



*Catalogue of telephonic
apparatus and supplies*
Western Electric Company

CATALOGUE
of
TELEPHONIC APPARATUS
AND SUPPLIES

WESTERN ELECTRIC COMPANY

TELEGRAPH EDITION

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BY
WESTERN ELECTRIC COMPANY

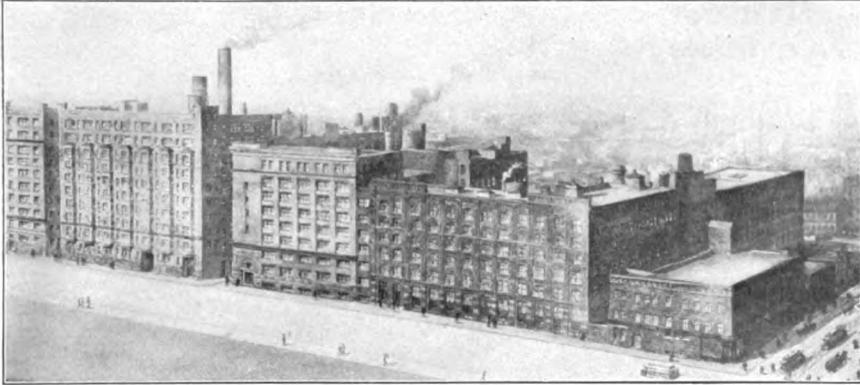
WESTERN ELECTRIC COMPANY

DOMESTIC HOUSES

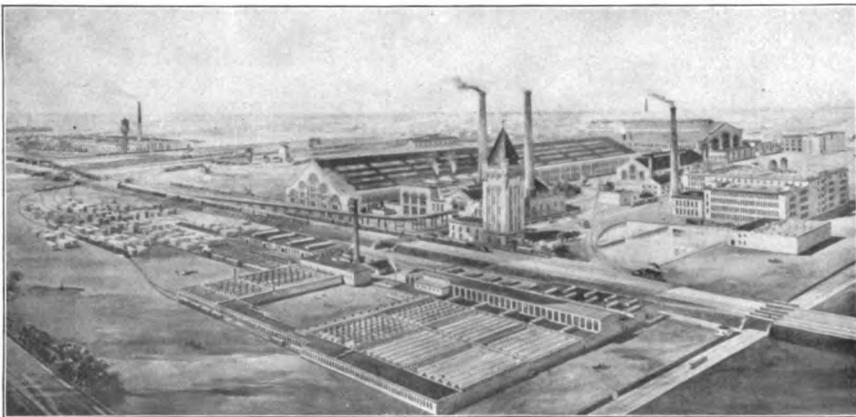
- ATLANTA—
230 LEE STREET,
ATLANTA, GEORGIA.
- CHICAGO—
259 So. CLINTON STREET,
CHICAGO, ILLINOIS.
- CINCINNATI—
113 WEST THIRD STREET,
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- DALLAS—
179 MAIN STREET,
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- DENVER—
1516 CURTIS STREET,
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COR. THIRD AND DEPOT STREETS,
DES MOINES, IOWA.
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463 WEST STREET,
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235-237 EAST 6TH STREET,
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445 SOUTH THIRD WEST STREET,
SALT LAKE CITY, UTAH.
- SAN FRANCISCO—
642 FOLSOM STREET,
SAN FRANCISCO, CAL.
- SEATTLE—
1518 FIRST AVENUE, SOUTH,
SEATTLE, WASHINGTON.

FOREIGN HOUSES AND AGENCIES

- CANADA—
NORTHERN ELECTRIC & MFG. CO., LTD.
814 NOTRE DAME STREET, WEST,
MONTREAL, CANADA.
- 181 BANNATYNE STREET,
WINNIPEG, MANITOBA.
- LONDON—
WESTERN ELECTRIC COMPANY,
NORFOLK HOUSE, VICTORIA EMBANKMENT,
LONDON, W. C., ENGLAND.
- ANTWERP—
BELL TELEPHONE & MANUFACTURING CO.,
33 RUE BOUDEWYNS,
ANTWERP, BELGIUM.
- BERLIN—
TELEPHON APPARAT FABRIK,
CHARLOTTENBURG SALZUFER 7,
BERLIN, GERMANY.
- PARIS—
SOCIÉTÉ DE MATÉRIEL TÉLÉPHONIQUE,
46 AVENUE DE BRETEUIL,
PARIS, FRANCE.
- MILAN—
OFFICINA ELETTRICA,
MILAN, ITALY.
- ST. PETERSBURG—
N. C. HEISLER & COMPANY,
12 GRIAZNAJA,
ST. PETERSBURG, RUSSIA.
- TOKYO—
NIPPON DENKI KABUSHIKI KAISHA
2 MITA SHIKOKUMACHI SHIBA-KU,
TOKYO, JAPAN.
- VIENNA—
VEREINIGTE TELEPHON & TELEGRAPHEN
FABRIK,
XX/2 DRESNER STRASSE 75,
VIENNA, AUSTRIA.
- JOHANNESBURG—
F. P. RICE,
P. O. BOX 1571,
JOHANNESBURG,
SOUTH AFRICA.
- SYDNEY—
R. B. HUNGERFORD,
163 PITT STREET,
SYDNEY, NEW SOUTH WALES,
AUSTRALIA.



CHICAGO



HAWTHORNE



NEW YORK



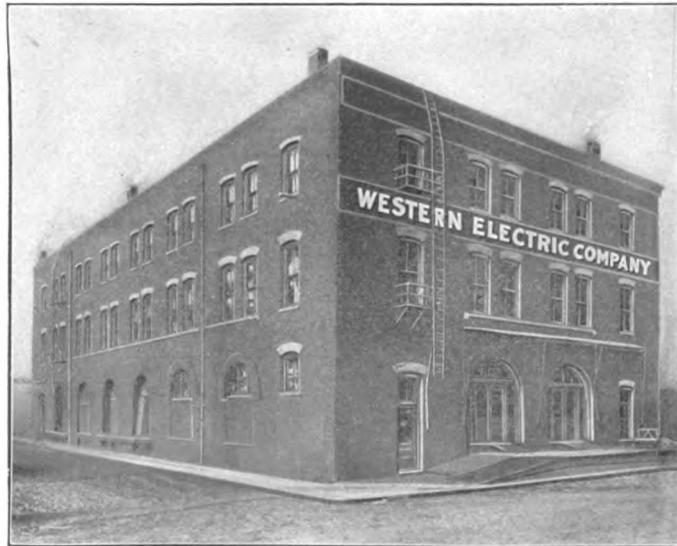
St. Louis



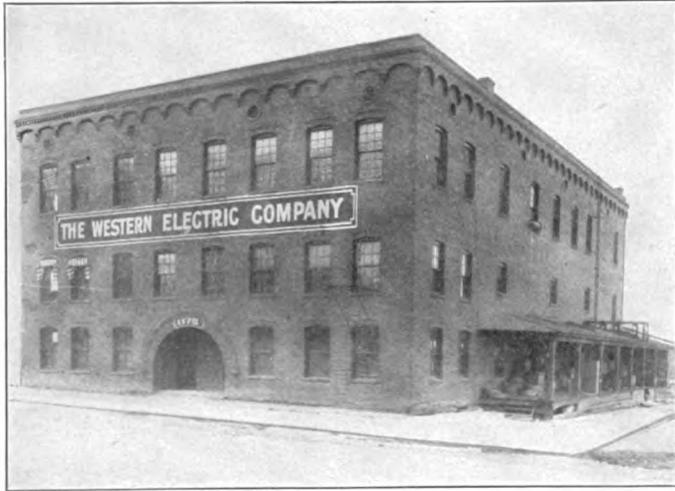
INDIANAPOLIS



LOS ANGELES



DES MOINES



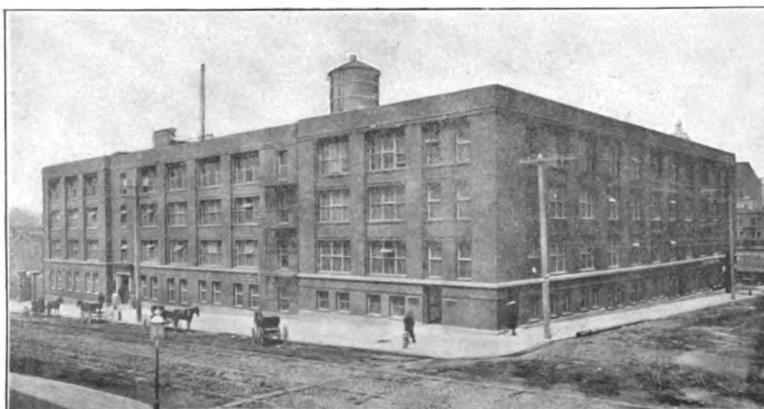
DENVER



OMAHA



ST. PAUL



SAN FRANCISCO



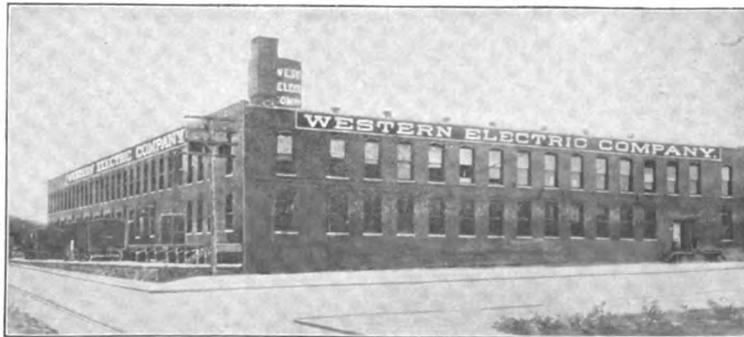
SEATTLE



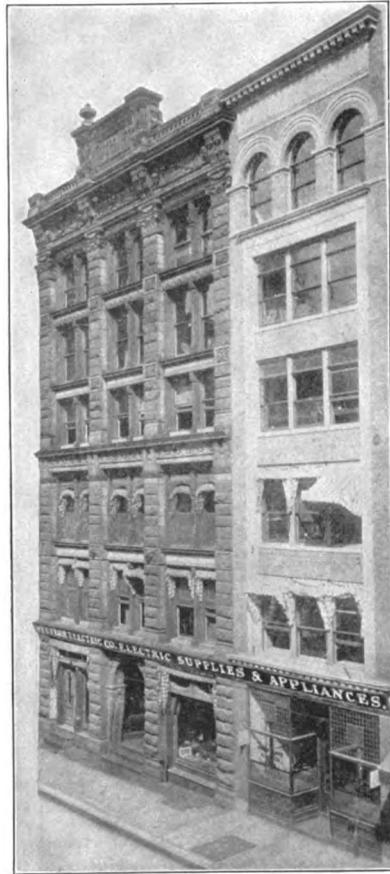
PHILADELPHIA



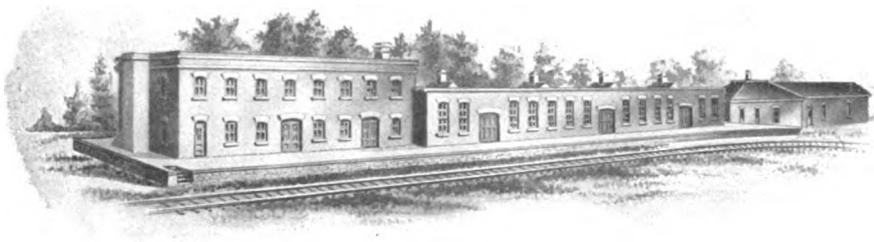
CINCINNATI



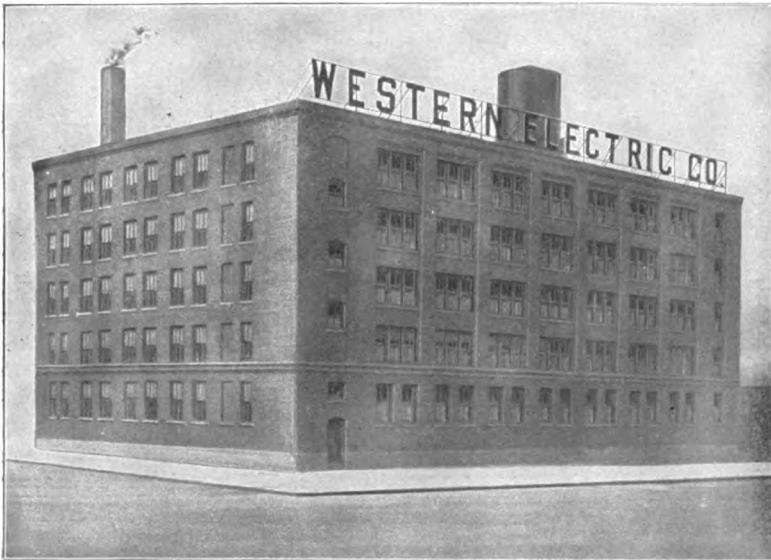
ATLANTA



KANSAS CITY



SALT LAKE CITY



PITTSBURG

INTRODUCTION

This catalogue has been prepared for the assistance and guidance of purchasers of telephonic and telegraphic apparatus or supplies. It lists only the types of apparatus and supplies which are in common use. Material for which there is very little demand or which is furnished only with complex exchange equipments is not included in this catalogue.

The common uses of the apparatus are given so far as possible for the guidance of the purchaser and it should be understood that the apparatus is not necessarily restricted to these uses.

All parts are interchangeable and we are prepared to furnish renewals and additions to existing equipments at any time. If the code number is not known when ordering it is advisable to send us the old parts to insure prompt and proper filling of the order.

We carry at all our houses a complete line of apparatus and supplies in general use. At every house are experts who will be glad to furnish any desired information or advice, if you will write stating your requirements.

WESTERN ELECTRIC COMPANY

TELEGRAPH CODE

To accommodate our largely increased correspondence we have arranged a code of carefully compiled words, each representing a business phrase, and customers are requested to make use of these words when ordering goods, requesting quotation, or seeking information relative to the shipment of orders by telegraph. A little ingenuity in arranging a message in code will result in a comprehensive order being placed or a request for information being transmitted at a comparatively small cost.

ORDERS

Leaking	Add to our order of.	Lease	Ship immediately.
Leaky	Cancel our order of.	Leased	Ship as soon as possible.
Lean	Change our order of.	Leasehold	Ship by express.
Leaned	Hurry forward goods on our order of.	Leaseholder	Ship by fast freight.
Leaning	Have you shipped goods on our order? If not when will you?	Leash	Ship quickest route.
Leanness	Enter order if you can ship in.	Leaven	Ship cheapest route.
Leaped	Hold for instructions our order of.	Leavened	Send tracer immediately for shipment of.
Leaping	If you cannot ship in time named, advise by telegraph.	Leavening	Wait receipt of letter before proceeding with order.
Learn	Instructions by mail.	Lecture	Change order for.
Learned	Prepay freight.	Legacy	Hold subject to our order.
Lectured	Send C. O. D. by express.	Legal	Hold until further orders.
Lecturing	What quantity can you ship per day?	Legalize	Send us immediately.
Ledge	Do not delay.	Legally	This is very important.
Leeward	Duplicate our order.	Legate	Send tracer on shipment—goods not here.
Leeway	Can you furnish?		
Learning	Shipping instructions will be sent you.		

ANSWERS

Legislature	Please specify quantities and trade number.	Lent	Have entered order and will ship.
Legitimate	Unable to give better price.	Leonard	Have sent tracer as requested.
Legitimately	We quote.	Leonine	Have suspended work as requested.
Legitimist	We quote for immediate acceptance.	Leonora	Too late to cancel order.
Legless	We quote in reply to your inquiry of.	Leopard	Unable to ship goods at time promised.
Leisure	We quote shipment from stock.	Leopols	We ship you to-day.
Leisurely	We quote shipment in.	Leper	We expect to ship.
Leming	We cannot accept at the price.	Leprosy	We will complete your order.
Lemon	We will accept your order.	Leprous	We will ship.
Lemonade	We do not make the article.	Lessen	We have shipped.
Lender	Can ship at once from stock if advised immediately.	Lessened	We have completed your order and shipped same.
Lending	Can ship at once on receipt of order.	Lessening	We have entered order.
Lengthen	Can ship in.	Lethargy	Telegraph shipping instructions for your order of.
Lengthened	Can begin shipping at once, and complete in.	Lettuce	Can deliver part of your order at once. Shall we ship portion, or hold till we can make one complete shipment?
Lengthening	Can ship within one week from receipt of order if advised at once.	Levant	Do not understand your order. Send duplicate with full details.
Lengthly	Can ship within two weeks from receipt of order if advised at once.	Levelness	Send us official order confirming your telegram.
Leniency	Have none in stock.		
Lenient	First shipment will be made.		

CODE IN GENERAL

Lapwing	Answer by mail.	Latent	Will greatly accommodate us if you will.
Larboard	Referring to our letter of.	Latently	According to contract.
Larceny	Referring to your letter of.	Lateral	Not according to contract.
Larch	We write you fully to-day.	Lather	To which add the cost of.
Largeness	We have no letter from you.	Lathered	In addition to.
Largess	Will write you fully in a day or so.	Lathering	How did you address?
Lariat	Write giving full particulars.	Latin	Was addressed to.
Lark	Answer by telegraph—day message.	Latinize	Please note an advance of.
Larva	Answer by telegraph—night message.	Latitude	Would you advise?
Larynx	Referring to our telegram of.	Latterally	Would advise you to.
Lascar	Referring to your telegram of.	Latterly	Would not advise you to.
Lash	Telegraph immediately.	Lattice	Unless otherwise advised will assume that.
Lashed	Telegraph reply soon as possible.	Laud	Will you agree to?
Lashing	We have no telegram from you.	Laudable	Will agree to.
Lass	Why do you not telegraph?	Laudably	Must have answer by.
Lasting	Shall we?	Laudation	Will be in.
Latch	Will you?	Laudative	Will be here.
Laugh	Utmost care must be used.	Lawrence	What have you done about?
Laughable	Cash on delivery.	Lax	Will deposit sight draft on you to-day, unless advised to the contrary, for dollars.
Laughed	Cash in 30 days.	Laxative	Please accept our draft for dollars.
Laughter	Will not allow any commission.	Laxity	Send duplicate copy of invoice dated.
Laughing	Commission will be allowed.	Laxness	Have examined very carefully and find.
Launch	Your financial standing being unknown, we will send goods C. O. D. unless otherwise instructed.	Laymen	Expenses to be paid by.
Launched	Kindly send us references as to your financial standing, or shall we ship via freight with draft attached to bill of lading?	Lazily	Do not fail to.
Laundress	Will you agree to the conditions?	Laziness	Have figured as close as possible.
Laundry	Contract awarded.	Lazy	Freight must be prepaid.
Laura	Contract will be awarded.	Leach	Freight rate per hundred pounds to destination.
Laurate	Will you extend credit?	Leaden	What is freight rate per hundred pounds?
Laurel	Have you decided?	Leader	Guarantee the account.
Lava	Have not decided.	Leading	Hold subject to your order.
Lavation	Have decided.	Leafage	Does not include.
Lavatory	Will guarantee delivery by the.	Leafing	Must be included.
Lavender	Cannot guarantee delivery before the.	Leafless	Will keep you fully informed.
Lawfully	The diameter is.	Leafy	Insist upon.
Lawfulness	Will do the best we possibly can.	League	Await instructions.
Lawgiver	Do the best you possibly can.	Leagued	Letter in transit with full particulars.
Lawgiving	Shall we do so?	Leak	Shall we deliver goods on verbal order of your Mr. ?
Lawless	Do so.	Leakage	Advisable for you to place order at once, prices tending to advance.
Lawn	Can do nothing until.		
Lateen	Will you accept?		
Lateness	Wire at once if accepted or not.		

QUESTIONS

Legatee	At what price could you furnish?	Legibly	Can you ship immediately?
Legation	Quote us by telegraph.	Legion	Can you ship in?
Legend	Quote us by next mail.	Legislate	Have you in stock?
Legendary	Quote lowest price by telegraph F. O. B. New York.	Legislated	Have you in stock? If not how soon can ship?
Legging	Quote lowest prices by mail F. O. B. New York.	Legislating	How soon can you ship?
Legible	Telegraph lowest price, F. O. B. New York, and how soon can ship.	Legislative	How soon can you make first shipment and how fast remainder?
		Legislator	What substitution can you make?

TERMS

Terms are thirty days net. All bills are due on the 15th of the following month. Payments may be made by bank draft, post office or express money order or registered letter. We are not responsible for remittances lost in the mails.

REFERENCES

New customers, unless satisfactorily rated by the commercial agencies, should send references with their first order and brief statement of their financial condition. This will enable us to ship promptly.

C. O. D. SHIPMENTS

To avoid the slight delay necessarily occasioned by our taking time to make the usual inquiries of references, we are always glad to ship by express C. O. D. if a remittance sufficient to pay express charges both ways accompanies the order, or by freight subject to sight draft against bill-of-lading.

PRICES

The prices as given in this catalogue are f.o.b. warehouse unless otherwise specified, and are subject to change without notice. Net prices quoted upon request. Please state quantities desired.

SHIPMENTS

We request customers to give shipping directions with their orders, but if not given will use our best judgment in making selection of route. As experienced packers are employed we are not responsible for breakages after having obtained "in good order" receipt from the transportation company. Goods ordered to be shipped by mail will be sent only at purchaser's risk.

TELEPHONE APPARATUS

APPARATUS BLANKS

A complete line of apparatus blanks is manufactured. These are suitable for covering the drillings for any of our apparatus which is not provided.

BACKBOARDS

Regularly furnished in oak or walnut



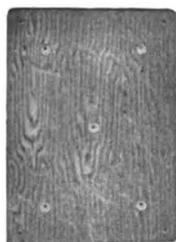
No. 111-C



No. 132-A



No. 133-A



No. 134-A



No. 138-A



No. 136-B

Code No.	Style	Used with	Dimensions inches	List Price each	
111-C	Battery Box for 3 dry cells	Nos. 1240 - A and 1240-E telephone sets. Included as part of set	33½x8½x7½	Walnut.....	\$1.60
				Oak.....	1.50
132-A	Writing Shelf	Nos. 1293-A, 1293-Y and 1296-A telephone sets.....	22½x7½x7½		1.05
133-A	Plain	No. 1293-J telephone set. Included as part of set.....	21x7½		.53
133-B	Plain	Special No. 1293-J telephone set when No. 7-E coin collector is used.....	24½x7½		.57
134-A	Plain	Nos. 1293 - A and 1293-Y telephone sets.....	9½x6½		.24
136-B	Battery Box for 3 dry cells	Nos. 1293-Y and 1305 type telephone sets.	26x8½x7½	Walnut.....	1.50
				Oak.....	1.45
138-A	Battery Box for 3 dry cells	No. 1298-A telephone set. Included as part of set	30½x8½x7½	Walnut.....	1.60
				Oak.....	1.50

WRITE FOR LIBERAL DISCOUNTS

Backboards—Continued



No. S-7296

Code No.	Style	Used with	Dimensions inches	List Price each
S-7296	Battery Box for 3 wet cells	Not drilled but suitable for Nos. 1240, 1293 and 1298 telephone sets.	35x16x8	\$2.70

BATTERY BOXES

Made of sheet steel, with black japan finish and lined with pressboard.

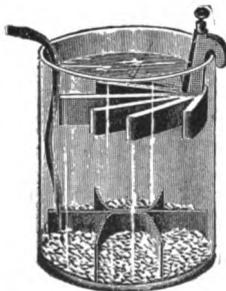


No. 1-A

Code No.	Used for	Dimensions inches	List Price each
1-A	3 standard size dry cells	8 $\frac{1}{2}$ x3 $\frac{1}{2}$ x7 $\frac{1}{4}$	\$0.75

PRIMARY BATTERIES

GRAVITY BATTERY



No. 10255

Code Word	List No.	5x7	List Price each
Deerfield	10250	Cell, complete...	\$ 1.00
Defiance	10251	Jar, glass 5x7....	.40
Delanco	10252	Zinc.....	.55
Deland	10253	Copper.....	.17
6x8			
Delano	10255	Cell, complete....	1.20
Delaware	10256	Jar, glass 6x8....	.50
Delevan	10257	Zinc.....	.70
Delhi	10258	Copper.....	.17



No. 10130

STANDARD FULLER BATTERY

Colville	10130	Cell, complete....	1.35
Comanche	10126	Jar, glass, 6x8....	.50
Comillah	10132	Cover for jar....	.15
Comines	10133	Carbon.....	.18
Como	10134	Porous cup.....	.30
Compton	10135	Zinc.....	.20

WRITE FOR LIBERAL DISCOUNTS

Primary Batteries—Continued



No. 10000

LECLANCHE BATTERY

Code Word	List No.		List Price each
Ceredo	10000	Cell, complete.....	\$ 0.46
Ceretto	10002	Porous cup.....	.36
Ceylon	10003	Jar.....	.20
Ceylonese	10004	Zinc, amalgamated.....	.10
Chase	10005	Sal-ammoniac, package.....	.10

GLADSTONE-LALANDE BATTERIES

Model G-10 Vitrified Porcelain Jar and Cover

Size over all, 5 inches x 8½ inches

Capacity, 100 ampere hours

Code Word	List No.		
Knieboog	G-10	Complete battery with charge.....	1.50

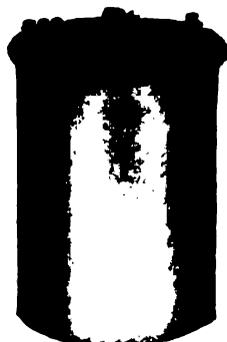
Renewal Charges

Kniedicht	G-11	Complete renewal.....	.72
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Separate Renewal Parts

Kniefall	G-12	One oxide plate.....	.24
Kniefalles	G-13	One double zinc plate.....	.28
Kniegurt	G-14	One can caustic soda.....	.15
Kniegurtes	G-15	One bottle paraffine oil.....	.05

These renewal charges can also be used in Lalande cells, types BB and Z.



G-20 with Jar

Model G-20 Vitrified Porcelain Jar and Cover

Size over all, 5¾ inches x 9 inches

Capacity, 150 ampere hours

Code Word	List No.		
Kniehebel	G-20	Complete battery with charge.....	2.20

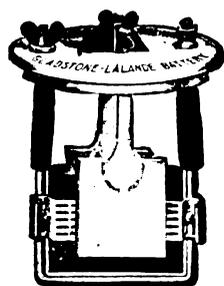
Renewal Charges

Kniehieb	G-21	Complete renewal.....	.82
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Separate Renewal Parts

Kniehout	G-22	One oxide plate.....	.31
Kniehouten	G-23	Two zinc plates.....	.28
Kniekappe	G-24	One can caustic soda.....	.17
Knielap	G-25	One bottle paraffine oil.....	.06

These renewal charges can also be used in Lalande cells, type Q.



G-20 without Jar

WRITE FOR LIBERAL DISCOUNTS

Primary Batteries—Continued

Model G-50 Vitrified Porcelain Jar and Cover
 Size over all, 7 1/4 inches x 10 1/2 inches
 Capacity, 300 ampere hours

These batteries are largely used for central station telephone transmitter work and in operating inter-rupters for subscriber ringing.

Code Word	List No.		List Price each
Knievormig	G-50	Complete battery with charge.....	\$ 2.90
Renewal Charges			
Kniewele	G-51	Complete renewal	1.40
Separate Renewal Parts			
Knoflook	G-52	One oxide plate.....	.55
Kniffes	G-53	Two zinc plates.....	.50
Knokkels	G-54	One can caustic soda.....	.28
Knolkool	G-55	One bottle paraffine oil.....	.07

These renewal charges can also be used in Lalande cells, types R and RR.

Permanent Parts of Gladstone-Lalande Batteries

Orsippos	G-110	Porcelain jar for G-10 cell.....	.35
Orsodagna	G-120	Porcelain jar for G-20 cell.....	.40
Ortalidi	G-150	Porcelain jar for G-50 cell.....	.50
Orthodoxal	G-111	Porcelain cover for G-10 cell.....	.25
Orthodoxe	G-121	Porcelain cover for G-20 cell.....	.35
Orthogamy	G-151	Porcelain cover for G-50 cell.....	.45
Orthogonos	G-112	Copper hanger with clamp and nuts for G-10 cell.....	.30
Orthogonun	G-122	Copper hanger with clamp and nuts for G-20 cell.....	.35
Orthonyx	G-152	Copper hanger with clamp and nuts for G-50 cell.....	.40
Orthosias	G-155	Double threaded screw with two wing nuts and one jam nut for hold- ing zincs in G-20 and G-50 cells.....	.10

Code No.	List No.		List Price each
Orthostade	G-113	Hard rubber insulators for G-10 cell..	.05
Orthostyle	G-123	Hard rubber insulators for G-20 cell..	.05
Orthotone	G-153	Hard rubber insulators for G-50 cell..	.05
Ortigaban	G-154	Wire connections for all sizes of cells.	.05



No. 100028

DRY BATTERIES

BLUE BELL

The Blue Bell dry battery has been developed to meet the exacting requirements of telephone work. Comparative tests have been applied to the different dry cells now on sale, and show conclusively that the Blue Bell is the best dry cell on the market for light service, such as would be required of a primary battery for use in connection with a high resistance transmitter at local battery telephone sets. Size 2 3/4 in. x 6 1/4 in. Packed in barrels containing 125 each.

Code Word	List No.	List Price each
Maststueck	100028	\$ 0.25

LIBERTY

It is especially adapted to telephone work, and is highly efficient. It has a voltage of 1.5 and is one of the best dry batteries for intermittent service.

Code Word	List No.	List Price each
Landschatz	97965	\$ 0.25



No. 97965

WRITE FOR CATALOG AND DISCOUNTS

Dry Batteries—Continued



No. 100029

COLUMBIA

This battery has been found satisfactory for telephonic work as well as for general use.

Code Word	List No.		List Price each
Mastuerzo	100029	No. 6 cell.....	\$ 0.30

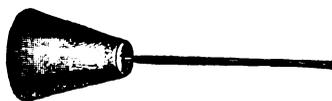


No. 4120

1900

This battery is manufactured expressly for telephone service.

Code Word	List No.		List Price each
Ossiforme	4129	Standard, 2½ in. x 6 in.....	\$ 0.30
Foolish	4449	Type C, 2 in. x 5 in.....	.25
Foolcracy	4450	Type B, 1¾ in. x 4½ in.....	.25



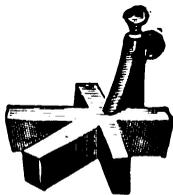
No. 10135



No. 10004



No. 10453



No. 10252

BATTERY SUPPLIES

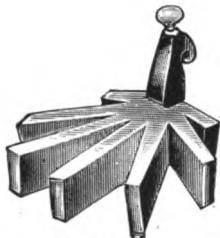
ZINCS

Code Word	List No.		List Price each
Ceylones	10004	Leclanche, square, amalgamated...	\$ 0.10
Devereux	10453	Leclanche, round, amalgamated...	.10
Compton	10135	Standard Fuller, weight 1½ lbs. ....	.20
Delanco	10252	Crowfoot for 5x7 jar, weight 1½ lbs.	.55

WRITE FOR LIBERAL DISCOUNTS

Battery Supplies—Continued

ZINCS



No. 10257

Code Word	List No.		List Price each
Delevan	10257	Crowfoot for 6x8 jar, weight, 3 lbs.	\$ 0.70

COPPERS

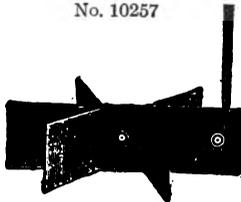
Deland	10253	For 5x7 jar. . . . .	.17
Delhi	10258	For 6x8 jar.17

SAL-AMMONIAC

Dundee	10500	Imported over 99% pure, per lb.20
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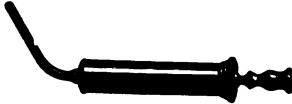
BLUE VITRIOL

Dunellen	10502	Per lb.24
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No. 10253

BATTERY UTENSILS



No. 10490



No. 10497



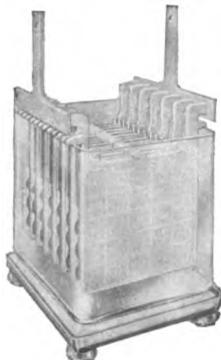
No. 10498

Code Word	List No.		
Dumont	10490	Battery syringe No. 6, solid piston.	2.00
Duncan	10497	Battery brush, per doz.	1.50
Duncannon	10498	Battery knife.	2.00

STORAGE BATTERIES

ELEMENT OF TYPE "E"

Size of Plates, 7 3/4 inches by 7 3/4 inches
"Chloride Accumulator"



Type "E"

Number of plates.	5	7	9	11	13	15	
For							
Discharge in amperes.	8 hours.	10	15	20	25	30	35
	5 hours.	14	21	28	35	42	49
	3 hours.	20	30	40	50	60	70
	1 hour.	40	60	80	100	120	140
Normal charge rate.	10	15	20	25	30	35	
Outside measurement of glass jar, in inches:	Length.	5 1/2	6 3/4	8	8 3/4	11	11
	Width.	9 1/4	9 1/4	9 1/4	9 1/4	9 1/4	9 1/4
	Height.	11 3/8	11 3/8	11 3/8	11 3/8	11 3/8	11 3/8
Outside measurement of rubber jar, in inches:	Length.	2 7/8	3 7/8	5	6 1/4	8 1/4	8 1/4
	Width.	8 1/2	8 1/2	8 1/2	8 1/2	8 1/2	8 1/2
	Height.	11	11	11	11	11	11
Outside measurement of all metal tanks, in inches:	Length.	8 3/4	9 3/4	11 1/4	12 3/4	13 3/4	15 1/4
	Width.	11	11	11	11	11	11
	Height.	12 1/4	12 1/4	12 1/4	12 1/4	12 1/4	12 1/4
Weight of electrolyte, in pounds:	In glass.	18 1/2	20	24 1/2	26	35	34
	In rubber.	5 1/2	8	10 1/2	12	17	18 1/2
	In all metal tanks.	27 1/2	31 1/2	36	40	44 1/2	49
	In glass.	49	60	74	86 1/2	104	112
Weight of cell complete with electrolyte, in pounds:	In rubber.	29 1/2	40 1/2	52	63	77	87
	In all metal tanks.	85	104	124	136	161	180

WRITE FOR LIBERAL DISCOUNTS

Elements of Type "E"—Continued

Size of Plates, 7 3/4 inches by 7 3/4 inches

"Chloride Accumulator"

Number of plates.....	5	7	9	11	13	15
Height of cell to top of lug, in inches:	In glass.....	20	20	20	20	20
	In rubber....	12 1/2	12 1/2	12 1/2	12 1/2	12 1/2
	In all metal tanks.....	16	16	16	16	16
List Price, element only.....	\$ 8.25	\$11.75	\$15.25	\$18.75	\$22.25	\$25.75
List Price, glass jar, extra.....	1.50	1.70	1.85	2.05	2.90	2.90
List Price, rubber jar and cover, extra.....	2.90	3.25	3.75	5.05	5.75	6.10
List Price, all metal tank, extra.....	10.30	11.35	12.40	13.45	14.50	15.55

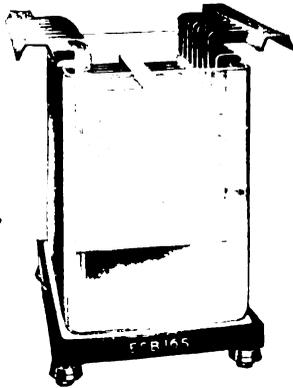
N. B.—In ordering Elements, or parts thereof, specify whether intended for glass or rubber jars or tanks.

ELEMENTS OF TYPE "F"

Size of Plates, 11 inches by 10 1/2 inches

"Chloride Accumulator"

Number of plates.....	9	11	13	15	17	19	21	23	25	27	
For											
Discharge in amperes:	8 hours....	40	50	60	70	80	90	100	110	120	130
	5 hours....	56	70	84	98	112	126	140	154	168	182
	3 hours....	80	100	120	140	160	180	200	220	240	260
	1 hour....	160	200	240	280	320	360	400	440	480	520
Normal charge rate.....	40	50	60	70	80	90	100	110	120	130	
Outside measurements of glass jar, in inches:	Length....	9	10 1/2	10 1/2	12	Old type jars 15 1/2 inches high can be furnished for renewals					
	Width....	12 1/2	12 1/2	12 1/2	12 1/2						
	Height....	17	17	17	17						
Outside measurements of glass tanks, in inches:	Length....	14 1/2	14 1/2	14 1/2	17 1/2	17 1/2	20 1/2	20 1/2	20 1/2	20 1/2	
	Width....	13 1/2	13 1/2	13 1/2	13 1/2	13 1/2	13 1/2	13 1/2	13 1/2	13 1/2	
	Height....	18 1/2	18 1/2	18 1/2	18 1/2	18 1/2	18 1/2	18 1/2	18 1/2	18 1/2	
Clearance between glass tanks, 2 1/2 and 3 1/2 inches											
Outside measurements of all metal tanks, in inches:	Length....	13 1/2	14 1/2	16 1/2	18 1/2	19 1/2	21 1/2	23 1/2	24 1/2	26 1/2	28 1/2
	Width....	15	15	15	15	15	15	15	15	15	15
	Height....	17 1/2	17 1/2	17 1/2	17 1/2	17 1/2	17 1/2	17 1/2	17 1/2	17 1/2	17 1/2
Clearance between metal tanks, 2 inches											
Outside measurements of lead-lined wood tanks, in inches:	Length....	13 1/2	15 1/2	16 1/2	18 1/2	20	21 1/2	23 1/2	25	26 1/2	28 1/2
	Width....	15	15	15	15	15	15	15	15	15	15
	Height....	20 1/2	20 1/2	20 1/2	20 1/2	20 1/2	20 1/2	20 1/2	20 1/2	20 1/2	20 1/2
Clearance between wood tanks, 2 inches											
Weight of electrolyte, in lbs.:	In glass jars....	63	69	67	79						
	In glass tanks.....	97									
	In all metal tanks.....	95	108	121	134	146	160	172	185	198	212
	In wood tanks	86	99	111	123	133	145	156	168	180	191
Weight of cell complete with electrolyte, in lbs.:	In glass jars....	174 1/2	206	227	260						
	In glass tanks.....	279									
	In all metal tanks.....	256	297	337	377	416	457	497	537	577	618
	In wood tanks	250	292	332	372	411	452	492	532	573	615
Height of cell, in glass jars, from bottom of insulator to top of lug, in inches:	29 1/2	29 1/2	29 1/2	29 1/2							
Height of cell, in glass tanks, from bottom of insulators to top of bus bar, in inches:				23 1/2	23 1/2	23 1/2					
Height of cell, in all metal tanks, from floor to top of bus bar, double insulation, in inches:	33 1/2	33 1/2	33 1/2	33 1/2	33 1/2	33 1/2	33 1/2	33 1/2	33 1/2	33 1/2	
Height of cell, in wood tanks, from floor to top of bus bar, double insulation, in inches:	33 1/2	33 1/2	33 1/2	33 1/2	33 1/2	33 1/2	33 1/2	33 1/2	33 1/2	33 1/2	
Number of plates.....	9	11	13	15	17	19	21	23	25	27	
List Price, element only.....	\$30.00	37.50	45.00	52.50	60.00	67.50	75.00	82.50	90.00	97.50	
List Price, glass jar, extra.....	4.40	5.05	5.05	6.25							
List Price, glass tank, extra.....	.....	.....	6.75	.....	7.75	.....	11.50			
List Price, all metal tank, extra.....	15.55	16.70	17.85	19.00	20.15	21.30	22.45	23.60	24.75	25.90	
List Price, lead-lined wood tank, extra....	13.00	13.85	14.70	15.55	16.40	17.25	18.10	18.95	19.80	20.65	



Type "F"

N. B.—In ordering Elements, or parts thereof, specify whether intended for glass jars, glass tanks, all metal tanks, or wood tanks.

WRITE FOR LIBERAL DISCOUNTS

ELEMENTS OF TYPE "G"

Sizes of Plates, 15 1/8 inches by 15 1/8 inches. Clearance between tanks, 2 inches

"Chloride Accumulator"



Number of plates.....	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43
For																	
Discharge in amperes:																	
8 hours.....	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400	420
5 hours.....	140	168	196	224	252	280	308	336	364	392	420	448	476	504	532	560	588
3 hours.....	200	240	280	320	360	400	440	480	520	560	600	640	680	720	760	800	840
1 hour.....	400	480	560	640	720	800	880	960	1040	1120	1200	1280	1360	1440	1520	1600	1680
Normal charge rate.....	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400	420
Outside measurement of tank in in.																	
Length.....	15 1/8	16 1/8	18 1/8	20	22 1/8	24 1/8	26	27 1/8	29 1/8	31	32 1/8	34 1/8	36	37 1/8	39 1/8	40 1/8	42 1/8
Width.....	19 1/8	19 1/8	19 1/8	19 1/8	20 1/8	20 1/8	20 1/8	20 1/8	20 1/8	20 1/8	20 1/8	20 1/8	20 1/8	20 1/8	20 1/8	20 1/8	20 1/8
Height.....	26	26	26	26	26 1/2	26 1/2	26 1/2	26 1/2	26 1/2	26 1/2	26 1/2	26 1/2	26 1/2	26 1/2	26 1/2	27 1/2	27 1/2
Weight of electrolyte, in pounds.....	188	210	231	253	274	296	317	338	360	381	403	424	446	467	489	510	532
Weight of cell, complete, with electrolyte, in lead-lined wood tank, in pounds:.....	568	645	719	798	925	1006	1085	1165	1266	1347	1427	1507	1588	1668	1748	1841	1922
Height of cell from floor to top of bus-bar, for double insulation, in inches:.....	38 1/8	38 1/8	38 1/8	38 1/8	40 1/8	40 1/8	40 1/8	40 1/8	40 1/8	40 1/8	40 1/8	40 1/8	40 1/8	40 1/8	40 1/8	41 1/8	41 1/8
List Price, element only.....	\$ 75 00	90 00	105 00	120 00	135 00	150 00	165 00	180 00	195 00	210 00	225 00	240 00	255 00	270 00	285 00	300 00	315 00
List Price, lead-lined wood tank, extra.....	\$ 18 70	19 55	20 40	21 25	22 10	23 00	23 50	24 40	25 30	26 20	27 10	28 00	28 90	29 80	30 70	31 60	32 50

Number of plates.....	45	47	49	51	53	55	57	59	61	63	65	67	69	71	73	75	
For																	
Discharge in amperes:																	
8 hours.....	440	460	480	500	520	540	560	580	600	620	640	660	680	700	720	740	
5 hours.....	616	644	672	700	728	756	784	812	840	868	896	924	952	980	1008	1036	
3 hours.....	880	920	960	1000	1040	1080	1120	1160	1200	1240	1280	1320	1360	1400	1440	1480	
1 hour.....	1760	1840	1920	2000	2080	2160	2240	2320	2400	2480	2560	2640	2720	2800	2880	2960	
Normal charge rate.....	440	460	480	500	520	540	560	580	600	620	640	660	680	700	720	740	
Outside measurement of tank in inches:																	
Length.....	44 1/8	45 1/8	47 1/8	49 1/8	51 1/8	53 1/8	54 1/8	56 1/8	58 1/8	59 1/8	61 1/8	63 1/8	64 1/8	66 1/8	68 1/8	69 1/8	
Width.....	20 1/8	20 1/8	20 1/8	20 1/8	21 1/8	21 1/8	21 1/8	21 1/8	21 1/8	21 1/8	21 1/8	21 1/8	21 1/8	21 1/8	21 1/8	21 1/8	21 1/8
Height.....	27 1/8	27 1/8	27 1/8	27 1/8	27 1/8	27 1/8	27 1/8	27 1/8	27 1/8	27 1/8	27 1/8	27 1/8	27 1/8	27 1/8	27 1/8	27 1/8	27 1/8
Weight of electrolyte, in pounds.....	553	575	596	618	639	661	682	704	725	747	768	790	811	833	854	876	
Weight of cell, complete, with electrolyte, in lead-lined wood tank, in pounds:.....	2005	2086	2165	2249	2333	2417	2501	2584	2671	2754	2841	2927	3014	3101	3188	3275	3362
Height of cell from floor to top of bus-bar, for double insulation, in inches:.....	41 1/8	41 1/8	41 1/8	41 1/8	41 1/8	41 1/8	41 1/8	41 1/8	41 1/8	41 1/8	41 1/8	41 1/8	41 1/8	41 1/8	41 1/8	41 1/8	41 1/8
List Price, element only.....	\$ 330 00	345 00	360 00	375 00	390 00	405 00	420 00	435 00	450 00	465 00	480 00	495 00	510 00	525 00	540 00	555 00	
List Price, lead-lined wood tank, extra.....	\$ 38 80	39 95	41 10	42 25	43 40	44 55	45 70	46 85	48 00	49 15	50 30	51 45	52 60	53 75	54 90	56 05	57 20

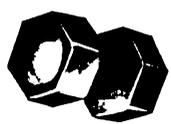
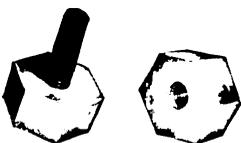
WRITE FOR LIBERAL DISCOUNTS

COUNTER ELECTRO-MOTIVE FORCE CELLS

These are similar to the regular storage cells, except that the plates are merely grids without the filling. Two are used in the primary circuit of the battery driven ringing machines when 4-party selective ringing is given.

	List Price Elements Only each
Type E-5: Same size as the regular E-5 cell, used with 75-watt battery driven ringing machines	\$ 4.125
Type E-7: Same size as the regular E-7 cell, used with 150-watt battery driven ringing machines	5.875
Type E-11: Same size as the regular E-11 cell, used with 300-watt battery driven ringing machines.....	7.625

STORAGE BATTERY ACCESSORIES

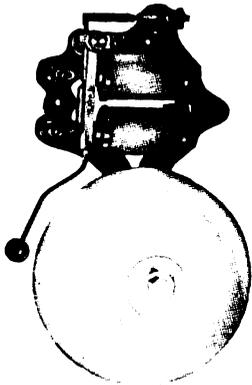
		List Price
Acid	See Electrolyte	
Battery Covers	Glass plates about $\frac{3}{8}$ in. thick used for covering the individual storage battery cells of Electric Storage Battery Company's manufacture. Made for types "E," "F" and "G" cells. Orders should specify the type of cell, and whether the bus bars are plain or have terminal cups.....	On request
		
Bolt Connectors	For bolting together the connecting straps of type "E" or type "F" elements in glass jars, each.....	\$ 0.20
		
Bolt Connectors		
Bus Bars	Two types are made, plain and reinforced. The plain bars are for joining together the elements of two adjacent cells. The reinforced bars are for the last cell in a row and the orders for them should state the number of cups on each, together with the size of wire for which each cup is to be drilled.....	On request
		
Reinforced Bus Bar and Terminal Cups.		
Displacing Tanks	Used in the pilot cell of batteries of types "F" and "G" cells to fill vacant space of partially equipped tank so that the variation of density of electrolyte between charge and discharge will be a maximum. In ordering the displacing tanks it is necessary to state the type of tank and the number of plates which it is intended to displace.....	On request

WRITE FOR LIBERAL DISCOUNTS

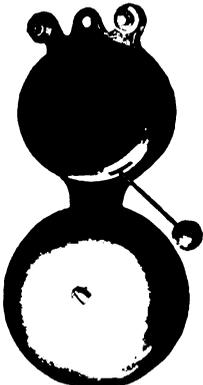
Storage Battery Accessories—Continued

		List Price	
	Electrolyte	Sulphuric acid having a specific gravity of 1.200. Delivered in carboys which are charged for, but which are credited when returned in good order. Per hundred pounds	\$3.00
	Hydrometer	Type "E" for type "E" cells, each	1.50
Type "E"		Type "H" for types "F" and "G" cells, each	1.50
	Hydrometer (Compensating)	For the pilot cell of batteries composed of types "F" and "G" cells, each	6.00
Compensating			
	Insulators	These are made of glass. Type "F" is used under sand trays. Type "G" is used under type "F" and "G" tanks and under stringers used in connection with tanks up to and including type G-17. Type "H" glass insulators are used under stringers for tanks larger than G-17.	
		Type "F," each . . . . .	.04
		Type "G," each . . . . .	.225
		Type "H," each . . . . .	.26
	Sand Trays	Wooden trays intended to be filled with sand, on which glass jars are placed. In ordering specify size of jar.	On request
	Terminal Cups	To be specified with the reinforced bus bars.	
		For 1,000,000 circular mil cable, each	\$2.93
		For 750,000 circular mil cable, each	2.55
		For 500,000 circular mil cable, each	2.06
		For No. 0000 B. & S. gauge cable, each	1.76
	Terminal Lugs	For connecting power wires to types "E" or "F" elements in glass jars. Type "E" has 1/2 in. hole for wire. Special type "F" has three holes drilled for the sizes of wire specified in the order.	
		Type "E," each . . . . .	.85
Type "E"		Special type "F," each	1.50
	Vitrified Bricks	Used under battery racks and stands, size 8 1/2 in. x 2 1/2 in., each . . . . .	.045

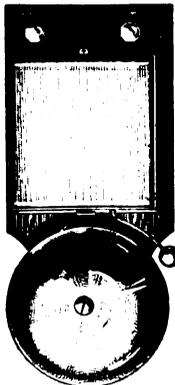
WRITE FOR LIBERAL DISCOUNTS



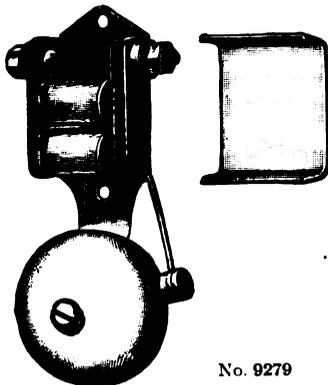
No. 98978



No. 96552



No. 23596



No. 9279

BELLS

FOR DIRECT CURRENT

Farady Skeleton Bells

Code Word	List No.	Standard Sizes of Gong inches	Standard Resistance ohms	List Price each
Lippenrand	98978	2½	1.5	\$ 1.68
Lippenroth	98979	3	1.5	1.74
Lippenzalf	98980	3½	1.5	1.85
Lippiverat	98981	4	1.5	1.96
Lipyrien	98982	5	2.1	2.84
Lipzoden	98983	6	2.1	3.20
Liquazione	98984	7	3.0	4.56
Liquefacio	98985	8	3.0	5.00
Liquerimus	98986	10	5.2	8.00
Liquidlert	98987	12	5.2	10.00

Hawthorn Bells

Code Word	List No.	Standard Sizes of Gong inches	List Price each
Koperasch	96552	2½	\$ 0.60
Koperblad	96553	3	.82
Koperbloem	96554	4	.80

Wood Box Bell

Orbitatem	23596	2½	.82
Orbitatis	23597	3	.84
Orbitele	23598	4	1.04

The Eco Bell

No adjustment screws to be displaced. Will operate equally well on one or ten cells of battery. Contact points are platinized.

Hammer rod and armature in one piece. Is practically dust and insect proof.

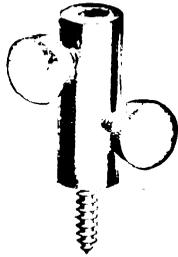
Gongs are stamped brass heavily nickeled.

Code Word	List No.	Standard Sizes of Gong inches	List Price each
Factive	2460	1	\$ 0.90
Annawan	9275	1½	.78
Anniston	9276	2	.80
Annville	9277	2½	.58
Anserated	9279	3	.60
Anserine	9280	4	.84

No. 2460 is nickel plated. Other sizes are japanned.

WRITE FOR LIBERAL DISCOUNTS

BINDING POSTS



No. 1-A



No. 1-B



No. 2-A



No. 2-D



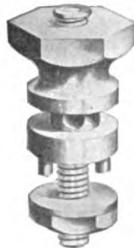
No. 2-E



No. 3-A



No. 3-E



No. 9-A



No. 9-B



No. 16-A



No. 20-C

Code No.	Finish	List Price each
1-A	Brass.....	\$0.15
1-B	Brass.....	.12
2-A	Nickel plate.....	.06
2-D	Nickel plate.....	.06
2-E	Brass.....	.075
3-A	Nickel plate.....	.09
3-E	Nickel plate.....	.105
9-A	Brass.....	.2025
9-B	Brass.....	.225
16-A	Nickel plate.....	.0425
20-C	Nickel dip.....	.0825

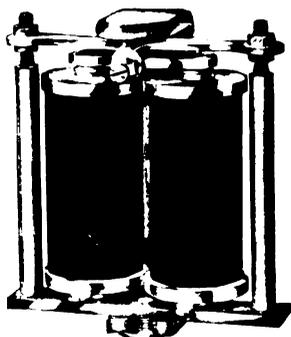
WRITE FOR LIBERAL DISCOUNTS

BUZZERS

FOR ALTERNATING CURRENT

The No. 1 type is made from a standard ringer, the gongs, gong posts and clapper wire being omitted.

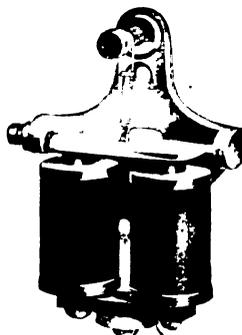
The No. 2 type has an armature spring and screw adjustment.



No. 1-A



No. 2-A



No. 2-D

Code No.	Resistance ohms	Used in	List Price each
1-A	1000	Telephone sets.....	\$ 1.35
1-B	2500	Telephone sets.....	1.95
2-A	100	Nos. 1006-A, 1006-C, 1006-D, 1006-E test sets.....	.70
2-B	250	No. 1006-B test set.....	.70
2-C	1000	.....	.90
2-D	100	No. 1017-A test set.....	.70

FOR DIRECT CURRENT

Hawthorn Buzzers

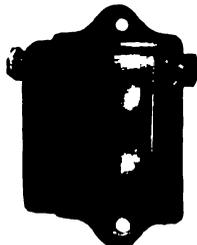


No. 96417

Code Word	List No.	Resistance ohms	List Price each
Klangwitz	96417	2	\$ 0.58
Micciremus	94081	200	On request

The Eco Buzzer

Will operate equally well on one or ten cells of battery.



No. 2633

Code Word	List No.	Size inches	List Price each
Ashcraft	9344	1½ x ¾	\$ 0.66
Falcon	2632	2 x 1	.56
Falconette	2633	2½ x 1½	.60
Falconer	2634	2¾ x 1¾	.62
Falcones	2635	3¼ x 1¾	.65

No. 9344 is full nickeled. Other sizes japanned.

WRITE FOR LIBERAL DISCOUNTS

CABLES FOR SWITCHBOARDS

The cables listed in the following tables are adapted for interior use; but should not be used where there is excessive dampness, since they are not provided with waterproof covering.

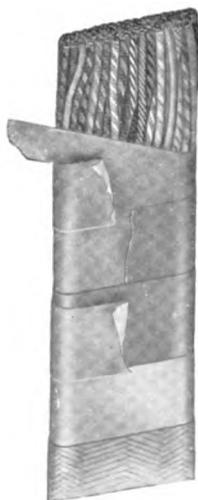
The conductors are provided with double silk and single cotton insulation which is colored in such a way that each pair and each single wire can be identified. The cable is protected from injury by a layer of lead tape and a heavy braiding which enclose the conductors. The cable is given a heavy coat of gray fireproofing paint.

The sizes of conductors are given in Brown and Sharpe gauge. No. 19 gauge wire in cables is used for the central office wiring of toll talking circuits, and No. 14 or No. 16 wire for supplying battery current to cord circuits, operator positions, lamp signals, etc.

The conductors in excess of the numbers mentioned in the columns for pairs and singles are provided as spares to be used in case some of the regular wires in the cable are accidentally cut.



No. 16



No. 84

Cable with Dry Core

Code No.	Number of Conductors	Number of Pairs	Number of Singles	Size Inches	Shape	List Price Per Foot
16	64	20-No. 22	20-No. 22	$\frac{3}{16}$ x $\frac{7}{16}$	Oval	\$ 0.22
24	43	20-No. 22		$\frac{1}{16}$ x $\frac{1}{16}$	Oval	.15
35	53	25-No. 22		$\frac{1}{16}$ x $\frac{1}{16}$	Oval	.19
50	34	10-No. 22	10-No. 22	$\frac{1}{16}$ x $\frac{1}{16}$	Oval	.13
59	71	34-No. 22		$\frac{1}{16}$ x $\frac{1}{16}$	Oval	.24
60	75	36-No. 22		$\frac{1}{16}$ x $\frac{1}{16}$	Oval	.25
62	63	30-No. 22		$\frac{1}{16}$ x $\frac{1}{16}$	Oval	.22
63	105	51-No. 22		$\frac{1}{16}$ x $\frac{1}{16}$	Round	.34
65	53	25-No. 19		$\frac{1}{16}$ x $\frac{7}{16}$	Oval	.235
66	103	50-No. 22		$\frac{1}{16}$ x $\frac{1}{16}$	Round	.34
70	83	40-No. 22		$\frac{1}{16}$ x $\frac{1}{16}$	Oval	.28
72	11		10-No. 19	$\frac{1}{16}$ x $\frac{1}{16}$	Round	.07
74	21		20-No. 22	$\frac{1}{16}$ x $\frac{1}{16}$	Round	.085
79	23	10-No. 22		$\frac{1}{16}$ x $\frac{5}{16}$	Oval	.09
81	13	6-No. 22		$\frac{1}{16}$ x $\frac{3}{16}$	Oval	.06
84	64	20-No. 22	20-No. 22	$\frac{1}{16}$ x $\frac{1}{16}$	Oval	.265
87	35	16-No. 22		$\frac{1}{16}$ x $\frac{1}{16}$	Oval	.135
96	100	32-No. 22	32-No. 22	$\frac{1}{16}$ x 1	Oval	.325
97	132	64-No. 22		$\frac{1}{16}$ x 1	Oval	.42
98	166	64-No. 22	32-No. 22	$\frac{1}{16}$ x 1	Oval	.525
100	84	40-No. 24		$\frac{1}{16}$ x $\frac{1}{16}$	Oval	.24
105	64	20-No. 24	20-No. 24	$\frac{1}{16}$ x $\frac{1}{16}$	Oval	.19
106	103	40-No. 22	20-No. 22	1 x $\frac{1}{16}$	Oval	.33
107	102	39-No. 22	19-No. 22 } 4-No. 16 }	$1\frac{1}{2}$ x $\frac{9}{16}$	Oval	.36
108	94	36-No. 22	19-No. 22	1 x $\frac{1}{16}$	Oval	.31
115	64	20-No. 19	20-No. 22	$\frac{1}{16}$ x $\frac{1}{16}$	Oval	.285
116	43	20-No. 19		$\frac{1}{16}$ x $\frac{1}{16}$	Oval	.225
117	83	20-No. 19 } 20-No. 22 }		$\frac{3}{16}$ x $\frac{1}{2}$	Oval	.345
119	103	50-No. 19		$\frac{3}{16}$ x 1	Oval	.52
120	64	20-No. 24	20-No. 24	$\frac{1}{4}$ x $\frac{1}{16}$	Oval	.19
121	53	10-No. 19 } 10-No. 22 }	10-No. 22	$\frac{7}{16}$ x $\frac{1}{4}$	Oval	.22
122	25	10-No. 22 } 1-No. 14 }		$\frac{7}{16}$	Round	.12
123	45	20-No. 22 } 1-No. 14 }		$\frac{1}{2}$	Round	.19
124	65	30-No. 22 } 1-No. 14 }		$\frac{1}{2}$	Round	.25
125	23	10-No. 19		$\frac{1}{16}$ x $\frac{9}{16}$	Oval	.13
126	43	10-No. 19 } 10-No. 22 }		$\frac{3}{8}$ x $\frac{1}{4}$	Oval	.19
127	33	10-No. 19	10-No. 22	$\frac{3}{8}$ x $\frac{3}{16}$	Oval	.16

Cable with Beeswaxed Core

39	35	16-No. 22		$\frac{1}{16}$ x $\frac{1}{16}$	Oval	.135
118	154	20-No. 19 } 40-No. 22 }	28-No. 22	$\frac{1}{16}$ x $\frac{1}{16}$	Oval	.60

WRITE FOR LIBERAL DISCOUNTS

CABLES

LEAD COVERED

Cable having conductors insulated with a single paper wrapping is standard for aerial and underground construction, but double wrapping can be furnished if desired. These have a lead sheath with 3% tin in preference to one of pure lead, on account of its greater strength and durability. A pure lead sheath can be furnished if desired at a somewhat lower cost.

For interior construction, cable having its conductors insulated with double wool, or silk and cotton is generally used. These are seldom employed for outside construction on account of their high cost. The former have a pure lead sheath, but one of composition can be furnished if desired.

TYPE "A" CABLE

For Aerial or Underground Use

Conductors No. 22 B. & S. gauge, single paper insulation, covering on pair colored red and white.

Characteristics per mile of cable,
 Average electrostatic capacity..... .069 microfarads
 Insulation resistance..... 500 megohms
 Composition lead sheath with 3% tin.

Code No.	Number of Pairs	Thickness of Sheath inches	Maximum Length per Reel feet	Code No.	Number of Pairs	Thickness of Sheath inches	Maximum Length per Reel feet
A-5	5	1/8	3000	A-125	125	3/2	1500
A-10	10	1/8	3000	A-150	150	3/2	1250
A-15	15	1/8	3000	A-175	175	3/2	1000
A-20	20	1/8	2500	A-180	180	3/2	1000
A-25	25	1/8	2500	A-200	200	3/2	1000
A-30	30	1/8	2500	A-225	225	3/2	1000
A-40	40	1/8	2250	A-240	240	3/2	900
A-50	50	1/8	2000	A-250	250	3/2	900
A-60	60	1/8	2000	A-275	275	3/2	850
A-75	75	1/8	1750	A-300	300	3/2	800
A-90	90	1/8	1500	A-350	350	3/2	750
A-100	100	1/8	1500	A-375	375	3/2	725
A-120	120	3/8	1500	A-400	400	3/2	700

TYPE "B" CABLE

For Aerial or Underground Use

Conductors No. 19 B. & S. gauge, single paper insulation, covering on pair colored red and white.

Characteristics per mile of cable,
 Average electrostatic capacity..... .054 microfarads
 Insulation resistance..... 500 megohms
 Composition lead sheath with 3% tin.

Code No.	Number of Pairs	Thickness of Sheath inches	Maximum Length per Reel feet	Code No.	Number of Pairs	Thickness of Sheath inches	Maximum Length per Reel feet
B-5	5	1/8	3000	B-50	50	3/2	1500
B-10	10	1/8	2500	B-60	60	3/2	1500
B-15	15	1/8	2000	B-75	75	3/2	1000
B-20	20	1/8	2000	B-100	100	3/2	1000
B-25	25	1/8	2000	B-120	120	3/2	900
B-30	30	1/8	1800	B-150	150	3/2	800
B-40	40	1/8	1600				

TYPE "C" CABLE

For Aerial or Underground Use

Conductors No. 19 B. & S. gauge, single paper insulation, covering on pair colored red and white.

Characteristics per mile of cable,
 Average electrostatic capacity..... .080 microfarads
 Insulation resistance..... 500 megohms
 Composition lead sheath with 3% tin.

Code No.	Number of Pairs	Thickness of Sheath inches	Maximum Length per Reel feet	Code No.	Number of Pairs	Thickness of Sheath inches	Maximum Length per Reel feet
C-5	5	1/8	3000	C-75	75	3/2	1000
C-10	10	1/8	2500	C-100	100	3/2	1000
C-15	15	1/8	2000	C-120	120	3/2	900
C-20	20	1/8	2000	C-150	150	3/2	800
C-25	25	1/8	2000	C-180	180	3/2	800
C-30	30	1/8	1800	C-200	200	3/2	750
C-50	50	3/8	1500	C-240	240	3/2	700
C-60	60	3/8	1500	C-300	300	3/2	700

PRICES ON REQUEST

Cables—Continued

TYPE "D" CABLE

For Inside Construction

Conductors No. 22 B. & S. gauge, double wool insulation, covering on pair colored white and red white.
 Characteristics per mile of cable,
 Insulation resistance..... 100 megohms.
 Sheath of pure lead.

Code No.	Number of Pairs	Thickness of Sheath inches	Code No.	Number of Pairs	Thickness of Sheath inches
D-5	5	$\frac{1}{16}$	D-140	140	$\frac{3}{8}$
D-10	10	$\frac{1}{8}$	D-150	150	$\frac{3}{8}$
D-15	15	$\frac{1}{8}$	D-180	180	$\frac{3}{8}$
D-20	20	$\frac{1}{8}$	D-200	200	$\frac{3}{8}$
D-25	25	$\frac{1}{8}$	D-220	220	$\frac{3}{8}$
D-30	30	$\frac{1}{8}$	D-225	225	$\frac{3}{8}$
D-50	50	$\frac{1}{8}$	D-240	240	$\frac{3}{8}$
D-60	60	$\frac{1}{8}$	D-250	250	$\frac{3}{8}$
D-75	75	$\frac{1}{8}$	D-300	300	$\frac{3}{8}$
D-100	100	$\frac{3}{8}$	D-360	360	$\frac{3}{8}$
D-110	110	$\frac{3}{8}$	D-400	400	$\frac{3}{8}$
D-120	120	$\frac{3}{8}$	D-480	480	$\frac{3}{8}$
D-125	125	$\frac{3}{8}$			

TYPE "E" CABLE

For Inside Construction

Conductors No. 19 B. & S. gauge, double wool insulation, covering on pair colored white and red white.
 Characteristics per mile of cable,
 Insulation resistance..... 100 megohms
 Sheath of pure lead.

Code No.	Number of Pairs	Thickness of Sheath inches	Code No.	Number of Pairs	Thickness of Sheath inches
E-10	10	$\frac{1}{16}$	E-120	120	$\frac{3}{8}$
E-15	15	$\frac{1}{8}$	E-125	125	$\frac{3}{8}$
E-20	20	$\frac{1}{8}$	E-150	150	$\frac{3}{8}$
E-25	25	$\frac{1}{8}$	E-160	160	$\frac{3}{8}$
E-30	30	$\frac{1}{8}$	E-180	180	$\frac{3}{8}$
E-40	40	$\frac{1}{8}$	E-200	200	$\frac{3}{8}$
E-50	50	$\frac{3}{8}$	E-225	225	$\frac{3}{8}$
E-60	60	$\frac{3}{8}$	E-240	240	$\frac{3}{8}$
E-70	70	$\frac{3}{8}$	E-250	250	$\frac{3}{8}$
E-75	75	$\frac{3}{8}$	E-300	300	$\frac{3}{8}$
E-100	100	$\frac{3}{8}$	E-325	325	$\frac{3}{8}$

• TYPE "F" CABLE

For Interior Construction

Conductors No. 22 B. & S. gauge, double silk and single cotton insulation, covering on pair colored white and red white.
 Characteristics per mile of cable,
 Insulation resistance..... 100 megohms
 Composition lead sheath with 3% tin.

Code No.	Number of Pairs	Thickness of Sheath inches	Code No.	Number of Pairs	Thickness of Sheath inches
F-5	5	$\frac{3}{16}$	F-60	60	$\frac{1}{8}$
F-10	10	$\frac{3}{16}$	F-75	75	$\frac{1}{8}$
F-15	15	$\frac{3}{16}$	F-100	100	$\frac{1}{8}$
F-20	20	$\frac{3}{16}$	F-120	120	$\frac{1}{8}$
F-25	25	$\frac{3}{16}$	F-150	150	$\frac{1}{8}$
F-30	30	$\frac{3}{16}$	F-200	200	$\frac{1}{8}$
F-40	40	$\frac{3}{16}$	F-240	240	$\frac{1}{8}$
F-50	50	$\frac{1}{8}$			

PRICES ON REQUEST

CABLE TERMINALS

No. 8 TYPE

These are for open wire distribution from lead covered aerial cable and are arranged for attaching to poles. No arrangement is made for protective devices. The code number does not include a cable stub, but it is recommended that they be ordered with 6 ft. of No. 22 B. & S. gauge cable attached.

Prices are f. o. b. New York

Code No.	Capacity pairs	Height of Hood inches	Diameter of Hood inches	Number in Standard package	Approx. Weight of Standard Package lbs.	List Price each with 6 ft. No. 22 B. & S. cable attached
8-A	10	11½	6½	10	250	\$ 3.75
8-B	16	11½	6½	10	250	4.20
8-C	26	16	6½	10	280	5.85
8-D	31	16	6½	10	280	6.75
8-E	51	25	6½	8	350	9.60
8-F	61	25	6½	8	385	11.25



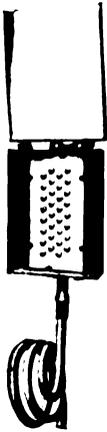
No. 8-B—Open

No. 14 TYPE

These are for open wire distribution from lead covered aerial cable and are intended to be mounted on poles or buildings. No arrangement is made for protective devices. The code number does not include a cable stub, but it is recommended that they be ordered with 6 ft. of No. 22 B. & S. gauge cable attached.

Prices are f. o. b. New York

Code No.	Capacity pairs	Height of Cover inches	Width of Cover inches	Number in Standard package	Approx. Weight of Standard package lbs.	List Price each with 6 ft. No. 22 B. & S. cable attached
14-A	10	7½	7½	8	210	\$ 4.40
14-B	11	7½	7½	8	210	4.45
14-C	16	9¾	7½	8	230	5.50
14-D	26	14½	7½	8	300	8.05
14-E	21	12¾	7½	8	280	7.15



No. 14-C—Open



No. 14-C closed

No. 15 TYPE

These are for joining aerial and underground cables. No. 77-A protectors, consisting of 6 ampere fuses, 40 per strip, can be mounted in them, but are not furnished unless ordered. No provision is made for open space cutouts.

They are for mounting on poles and are not conspicuous on account of their narrow width.

The following prices are for cable terminals in lots of twenty-five or more. For lots of more than ten and less than twenty-five, an additional charge of \$0.40 each will be made for packing. For lots of less than ten an additional charge of \$0.80 each will be made.

Prices are f. o. b. New York

Code No.	Capacity pairs	Dimensions inches			Approx. Weight of one box crated lbs.	List Price each without protectors
		Height	Width	Depth		
15-A	100	38	20	9¾	70	\$ 8.25
15-B	200	63	22	9¾	113	11.25

In ordering specify the code number and number of pairs (in groups of 20) of protectors desired.



No. 15-A—Open, with Protectors

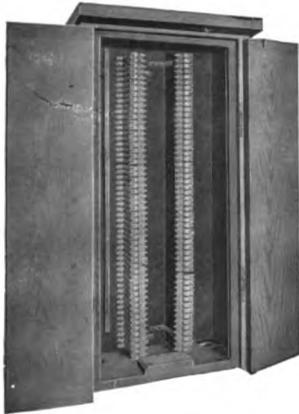


No. 15-A—Closed

WRITE FOR LIBERAL DISCOUNTS

Cable Terminals—Continued

Nos. SH-5108 AND SH-5109 TYPES



SH-5108—Open, with Protectors

These are for joining aerial and underground cables or for open wire distribution. No. 7-A protectors consisting of 6 ampere fuses or No. 61-A protectors consisting of 6 ampere fuses and carbon open-space cutouts can be mounted in them, but are not furnished unless ordered.

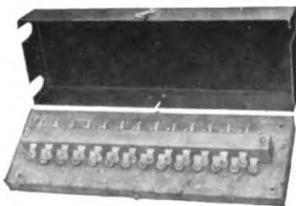
Boxes up to 100 pairs are arranged to mount the protectors in two strips; larger ones are arranged for four strips. They are for mounting on poles.

The following prices are for cable terminals in lots of twenty-five or more. For lots of more than ten and less than twenty-five an additional charge of \$0.40 each will be made for packing. For lots of less than ten an additional charge of \$0.80 each will be made.

Prices are f. o. b. New York

Code No.	Dimensions, inches			Approx. Weight of one box crated lbs.	List Price each without protectors
	Height	Width	Depth		
SH-5108 for 25 pairs	25½	20½	8½	38	\$ 6.75
SH-5108 for 30 pairs	29	20½	8½	46	6.90
SH-5108 for 50 pairs	42½	20½	8½	55	7.20
SH-5108 for 55 pairs	46	20½	8½	59	7.35
SH-5108 for 60 pairs	49½	20½	8½	67	7.35
SH-5108 for 100 pairs	77	20½	8½	94	8.80
SH-5109 for 110 pairs	46	37½	9	97	9.45
SH-5109 for 120 pairs	49½	37½	9	104	9.45
SH-5109 for 150 pairs	60½	37½	9	122	9.90
SH-5109 for 200 pairs	77	37½	9	145	10.50

In ordering specify code number and capacity of box, together with number of pairs and kind of protector desired.



No. 12-A

No. 12 TYPE

These are provided with a cover and are convenient in cross-connecting cables for intercommunicating systems.

Code No.	Capacity pairs	Length	Dimensions, inches		List Price each
			Width	Depth	
12-A	10	12	4	1½	\$ 1.00
12-B	20	12	4	2½	1.30
12-C	30	12	4	3½	1.65



Style C
No. 52041

CALCULAGRAPHS

Furnished in case style A, style B or style C as specified.

Code Word	List No.	Description	List Price each
Hygram	52041	Model 6 calculates and prints elapsed time in minutes and quarter minutes, has visible dial and records the time of day.....	\$ 100.00

May be obtained to calculate and print elapsed time in hours and minutes and the day of month and year.

Code Word	List No.	Description	List Price each
Meelbrij	93478	Pedestal for calculagraph for use with the style A case, height adjustable from 26 to 40 inches from floor to ticket plate.....	\$10.00
Madradores	93486	Ribbon for Calculagraph, unless otherwise ordered, blue is shipped. Other colors made to order.....	.50



Style B
No. 52041



No. 52041
Style A
and
No. 93478

WRITE FOR LIBERAL DISCOUNTS



CHAIRS

For telephone switchboard operators. The chairs are furnished in birch with a mahogany finish. They can be furnished with leather over cane, and with castors or rubber tips.

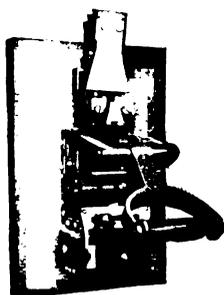
The first measurement indicates the distance of seat from the floor when the seat is in its lowest position while the second indicates the highest.

Code Word	List No.	Height inches
Hygeist	52032	18 to 22
Hygia	52033	24 to 31
Hygiciam	52034	28 to 35

Prices on request.

CIRCUIT BREAKERS

Cutter overload circuit breaker with auxiliary shunt tripping coil for 30 volts, for use with our No. 154 type relay to protect the storage battery and charging generators from excessive or reverse currents.



Type NX

Type	Capacity Amperes	Calibration Volts	List Price each
EL	30	25 to 45	\$ 41.00
EL	60	45 to 90	45.00
EL	100	75 to 150	48.00
EL	200	150 to 300	52.00
EL	300	225 to 450	55.00
NX	400	300 to 600	92.00
NX	600	450 to 900	100.00
NX	800	600 to 1200	110.00
NX	1000	800 to 1500	125.00

Order should read:—1 Cutter ampere overload circuit breaker type with auxiliary shunt tripping coil for 30 volts, with terminal lugs drilled for circular mil cable.

CUTTER UNDERLOAD CIRCUIT BREAKER

Type	Capacity Amperes	Calibration Volts	List Price each
EL	30	25 to 45	\$ 28.00
EL	60	45 to 90	32.00
EL	100	75 to 150	35.00
EL	200	150 to 300	39.00
EL	300	225 to 450	42.00

Orders should read:—1 Cutter ampere underload circuit breaker, type EL with lugs drilled for circular mil cable.

COIN COLLECTORS

FOR CENTRAL BATTERY TELEPHONES

These are arranged so that a coin placed in the coin chute remains under control of the central office operator, who may refund or deposit it into the coin box. The coin collector is ordinarily connected to the telephone line so that it is necessary to drop a coin of the proper denomination into the box to signal central office. This saves considerable time on the part of the operator. It may be wired so that the coin need not be deposited until the operator requests it.

All electrical circuits are insulated from the case. The case has a heavy black japanned finish.

On the front of each of these coin collectors is mounted a small metal frame which holds an instruction card. Over the card is placed a piece of glass for protecting the card from dirt and injury.



No. 7-A.

Code No.	Arranged for	Length	Dimensions inches Width	Depth	List Price each
7-A	Nickels	7 $\frac{1}{2}$	5 $\frac{1}{2}$	3 $\frac{1}{4}$	\$ 5.25
7-C	Dimes	7 $\frac{1}{2}$	5 $\frac{1}{2}$	3 $\frac{1}{4}$	5.55

WRITE FOR LIBERAL DISCOUNTS

Coin Collectors—Continued



No. 7-E

Code No.	Arranged for	Length	Dimensions inches Width	Depth	List Price each
7-E	Nickels	11½	5½	3½	\$ 6.40

The No. 7-E has a larger coin box than the No. 7-A.



No. 13-A

FOR CENTRAL BATTERY OR MAGNETO TELEPHONES

This is arranged so that any coin dropped into the chute falls directly into the coin box when the lever is rotated. It has but a single coin slot into which may be inserted, one at a time, nickels, dimes or quarters. It is necessary for the operator to listen on the line while the coins are being deposited, since the signal is given on a gong, a nickel giving one, a dime two and a quarter three strokes.

Code No.	Arranged for	Length	Dimensions inches Width	Depth	List Price each
13-A	Nickels, dimes and quarters	9½	4½	4	\$ 9.75

CONDENSERS

These are of small size and made of selected material. Except as noted in the list, they are designed to withstand a potential of 500 volts direct current, and are rated at the minimum capacity.

They may be mounted in any desired position by means of a condenser strap (P-43065) and two wood screws. The No. 21-E is usually mounted by means of strap WM-2381.



No. 21-D

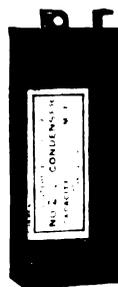
Code No.	Capacity micro-farads	Style of terminal	Size of case inches	Use	List Price each
21-D	2	Bent	4½ x 1½ x 1½	For telephone sets	\$ 1.15
21-E	2	Straight	4½ x 1½ x 1½	For switchboards and for general use	1.15
21-F	1	Bent	4½ x 1½ x 1½	For telephone sets	.70
21-H	0.1	Bent	4½ x 1½ x 1½	For No. 84 type interrupter—designed to stand 1000 volts alternating current.	.60

WRITE FOR LIBERAL DISCOUNTS

Condensers—Continued



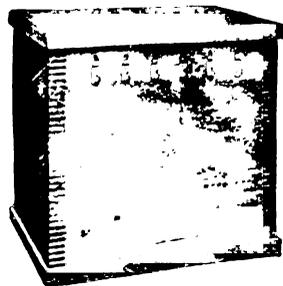
No. 21-J



No. 21-U



No. 27-B



No. 28-B



No. 33-A

Code No.	Capacity micro-farads	Style of terminal	Size of case inches	Use	List Price each
21-J	0.3	Straight	$4\frac{1}{2} \times 1\frac{1}{2} \times 1\frac{1}{8}$	Designed to stand 750 volts direct current—3 terminals	\$ 0.75
	0.3				
21-K	1	Straight	$4\frac{1}{2} \times 1\frac{1}{2} \times 1\frac{1}{8}$	For general use	.70
21-L	2				
21-M	1	Straight	$4\frac{1}{2} \times 1\frac{1}{2} \times 1\frac{1}{8}$	For mounting on coil racks	.70
21-N	1.0				
	0.5	Straight	$4\frac{1}{2} \times 1\frac{1}{2} \times 1\frac{1}{8}$	For mounting on coil racks—3 terminals.....	1.05
21-R	0.1				
	0.125	Straight	$4\frac{1}{2} \times 1\frac{1}{2} \times 1\frac{1}{8}$	For telegraph work—4 terminals.....	1.05
21-S	0.250				
	0.500				
21-U	.05	Bent	$4\frac{1}{2} \times 1\frac{1}{2} \times 1\frac{1}{8}$	For railway composite telephone set, designed to stand 1200 volts alternating current.....	.45
31-A	.05	Wire	$4\frac{1}{2} \times 1\frac{1}{2} \times 1\frac{1}{8}$	For general use—4 terminals	.75
	.05				

These are used in connection with telegraph and telephone stations on railway composite systems.

Code No.	Capacity micro-farads	Size of case inches	Use	List Price each
23-A	1	$8\frac{3}{4} \times 6\frac{1}{4} \times 1\frac{1}{2}$	For railway composite system; designed to stand 1000 volts alternating current.....	\$ 3.75
27-B	1	$10\frac{7}{8} \times 7\frac{1}{8} \times 2\frac{1}{8}$	For intermediate telegraph stations on railway composite system; a No. 23-A condenser on a maple base; designed to stand 1000 volts alternating current.....	4.35
28-B	1	$10\frac{1}{2} \times 11 \times 8\frac{1}{4}$	For terminal telephone stations on railway composite system; comprises 1 No. 23-A condenser and 1 No. 5-L retardation coil mounted in a maple box; designed to stand 1000 volts alternating current.....	16.95

These are designed for mounting on the coil rack, either on the same shelves with the repeating coils, or grouped on shelves by themselves, and consist of No. 21 type condensers mounted on a wood base $10\frac{1}{2}$ in. long by $1\frac{1}{2}$ in. wide.

Code No.	Condensers Used	Capacity of each No. 21 Type Condenser microfarads	List Price each
33-A	2 No. 21-L	2	\$ 2.50
33-B	1 No. 21-L	2	1.35
33-C	2 No. 21-M	1	1.60
33-D	1 No. 21-M	1	.90
33-E	2 No. 21-N	1.0	2.35
		0.5	

WRITE FOR LIBERAL DISCOUNTS



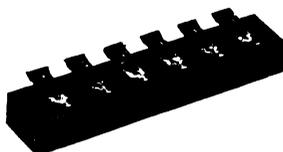
No. 1-A—Connecting Block



No. 6-D—Connecting Block



No. 7-A—Connecting Block



No. 8-A—Connecting Block

CONDENSER STRAPS

Code No.	Description	List Price each
WM-2381	Bent iron strap for use with No. 21-E condenser. Dimensions over all $5\frac{3}{8}$ in. x $1\frac{7}{8}$ in. x $\frac{9}{16}$ in., inside $4\frac{1}{8}$ in. x $1\frac{3}{8}$ in.	\$ 0.045
P-43065	Straight iron strap for use with No. 21 type condensers. Dimensions $4\frac{1}{8}$ in. x $\frac{1}{2}$ in. ....	.012

CONNECTING BLOCKS

Code No.	Number of Binding Posts	Style	Size inches	Base	List Price each
1-A	3	Lock nut....	$2\frac{1}{4} \times \frac{3}{8}$	Electrose.....	\$ 0.12
6-A	7 pairs	Lock nut....	$5\frac{3}{8} \times 1\frac{1}{8}$	Electrose.....	.53
6-B	11 pairs	Lock nut....	$8\frac{3}{8} \times 1\frac{1}{8}$	Electrose.....	.71
6-C	16 pairs	Lock nut....	$12\frac{3}{8} \times 1\frac{1}{8}$	Electrose.....	.98
6-D	21 pairs	Lock nut....	$16\frac{1}{4} \times 1\frac{1}{8}$	Electrose.....	1.35
6-E	26 pairs	Lock nut....	$19\frac{1}{8} \times 1\frac{1}{8}$	Electrose.....	1.65
7-A	2	Lock nut....	$2\frac{3}{8} \times 1$	Electrose.....	.14
			with cover.		
8-A	6	For cord tip	5x1	Ebonized Wood...	.23
8-B	3	For cord tip	$2\frac{1}{2} \times 1$	Ebonized Wood...	.15
9-A	3	Lock nut....	$2\frac{1}{2} \times \frac{1}{8}$	Electrose.....	.15
			with cover.		

CORDS

FOR CENTRAL OFFICES

It is customary to use 4 ft. switchboard and 6 ft. operator's telephone cords on small magneto and private exchanges and 6 ft. switchboard and operator's telephone cords on other boards.

These lengths are carried in stock but others will be furnished on request. The switchboard cords, Nos. 152, 155, 156, 236, 244, and 249 are regularly made in three colors, red, white and green. The white cords are furnished unless the color is specified. The steel cords are more substantial than the tinsel but have a higher resistance. It is accordingly customary to use steel cords for local positions and tinsel for toll.

In ordering specify the code number, length, color, and, if plugs are to be attached, give the code number of the plugs. No extra charge is made for attaching plugs to cords.

Code No.	Description	Used with	Standard Length feet	List Price each
10	2 conductor tinsel cord, green silk covering.	Operator's head telephone when connected to binding posts.....	6	\$ 0.31
26	Single conductor stranded copper and tinsel cord, green silk covering.	Suspended switchboard transmitter and No 7 transmitter arm.....	6	.12
30	2 conductor tinsel cord, green silk covering.	Operator's head telephone when connected to No. 85 plug.....	6	.36
87	4 conductor tinsel cord, green silk covering.	Operator's head telephone and chest transmitter when attached to No. 103 or 112 plug.....	6	.75
129	4 conductor stranded copper cord, green glazed cotton covering.	Neither end equipped with tips, but there may be connected to one end a No. 124, 128 or 132 plug, for testing on protectors or terminal strips...	10	.765

WRITE FOR LIBERAL DISCOUNTS

Cords—Continued

Code No.	Description	Used with	Standard Length	List Price each
152	3 conductor steel switchboard cord, glazed cotton covering.	No. 110 plug.....	6 ft.	\$ 0.75
153	4 conductor stranded copper cord, green glazed cotton covering.	No. 124, 128 or 132 plug....	10 ft.	.78
155	3 conductor steel switchboard cord, glazed cotton covering.	No. 109 plug.....	6 ft.	.75
156	2 conductor steel switchboard cord, glazed cotton covering.	No. 47 plug.....	4 ft. 6 ft.	.425 .53
236	2 conductor tinsel switchboard cord, glazed cotton covering.	No. 47 plug.....	4 ft. 6 ft.	.29 .38
244	3 conductor tinsel switchboard cord, glazed cotton covering.	No. 109 plug.....	6 ft.	.60
249	3 conductor tinsel switchboard cord, glazed cotton covering.	No. 110 plug.....	6 ft.	.53
254	2 conductor tinsel cord, green silk covering.	Operator's head telephone, when connected to No. 103 plug	6 ft.	.36

No. 152

Code No.	Description	Used with	Standard Length	List Price each
264	2 conductor stranded copper cord, green glazed cotton covering.	One end equipped with spring clips for testing on terminal strips.....	6 ft.	.66
265	Single conductor tinsel switchboard cord, glazed cotton covering.	No. 116 plug.....	4 ft.	.24
338	Single conductor stranded copper cord, rubber covered.	For connecting dry cells.....	4 in.	.0375

FOR TELEPHONE SETS

Note:—The length of all cords, except combination cords, should be specified on the order

10	2 conductor tinsel cord, green silk covering.	Receiver on wall set.....	3 ft.	.195		
15	2 conductor stranded copper cord, red worsted covering.	Receiver on No. 1006 test set (included with No. 125-W receiver)	3 ft.	.225		
92	2 conductor tinsel cord, red and blue worsted covering.	Receiver on wall set.....	3 ft.	.13		
175	4 conductor tinsel cord, green silk covering.	Desk stand as extension cord. Part of No. 293 cord.....	6 ft.	.57		
178	2 conductor tinsel cord, green silk covering.	Receiver on desk stand or transmitter arm.....	2½ ft. 3 ft.	.18125 .20		
179	Single conductor tinsel cord, green silk and cotton covering.	Transmitter on desk stand or transmitter arm.....	{ 5½ in. 8 in. 9½ in. 12 in. }	.045		
180	3 conductor tinsel cord, green silk covering.	Desk stand transmitter arm or No. 1130-A wall set as extension cord..			6 ft.	.45
196	2 conductor tinsel cord, green silk covering.	Receiver on No. 1130-A wall set and part of No. 293 cord.....			3 ft.	.20
231	4 conductor tinsel cord, green silk covering.	Desk stand as extension cord. Part of No. 232 cord.....			3 ft.	.57
232	Combination of 6 ft. 231; 3 ft. 178; 8 in. 179.	No. 1020-F desk stand .....		.81
234	Combination of 6 ft. 180; 3 ft. 178; 9½ in. 179.	Nos. 1020-B, 1020-M and 1020-S desk stands.....		.69		
242	4 conductor steel cord, glazed cotton covering.	No. 1278-A telephone set.....	18 in.	.50		
243	Single conductor tinsel cord, green silk and cotton covering.	Nos. 1278-A and 1280-A telephone sets	8 in.	.04125		

WRITE FOR LIBERAL DISCOUNTS

Cords—Continued

Code No.	Description	Used with	Standard Length	List Price each
247	Single conductor copper cord, green cotton covering.	No. 250-W transmitter	10 ³ / ₁₆ in.	\$ 0.045
267	Single conductor stranded steel cord, blue linen covering.	No. 1314-A telephone set to connect rail clamp	10 ft.	.3875
268	Single conductor stranded steel cord, blue linen covering.	No. 1314-A telephone set to connect set to line	104 ft.	1.50
285	3 conductor steel cord, glazed cotton covering.	No. 1280-A telephone set	18 in.	.39
287	6 conductor tinsel cord, green silk covering.	No. 1020-H desk stand	6 ft.	.87
289	Combination of 6 ft. 287; 3 ft. 196; 9 ¹ / ₂ in. 179.	No. 1020-H desk stand		1.11
293	Combination of 6 ft. 175; 3 ft. 196; 12 in. 179.	No. 1020-C desk stand		.83
308	Combination of 6 ft. 313; 2 ¹ / ₂ ft. 178; 8 in. 179.	No. 1040 type transmitter arm		.67
309	3 conductor steel cord, beeswaxed cotton covering.	Nos. 1280-A and 1302-A telephone sets to No. 126 plug	15 ft.	1.02
310	Combination of 8 ¹ / ₂ ft. 180; 2 ¹ / ₂ ft. 178; 11 in. 179.	No. 1020-A transmitter arm		.84
311	2 conductor steel cord, glazed cotton covering.	Receiver on Nos. 1302-A and 1314-A telephone sets	3 ft.	.34
313	3 conductor tinsel cord, green silk covering.	Transmitter arm as extension cord Part of No. 308 cord	6 ft.	.45
317	Single conductor tinsel cord, green silk and cotton covering.	No. 1002-A hand set. Part of No. 319 cord	9 ¹ / ₂ in.	.06
318	3 conductor tinsel cord, green silk covering.	No. 1002-A hand set. Part of No. 319 cord	4 ¹ / ₂ ft.	.39
319	Combination of 4 ¹ / ₂ in. 336; 9 ¹ / ₂ in. 317; 4 ¹ / ₂ ft. 318.	No. 1002-A hand set		.50
325	5 conductor tinsel cord, green silk covering.	No. 1020-F desk stand. Part of No. 326 cord	6 ft.	.69
326	Combination of 6 ft. 325; 3 ft. 178; 8 in. 179.	No. 1020-F desk stand		.93
329	Single conductor tinsel cord, green silk and cotton covering.	Telephone sets	5 ¹ / ₂ in.	.045
		No. 1020-P desk stand	{ 9 in. } { 9 ¹ / ₂ in. }	.045
331	Combination of 3 ft. 178; 6 ft. 180; 9 in. 329; 9 ¹ / ₂ in. 329.	No. 1020-P desk stand		.74
336	Single conductor tinsel cord, green silk and cotton covering.	No. 1002-A hand set	4 ¹ / ₂ in.	.06
337	2 conductor steel cord, glazed cotton covering.	No. 1017-A test set for receiver	24 in.	.32
338	Single conductor cord, rubber covering.	Dry cells for connecting batteries	4 in.	.0375
348	2 conductor with testing clips.	No. 1001 hand set	2 ft.	.7875



No. 9

CORD FASTENERS

Code No.	Description	List Price each
9	Used on cord shelves with all types of switchboard cords.....	\$ 0.03

WRITE FOR LIBERAL DISCOUNTS



No. 3—Cord Hook

CORD HOOKS



No. 7-L—Cord Hook

The two types of cord hooks shown will meet all requirements. The No. 3 is the screw hook type, and can be mounted in any desired location. The No. 7 is designed for placing on the rear edge of cordshelves, and consists of a flat strip of brass $\frac{1}{16}$ in. thick by $\frac{3}{4}$ in. wide, the hooks being punched out at various spacings as listed in the following table. Hooks of this type are strong and efficient, present a neat appearance and occupy a minimum amount of space.



No. 103

Code No.	Number per Strip	Spacing inches	Length inches	List Price each
3	single			\$ 0.375 per gross
7-A	9	$\frac{27}{32}$	$7\frac{17}{32}$	.27
7-B	10	$\frac{1}{2}$	$4\frac{15}{16}$	.24
7-C	10	$\frac{3}{4}$	$7\frac{7}{16}$	.29
7-D	18	$\frac{15}{32}$	$7\frac{5}{16}$	.27
7-E	11	$\frac{5}{8}$	$6\frac{1}{8}$	.27
7-F	18	$\frac{7}{16}$	$7\frac{1}{8}$	.29
7-G	19	$\frac{17}{32}$	10	.30
7-H	8	$1\frac{1}{8}$	9	.27
7-J	10	$\frac{3}{8}$	$3\frac{1}{4}$	.23
7-K	7	$\frac{1}{2}$	$5\frac{1}{4}$	.23
7-L	3	$\frac{1}{2}$	$2\frac{1}{8}$	.14



No. 105



No. 106

CORD PULLEYS

These have brass wheels about $\frac{5}{16}$ in. wide except the No. 109 which has a rubber wheel. They are for use with our standard switchboard or telephone cords as the case may require.



No. 109



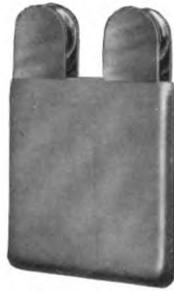
No. 111

Code No.	Width inches	List Price each
103	$\frac{11}{16}$	\$ 0.24
105	$\frac{5}{8}$	.21
106	$1\frac{3}{8}$	.15
109	$\frac{7}{8}$	.15
111	$\frac{3}{4}$	.23

WRITE FOR LIBERAL DISCOUNTS



No. 103



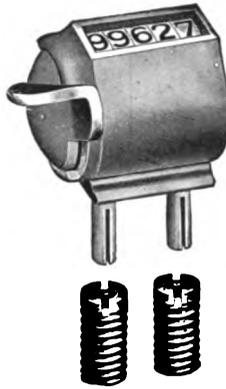
No. 108

CORD WEIGHTS

Code No.	Style	Used with	List Price each
103	Brass 14 oz.	Suspended transmitter and No. 7 transmitter arm.....	\$ 0.60
108	Lead 28 oz.	Switchboard cords when cord pulley is used.....	.55
111	Lead 10 oz.	Switchboard cords on No. 49 jack switchboard and magneto switchboards except No. 105.....	.25
112	Lead 8 oz.	Switchboard cords on No. 92 jack switchboard and No. 105 switchboard.....	.25



No. 111



No. 18880

COUNTER

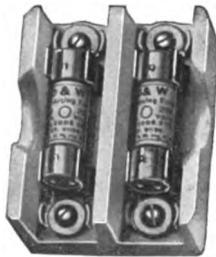
For counting the number of telephone calls handled at an operator's position; the sockets are permanently placed, and the counter may be mounted or removed at will.

Code Word	List No.
Placando	18880

CUT-OUTS

Made in single, double and triple pole styles, for D. & W. fuses, 3 to 60 amperes, 250 volts.

Orders should state number of poles, voltage and capacity of fuses which will be used.



D. & W. Cut-out

DESIGNATION STRIPS

These consist of a wooden mounting with a No. 8 type designation strip mounted on the face, and are for use in designating outgoing trunk jacks, etc.

The No. 6-B and No. 6-F are the same as the No. 6-A and No. 6-E, respectively, except that they mount flush with the face of the jack mountings, while the No. 6-A and No. 6-E project slightly.

Code No.	Width inches	Finish	Used with Switchboard	List Price each
1-A	$\frac{7}{16}$	Nickel plate	No. 49 jack, No. 1	\$ 0.23
1-B	$\frac{1}{4}$	Nickel plate	No. 49 jack, No. 1	.23
1-C	$\frac{1}{8}$	Black	No. 49 jack, No. 1	.23
1-D	$\frac{1}{8}$	Black	No. 49 jack, No. 1	.23
6-A	$\frac{1}{8}$	Nickel plate	No. 92 jack, No. 1	.23
6-B	$\frac{1}{8}$	Nickel plate	No. 92 jack, No. 1	.23
6-E	$\frac{1}{8}$	Black	No. 92 jack, No. 1	.23
6-F	$\frac{1}{8}$	Black	No. 92 jack, No. 1	.23
10-B	$\frac{1}{8}$	Nickel plate	No. 9	.23
10-C	$\frac{1}{2}$	Nickel plate	No. 9	.23

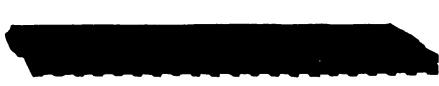


No. 1-A

WRITE FOR LIBERAL DISCOUNTS

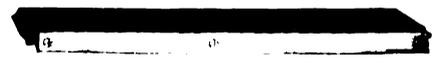
Designation Strips—Continued

These are of the same type as the No. 1, except that in place of a No. 8 type designation strip a hard rubber face milled out and drilled for 20 No. 4 or No. 31 number plates is used.



No. 2-C

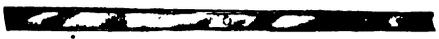
Code No.	Width inches	Finish	Used with Switchboard	List Price each
2-C	$\frac{1}{8}$	Black	No. 49 jack, No. 1	\$ 0.90
50-A	$\frac{1}{8}$	Black	No. 10	.98



No. 7-A

These are of the same type as the No. 1, except that in place of a card holder a strip of printed figures is held in place by a transparent celluloid face fastened to the base by nickel plated screws.

Code No.	Width inches	Finish	Used with Switchboard	List Price each
7-A	$\frac{1}{8}$	Celluloid face	No. 49 jack, No. 1	\$ 0.20
7-B	$\frac{1}{4}$	Celluloid face	No. 49 jack, No. 1	.20
7-D	$\frac{3}{8}$	Celluloid face	No. 49 jack, No. 1	.20
13-A	$\frac{3}{8}$	Celluloid face	No. 92 jack, No. 1	.20
48-A	$\frac{1}{8}$	Celluloid face	No. 10	.23



No. 8

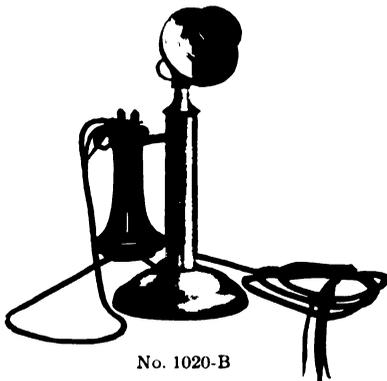
These consist of a metal card holder and a thin transparent celluloid strip for protecting a strip of printed paper.

Code No.	Width inches	Length inches	Finish	Used for	List Price per foot
8-A	$\frac{1}{8}$	As specified	Nickel plate	Keyshelf and miscellaneous numbering	\$ 0.18
8-B	$\frac{1}{4}$	As specified	Nickel plate	Keyshelf and miscellaneous numbering . . . . .	.18
8-D	$\frac{1}{4}$	As specified	Nickel plate	Keyshelf and miscellaneous numbering . . . . .	.18
8-E	$\frac{1}{4}$	As specified	Black	Keyshelf and miscellaneous numbering . . . . .	.18
43-A	$\frac{1}{8}$	1 $\frac{1}{2}$	Black	Test boards . . . . .	.09 each
43-B	$\frac{3}{8}$	1 $\frac{1}{2}$	Black	Test boards . . . . .	.075 each
43-C	$\frac{3}{8}$	1 $\frac{1}{2}$	Black	Test boards . . . . .	.075 each

DESK STANDS

WITH TRANSMITTERS, RECEIVERS AND CORDS

The No. 122-W receiver and standard high resistance transmitter are furnished with these desk stands, as specified below. Others will be furnished if ordered.



No. 1020-B

Code No.	Description	Finish	List Price each
1020-B	For regular local battery bridging or central battery service. Includes: 1 No. 20-B desk stand. 1 No. 229-W transmitter. 1 No. 122-W receiver. 1 No. 234 cord.	Nickel plate	\$ 6.90
1020-C	For operator's telephone set with cordless private exchange. Includes: 1 No. 20-C desk stand. 1 No. 229-W transmitter. 1 No. 122-W receiver. 1 No. 293 cord	Nickel plate	7.15

WRITE FOR LIBERAL DISCOUNTS

Desk Stands—Continued

Code No.	Description	Finish	List Price each
1020-F	For central battery service, used with No. 7 type coin collector. Includes: 1 No. 20-F desk stand. 1 No. 229-W transmitter. 1 No. 122-W receiver. 1 No. 232 cord.	Nickel plate	\$7.05
1020-H	For intercommunicating service. Includes: 1 No. 20-H desk stand. 1 No. 229-W transmitter. 1 No. 143-W receiver. 1 No. 289 cord.	Nickel plate	7.25
1020-J	For operator's telephone set, using No. 128-W receiver, No switchhook Includes: 1 No. 20-J desk stand. 1 No. 229-W transmitter. 1 No. 128-W receiver. 1 No. 178, 6 ft. cord. 1 No. 10, 6 ft. cord. 1 No. 179, 9 in. cord.	Nickel plate	6.90
1020-M	For central battery service using transmitter cutout button. Includes: 1 No. 20-M desk stand. 1 No. 229-W transmitter. 1 No. 122-W receiver. 1 No. 234 cord.	Nickel plate	7.15
1020-P	For local battery bridging or central battery service, using insulated transmitter. Includes: 1 No. 20-P desk stand. 1 No. 271-W transmitter. 1 No. 122-W receiver. 1 No. 331 cord.	Nickel plate	7.05
1020-S	For regular local battery bridging or central battery service. Same as No. 1020-B except finish. Includes: 1 No. 20-S desk stand. 1 No. 229-W transmitter. 1 No. 122-W receiver. 1 No. 234 cord.	Black enamel	6.90

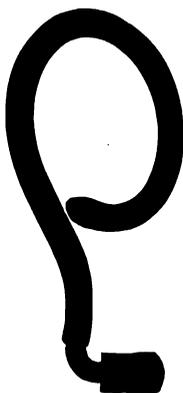


No. 1020-M

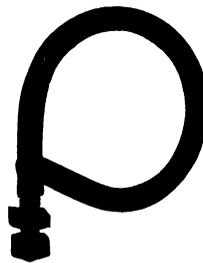
WITHOUT TRANSMITTERS, RECEIVERS OR CORDS

These are similar to those listed above except that the transmitters, receivers and cords are omitted.

Code No.	Service	Finish	List Price each
20-B	Regular local battery bridging, or central battery	Nickel plate	\$ 2.25
20-C	Operator's telephone set, cordless private exchange	Nickel plate	2.35
20-F	Central battery for use with No. 7 coin collector	Nickel plate	2.55
20-H	Intercommunicating systems	Nickel plate	2.50
20-J	Operator's telephone set without switch hook	Nickel plate	1.75
20-M	Central battery with transmitter cut-out button	Nickel plate	2.50
20-P	Local battery bridging or central battery for insulated transmitter	Nickel plate	2.35
20-S	Regular local battery bridging, or central battery	Black enamel	2.25



No. 1



No. 3

DISTRIBUTING RINGS

These are made from a steel rod covered with vulcanized rubber tubing which is very substantial.

Code No.	Inside Diameter inches	Used for	List Price each
1	2 1/4	Main and intermediate distributing frames.	\$ 0.27
3	3	Intermediate distributing frame No. 10 switchboard.	.27

WRITE FOR LIBERAL DISCOUNTS

DROPS

In the following list the Nos. 3 and 4 types of drops are equipped with two electro-magnet spools each. The Nos. 19, 22, 35, 56 and 57 are single spool drops with tubular iron shells and are cross-talk proof. The No. 19 type is employed especially on long bridging lines, toll lines, cord circuits, etc.

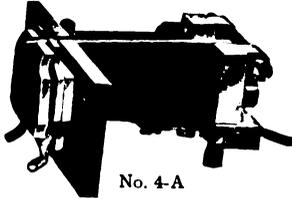
All drops are equipped with night bell contacts. The contact of the No. 19-F is made only while the drop is energized by the ringing current. In all the other drops listed below, the night bell contact remains closed until the drop is restored.

All drops except the No. 57-A will operate on alternating ringing current. The No. 57-A is used particularly for selective central office signalling on rural lines and will operate only on pulsating or direct current.

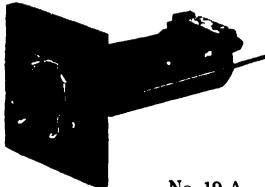
The No. 22 type drop is equipped with an extra winding for restoring the shutter when the call is answered.

The No. 35 type drop is equipped with two windings, one front and one back, and is adapted for selective central office signalling by grounding the middle of the winding and one side of the calling generator.

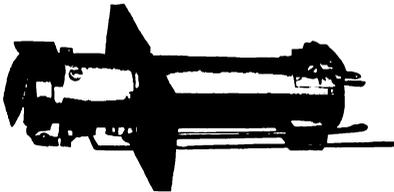
The Nos. 55 and 56 drops are similar to the No. 19, except that they are arranged to mount on $1\frac{1}{2}$ and 1 in. centers respectively instead of $1\frac{3}{8}$ in.



No. 4-A



No. 19-A



No. 22-A



No. 57-A



No. 58

Code No.	Total Resistance ohms	List Price each
3-A	80	\$ 1.05
3-B	500	1.15
3-C	1,000	1.20
4-A	80	.70
4-B	100	.75
4-C	1,000	1.00
4-D	500	.90
19-A	525	1.45
19-B	600	1.50
19-C	1,000	1.65
19-D	800	1.60
19-E	10	1.30
19-F	500	1.65
35-A	300-300	1.75
35-B	500-500	1.80
55-B	600	1.50
56-A	500	1.45
56-B	600	1.50
56-C	1,000	1.65
22-A	Line 600, restoring 45	3.70
22-B	Line 1,000, restoring 450	4.05
22-D	Line 1,000, restoring 45	3.90
57-A	1,750	3.70

DROP MOUNTINGS

Code No.	Number per Strip	Centers inches	Size of Plate inches	For Drops number	Used on Switchboards number	List Price each
2	10	$1\frac{3}{8}$	15 x 1	4, 19, 35	101, 102, 1006, 1010, 1011	\$ 0.60
54	3	$1\frac{3}{8}$	$4\frac{1}{2} \times 1$	19	Cordless private exchange	.18
56	20	$1\frac{1}{2}$	$24\frac{1}{8} \times 1$	55, 56	9	1.20
57	15	$1\frac{3}{8}$	$24\frac{1}{8} \times 1$	4, 19, 35	1102	.90
58	15	$1\frac{3}{8}$	$21\frac{1}{2} \times 1$	4, 19, 35	105, 1005	.85
59	12	$1\frac{3}{8}$	$21\frac{1}{2} \times 1$	4, 19, 35	105, 1005	.75
64	5	$1\frac{1}{2}$	$8\frac{1}{8} \times 1$	4, 19, 35	106	.40
65	5	$1\frac{1}{2}$	$8\frac{1}{8} \times 1\frac{1}{2}$	4, 19, 35, 57	106, 1101	.40
69	10	1	$11\frac{1}{8} \times 1$	56	10	1.30

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FUSES

These will blow on 50 per cent. increase in current above rating. In ordering specify the code number and ampere rating.



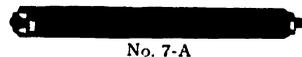
No. 46-A

No. 24-A

PLAIN MICA FUSES

Will Mount on 1 Inch Centers

Code No.	Carrying Capacity amperes	Slotted for Screws number	List Price per hundred	Code No.	Carrying Capacity amperes	Slotted for Screws number	List Price per hundred
24-A	1½	10	\$ 1.15	24-B	3	6	\$ 1.15
24-B	½	6	1.15	24-B	4	6	1.15
24-B	1½	6	1.15	24-B	5	6	1.15
24-B	2	6	1.15	24-C	2	10	1.15



No. 7-A



No. 11-C

ALARM FUSES

Will Mount on 1¼ in. Centers

These have a spring which makes contact with an auxiliary bus bar and gives a signal when the fuse blows.



No. 12-A

Code No.	Carrying Capacity amperes	Slotted for Screws number	List Price per 100	Code No.	Carrying Capacity amperes	Slotted for Screws number	List Price per 100
45-A	1½	10	\$ 3.90	45-B	4	6	\$ 3.90
45-B	1½	6	3.90	45-B	5	6	3.90
45-B	2	6	3.90	45-C	2	10	3.90
45-B	3	6	3.90				

INDICATOR ALARM FUSES

Will Mount on 1¼ in. Centers

These are similar to the alarm type but in addition have a bead which gives a prominent visual signal when a fuse operates.



No. 47-A

Code No.	Carrying Capacity amperes	Slotted for Screws number	List Price per hundred	Code No.	Carrying Capacity amperes	Slotted for Screws number	List Price per hundred
46-A	1½	10	\$ 5.25	46-B	4	6	\$ 5.25
46-B	1½	6	5.25	46-B	5	6	5.25
46-B	2	6	5.25	46-C	2	10	5.25
46-B	3	6	5.25				



D. & W. Ferrule

TUBULAR FUSES

With Fibre Shell

These are made in 1, 2, 3, 4, 5, 6, 7, and 8 amperes capacity.

The No. 7 fuse is furnished in 6 amperes capacity, and the No. 11 fuse and No. 12 fuse in 7 amperes capacity, unless otherwise specified. The No. 12 fuse contains a heat coil.



D. & W. Knife Blade

Code No.	Used with Protectors number	List Price each
7 -A	7-A, 7-D, 61-A, 77-A	\$ 0.09
11-C	58-A, 58-B, 59-A, 79-A	.135
12-A	12-A	.30

TUBULAR FUSES

With Porcelain Shell



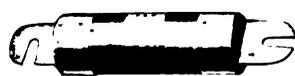
D. & W. Type A Contact

Code No.	Capacity amperes	Used	List Price each
47-A	7	At telephone stations as an outside fuse in connection with No. 60-A protector.....	\$ 0.105
47-B	14	At telephone stations as an outside fuse in connection with No. 79-A protector.....	.105

FUSES D. & W.

For power panels; the ferrule and knife blade contacts conform to the rules of the National Board of Fire Underwriters; the type "A" or screw clamp type of contact is used only on battery panels. The fuses are made for two voltages, 250 and 600.

Orders must state the capacity in amperes, the voltage and style of contact.



D. & W. Type A Middle Contact

Style of Contact	For Fuses amperes
Ferrule	3 to 60
Knife blade	61 to 600
Type "A" contact	4 to 125
Type "A" middle contact	126 to 500

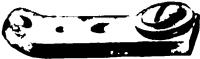
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FUSE POSTS

FOR MICA AND ALARM FUSES

These are furnished with two sizes of fuse screw. The larger screw is furnished with small capacity fuses and the smaller screw for those of large capacity. This is to guard against using a fuse of high capacity in a circuit designed for one of low capacity. The only exception to this rule is in the case of the No. 24-C, No. 45-C and No. 46-C fuses (2 amperes), which with the No. 5-B post are to be used only in the service meter circuits. To further guard against using the wrong fuse, the post and fuse terminal designed for 1½ ampere capacity circuits are nickel plated and tinned respectively, while those for circuits above 1½ ampere capacity are copper plated.

In replacing a fuse it should therefore be noted that the finish of the fuse terminals and post is similar.

	Code No.	Finish	Screw number	Used with Fuse number	List Price each
	2	Nickel plate	10	24-A.....	\$ 0.105
	3	Copper plate	6	24-B.....	.105
	5-A	Nickel plate	10	24-A, 45-A, 46-A.....	.085
	5-B	Copper plate	10	24-C, 45-C, 46-C.....	.085
	6	Copper plate	6	24-B, 45-B, 46-B.....	.085
	7-B	Nickel plate	10	46-A, No. 10 switchboard.....	.07
	7-C	Copper plate	6	46-B, No. 10 switchboard.....	.07

FOR MOUNTING FUSES ON POWER PANELS

For D. & W. Fuses with Screw Clamp Contact—(Type A)

	Code No.	Capacity amperes	Volts	Stud	List Price each
	8	3 to 15	250	No. 10-32.....	\$ 0.375
	9	18 to 30 or 3 to 25	250 500	⅝ in.-24.....	.45
	10	35 to 60 or 30 to 50	250 500	⅝ in.-24.....	.525
	11	65 to 125	250	½ in.-18.....	.75
	12	150 to 300	250	½ in.-18.....	1.45
	13	150 to 300	250	¾ in.-18.....	2.10
	14	350 to 500	250	¾ in.-18.....	2.80
	15	500 to 600	250	¾ in.-14.....	4.20

For D. & W. Fuses, National Electrical Code Standard

List No.	Capacity amperes	Volts	Stud
94022	3 to 30	250	No. 12-24
94023	31 to 60 or 3 to 30	250 600	⅝ in.-24
94024	31 to 60	600	⅝ in.-24
94025	61 to 100	600	½ in.-18
94026	101 to 200	600	¾ in.-18
94027	201 to 400	600	1 in.-14
94028	401 to 600	600	1½ in.-14

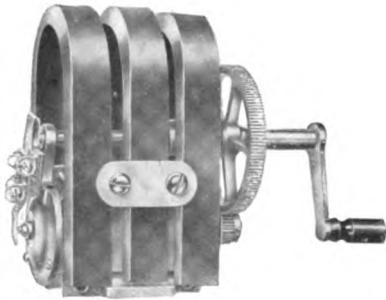
FUSE CLIPS

For use with D. & W. fuses; for mounting on bus bars; they conform to the rules of the National Board of Fire Underwriters.

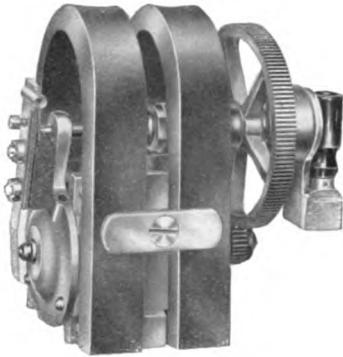
	List No.	Amperes	Used with Fuse	Volts
	94013	3 to 30		250
	94015	31 to 60 or 3 to 30		250 600
	94016	31 to 60		600
	94018	61 to 100		600
	94019	101 to 200		600
	94020	201 to 400		600
	94021	401 to 600		250

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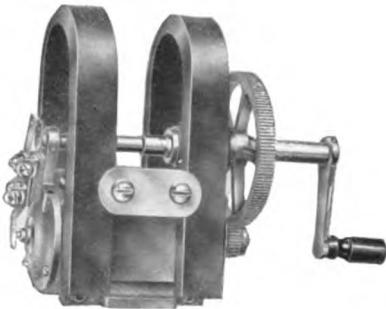
HAND GENERATORS



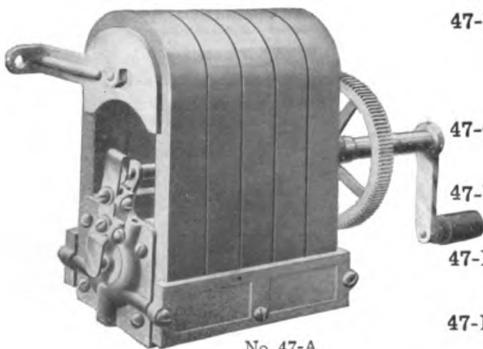
No. 22-A



No. 29-B



No. 22-E



No. 47-A

Code Number	No. of Bars	Current	Open or Closed Circuit	Used in	List Price each
22-A	3	Alternating	Open	Magneto telephone sets and switchboards.....	\$ 3.15
22-B	3	Alternating	Closed	Nos. 1006-D and 1006-E test sets	3.15
22-D	3	Pulsating	Open or Closed	Magneto telephone sets and switchboards.....	3.15
22-K	3	Alternating	Closed	Nos. 90510 and 90530 test sets	3.15
22-N	3	Alternating	Closed	Nos. 90511 and 90512 test sets	3.15
43-B	3	Alternating	Open	No. 1302-A telephone set.....	4.50
29-A	2	Alternating	Open	Nos. 1006-A, 1006-B, 1006-C test sets. (This generator is the same as the No. 29-B except that the handle is not the folding type.)	3.00
29-B	2	Alternating	Open	No. 1017-A test set.....	3.25
22-E	2	Alternating	Open	Magneto telephone sets.....	3.15
20-B	5	Alternating	Open	No. 1280-A telephone set.....	5.65
47-A	5	Alternating	Open	Magneto telephone sets and switchboards Nos. 1101, 1102, 1006	6.00
47-B	5	Pulsating and alternating	Open	Magneto telephone sets and switchboards Nos. 1101, 1102, 1006	7.00
47-C	5	Alternating	Open	Switchboards Nos. 1005, 1010, 1011	6.00
47-D	5	Pulsating and alternating	Open	Switchboards Nos. 105, 1005.....	7.00
47-E	5	Pulsating and alternating	Open	Switchboard No. 106.....	7.00
47-F	5	Alternating	Open	Switchboard No. 1012.....	6.00

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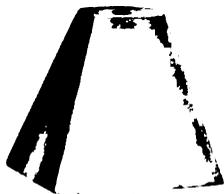
GONGS

FOR RINGERS

Each of the gongs listed below requires a different gong mounting. The Nos. 1 and 16 are used on standard ringers, the former having a round hole for the mounting screw and the latter having a slotted hole to prevent the gong turning on the mounting. The Nos. 1 and 16 gongs are not interchangeable.



No. 1



No. 3



No. 6

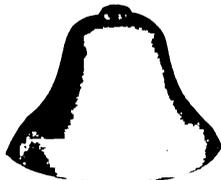
Code No.	Description	Diameter inches	Height inches	Finish	List Price each
1	Telephone set gong for round gong posts.	2½	¾	Nickel plate.....	\$ 0.07
3	Cow gong.	2x1½	1½	Nickel plate.....	.21
6	Large sleigh gong.	1½	1½	Nickel plate.....	.30
10	Large tea gong.	2½	1½	Nickel plate.....	.45
16	Standard telephone set gong for round gong post with two wings.	2½	¾	Nickel plate.....	.07

GONG MOUNTINGS

Each of the code numbers in the following list includes a pair of gong mountings and No. 2 includes also the necessary screws for fastening the gongs to the mountings. The gong nuts listed below must be ordered separately, for example:

1—No. 3 gong mounting

2—P-19097 gong nuts



No. 10



No. 16

Code No.	Length of Post inches	Used with Gongs	Gong Nuts	Finish	List Price each
2	¾	No. 6.		Nickel plate.....	\$ 0.15
3	1½	Nos. 3 and 10.	P-19097	Nickel plate.....	.165

GONG NUTS



P-19097

\$ 0.0275

No. 3

HAND SETS



No. 1001

Code No.	Description	List Price each
1001	Includes No. 1 hand set handle, No. 244-W transmitter, No. 131-W receiver and 3 ft. two conductor cord, Code No. 348, which has two spring clips for lineman's testing.	\$ 7.50

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Hand Sets—Continued



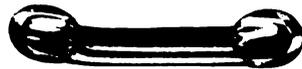
Code No.
1002-A

Description
For use in place of a regular local battery bridging or central battery desk stand or transmitter arm. Includes No. 141-W receiver, No. 267-W transmitter and No. 319 cord

List Price
each

\$ 6.35

HAND SET HANDLES



No. 1

Code No.
1

Description
For use with street railway telephone sets and line-man's hand set No. 1001. It is suitable for the No. 244-W transmitter and No. 131-W receiver.....

List Price
each

\$ 1.50



No. 4-A

Code No.
4-A

Description
Black shell for magneto equipments.

Used with Protectors
numbers

4-A, 65-A, 78-A, 84-A

List Price
each

\$ 0.105

41

Red shell for central battery equipments.

4-C 65-B, 78-B, 84-B

.105



No. 66

66

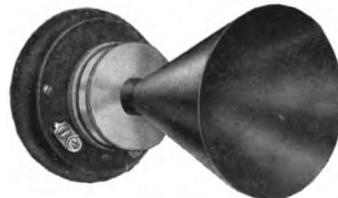
Brass dummy.

4-A, 4-C, 65-A, 65-B,
78-A, 78-B, 84-A, 84-B

.0075

HEAT COILS

HOWLER



No. 1-A

Used in place of a bell for railway composite systems when signalling is accomplished by means of a high frequency interrupter.

Code No.

Description

List Price
each

1-A Mounted on wood base for use with No. 1312-A telephone set

\$ 9.40

1-B With iron bracket for mounting in No. 1314-A telephone set

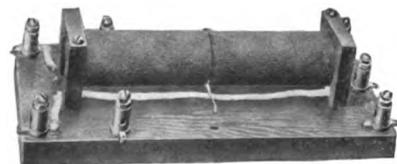
9.10



No. 5

INDUCTION COILS

The Nos. 10, 23 and 24 induction coils are mounted on wooden bases, the others are unmounted, unless otherwise specified.



No. 10

Code No.
5

Size
inches
4 1/2 x 1 1/2

Used with
Nos. 1312-A and 1314-A rail-
way composite telephone sets

List Price
each

\$ 1.50

10

Size
inches
8 1/2 x 3 1/2

Operator's telephone sets in
the following switchboards:
Nos. 105, 1005, 1006, 1010,
1011, 1101, 1102.....

2.00

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Induction Coils—Continued



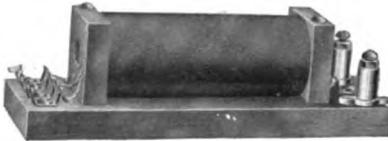
No. 13

Code No.	Size inches	Used with	List Price each
13	3½x1	Magneto telephone sets.....	\$ 0.47



No. 20

20	4¼x1½	Central battery telephone sets	.70
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No. 23

23	6½x2	Operator's telephone set in switchboards: Nos. 9, 10, 106, 1012, and in private exchanges Nos. 4, 101, 102.....	1.10
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No. 24

24	6¾x3¼	Operator's telephone set in No. 1 switchboard	1.50
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INTERRUPTERS



No. 100-A

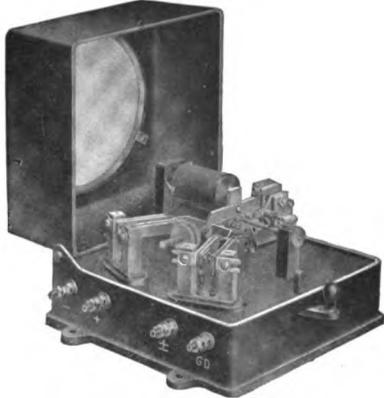
Code No.	Description and Use	List Price each
65-A	A wooden box containing: 1 vibrating sending relay, 100 ohms; 1 No. 21-E condenser; 1 No. 8 repeating coil; 1 resistance, 20,000 ohms; Base is 10 3/16 in. x 5 1/4 in. Used with the ringing set for composite telephone lines.....	\$ 18.40
100-A	Same as No. 65-A, except base is 10 1/4 in. x 5 1/4 in., and is designed for mounting on a rack.....	18.40

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Interrupters—Continued



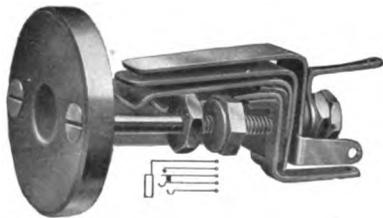
No. 84-A, closed



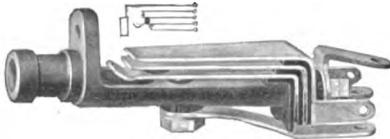
No. 84-A, open



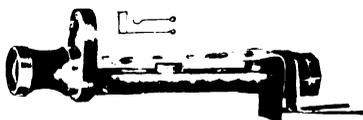
No. 3



No. 77



No. 91



No. 99

Code No.

Description and Use

List Price each

84-A

An electrically operated pole changer producing alternating and positive and negative pulsating currents from a source of direct electro-motive force. Operating coil wound for current from a 24-volt battery. Ringing current taken from a battery of dry cells. Used for supplying ringing current in small exchanges. Dry cells are not included. Size of base, 8 in. x 8 in.

\$ 24.70

84-B

Same as No. 84-A, except the operating coil is wound for current from two primary cells in series (Gladstone-Lalande batteries usually used). Cells are not included.

24.00

We make a variety of interrupter attachments which are for mounting on ringing machines and which are intended to interrupt battery current supply and ringing current supply in various circuits. Interrupters can be supplied to meet any requirements as to frequency of interruptions for such uses as tone test, howler, busy back and machine ringing.

WARNER POLE CHANGER

Operates on one cell of closed circuit battery

Code Word	List No.	Description
Hygiocome	52039	Standard
Hygiologie	52040	Selective

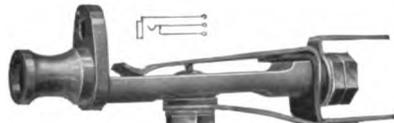
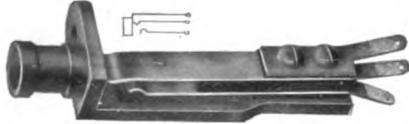
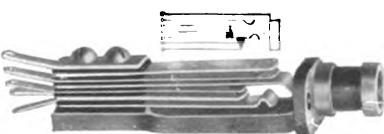
JACKS

The jacks designed for mountings must be ordered in connection with them. See note under jack mountings.

Code No.	Contact Points	Used with Plugs number	Used with Jack Mountings number	List Price each
3	Not platinum	47,116	Singly.	\$ 0.17
49	None	110	1, 2, 3, 114.	10 per strip .48 20 per strip .38
77	Platinum	85	Singly. . . . .	.83
81	Platinum	110	6, 7.	10 per strip .68 20 per strip .53
91	Platinum make contact Break contact for two not platinum	47, 103 or 112	Singly and 30, 78, 80 jack mounting.	singly .48 mounted .78
92	None	109	18, 19, 113.	10 per strip .48 20 per strip .38
99	None	47, 103 or 112 for two	Singly and 30, 78, 80 jack mounting.	singly .20 mounted .50

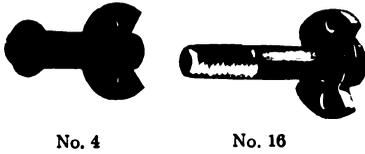
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Jacks—Continued

	Code No.	Contact Points	Used with Plugs number	Used with Jack Mountings number	List Price each
 No. 102	102	Not Platinum	47	Singly.....	\$ 0.42
	103	Platinum	47	Singly.....	.36
 No. 103	107	Platinum	47	Singly.....	.54
	108	Platinum	47	Singly.....	.39
 No. 107	117	None	110	Singly.....	.20
	118	Platinum	110	Singly.....	.38
 No. 108	124	Platinum	47	Singly.....	.60
	132	None	126	Singly.....	3.38
 No. 117	140	Platinum	110	Singly.....	.45
	141	Platinum	110	108, 109, 110, 112, 10 per strip 20 per strip.....	.68 .53
 No. 118					
 No. 124					
 No. 132					
 No. 140					

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JACK FASTENERS



These are for holding the jack and lamp socket mountings in place.

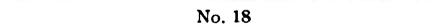
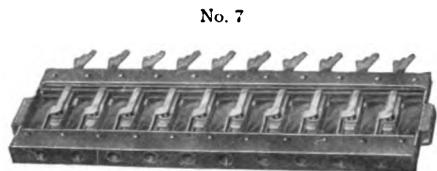
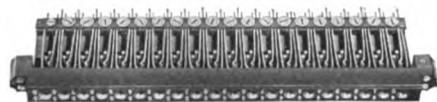
Code No.	Used with Jack number	List Price each
4	49, 81	\$ 0.06
16	92, 141	.045

JACK MOUNTINGS

For central battery exchanges the multiple jack strips in each panel are separated into groups of five by thin white holly strips. Each group consists of one hundred jacks numbered 0 to 99. Each strip is divided into four parts, each having five jacks, by a distinctive mark so that an operator may readily choose the proper ones. It is also usual to furnish these jack mountings with a groove on the lower edge for marking the jacks for various purposes such as signifying that several adjoining jacks are connected to one private exchange. This groove is shown on the Nos. 113 and 114 jack mountings.

In ordering specify the number of jacks and the code number, the code number of the mounting with the number per strip together with the numbering desired. If holly strips are to be attached to the lower edge of any, the order should specify which ones. The proper number of jacks should be ordered to equip the mountings fully.

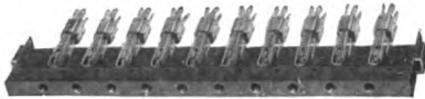
Not Arranged for Number Plates



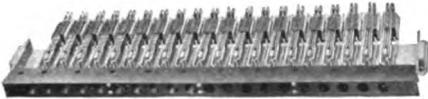
Code No.	Used with Jack number	Number per Strip	Used with	List Price
1	49	10	No. 49 jack, No. 1 switchboard.	The price of the jack mounting is included in the price of the jack.
3	49	20	No. 49 jack, No. 1 switchboard.	
6	81	10	No. 9 switchboard.	
7	81	20	No. 9 switchboard.	
18	92	10	No. 92 jack, No. 1 switchboard.	
30	91, 99	4	All switchboards for operator's telephone jacks.	
78	91, 99	6	No. 1 switchboard for operator's and supervisor's telephone jacks.	
80	91, 99	2	All switchboards for operator's telephone jacks.	
108	141	20	No. 10 switchboard.	

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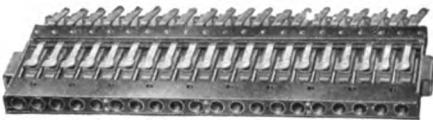
Jack Mountings—Continued



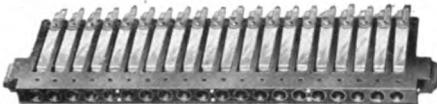
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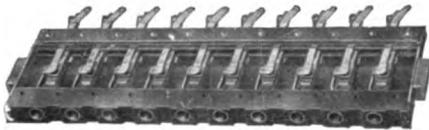
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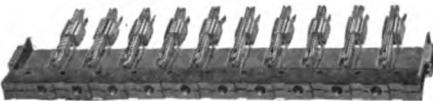
No. 113



No. 114



No. 19



No. 110

Code No.	Used with Jack number	Number per Strip	Used with	List Price
109	141	10	No. 10 switchboard.	The price of the jack mounting is included in the price of the jack.
112	141	20	No. 10 switchboard.	
113	92	20	No. 92 jack, No. 1 switchboard.	
114	49	20	No. 49 jack, No. 1 switchboard.	

Arranged for Number Plates

These are not numbered. In ordering specify the number of jacks and the code number, the code number of the mounting with the number per strip. The proper number of jacks should be ordered to fully equip the mountings.

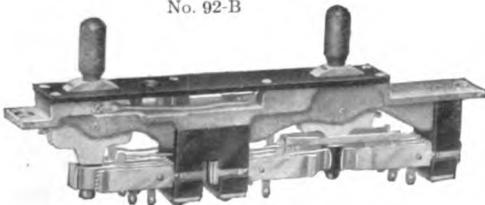
Code No.	Used with Jack number	Number per Strip	For Number Plates	Used with	List Price
2	49	10	4, 31, 109	No. 49 jack, No. 1 switchboard.	The price of the jack mounting is included in the price of the jack
19	92	10	6, 30, 108	No. 92 jack, No. 1 switchboard.	
110	141	10	5-A	No. 10 switchboard.	

KEYS

These represent a few of the commonly used types which we manufacture. We have a very complete line of standard keys, from which can be selected those which, we believe, will fulfil any requirements. All contacts used in the talking circuit are made of platinum.



No. 92-B

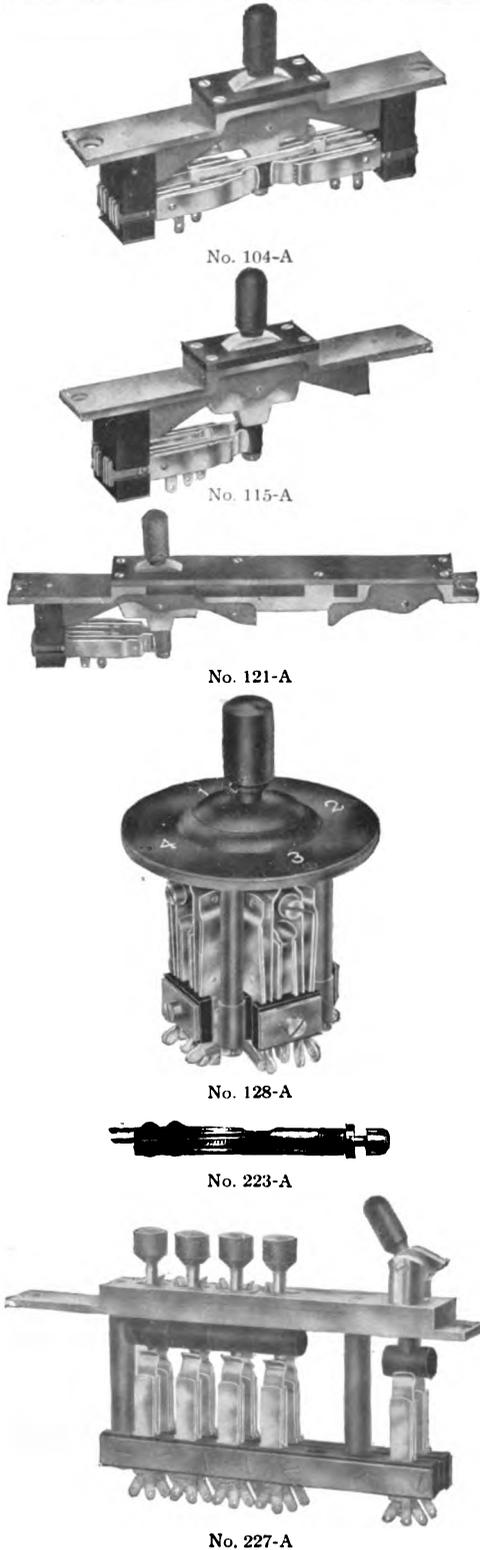


No. 102-A

Code No.	Description	List Price each
69-A	Push button type, mounted in strips; used in order wire circuits.....	\$ 0.60
242-A	Push button type, mounted in strips; used in order wire circuits where local contact is necessary.....	1.00
92-B	Single brass listening key; locks when operated.....	.75

WRITE FOR LIBERAL DISCOUNTS

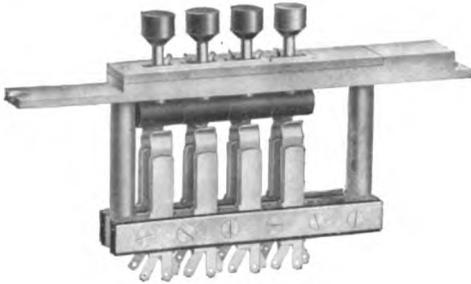
Keys—Continued



Code No.	Description	List Price each
102-A	Listening and two-party ringing key with indicator.....	\$ 3.15
110-A	Listening and two-party ringing key with indicator; has local contact springs on listening end.	3.30
124-A	Double listening key.....	2.80
156-A	Listening and two-party ringing key without indicator; has local contact springs on listening end.....	2.85
104-A	Listening and single ringing key....	1.75
116-A	Listening and single ringing key; has local contact springs on listening end.....	1.90
184-A	Listening and single ringing key....	1.80
115-A	Single ringing key.....	1.20
155-A	Single listening key.....	1.45
121-A	Single listening key.....	1.60
123-A	Single ringing key.....	1.35
128-A	Four party ringing switching key...	6.00
223-A	Single service meter key.....	.55
227-A	Four party ringing and listening key with indicator.....	6.00

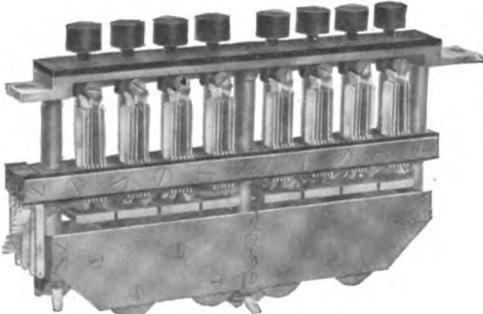
WRITE FOR LIBERAL DISCOUNTS

Keys—Continued



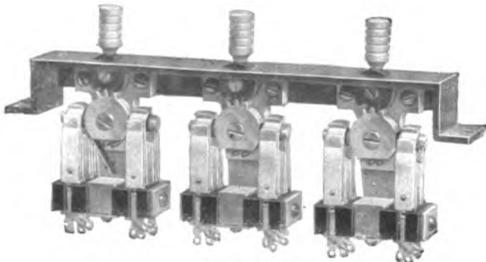
No. 228-B

Code No.	Description	List Price each
228-B	Four party ringing key with indicator	\$ 4.90



No. 237-A

237-A	Double four party machine ringing key; button is held depressed until party answers.....	14.25
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No. 251-A

251-A	Ringling and listening key; used on cordless private exchange switch-board.....	5.25
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371-A	Ten line push button key used in intercommunicating system.....	8.80
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371-B	Twenty line push button key used in intercommunicating system.....	15.55
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371-C	Thirty line push button key used in intercommunicating system.....	22.30
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No. 371-A

375-A	Push button type; single mounted ringing key.....	.70
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No. 375-A

378-A	Plunger type listening key, single mounted; used with key lever70
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No. 378-A

381-A	Plunger type listening key with local contact springs, single mounted; used with key lever.....	.85
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WRITE FOR LIBERAL DISCOUNTS

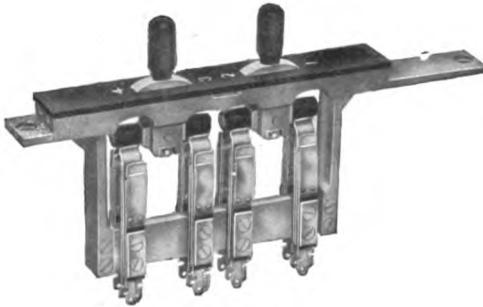


No. 406-A

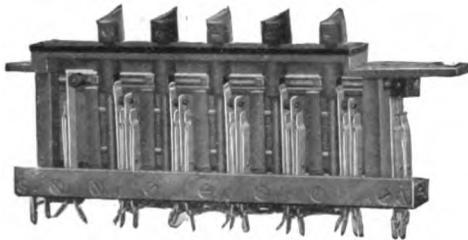
Keys—Continued



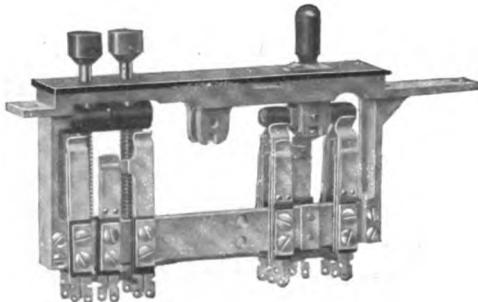
No. 438-A



No. 439-A



No. 442-B



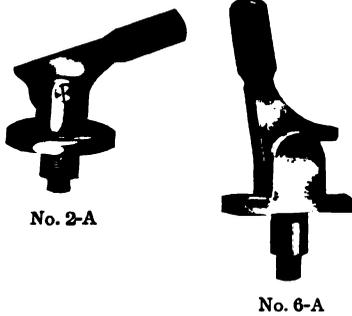
No. 462-A

Code No.	Description	List Price each
406-A	Single switching key; locking.....	\$ 0.75
438-A	Four party ringing key.....	4.50
439-A	Four party ringing key.....	4.90
442-B	Four party machine ringing and listening key; ringing key remains operated until party answers.....	8.55
462-A	Listening, single party ringing, coin collector and service meter key . .	4.60

WRITE FOR LIBERAL DISCOUNTS

KEY LEVERS

These are used with the No. 378 type plunger keys.



Code No.	Operated Position of Handle	Handle	List Price each
2-A	Vertical	Hard rubber, black.....	\$ 0.45
4-A	Horizontal	Hard rubber, black.....	.45
6-A	Vertical	Hard rubber, black.....	.38
6-B	Vertical	Hard rubber, red.....	.38
14-A	Horizontal	Hard rubber, black.....	.38
14-B	Horizontal	Hard rubber, red.....	.38

KEY MOUNTINGS

These are used with the Nos. 69 and 242 type order wire keys. They are made in various lengths with different numbers of keys per strip to mount with all our standard cord circuit and trunk keys. The width of these mountings is 1/2 in. for No. 69 type keys and 3/8 in. for No. 242 type keys.



No. 303

Code No.	Number per Strip	Used with Keys Number	List Price
300	5	242	The price for Nos. 69 and 242 keys includes the mounting
303	8	69	
304	8	242	
314	5	69	
315	4	69	



No. 1

KEY INDICATORS

Code No	Use	List Price
1	With No. 375 type keys to indicate which key was last operated.....	\$ 0.15

LAMPS

The overall diameter of the No. 2 type lamp is .3075 in. and of the No. 4 type .515 in.



No. 2

No. 4

Code No.	Voltage	Current Consumption		Used with Lamp Sockets Number	List Price each
		Minimum Amperes	Maximum Amperes		
2-A	4	.17	.21	12, 13, 30, 32	\$ 0.225
2-B	4	.27	.31	12, 13, 30, 32	
2-C	15	.09	.12	12, 13, 30, 32	
2-D	16	.27	.31	12, 13, 30, 32	
2-E	20	.09	.12	12, 13, 30, 32	
2-F	12	.097	.12	12, 13, 30, 32	
2-G	24	.075	.105	12, 13, 30, 32	
2-H	6	.27	.31	12, 13, 30, 32	
2-J	24	.025	.035	12, 13, 30, 32	
2-K	30	.09	.12	12, 13, 30, 32	
2-L	10	.24	.26	12, 13, 30, 32	
2-N	6	.12	.16	12, 13, 30, 32	
2-P	8	.085	.10	12, 13, 30, 32	
2-R	18	.09	.12	12, 13, 30, 32	
2-T	35 to 47	.03		12, 13, 30, 32	
4-A	4	.50	.60	16		.39
4-B	8	.50	.60	16	.39
4-C	22	.17	.21	16	.39
4-D	12	.27	.31	16	.39
4-E	18	.17	.21	16	.39
4-F	20	.17	.21	16	.39
4-G	24	.15	.185	16	.39

WRITE FOR LIBERAL DISCOUNTS

LAMP BRACKETS



No. 1

For use on power switchboards. Comprises a bracket fitted with Edison key socket, lamp shade holder, green porcelain half shade and a 16 c. p. lamp. Voltage of lamp to be called for on the order.....

List Price each

\$ 1.35

LAMP CAPS

No. 2 TYPE (Used with Nos. 12 and 13 Lamp Sockets)



No. 2-C



No. 2-J



No. 2-AY



No. 4-A



No. 8-A

Code No.	Symbol	Color	List Price each	Code No.	Symbol	Color	List Price each
2-A	⊖	White Opalescent	\$ 0.12	2-AC	⊙	Red	\$ 0.12
2-B	⊙	White Opalescent	.12	2-AD	⊕	White Opalescent	.12
2-C	⊕	White Opalescent	.12	2-AE	⊖	Red	.15
2-D	⊙	White Opalescent	.12	2-AF	⊖	White Opalescent	.12
2-E	⊖	White Opalescent	.12	2-AG	⊖	White Opalescent	.12
2-F	⊙	White Opalescent	.12	2-AH	⊖	White Opalescent	.12
2-G	⊕	White Opalescent	.12	2-AJ	⊖	White Opalescent	.12
2-H	⊙	Red	.12	2-AK	⊖	White Opalescent	.12
2-J	⊗	White Opalescent	.12	2-AL	⊙	Green	.15
2-K	⊕	White Opalescent	.12	2-AM	⊖	White Opalescent	.12
2-L	⊙	Green	.12	2-AN	⊖	White Opalescent	.12
2-M	⊕	White Opalescent	.12	2-AP	⊗	White Opalescent	.12
2-N	⊙	Red	.12	2-AR	⊙	Red	.15
2-P	⊗	Jeweled Red	.15	2-AS	⊖	White Opalescent	.12
2-R	⊗	Jeweled Blue	.15	2-AT	⊖	White Opalescent	.12
2-S	⊗	Jeweled Green	.15	2-AU	⊖	White Opalescent	.12
2-T	⊕	Red	.15	2-AW	⊕	White Opalescent	.12
2-U	⊙	Amber	.12	2-AY	⊕	White Opalescent	.075
2-W	⊙	Blue	.12	2-AZ	⊕	Red	.15
2-Y	⊙	Green	.15	2-BA	⊕	White Opalescent Engraved as Specified	.15
2-Z	⊖	White Opalescent	.12	2-BC	⊖	White Opalescent	.12
2-AA	⊖	Red	.15	2-BD	⊙	White Opalescent	.12
2-AB	⊖	White Opalescent	.12	2-BE	⊕	Green	.15

No. 4 TYPE (Used with Nos. 16 and 32 Lamp Sockets)

4-A	⊙	White Opalescent	.15	4-E	⊗	White Opalescent	.225
4-B	⊗	Jeweled Red	.225	4-F	⊙	Green	.225
4-C	⊗	Jeweled Green	.225	4-G	⊕	White Opalescent	.225
4-D	⊙	Red	.225	4-H	⊖	White Opalescent	.225

No. 8 TYPE (Used with No. 30 Lamp Socket)

8-A	⊙	White Opalescent	.06	8-G	⊖	White Opalescent	.12
8-B	⊙	Clear	.12	8-H	⊖	White Opalescent	.12
8-C	⊙	Clear, Flat Top	.26	8-J	⊕	White Opalescent	.12
8-D	⊙	Red	.12	8-K	⊙	White Opalescent	.12
8-E	⊙	White Opalescent	.12	8-L	⊙	Green	.12
8-F	⊙	White Opalescent	.12				

WRITE FOR LIBERAL DISCOUNTS



No. 68-A

Lamp Caps—Continued

No. 68 TYPE (Used with Nos. 12 and 13 Lamp Sockets)

Code No.	Color	List Price each
68-A	White Opalescent.....	\$ 0.09
68-B	Red.....	.135
68-C	Green.....	.135



No. 69-A

No. 69 TYPE (Used with Nos. 16 and 32 Lamp Sockets)

Code No.	Color	List Price each
69-A	White Opalescent.....	.165
69-B	Jeweled Red.....	.24
69-C	Jeweled Green.....	.24
69-D	White Opalescent.....	.24

LAMP GUARDS

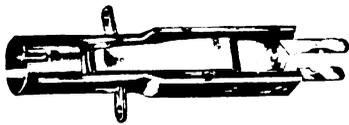


No. 21

Code No.	Used with Lamp Sockets number	List Price each
21	12, 13	\$ 0.03
22	16, 32	.03

LAMP SOCKETS

Mounted Singly



No. 13

Code No.	Used with Lamps number	Used with Lamp Caps number	Used with Thickness of Shelf inches	List Price each
13	2 type	2, 68	$\frac{1}{8}$	\$ 0.23
16	4 type	4, 69, 70	$\frac{1}{8}$, $1\frac{3}{8}$, $1\frac{1}{4}$, $1\frac{1}{8}$ as specified.....	.75
32	2 type	4, 69, 70	$\frac{1}{8}$, $1\frac{3}{8}$, $1\frac{1}{4}$, $1\frac{1}{8}$ as specified.....	.75

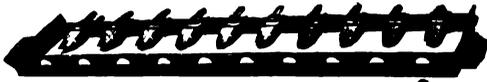
Mounted in Strips

These must be ordered in connection with the lamp socket mountings. See note under LAMP SOCKET MOUNTINGS.

Code No.	Used with Lamps number	Used with Lamp Caps number	Suitable for Lamp Socket Mountings number	List Price each
12	2 type	2	102, 117, 118, 122, 134, 136, 137	5 per strip \$ 0.75 10 per strip .53 20 per strip .38
30	2 type	8	101, 102, 111, 118	10 per strip .53 20 per strip .38

WRITE FOR LIBERAL DISCOUNTS

LAMP SOCKET MOUNTINGS



No. 101



No. 102



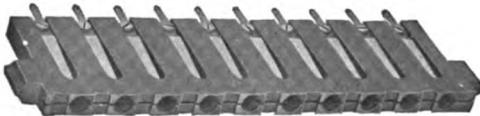
No. 118



No. 136



No. 137



No. 122



No. 134



No. 2

In ordering specify the number of lamp sockets and the code number together with the code number of the lamp socket mounting. The proper number of lamp sockets should be ordered to fully equip the mountings.

Not arranged for Number Plates

Code No.	Used with Lamp Sockets No.	No. per Strip	Used with	List Price
101	30	10	No. 49 jack, No. 1 switchboard	The price of the lamp socket mounting is included in the price of the lamp socket
111	30	10	No. 92 jack, No. 1 switchboard	
102	12, 30	20	No. 49 jack, No. 1 switchboard	
118	30	20	No. 92 jack, No. 1 switchboard	
136	12	10	No. 10 switchboard	
137	12	20	No. 10 switchboard	

Arranged for Number Plates

Code No.	Used with Lamp Sockets No.	No. per Strip	For Number Plates	Used with	List Price
122	12	10	4, 31, 109	No. 49 jack, No. 1 switchboard	The price of the lamp socket mounting is included in the price of the lamp socket.
134	12	10	6, 30, 108	No. 92 jack, No. 1 switchboard	

LINE POLES

Code No.

2 Pole designed to make the line connection for portable railway composite set No. 1314-A. It consists of three six foot sections and one No. 268 cord 100 feet long. The two upper sections are made of bamboo, the lower section of hickory.

List Price each

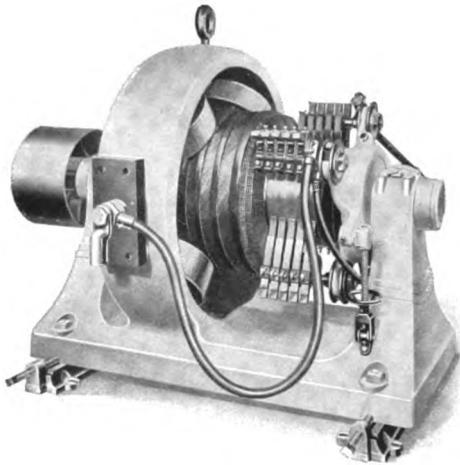
\$ 11.25

WRITE FOR LIBERAL DISCOUNTS

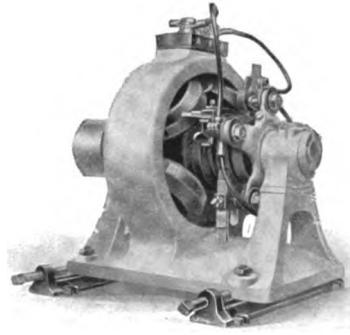
MACHINES

CHARGING GENERATORS

These have been designed for charging storage batteries in telephone exchanges. They are especially constructed to reduce to a minimum the chances of noise being introduced into the telephone circuits while the battery is being charged.



No. 7-A



No. 1-A

CHARGING GENERATORS, BELT DRIVEN

These are suitable for charging eleven cells in series. If there are two batteries (each of eleven cells) the fact should be stated in the order so that the proper rheostat may be determined. The rheostat will regulate the voltage between 22 and 30.

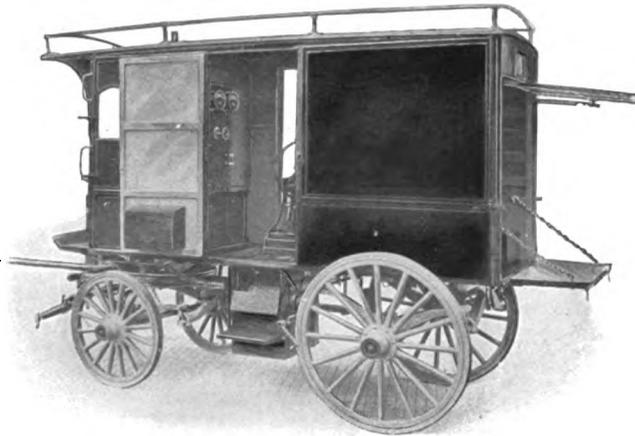
When ordering a new rheostat to replace one in service, the name plate data of the machine should be stated in the order.

Code No.	Type	Output			Standard Speed R.P.M.	Diameter of Pulley inches	Horse Power Required to Drive	Size.		Approximate Shipping Weight pounds
		Amperes	Volts	Watts				Length Including Pulley inches	Width Including Slide Rails inches	
1-A	M-1	25	30	750	1,750	8	1½	20½	20	275
2-A	M-2	50	30	1,500	1,750	8	3	23½	20	385
3-A	M-3	100	30	3,000	1,150	8	5½	24½	24	575
4-A	M-4	175	30	5,250	1,150	8	9½	28½	30	900
5-A	M-5	225	30	6,750	1,150	8	11½	28½	30	1,000
6-A	M-5½	300	30	9,000	1,150	8	14½	46½	41	1,950
6-B	M-5½	400	30	12,000	1,150	8	19½	46½	41	1,950
7-A	M-7	600	30	18,000	850	14½	28½	50½	47	2,200
8-A	M-8	800	30	24,000	850	15	37½	52½	51	3,980
9-A	M-9	1,000	30	30,000	475	20 or 24	48	71½	57	6,000

Note:—Orders should read thus:

One No. . . . belt driven charging generator to give an output of . . . amperes at 30 volts; to run at . . . R.P.M., with pulley . . . inches in diameter; terminals drilled for . . . circular mil cable; with necessary rheostat for rear of board mounting with hand wheels; to be used for charging a battery of 11 type "G" . . . cells and also a battery of 11 type E . . cells.

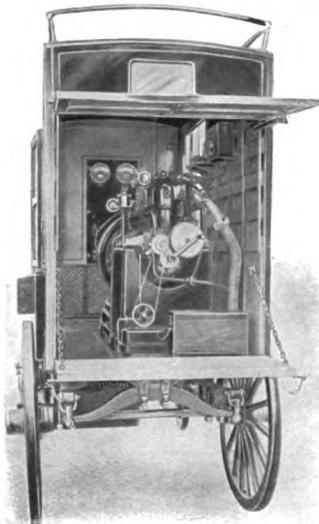
PRICES ON REQUEST



PORTABLE CHARGING SETS

For Charging Storage Batteries

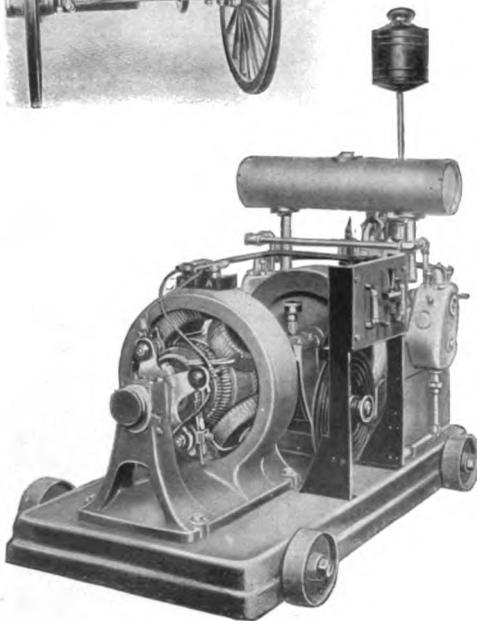
Output	Generator	Remarks	Shipping Weight pounds
25 amperes at 42 volts	M-2	On iron base with wheels...	1400



Output	Generator	Remarks	Shipping Weight pounds
50 to 60 amperes at 36 volts	M-3	Mounted in covered wagon....	2200

100 to 125 amperes at 36 volts	M-4	Mounted in covered wagon....	3800
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Output	Generator	Remarks	Shipping Weight pounds
200 to 225 amperes at 36 volts	M-5	Mounted in covered wagon....	4000



300 to 350 amperes at 36 volts	M-5½	Mounted in covered wagon....	4500
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The above sets include a type "M" generator direct connected to a gasolene engine and the necessary field rheostat. The rheostat with the 25 ampere set is capable of regulating the terminal voltage between 22 and 42 volts. The field rheostat furnished with the other sets is capable of regulating the terminal voltage between 22 and 36 volts.

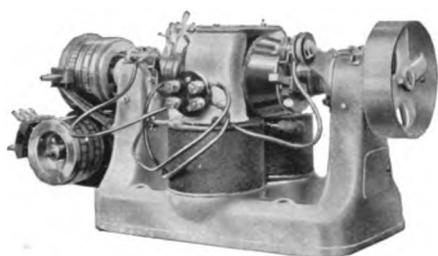
The shipping weights given above for the large sets are for the apparatus complete including the wagon.

PRICES ON REQUEST

CHOKE COILS

Used in the lead between the charging machine and the non-grounded side of the storage battery to choke down any disturbances which might cause noises in the telephone circuits while the battery is being charged. Mounted on wooden base. Terminals are included. Prices are f.o.b. Chicago.

Code No.	Used with Charging Units Employing the Following Generators	Winding	Size of Base inches	List Price each
1-A	M-2	90 turns of No. 0 wire.	24 x 5½	\$ 37.00
1-B	M-2	80 turns of No. 00 wire.	24 x 5½	40.00
1-C	M-3	72 turns of No. 0000 wire.	24 x 6½	69.00
2-A	M-4	69 turns of 3-No. 10x1 in. copper ribbons in parallel.	26½x11½	170.00
2-B	M-5	69 turns of 3-No. 8x1 in. copper ribbons in parallel.	36½x12½	249.00
2-C	M-7	48 turns of 7-No. 8x1½ in. copper ribbons in parallel.	43½x17½	769.00
2-D	M-5½ (300 ampere)	56 turns of 4-No. 9x1 in. copper ribbons in parallel.	37 x13	234.00
2-E	M-5½ (400 ampere)	48 turns of 4-No. 9x1½ in. copper ribbons in parallel.	42 x14½	318.00
2-F	M-8	40 turns of 10-No. 8x1½ in. copper ribbons in parallel.	43½x21½	1,235.00
2-G	M-9	38 turns of 11-No. 8x2 in. copper ribbons in parallel.	52½x23	2,272.00



No. 3-A
With Interrupter

RINGING GENERATORS

Belt Driven, Self Excited

Prices are f.o.b. Chicago and do not include slide rails or starting boxes

When the power supply is direct current at a voltage exceeding 220 or alternating current, ringing generators driven by suitable motors are used.

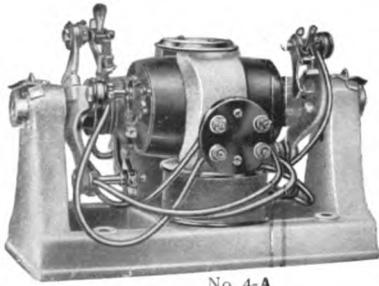
Code No.	Output			Full Load Speed R. P. M.	Overall Size		Horse Power Required to Drive without interrupters	Shipping Weight without Interrupters pounds	List Price each
	Amperes	Volts	Watts		Length Including Pulley inches	Width inches			
1-A	¼	75	19	950	14½	7½	½	50	\$ 112.00
3-A	1	75	75	950	16	9½	¾	95	152.00
5-A	2	75	150	950	18½	10½	1	160	233.00
8-A	4	75	300	950	23	13½	1½	290	305.00

Slide rails are not needed when the driving motor has means for tightening the belt.

Orders should read thus:

1 No. . . . ringing machine, self-excited; with an output of . . . amperes at 75 volts, complete with slide rails and pulley . . . inches in diameter; equipped with . . . interrupter.

WRITE FOR LIBERAL DISCOUNTS



No. 4-A

RINGING DYNAMOTORS

Direct Current Primary

Prices are f.o.b. Chicago and do not include starting boxes

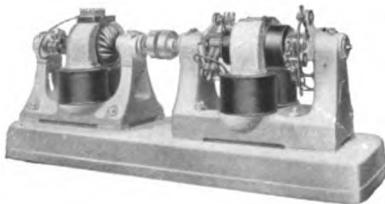
Code No.	Output		Primary Voltage	Size of Starting Box Horse Power	Full Load Speed R.P.M.	Overall Length inches	Size Width inches	Shipping Weight Without Interrupters pounds	List Price each	
Amperes	volts	watts								
2-A	1	75	15	20	None Required	950	13	9	50	\$ 105.00
2-B	1	75	15	110	None Required	950	13	9	50	105.00
2-C	1	75	15	220	None Required	950	13	9	50	105.00
4-A	1	75	38	20	1/2	950	14 1/2	10 3/4	95	145.00
4-B	1	75	38	110	1/2	950	14 1/2	10 3/4	95	145.00
4-C	1	75	38	220	1/2	950	14 1/2	10 3/4	95	145.00
6-A	1	75	75	20	1/2	950	17	13	160	225.00
6-B	1	75	75	110	1/2	950	17	13	160	225.00
6-C	1	75	75	220	1/2	950	17	13	160	225.00
7-A	2	75	150	20	1/2	950	20 1/2	15 1/2	290	295.00
7-B	2	75	150	110	1/2	950	20 1/2	15 1/2	290	295.00
7-C	2	75	150	220	1/2	950	20 1/2	15 1/2	290	300.00
9-A	4	75	300	20	3/4	950	28	18 1/2		400.00
9-B	4	75	300	110	3/4	950	28	18 1/2		400.00
9-C	4	75	300	220	3/4	950	28	18 1/2		425.00

Orders should read thus:

1 No. . .ringing machine to give an output of amperes at 75 volts; primary voltage. . . .volts; equipped with. . . .interrupters and necessary starting box for rear of board mounting with hand wheel.



Charging Motor Generator



Small Motor Generator

MOTORS

We carry a complete line of motors suitable for all power circuits. In ordering, specify the voltage of the circuit if direct current, or the voltage, phase and frequency if the current is alternating, also whether a starting box for rear of board mounting with hand-wheel is to be provided. If the motor is to be direct connected to a generator, the order should state if a flexible insulated coupling is to be furnished and if the sub-base is to have cushions.

WRITE FOR LIBERAL DISCOUNTS

COIN COLLECTOR MOTOR-GENERATORS

We furnish motor generators for supplying current for operating coin collectors. Orders should state the output desired, and specify exactly the power circuit on which the motor is to work, also whether the rheostat and starting box should be furnished with hand wheels for rear of board mounting.

SERVICE METER MOTOR-GENERATORS

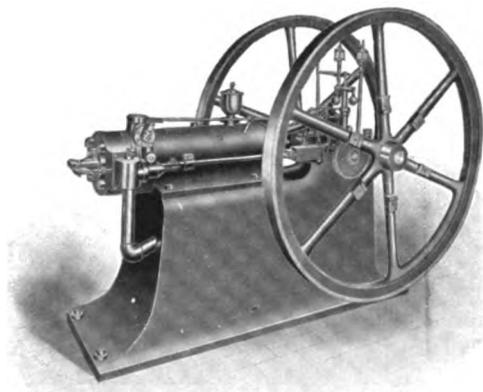
We furnish motor-generators for supplying current for operating the service meters. Orders should state the output desired, and specify exactly the power circuit on which the motor is to work, also whether the rheostat and starting box should be furnished with hand wheels for rear of board mounting.

GAS ENGINES

Designed specially for telephone service in accordance with our specifications

White & Middleton

Brake Horse Power	Extreme Length Including Fly Wheel	Width to Outside of Fly Wheels	Diameter of Fly Wheels	Width of Fly Wheels inches	Width of Belt Used inches	Speed R.P.M.	Approx. Shipping Weight pounds	Used with Charging Machine
4	5 ft. 2½ in.	2 ft. 2½ in.	3 ft. 4 in.	3½	3	300	1600	M-1 and M-2
6	6 ft. 3 in.	2 ft. 5 in.	4 ft. 0 in.	4	4	250	2400	M-3
9	7 ft. 2½ in.	2 ft. 9 in.	4 ft. 8 in.	5½	4	250	3100	M-4
12	7 ft. 3 in.	2 ft. 9 in.	4 ft. 8 in.	5½	5	240	3600	M-5
15	7 ft. 7 in.	3 ft. 1 in.	5 ft. 1 in.	6½	5	220	4300	M-5½ (300 amperes)
20	8 ft. 6½ in.	3 ft. 6 in.	5 ft. 6 in.	6½	6	200	5600	M-5½ (400 amperes)
25	8 ft. 7 in.	3 ft. 7½ in.	6 ft. 0 in.	8	7	200	7700	
30	9 ft. 6½ in.	3 ft. 7½ in.	6 ft. 0 in.	9	8	200	8500	M-7
40	10 ft. 9½ in.	4 ft. 1½ in.	6 ft. 8 in.	9	9	180	13500	M-8
50	12 ft. 3 in.	4 ft. 3½ in.	7 ft. 6 in.	10	10	180	16000	M-9



The engine requires a foundation which is slightly longer and wider than the space occupied by the engine as given above.

The following accessories should be ordered with each engine:

- 1 gas bag
- 1 exhaust muffler
- 1 set of oil cans
- 1 set of wrenches
- 1 5 gallon can of cylinder oil
- 1 5 gallon can of bearing lubricating oil
- 1 wooden templet for locating foundation bolts
- 1 set of foundation bolts and anchor plates
- 1 list of framed instructions
- 1 cooling tank (unless running water will be used for the cylinder jacket)
- 1 spark coil panel including one No. 1 spark coil and one double pole, single throw switch
- 1 belt

SPARK COIL

Code No.	Description and Use	List Price each
1	A gas or gasolene engine spark coil for use on a 24-volt circuit. Resistance 60 ohms. Base 13 in. x 3½ in.	\$ 7.50

MACHINE COVERS

A complete line of machine covers is manufactured for all of our machines. They are made of eight ounce brown army paraffined canvas.

PRICES ON REQUEST

MACHINE TABLES

These consist of an angle iron frame with a slate top drilled for our various small machines, such as ringing, coin collector or service meter machines.

RHEOSTATS

These are used with our various generators which supply direct current, and are made for mounting on the front or rear of the power switchboard. When rear mounted they require hand wheels and index plates.

They should be ordered with each new machine when required. When a rheostat is being ordered for a machine already installed, the data on the name plate on the machine should be stated in the order.

STARTING BOXES

No-voltage release or no-voltage release and overload boxes are supplied for motors of all capacities and voltages. They are arranged for rear of board mounting and require a hand wheel on the front. They should be ordered with new motors. When a starting box is being ordered for a machine already installed the data on the name plate on the motor should be stated in the order.



HAND WHEELS

These are finished in polished copper and black dip, and are for use with rear mounted starting boxes and rheostats. A complete line is carried for all the various sizes. The hand wheel includes a dial properly marked.

BELTS

No. 101

Endless leather belts are carried in single or double ply. Specify length, width and ply

POWER PROTECTION PANELS

These are arranged for mounting on a wall, and comprise a slate panel equipped with a switch, together with the necessary fuses, retardation coils and lightning arresters for protecting motors. A complete line is manufactured, suitable for all kinds of circuits and for motors of different horse-power.

POWER SWITCHBOARDS

These comprise one or more slate panels mounted on an iron framework, which is braced to the floor and wall. Space is left for access to the back of the board. The size and number of panels depend upon the machines furnished. There is mounted on these boards all of the apparatus for controlling the machines.

BATTERY PANELS

These are arranged for mounting on a wall and comprise a slate panel equipped with fuses for protecting the storage battery and a shunt for reading the battery current. They are made for protecting one or two batteries.

PRICES ON REQUEST

MOUNTING PLATES

The term "mounting plate" refers in general to a mild steel plate drilled and slotted for mounting relays, resistance coils, service meters or small retardation coils. Plates for mounting drops and signals are known as "drop mountings" and "signal mountings" respectively.

The standard thickness of a relay mounting plate is $\frac{1}{2}$ in.; of a mounting plate for No. 18 and No. 19 type resistances $\frac{1}{8}$ in.; and of a mounting plate for service meters $\frac{3}{8}$ in. All these plates are of mild steel, copper plated, oxidized and lacquered to improve the appearance and prevent rusting.

Whenever necessary the holes for terminals are equipped with hard rubber bushings to insulate the parts in circuit from the plate.

Certain mounting plates are equipped with dust proof covers which enclose the strips of relays. Such mounting plates are used with relays like the No. 189, not equipped with individual covers.

The length of mounting plates is usually 19 in., 21 $\frac{1}{8}$ in., 23 in., or 27 in. The first is used on relay racks, the second and third on subscriber and trunk sections of the No. 1 board and the last on the No. 10 board. Service meters are regularly mounted 20 per strip on a plate 33 $\frac{1}{2}$ in. long.

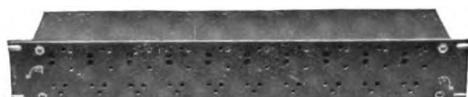
Mounting plates of other sizes are furnished to meet conditions.



No. 600-A



No. 610-C



No. 603-F



No. 601-C



No. 671-A

Relay Mounting Plates

Code No.	Number per Strip	Centers inches	Size inches	List Price each
600-A	10	1 $\frac{1}{2}$	19 x 1 $\frac{1}{2}$	\$ 0.60
606-A	10	1 $\frac{1}{2}$	21 $\frac{1}{8}$ x 1 $\frac{1}{2}$ . . . .	.70
609-A	10	1 $\frac{1}{2}$	23 x 1 $\frac{1}{2}$ . . . .	.70
605-B	34	1 $\frac{3}{8}$	21 $\frac{5}{8}$ x 4 $\frac{1}{2}$	1.80
610-C	34	1 $\frac{3}{8}$	23 x 4 $\frac{1}{2}$	1.80
603-F	10	1 $\frac{1}{8}$	19 x 2 $\frac{1}{8}$	1.75

Resistance Mounting Plates

601-A	10	1 $\frac{1}{2}$	19 x 1 $\frac{1}{2}$ . . . . .	.45
601-C	40	$\frac{7}{8}$	19 x 1 $\frac{1}{2}$ . . . . .	.70
607-D	40	$\frac{7}{8}$	21 $\frac{1}{2}$ x 1 $\frac{1}{2}$ . . . . .	.85
602-F	42	$\frac{7}{8}$	23 x 1 $\frac{1}{2}$ . . . . .	.85

Service Meter Mounting Plates

623-A	20	1 $\frac{5}{8}$	33 $\frac{1}{2}$ x 1 $\frac{1}{2}$	1.00
671-A	10	1 $\frac{1}{2}$	19 x 1 $\frac{1}{2}$ . . . . .	.60

NUMBER PLATES

Code No.	Description	Size inches	Used on	List Price each
1-A	White ivory, black figures $\frac{1}{4}$ in. high	$\frac{3}{8}$ diameter	Wooden stile casings and panel numbers	\$ 0.075
12-A	White ivory, black figures $\frac{1}{8}$ in. high	$\frac{3}{8}$ diameter	Plug shelves and key shelves . . . . .	.0675
113-A	White ivory, black figures $\frac{1}{4}$ in. high	1 $\frac{1}{2}$ diameter	Panels of switchboards	.36
23-B	Aluminum, black figures $\frac{9}{16}$ in. high	$\frac{5}{8}$ diameter	Flat iron stile casings . .	.075
107-A	Aluminum, black figures $\frac{1}{4}$ in. high	$\frac{1}{2}$ diameter	Flat iron stile casings . .	.075
4-A	Metal, black finish white figures $\frac{9}{16}$ in. high	$\frac{7}{8}$ x $\frac{7}{8}$	No. 2 jack mounting No. 2-C designation strip No. 50-A designation strip . . . . .	.045



No. 1-A



No. 23-B



No. 4-A

WRITE FOR LIBERAL DISCOUNTS

Number Plates—Continued

	Code No.	Description	Size inches	Used on	List Price each
	5-A	Metal, black finish, white figures $\frac{5}{8}$ in. high	$\frac{1}{8} \times \frac{1}{2}$	No. 110 jack mounting.	\$ 0.045
No. 58-A	6-A	Metal, black finish white figures $\frac{1}{2}$ in. high	$\frac{1}{4} \times \frac{3}{8}$	No. 19 jack mounting.	.045
	21-A	Metal, black finish, white figure $\frac{5}{8}$ in. high	$\frac{5}{16} \times \frac{1}{8}$	No. 105 board, for numbering toll and out-going jacks.....	.06
No. 30-A	30-A	Metal, black finish, numbers printed on white paper	$\frac{1}{4} \times \frac{3}{8}$	No. 19 jack mounting.....	.0375
	31-A	Metal, black finish, numbers printed on white paper	$\frac{5}{16} \times \frac{7}{16}$	No. 2 jack mounting and Nos. 2-C and 50-A designation strips.....	.0375
No. 93-A	108-A	Metal, black finish, numbers printed on white paper	$\frac{1}{4} \times \frac{2}{8}$	No. 19 jack mounting and No. 134 lamp socket mounting when mounted together .....	.0375
	109-A	Metal, black finish, numbers printed on white paper	$\frac{1}{4} \times \frac{7}{16}$	No. 2 jack mounting and No. 122 lamp socket mounting when mounted together .....	.0375
No. 97-A	58-A	Metal, nickel finish, black figures	$\frac{1}{2} \times 1 \frac{1}{4}$	Protector bar of main distributing frame..	.06
	93-A	Aluminum, black figures	$1 \frac{1}{8} \times 2 \frac{5}{8}$	Transmitter of telephone sets.....	.03
No. 97-A	97-A	Metal, black finish, white letters or figures $\frac{1}{4}$ in. high	$2 \times 2 \frac{1}{8}$	Transmitter of telephone sets.....	.06
No. 110-A	110-A	Metal, nickel plated, paper card with celluloid covering	$1 \frac{1}{8} \times 2 \frac{3}{4}$	Transmitter of telephone sets.....	.05

WRITE FOR LIBERAL DISCOUNTS

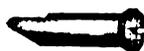
Number Plates—Continued



No. 67-AF



No. 24-A



No. 117-A

Code No.	Description	Size inches	Used on		
67	Brass, black finish, raised copper figures $\frac{3}{8}$ in. high; designations as listed below	2x1	Power switchboards for designating the circuits controlled by switches, etc.		
Code No.	Designation	List Price each	Code No.	Designation	List Price each
67-A	BAT.....	\$ 0.55	67-Q	R-3.....	\$ 0.55
67-B	VM.....	.40	67-R	R-4.....	.55
67-C	G-1.....	.55	67-S	B-1.....	.55
67-D	G-2.....	.55	67-T	B-2.....	.55
67-E	G-3.....	.55	67-U	GEN.....	.55
67-F	G-4.....	.55	67-W	R-2.....	.55
67-G	G-5.....	.55	67-Y	PC-2.....	.70
67-H	G-6.....	.55	67-Z	START.....	.85
67-J	M-1.....	.55	67-AA	RUN.....	.55
67-K	M-2.....	.55	67-AB	LINE.....	.70
67-L	M-3.....	.55	67-AC	R-I.....	.55
67-M	M-4.....	.55	67-AE	PC-1.....	.70
67-N	M-5.....	.55	67-AF	AMM.....	.55
67-P	M-6.....	.55			

These are used for inserting in a jack to designate change of number, dead lines, lines temporarily disconnected, lines arranged for calling only or similar purposes.

For Number 49 Jacks

Code No.	Color	List Price per thousand	Code No.	Color	List Price per thousand
24-A	White.....	\$ 9.85	24-E	Yellow.....	\$ 9.85
24-B	Red.....	9.85	24-F	Dark Blue.....	9.85
24-C	Slate.....	9.85	24-G	Dark Green.....	9.85
24-D	Black.....	9.40	24-H	Light Green.....	9.85

These are for the same purpose as those above but have a slot in the face. By means of a screw-driver they can be turned through half a circle when the jack springs will force them out.

117-A	White.....	9.85	117-E	Yellow.....	9.85
117-B	Red.....	9.85	117-F	Dark Blue.....	9.85
117-C	Slate.....	9.85	117-G	Dark Green.....	9.85
117-D	Black.....	9.40	117-H	Light Green.....	9.85

For Number 92 Jacks

These are similar to the No. 24 type.

27-A	White.....	9.85	27-E	Yellow.....	9.85
27-B	Red.....	9.85	27-F	Dark Green.....	9.85
27-C	Slate.....	9.85	27-G	Light Green.....	9.85
27-D	Black.....	9.40			

These are similar to the No. 117 type.

118-A	White.....	9.85	118-E	Yellow.....	9.85
118-B	Red.....	9.85	118-F	Dark Blue.....	9.85
118-C	Slate.....	9.85	118-G	Dark Green.....	9.85
118-D	Black.....	9.40	118-H	Light Green.....	9.85

PLUGS

In ordering specify the code number and if cords are to be attached give the code number of the cords together with the length and color. No extra charge is made for attaching cords to plugs.



No. 47



No. 85



No. 103

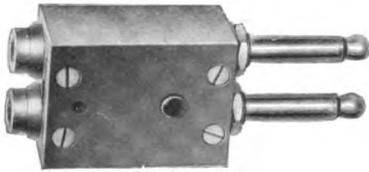
Code No.	Number of Conductors	Used with Jacks number	Used with Cords number	Use	List Price each
47	2	3, 91, 99	156, 236	Switchboards...	\$ 0.45
			102, 103		
			107, 108		
			124		
85	3	77	30	Operator's head telephone....	1.50
103	Twin 2	91,99	87, 254	Operator's head telephone and chest transmitter.....	1.50

WRITE FOR LIBERAL DISCOUNTS

Plugs—Continued



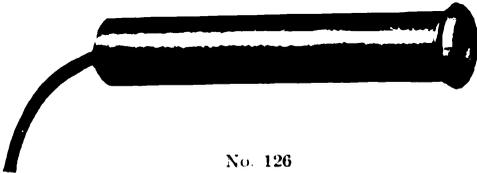
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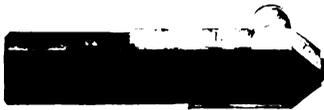
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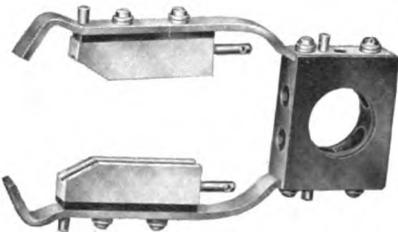
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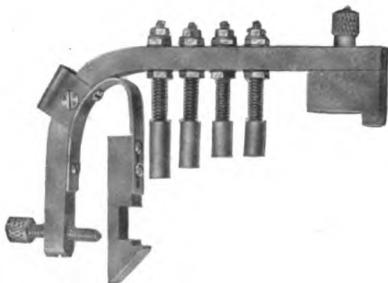
No. 126



No. 124



No. 128



No. 132

Code No.	Number of Conductors	Used with Jacks number	Used with Cords number	Use	List Price each
109	3	92	155,244	Switchboards...	\$ 1.13
110	3	49, 117, 118, 140, 141	152, 249	Switchboards...	1.13
112	Twin 2	91, 99	87	Operator's head telephone and chest transmitter. Has transmitter cutout key...	3.75
116	1	3,103	265	Switchboards...	.225
126	3	132	309	Portable street railway sets..	4.15

For Testing on Frames

Code No.	Number of Conductors	Used with Cords number	Use	List Price each
124	2	129	For testing on Nos. 4, 65, 78 and 84 protectors.....	\$ 0.98
128	4	129	For testing on Nos. 4, 65, 78 and 84 protectors.....	1.90
132	4	129, 153	For testing on terminal strips Nos. 35, 36, 38 and 39	2.65

WRITE FOR LIBERAL DISCOUNTS

PLUG SEATS

Red Fibre



No. 13

Code No.	Mounted on Centers inches	Used with Plugs number	List Price each
12	$\frac{3}{4}$	110	\$ 0.015
13	$\frac{3}{4}$	109	.015
15	$\frac{1}{2}$	47, 116	.015

PROTECTION

The complete protection of telephone apparatus from foreign electrical currents which might cause damage by fire or injury from electrical shock requires the use of high potential, abnormal current and sneak current arresters. These arresters should be installed (1) at central offices, (2) at cable terminals, and (3) at telephone stations.

Central Offices All lines entering the central office should be equipped with heat coils or sneak current arresters. In case the lines outside the central office are wholly underground, or of non-exposed, insulated wire, no protection other than heat coils is necessary. In case the lines leave the central office in underground cable but are exposed, carbon block cutouts should be installed in addition to heat coils. In case the lines are distributed immediately to open lines, heat coils, carbon block cutouts and No. 7-A fuses should be provided.

When open wire lines enter the central office and at any portion of their length are exposed to potentials in excess of 2,500 volts, the protection noted above should be used and, in addition, metal block cutouts should be installed at the outer end of the bridle cable.

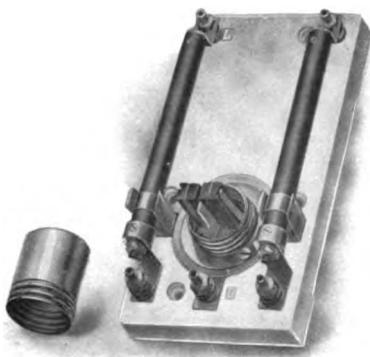
Cable Terminals Cable terminals should be located at the outer end of underground cable and equipped with No. 7-A fuses. If the lines are connected to aerial cable or open wires in localities where lightning is not very prevalent, and if they are not exposed to foreign electrical circuits this protection is sufficient, provided the lines are less than one-half mile in length. Under these conditions if the lines are over one-half mile long, copper block cutouts should also be used. Carbon block cutouts should be installed if the lines are exposed to other electrical circuits. If the lines are not exposed to other circuits copper block cutouts should be used if the lines are over one-half mile in length or if they are in districts where lightning is very severe.

Telephone Stations In case the line from the central office to a telephone station is wholly underground or of non-exposed, insulated wire, no protection need be installed at the telephone station.

If the lines are wholly or in part of open wire, and exposed to circuits not in excess of 1800 volts, the No. 12-A protector should be used at magneto stations and the No. 58-A or Nos. 59-A and 60-A at central battery telephone stations. If the lines are not exposed to other circuits open space cutouts with or without fuses may be used.

In case the lines are exposed to lighting or power circuits in excess of 1800 volts, or to severe lightning discharges, the No. 47 type fuse should be employed at the telephone stations. These are outside fuses to be connected in the drop wire and are so constructed that if an arc persists after the fuse blows, the tube will be shattered and the wire will fall away by several feet, thus effectually opening the line.

When the exposed line is not more than one-half mile long, the No. 47-A, 7 ampere fuse, may be employed in connection with the No. 60-A protector. In case the exposed line is more than one-half mile long the No. 47-B, 14 ampere fuse, may be used in connection with the No. 79-A protector.



No. 12-A

PROTECTORS

For code numbers of fuses, protector blocks and protector micars, see tables having these headings.

MOUNTED SINGLY

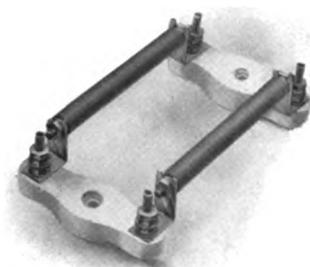
Code No.	Used with	Protecting against	Consists of	List Price each
12-A	Magneto telephone sets	High potential, abnormal and sneak currents	2, 7-ampere fuses with heat coils, 2 carbon cutouts and mounting....	\$ 1.22

WRITE FOR LIBERAL DISCOUNTS

Protectors—Continued



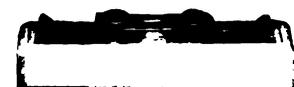
No. 58-A



No. 59-A



No. 60-A



No. 62-A



No. 68-A



No. 70-A

Code No.	Used with	Protecting against	Consists of	List Price each
58-A	Central battery or magneto telephone sets	High potential and abnormal currents	2 7-ampere fuses, 2 carbon cutouts and mountings..	\$ 0.77
58-B	Central battery or magneto telephone sets	High potential and abnormal currents	2 7-ampere fuses, 2 copper cutouts and mountings...	.93
58-C	Magneto street railway telephone sets	High potential and abnormal currents	2 ½-ampere fuses, 2 copper cutouts and mountings. Two protector micas are used between each pair of protector blocks..	.85
59-A	No. 60 type protector	Abnormal current	2 7-ampere fuses and mountings..	.48
60-A	Central battery or magneto telephone sets	High potential current	2 carbon cutouts and mounting....	.38
60-B	Central battery or magneto telephone sets	High potential current	2 copper cutouts and mounting....	.54
62-A	Miscellaneous circuits	Abnormal current	1 mica fuse and mounting; capacity ½ to 5 amperes as specified.....	.09
62-B	Miscellaneous circuits	Abnormal current	1 alarm fuse with mounting; capacity ½ to 5 amperes as specified	.195
68-A	Miscellaneous circuits	Abnormal current	1 mica fuse and mounting; capacity ½ to 5 amperes as specified.....	.135
70-A	Portable street railway telephone sets	High potential current	2 carbon cutouts and mounting....	1.23

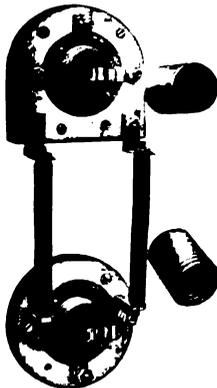
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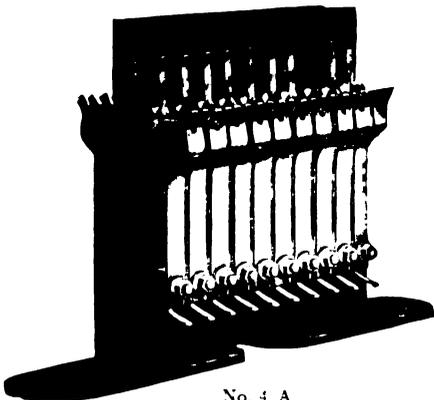
No. 74-A (open)



No. 74-A (closed)



No. 79-A



No. 4 A

Protectors—Continued

Code No.	Used with	Protecting against	Consists of	List Price each
74-A	Magneto street railway telephone sets	High potential and abnormal currents	2 ½-ampere fuses, 2 copper cutouts, repeating coil and mounting in iron box. Two protector micas are used between each pair of protector blocks.	\$ 11.18
79-A	Central battery and magneto telephone sets	High potential and abnormal currents	2 7-ampere fuses, 2 copper cutouts, 2 carbon cutouts, 1 retardation coil and mountings. Two protector micas are used between each pair of copper protector blocks.	1.64

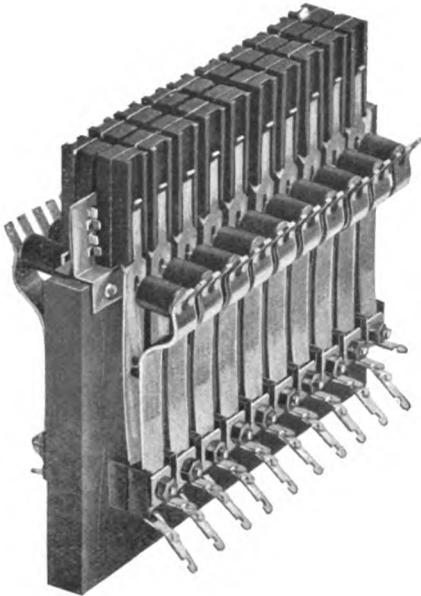
MOUNTED IN STRIPS

The No. 4 and No. 65 protectors are like the No. 84 and No. 78 respectively except the mounting and the No. 4 and No. 84 differ from the No. 65 and No. 78 only in the way the wires are connected to them. The Nos. 4 and 84 are designed for the outside wires to be connected first to a terminal block, and jumper wires to extend from the terminal block to one side of the protector, and the switchboard cables to the other. The Nos. 65 and 78 are just the reverse, that is, they are designed for the outside wires to be connected directly to one side of the protector, and jumper wires to extend from the other side to a terminal strip, where they are connected to the switchboard cables.

In ordering, specify the number of protectors per strip (noting that some protectors are single, while others are in pairs) and if the protector is for a frame give sufficient information for the drilling. If the protector is to be mounted on a frame which we have furnished, the name of the exchange with the location of the protectors on the frame is sufficient. The number of protectors on a strip for mounting on a frame should always be a multiple of twenty.

Code No.	Used with	Protecting against	Consists of	List Price each
4-A	Magneto central office	High potential and sneak currents	2 heat coils, 2 carbon cutouts and No. 10 protector mounting for mounting on wall	\$ 0.68
4-C	Central battery central office	High potential and sneak currents	2 heat coils, 2 carbon cutouts and No. 10 protector mounting for mounting on wall	.68
65-A	Magneto central office	High potential and sneak currents	2 heat coils, 2 carbon cutouts and No. 23 protector mounting for mounting on wall	.68
65-B	Central battery central office	High potential and sneak currents	2 heat coils, 2 carbon cutouts and No. 23 protector mounting for mounting on wall	.68

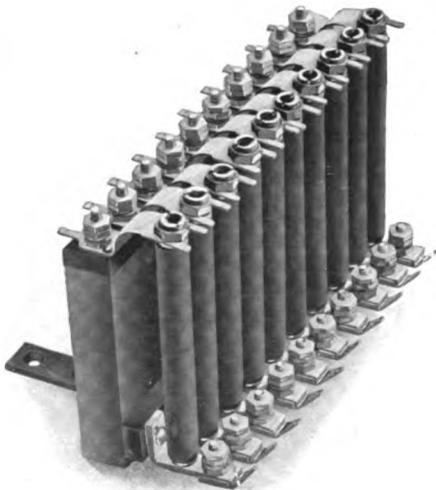
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No. 84-A



No. 7-D

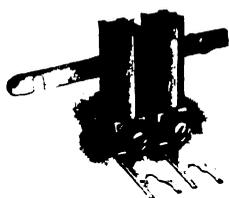


No. 7-A

Protectors—Continued

Code No.	Used with	Protecting against	Consists of	List Price each
78-A	Magneto central office	High potential and sneak currents	2 heat coils, 2 carbon cutouts and No. 24 protector mounting for mounting on frame	\$ 0.68
78-B	Central battery central office	High potential and sneak currents	2 heat coils, 2 carbon cutouts and No. 24 protector mounting for mounting on frame . . . . .	.68
84-A	Magneto central office	High potential and sneak currents	2 heat coils, 2 carbon cutouts and No. 11 protector mounting for mounting on frame . . . . .	.68
84-B	Central battery central office	High potential and sneak currents	2 heat coils, 2 carbon cutouts and No. 11 protector mounting for mounting on frame . . . . .	.68
7-A	Magneto and central battery central offices and cable terminals	Abnormal current	1 6-ampere fuse and No. 2 protector mounting for mounting on wall or in cable terminals (except No. 15 type) . . .	.24
7-D	Magneto and central battery central offices	Abnormal current	1 6-ampere fuse and No. 41 protector mounting for wall type main distributing frame27

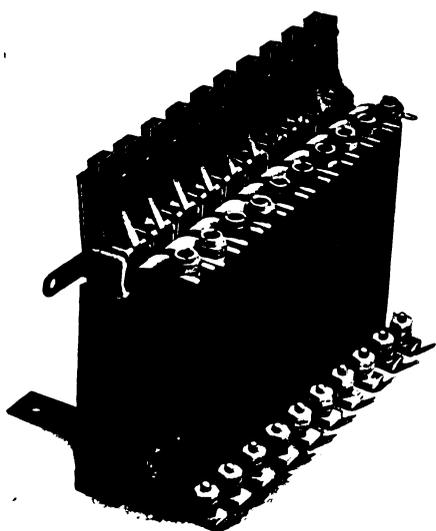
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No. 17-A

Protectors—Continued

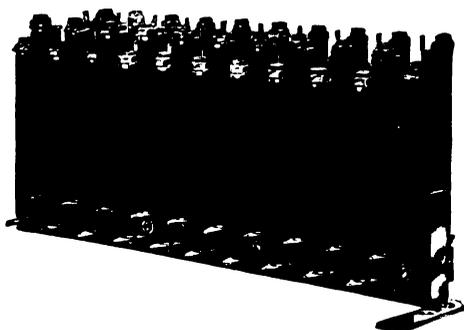
Code No.	Used with	Protecting against	Consists of	List Price each
17-A	No. 7-A protector	High potential current	2 carbon cutouts and No. 15 protector mounting for mounting on No. 7-A protector.....	\$ 0.41



No. 61-A

17-B	No. 7-A protector	High potential current	2 copper cutouts and No. 15 protector mounting for mounting on No. 7-A protector.....	.54
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61-A	Magneto and central battery central offices and cable terminals	High potential and abnormal currents	1 6-ampere fuse, 1 carbon cutout and No. 30 protector mounting for mounting on wall or in cable terminals (except No. 15 type)..	.45
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No. 77-A

77 A	No. 15 cable terminal	Abnormal current	1 6-ampere fuse and No. 51 protector mounting for mounting in No. 15 type cable terminal.....	.24
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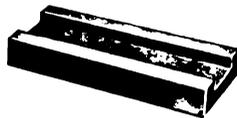
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PROTECTOR BLOCKS

A No. 1 protector block is used with a No. 2 and requires one or two No. 3 protector micas. A No. 5 block is used with another No. 5 and requires a No. 7 protector mica. A No. 9 protector block is used by itself and requires no protector mica. A No. 19 protector block is used with a No. 20 and requires one or two No. 10 protector micas.



No. 1



No. 2



No. 19



No. 20



No. 3



No. 10



No. 48



No. 9641

Code No.	Description	Used with Protectors number	List Price each
1	Plain carbon block with fuse metal.	4-A, 4-C, 12-A, 58-A, 60-A, 61-A, 65-A, 65-B, 70-A, 78-A, 78-B, 79-A, 84-A, 84-B.....	\$ 0.0225
2	Grooved carbon block without fuse metal.	4-A, 4-C, 12-A, 58-A, 60-A, 61-A, 65-A, 65-B, 70-A, 78-A, 78-B, 79-A, 84-A, 84-B.....	.0125
5	Grooved carbon block with fuse metal.	17-A.....	.02625
9	Wood dummy	4, 65, 78, 84.....	.0075
19	Copper block with two pins which fit into two bushings of the 20 protector block.	17-B, 58-B, 58-C, 60-B, 74-A, 79-A, 80-A.....	.04875
20	Copper block with two bushings which engage the two pins of the 19 protector block.	17-B, 58-B, 58-C, 60-B, 74-A, 79-A, 80-A.....	.07125

PROTECTOR MICAS

Code No.	Used with Protector Blocks number	Used with Protectors number	List Price per hundred
3	1, 2	4-A, 4-C, 12-A, 58-A, 60-A, 61-A, 65-A, 65-B, 70-A, 78-A, 78-B, 79-A, 84-A, 84-B.....	\$ 1.15
7	5	17-A.....	1.60
10	19, 20	17-B, 58-B, 58-C, 60-B, 74-A, 79-A.....	1.15

PROTECTOR MOUNTINGS

Code No.	Description	List Price each
48	Asbestos mat, 8 in. x 4 1/4 in. for placing under Nos. 58, 59 and 79 types protectors.....	\$ 0.021

PUSH BUTTONS

WOOD

Code Word	Diameter 1 3/4 in.		List Price each
	List No.	Finish	
Benton	9641	Natural oak	\$ 0.15
Benwood	9642	Antique oak	.15
Berkeley	9643	Walnut	.15
Berkley	9644	Ash	.15
Berkshire	9645	Cherry	.15
Berl	9646	Mahogany	.18
Diameter 2 1/8 in.			
Berea	9650	Natural oak	.15
Berger	9651	Antique oak	.15
Berholz	9652	Walnut	.15
Bernice	9653	Ash	.15
Bernie	9654	Cherry	.15
Berryville	9655	Mahogany	.18

WRITE FOR LIBERAL DISCOUNTS

Push Buttons—Continued



Diameter, 1 in. at base			
Code Word	List No.	Finish	List Price each
Bloomville	9703	Oak	\$ 0.14
Blodgett	9704	Ash	.14
Boca	9705	Walnut	.14
Bodan	9706	Mahogany	.14
Boise	9707	Rosewood	.14

NEW MITE PUSH

The smallest push made. Fits in $\frac{1}{4}$ in. hole, is $\frac{3}{8}$ in. deep and has a face $\frac{3}{8}$ in. in diameter. Held in place by side springs. Centers will not turn. Wire connectors will take any size wire.



No. 122-W

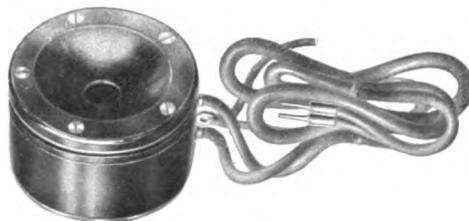
Code Word	List No.	Finish	List Price each
Famelict	2889	Light or dark pearl center	\$ 0.15
Fames	2890	Black or white celluloid center	.15
Organiscos	23695	Red of blue celluloid center	.25

PEAR PUSHES

Bingham	9680	Oak	\$ 0.50
Ossifragum	9681	Cherry	.50
Birchton	9682	Walnut	.50

RECEIVERS

Code No.	Description	Used with	List Price each
122-W	Standard bipolar hand receiver, hard rubber case.	Telephone sets, desk stands, transmitter arms, etc.	Without cord \$ 1.52 With 3 ft. No. 92 cord 1.65



No. 125-W

Code No.	Description	Used with	List Price each
125-W	Lineman's receiver, hard rubber case, metal front and back. Includes a 3 ft. No. 15 cord.	No. 1006 type test sets . . .	With cord \$ 3.45



No. 128-W

Code No.	Description	Used with	List Price each
128-W	Standard bipolar head receiver, hard rubber case. This receiver used in combination with the No. 234 transmitter takes a No. 87 cord; when used with a No. 85 plug it takes a No. 30 cord.	Operator's telephone set all switchboards . . .	Without cord \$ 1.95 With 6 ft. No. 87 cord 2.70 With 6 ft. No. 30 cord 2.31

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Receivers—Continued



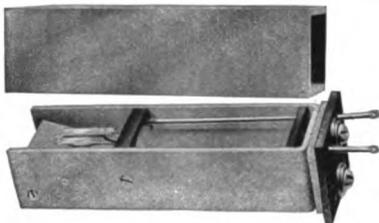
No. 133-W



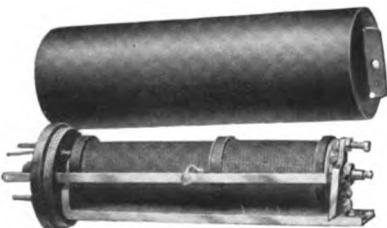
No. 143-W



No. 44-A



No. 87-A



No. 89-A

Code No.	Description	Used with	List Price each
131-W	Metal case bipolar receiver.	No. 1 hand set handle, No.1001 hand set.....	Without cord \$ 2.30
133-W	Insulated bipolar hand receiver, hard rubber case	No. 1302-A and 1314-A telephone sets...	Without cord 1.90 With 3 ft. No. 311 cord.... 2.24
141-W	Small metal case bipolar receiver	No. 1002-A hand set.....	Without cord.. 1.90
143-W	Concealed binding post hand receiver composition case.	Telephone sets, desk stands, transmitter arms, etc.....	Without cord.. 1.20 With 3 ft. No. 92 cord.... 1.33
144-W	Concealed binding post hand receiver hard rubber case.	Telephone sets, desk stands, transmitter arms, etc.	Without cord.. 1.52 With 3 ft. No. 92 cord.... 1.65

RELAYS

The wide range of types and resistances of our relays makes it impracticable to catalogue them all here. The following views are shown to convey an idea of the types generally used. The resistances of the windings and the arrangements of contacts are varied to meet the requirements of the circuits in which they are placed.

No. 44 Type Is self-restoring. Has a line operating coil and a restoring coil. Used when a local signal circuit is to be operated by ringing on the line. When the line coil is energized, the front armature is released and falls forward, closing a local contact. When the restoring coil is energized, the front armature is restored to the vertical position. Makes one contact when operated.

No. 87 Type Closes a local circuit only while the line is being rung upon. Has flexible contact springs and a heavy armature of sluggish action so that the local circuit remains closed as long as there is ringing current on the line. Used in trunk circuits between central offices. Has a cross-talk proof cover. Makes one contact when operated.

No. 89 Type Has an operating coil and a locking coil. Made to respond to ringing current and to close a circuit through its armature contact and locking coil so that the relay remains in the operated position after ringing has ceased. Used for toll line signalling and in toll cord supervisory circuits. Has cross-talk proof cover. Makes one contact when operated.

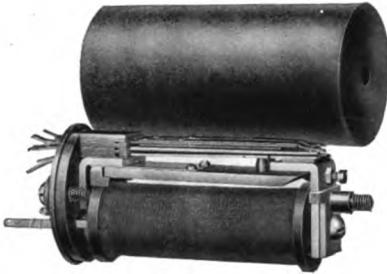
PRICES ON REQUEST

Relays—Continued



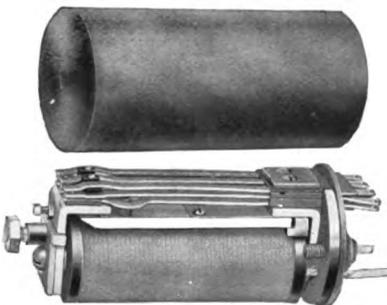
No. 118-A

No. 114 Type Operates on direct current. Has one or two operating windings. Used when a firmly established back contact is desired. Makes one contact and breaks one.



No. 122-A

No. 118 Type Sensitive relay for operating on direct current. For general use where a single contact is to be made. Has cross-talk proof cover. One form of this relay has in addition a back contact.



No. 125-A

No. 122 Type Operated by direct current and generally used where it is desired to break two and make two contacts when the relay is energized.

No. 125 Type Operated by direct current and generally used where it is desired to break three and make three contacts when the relay is energized.



No. 163-E

No. 163 Type The type of line and cut-off relay used with the No. 1 switchboard. Comprises a line relay which controls the signal lamp circuit, and a cut-off relay which operates and cuts off the line relay and signal equipment when the call is answered.



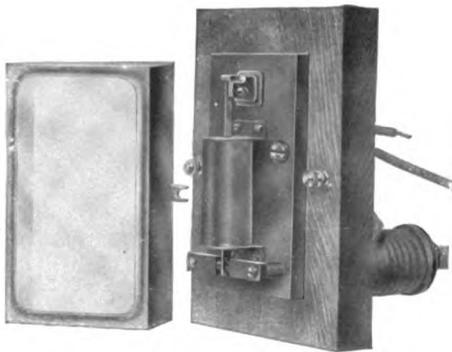
No. 189 B

No. 189 Type A small relay operating on direct current. Used as a line relay with the No. 10 switchboard. Makes one contact when operated.

PRICES ON REQUEST

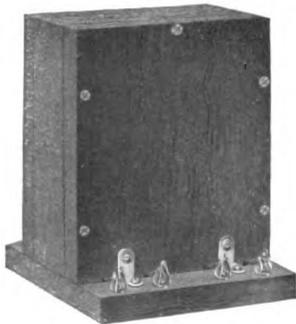
POLARIZED RELAYS

These are used in connection with the reverse current coil of a circuit breaker, to prevent the storage battery discharging through the generator in case the latter stops.



No. 154-A Relay

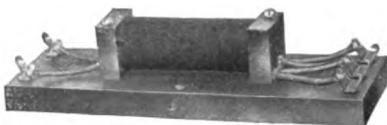
Code No.	Capacity amperes	For	List Price each
154-A	50	30 volt battery.....	\$ 22.50
154-B	100	30 volt battery.....	30.00
154-C	200	30 volt battery.....	30.00
154-D	300	30 volt battery.....	30.00
154-E	400	30 volt battery.....	30.00
154-F	600	30 volt battery.....	36.00
154-G	800	30 volt battery.....	75.00
154-H	1,000	30 volt battery.....	75.00



No. 8-A

REPEATING COILS

The No. 8-A repeating coil is mounted in a wooden box, and the Nos. 20-A and 30-A have a cloth covering. With these exceptions the coils listed below are enclosed in iron cross-talk proof shells. The No. 25-E is provided with a hard rubber base. All others are mounted on wooden bases.



No. 20-A

Code No.	Resistance ohms	Size of Base inches	Use	List Price each
8-A	2 Primary windings, 52.5 each. 2 Secondary windings, 76 each.	3 1/8 x 4 1/4	Cord circuits Nos. 1006, 1101, 1102 and 1010 magneto switchboards.....	\$ 2.40



No. 25 E

20-A	1 Primary winding, 277. 1 Secondary winding, 40. 1 Tertiary winding, non-inductive, 360	5 7/8 x 1 1/4	Trunk operator's telephone circuit, No. 1 switchboard.....	1.15
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No. 30-A

25-E	1 Primary winding, 46. 1 Secondary winding, 46.	3 1/4 x 4 7/8	Street railway telephone sets Nos. 1278 - A and 1302-A.....	5.05
30-A	1 Primary winding, 385. 1 Secondary winding, .03.	5 1/2 x 5 1/2	Tone test circuit.....	6.25

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Repeating Coils—Continued



No. 37-A

Code No.	Resistance ohms	Size of Base inches	Use	List Price each
37-A	2 Primary windings, 35 each.	11 x 8½	Phantom toll circuits and simplex circuits.....	\$ 18.90
	2 Secondary windings, 35 each.			
39-A	First winding, 62; second winding, 37; third winding, 40.	10½ x 3¼	Phantom toll circuits and simplex circuits.....	13.70

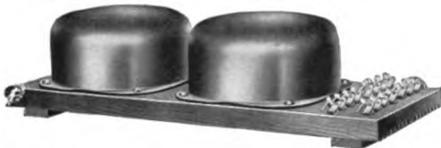
These have two coils mounted on one base and are for use on standard repeating coil racks. Size of base is 10½ in. by 4 in.

The windings of the Nos. 25-C and 25-G are the same as those of the Nos. 25-A and F respectively, except that they are brought out to terminals on both ends of the base.



No. 39-A

Code No.	Resistance ohms	Use	List Price each
25-A	2 Primary windings, 23 each.	Cord circuits and incoming trunk circuits on central battery switchboards.....	\$ 7.65
	2 Secondary windings, 23 each.		
25-F	2 Primary windings, 23 each.	48 volt battery long distance and incoming toll trunks central battery switchboards.....	8.30
	2 Secondary windings, 23 each.		
	2 Non-inductive windings, 40 each.		
25-C	2 Primary windings, 23 each.	Cord circuits and incoming trunk circuits of central battery switchboards.....	7.65
	2 Secondary windings, 23 each.		
25-G	2 Primary windings, 23 each.	48 volt battery long distance and incoming toll trunks central battery switchboards.....	8.30
	2 Secondary windings, 23 each.		
	2 Non-inductive windings, 40 each.		



No. 25-A



No. 25-C

These have one coil per base, and are for use on standard repeating coil racks. Size of base is 10½ in. by 4 in.

The windings of the Nos. 26-C and 26-F are the same as those of the Nos. 26-A and 26-E respectively, except that they are brought out to terminals on both ends of the base.

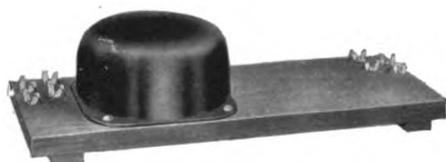


No. 26-A

Code No.	Resistance ohms	Use	List Price each
26-A	2 Primary windings, 23 each.	Cord circuits and incoming trunk circuits of central battery switchboards.....	\$ 4.05
	2 Secondary windings, 23 each.		

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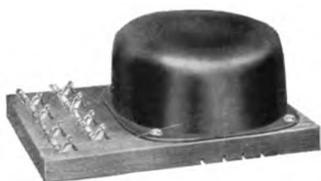
Repeating Coils—Continued



No. 26-C

Code No.	Resistance ohms	Use	List Price each
26-E	2 Primary windings, 23 each.	48 volt battery long distance and incoming toll trunks central battery switchboards.....	\$ 4.25
	2 Secondary windings, 23 each.		
	2 Non - inductive windings, 40 each.		
26-C	2 Primary windings, 23 each.	Cord circuits and incoming trunk circuits of central battery switchboards.....	4.05
	2 Secondary windings, 23 each.		
26-F	2 Primary windings, 23 each.	48 volt long distance and incoming toll trunks central battery switchboards.....	4.25
	2 Secondary windings, 23 each.		
	2 Non - inductive windings, 40 each.		

These have a single coil on a base 6 in. by 4 in. and are used where a single coil mounted on a short base is desired.



No. 27-A

Code No.	Resistance ohms	Use	List Price each
27-A	2 Primary windings, 23 each.	Cord circuits and incoming trunk circuits on central battery switchboards.....	\$ 3.95
	2 Secondary windings, 23 each.		
27-C	2 Primary windings, 23 each.	48 volt battery long distance and incoming toll trunks on central battery switchboards.....	4.25
	2 Secondary windings, 23 each.		
	2 Non - inductive windings, 40 each.		

These coils may be used in single office districts. The windings of the "B" type coils are the same as those of the "A" type, except that they are brought out to terminals on only one end of the base.



No. 11-A

Code No.	Resistance ohms	Use	List Price each
11-A	4 windings, 38 each.	Subscriber cord circuits at central battery switchboards ..	\$ 2.50
11-B	4 windings, 38 each.	Subscriber cord circuits at central battery switchboards ..	2.50
12-A	4 windings, 22 each.	Trunk and toll circuits central battery switchboards.....	3.45
12-B	4 windings, 22 each.	Trunk and toll circuits central battery switchboards.....	3.45

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RESISTANCES

No. 1 Type



No. 1

These have a brass core, fibre heads and are enclosed in a brass shell. They have one coil.

Code No.	Resistance ohms	List Price each	Code No.	Resistance ohms	List Price each
1-A	400	\$ 0.30	1-K	30	\$ 0.30
1-B	2500	.45	1-L	100 (Non inductive)	.30
1-C	500	.30	1-N	700	.30
1-D	60	.30	1-P	5	.30
1-E	300	.30	1-R	250	.30
1-F	1000	.45	1-T	350	.30
1-G	3000	.60	1-U	45	.30
1-H	200	.30	1-W	2000 (Non inductive)	.45
1-J	20	.30			

No. 5 Type



No. 5

These have a wooden spool and one winding.

5-A	120	.70	5-S	9000	1.60
5-B	20	.70	5-T	20000	1.90
5-C	60	.70	5-U	450	.85
5-D	50	.70	5-W	150	.70
5-E	90	.70	5-Y	1450	1.15
5-F	10	.75	5-Z	8550	1.50
5-G	10000	1.50	5-AA	300	.70
5-H	500	.85	5-AB	9250	1.50
5-J	600	.85	5-AC	2000	1.12
5-K	750	1.15	5-AD	8800	1.60
5-L	1000	1.15	5-AE	1200	1.15
5-M	2500	1.15	5-AF	100	.70
5-N	800	1.15	5-AG	200	.70
5-P	180	.70	5-AH	250	.70
5-R	40	.70			

No. 18 Type



No. 18

These have a micanite core and two terminals.

18-A	37	.35	18-U	100	.35
18-B	40	.35	18-W	133	.35
18-C	83	.35	18-Y	90	.35
18-D	120	.35	18-Z	67	.35
18-E	140	.35	18-AA	95	.35
18-F	150	.35	18-AB	45	.35
18-G	200	.35	18-AC	500	.35
18-H	210	.35	18-AD	240	.35
18-J	30	.35	18-AE	600	.35
18-K	80	.35	18-AF	300	.35
18-L	170	.35	18-AG	226	.35
18-M	53	.35	18-AH	320	.35
18-N	180	.35	18-AJ	400	.35
18-P	130	.35	18-AK	60	.35
18-Q	110	.35	18-AL	4	.35
18-R	10	.35	18-AM	250	.35
18-S	20	.35	18-AN	350	.35
18-T	50	.35			

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Resistances—Continued

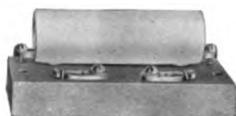
No. 19 Type

These have a micanite core, two windings and three terminals, the middle terminal being common to one end of each of the windings.



No. 19

Code No.	Resistance ohms	List Price each	Code No.	Resistance ohms	List Price each
19-A	37 and 37	\$ 0.38	19-Y	15 and 15	\$ 0.38
19-B	40 and 40	.38	19-Z	120 and 120	.38
19-C	40 and 83	.38	19-AA	15 and 90	.38
19-D	83 and 83	.38	19-AB	120 and 210	.38
19-E	30 and 30	.38	19-AC	60 and 83	.38
19-F	40 and 60	.38	19-AD	150 and 150	.38
19-G	40 and 100	.38	19-AE	30 and 120	.38
19-H	40 and 120	.38	19-AF	140 and 140	.38
19-J	10 and 40	.38	19-AG	120 and 160	.38
19-K	100 and 100	.38	19-AH	240 and 240	.38
19-L	60 and 60	.38	19-AJ	200 and 200	.38
19-M	20 and 20	.38	19-AK	70 and 70	.38
19-N	5 and 8	.38	19-AL	40 and 68	.38
19-P	20 and 130	.38	19-AM	50 and 50	.38
19-R	25 and 120	.38	19-AN	260 and 260	.38
19-S	60 and 90	.38	19-AP	180 and 180	.38
19-T	25 and 25	.38	19-AR	60 and 260	.38
19-U	25 and 90	.38	19-AS	170 and 170	.38
19-W	10 and 10	.38			



No. 31-A

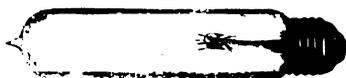
No. 31 Type

A steel tube enameled resistance; mounted on a wood base; used in railway composite circuit.

Code No.	Resistance ohms	List Price each
31-A	1,200	\$ 1.15

RESISTANCE LAMPS

These are designed specially to serve as resistance lamps having tubular bulbs 1 1/4 in. diameter with carbon filament. They are fitted with Edison bases.

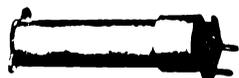


No. 1

Code No.	Resistance ohms	List Price each
1-A	660	\$ 0.60
1-B	220	.43
1-C	300	.60
1-D	100	.60

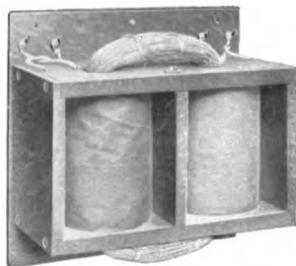
RETARDATION COILS

These represent a few of the commonly used types which we manufacture.



No. 1-A

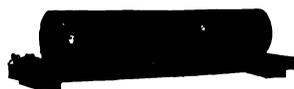
Code No.	Resistance ohms	Use	List Price each
1-A	1 winding 600	Telephone circuit desk operator, No. 1 switchboard.....	\$ 1.00
1-C	1 winding 200	Telephone circuit Nos. 1006, 1010, 1101 and 1102 magneto switchboards.....	.90
1-F	1 winding 500	Telephone circuit, desk operator, No. 1 switchboard and cord circuit No. 9 switchboard.....	.90
1-G	1 winding 750	Telephone circuit, Nos. 101, 102 and cordless private exchanges	1.00
1-K	1 winding 1000	Long line circuit No. 10 switchboard	1.05
5-K	2 windings 15 each	Composite circuit and No. 9 switchboard.....	11.80
5-L	2 windings 25 each	Composite circuit.....	12.85
5-N	4 windings 250 each	Duplex telegraph circuit.....	16.20
5-R	2 windings 20 each	Composite circuit.....	1.80



No. 5-K

WRITE FOR LIBERAL DISCOUNTS

Retardation Coils—Continued



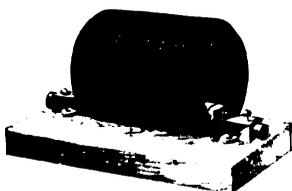
No. 8-B



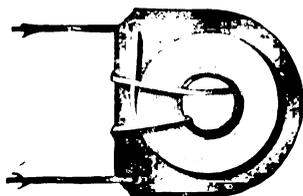
No. 12-A



No. 12-K



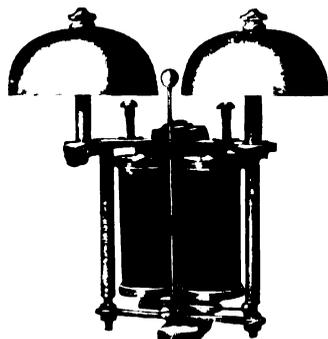
No. 31-B



No. 45-A



No. 44-B



No. 2-AG

Code No.	Resistance ohms	Use	List Price each
8-B	2 windings 85 each	Cord circuit Nos. 4, 101, 102 and cordless private exchanges.....	\$ 3.25
8-L	2 windings 175 each	No. 4 private exchange.....	2.55
12-A	1 winding 165	Operator's telephone circuit, Nos. 1, 9 and 10 switchboards, Nos. 101 and 102 private exchanges.....	.85
12-G	1 winding 2	Telephone set No. 1312-A.....	.75
12-L	1 winding 400	Operator's telephone circuit, No. 4 private exchange.....	1.50
12-M	1 winding 2.3	Telephone set No. 1314-A.....	.75
12-H	1 winding	Choke coil used in primary circuit of battery driven 38 watt dynamotor	6.75
12-J	1 winding	Choke coil used in primary circuit of battery driven 75 watt dynamotor	6.75
12-K	1 winding	Choke coil used in primary circuit of battery driven 150 watt dynamotor.....	6.75

The No. 31 type for use with lightning arresters for the protection of overhead direct and alternating current power circuits; mounted on a temporary base for shipment.

Code No.	Capacity amperes	List Price each
31-B	25	\$ 4.30
31-D	50	7.50
31-F	100	17.65
31-H	150	25.90

Code No.	Resistance ohms	Use	List Price each
45-A	2 windings .04 each	In No. 79 type protector.....	\$ 0.20
44-B	2 windings 200 each	This has two separate toroidal coils on the same wooden base. Each coil is enclosed in a cross talk-proof shell. Used in the cord circuit of No. 1 toll switchboard.....	14.25

RINGERS

For Telephone Sets

These are equipped with No. 16 gongs and the necessary gong mountings and gong nuts. Different gongs may be used if desired, by changing the gong mountings and nuts and in ordering these it will be sufficient to specify, No.ringers equipped with No.gongs.

Code No.	Type	Type of Gong Posts	Resistance ohms	List Price each
2-AG	Long unbiased	Long	1000	\$ 1.65
2-BG	Long unbiased	Long	2500	2.25
2-FG	Long unbiased	Long	1600	2.25
3-AG	Long unbiased	Medium	1000	1.65
3-BG	Long unbiased	Medium	2500	2.25
4-AG	Long unbiased	Short	1000	1.65
4-BG	Long unbiased	Short	2500	2.25

WRITE FOR LIBERAL DISCOUNTS

Ringers—Continued



No. 6-AG

Code No.	Type	Type of Gong Posts	Resistance ohms	List Price each
6-AG	Long biased	Long	1000	\$ 1.65
6-BG	Long biased	Long	2500	2.25
6-FG	Long biased	Long	1600	2.25
7-AG	Long biased	Medium	1000	1.65
7-BG	Long biased	Medium	2500	2.25
8-AG	Long biased	Short	1000	1.65
8-BG	Long biased	Short	2500	2.25

RINGER INDICATORS

Used in connection with ringers to indicate the calling line.

Code No.	List Price each
1-A	\$ 0.45



No. 1-A operated and non operated



No. 5-G

SERVICE METERS

These are for counting the number of effective calls made on a telephone line. They are mounted at the central office on steel mounting plates.

Code No.	Outer Winding Resistance ohms	Inner Winding Resistance ohms	Operates on volts	Does not Operate on volts	List Price each
5-G	40	500	26.5	25	\$ 3.70

These are for counting the number of connections made by an operator. They are mounted on steel mounting plates.

Code No.	Resistance ohms	Operating Current amperes	Non-operating Current amperes	List Price each
5-H	.25	1.3	1.2	\$ 3.40



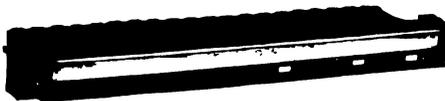
No. 4-E Signal, No. 2 Mounting



No. 32-A



No. 34-A



No. 42-A Signal, No. 79 Mounting

SIGNALS

The No. 4 has two coils and is used principally as a line signal in private exchanges employing magnetic signals and operating on a central battery basis.

The No. 32 has a single coil and is used principally as a supervisory signal in private exchanges employing magnetic signals and operating on a central battery basis. It is also used as the line signal in the cordless private exchange switchboards.

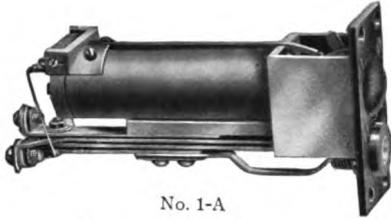
The No. 34 is used as a line signal in the No. 9 switchboard and in the trunk circuits of the No. 105 magneto switchboard. The Nos. 39 and 41 signals are used in the cord circuits of the No. 9 switchboard.

The No. 42 is used as a busy signal with multiple toll line jacks and mounts on same centers as jacks.

The Nos. 4, 34, 39 and 41 signals are numbered in paint on the shutter, numbering to be specified.

Code No.	Resistance ohms	List Price each
4-E	250	\$ 1.90
32-A	33.3	2.35
34-A	80	2.25
34-B	300	2.40
39-A	2 windings 250 each	3.30
41-B	2 windings 100 each	3.25
42-A	100	.90

WRITE FOR LIBERAL DISCOUNTS



No. 1-A



No. 62

Code No.	For Signals number	Number of Signals per Strip	Size of Face Plate inches	List Price
2	4	10	15x 1 7/8	The price of the signal mounting is included in the price of the signal if the strip is fully equipped
29	34, 39, 41	5	7 1/2 x 1 3/8	
60	34, 39, 41	15	24 1/8 x 1 3/8	
61	34, 39, 41	20	24 1/8 x 1 3/8	
62	34, 39, 41	12	21 x 1 3/8	
77	42	10	9 3/16 x 7/8	
78	42	10	7 3/8 x 7/8	
79	42	20	9 3/8 x 7/8	

Signals—Continued

The No. 1-A Combination Jack and Signal is used as a line signal for the Nos. 1101 and 1102 magneto switchboards. It is designed for magneto switchboards when the jack is to be mounted adjacent to the signal. The signal is restored automatically by inserting a plug in the associated jack.

Code No.	Description	Resistance ohms	List Price each
1-A	Combination jack and signal	500	\$ 2.65

SIGNAL MOUNTINGS

The following are the principal mountings used with the signals described above.

CENTRAL BATTERY SWITCHBOARDS
No. 1 SUBSCRIBER AND TRUNK SWITCHBOARDS

The No. 1 switchboard is a central battery lamp signal and lamp supervisory switchboard arranged for positive supervision, and is recommended for use for all equipments where a central battery exchange of more than 1600 lines is desired, or for a smaller equipment, where the liability of growth within a few years to a system exceeding 1600 lines is calculated.

For small central battery exchanges we recommend the No. 9 or the No. 10 switchboards which are described herein.

The No. 1 switchboard is a multiple board, the multiple jacks being bridged across the line, and appearing once in each section, so that every operator has a multiple jack of each subscriber's line within her reach.

These boards are furnished in various standard sizes from 3000 to 9600 lines; the commonly used of these being the 3000 line, 4900 line and 9600 line boards. Any equipment desired may be provided with the original installation, as the equipment is so arranged that additions may be installed at any time without interrupting the service.

The 3000 line section is a five panel board, arranged for two operators' positions, 400 answering jacks, 300 outgoing trunk multiple and is 6 ft. 6 in. high, 4 ft. 3 1/4 in. long and 3 ft. 7 1/4 in. deep from the front of the keyshelf to the rear curtain.

The 4900 line section has seven panels, is arranged for three operators' positions, 560 answering jacks, 500 outgoing trunk multiple and is 6 ft. 10 in. high, 5 ft. 11 1/4 in. long and 4 ft. 1/4 in. deep from the front of the keyshelf to the rear curtain.

The 9600 line section has eight panels, is arranged for three operators' positions, 640 answering jacks, 600 outgoing trunk multiple, and is 7 ft. 8 1/2 in. high, 5 ft. 8 in. long and 4 ft. 4 1/2 in. deep from the front of the keyshelf to the rear curtain.

The first two of these boards are what are commonly known as the No. 49 jack boards, on account of their being arranged for No. 49 jacks, and the latter is known as the No. 92 jack board, because it is arranged for No. 92 jacks.

The No. 49 and No. 92 jacks are similar with the exception that the No. 92 is smaller and is assembled on a metal mounting, while the No. 49 jack is assembled on a hard rubber mounting. The No. 92 jacks being smaller are mounted on closer centers, and for this reason are used in place of the No. 49 jacks where large multiple equipments are necessary.

It will be understood from the above that the plugs and cords, as well as the various other pieces of apparatus used in these sections, will be different. These differences, however, are only in dimensions, and do not in any way affect the operation, strength and efficiency of the equipment.

PRICES ON REQUEST

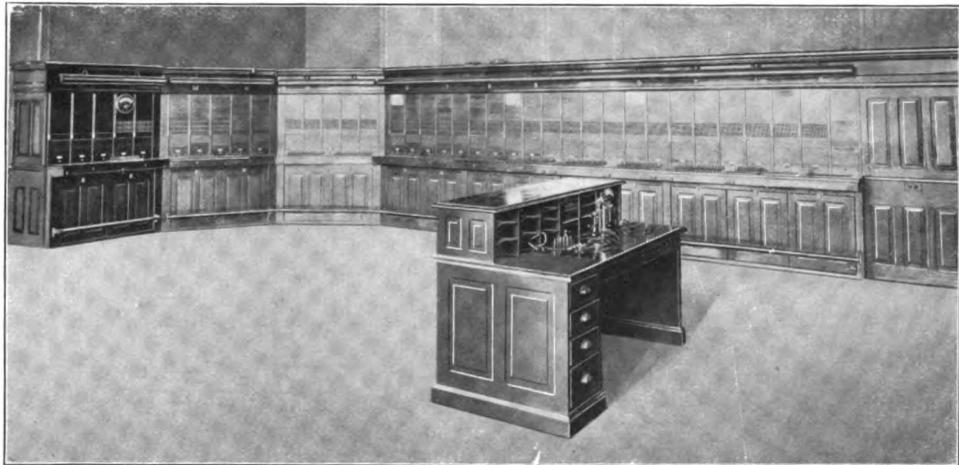
Central Battery Switchboard—Continued

Line and cut-off relays are provided for each subscriber line circuit. The function of the line relay is to operate when a subscriber takes the receiver off the hook, thus lighting the line lamp and signalling the operator. The cut-off relay operates when the call is answered, cutting off the line battery and extinguishing the line lamp. From this point on during a conversation, the talking battery is taken from the cord circuit through the repeating coil, separate coils being provided with each pair of cords.

In multiple office districts, i.e., in districts where there are two or more exchanges, as for instance, in a large city where the number of subscribers is such that they can be accommodated only by a number of central offices, instead of by only one exchange, or where the area covered is such that it is more economical to install several exchanges than to try to handle the business from one point, trunk sections are recommended for use in conjunction with the No. 1 subscriber board.

In these trunk sections appear multiple jacks, bridged across the subscribers' lines, so that a multiple jack of each line is within the reach of every one of the trunk operators.

In cases of this kind, trunk equipments are provided, terminating in jacks at the subscriber board and in incoming trunks, consisting of plugs and cords with the necessary repeating coils, relays, resistances, lamps and keys at a distant exchange. These incoming trunks are placed in the trunk sections, and when a subscriber connected to one exchange desires to converse with a subscriber connected to another exchange,



Operating Room

the operator at the subscriber board where the call originates, has a trunk assigned over a call wire, by the trunk operator at the distant exchange, who then makes connection with the trunk multiple jack of the subscriber's line with which the calling subscriber desires connection.

The trunk sections are in large exchanges placed in a separate line from the subscriber sections, but in exchanges where the number of trunks is not large the sections may be placed in the same line with the subscriber board. Subscriber sections may be readily converted into trunk sections by merely changing the equipment.

The frames of these sections are made of steel to give them strength and rigidity. All the woodwork on the front of the boards is of selected mahogany, and is very carefully fitted and finished. The rear of the board is provided with rolling wooden curtains. Lighting equipment is provided with each section.

These switchboards, both subscriber and trunk, are equipped with the necessary miscellaneous circuits, such as night bell, auxiliary signal, instruction, supervisors, tone test, etc.

FRAMES AND RACKS, USED WITH No. 1 SWITCHBOARD

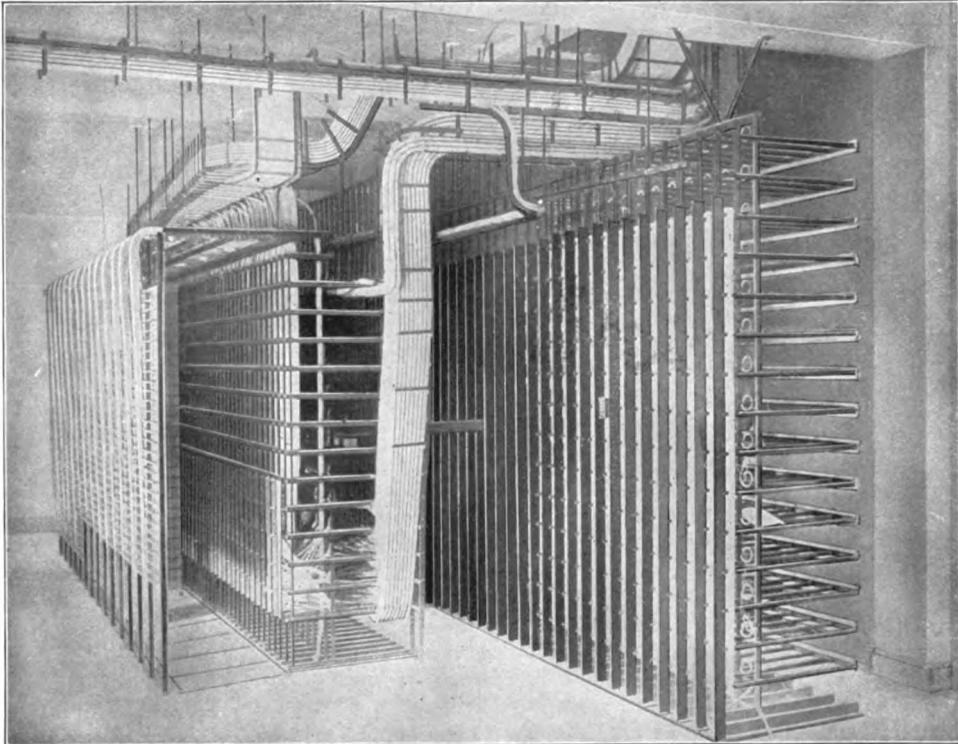
MAIN DISTRIBUTING FRAME

A main frame of iron construction is provided with this board, to one side of which the outside lines are connected, the other side being connected by cable to the intermediate frame. On it are mounted protectors, consisting of heat coils and carbon block arresters. Adequate provision is made for cross connecting.

PRICES ON REQUEST

Frames and Racks—Continued**INTERMEDIATE FRAME**

An intermediate distributing frame of iron construction is provided, on the horizontal side of which are mounted terminal strips, to which the cables from the main frame are soldered. Terminal strips are placed on the vertical side of this frame, and from these the cables are run to the answering jacks in the switchboard and to the relays on the relay rack. Ample provision is made on this frame for cross connecting.



Terminal Room

RELAY RACK

A relay rack of iron construction is provided on which to mount the line relays and the incoming trunk relays in case trunking equipment is necessary. In a very large exchange a separate relay rack is provided for the trunk relays.

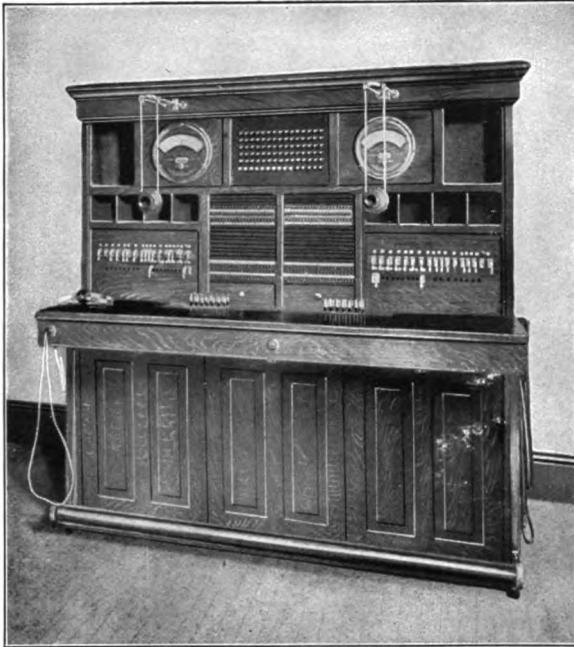
COIL RACK

A coil rack of iron construction is provided on which the repeating coils, wired in the cord circuits, are mounted. These coils are connected to the cord circuits by cable run from the coil rack to the switchboard sections.

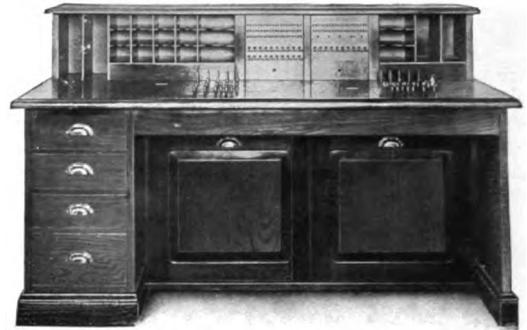
FUSE PANEL

At the end of the coil rack is placed a fuse panel of slate $1\frac{1}{2}$ in. thick, on which are mounted the fuses for the cord circuits and operators' sets, as well as the line fuses and other fuses necessary to protect the miscellaneous circuits. This fuse panel is generally arranged for alarm type fuses, so that when the fuse blows, a connection is made with an alarm fuse bus-bar closing a circuit through a bell, thus giving the signal that one of the fuses has burned out. (This fuse panel is separate from the power fuse panel on which the fuses used in the power circuits are mounted.)

PRICES ON REQUEST



No. 9 Wire Chief's Desk



No. 2 Chief Operator's Desk

DESKS

The necessary desks, such as Wire Chief's, Chief Operator's, Manager's and Information Desks, will be provided with the multiple switchboard.

POWER PLANT

The power plant is laid out on the basis of 24 volt battery supply for local connections and 48 volt supply for toll and long distance connections. For charging the storage batteries, it is considered desirable to have duplicate

sources of power and the usual arrangement is to have two charging sets entirely independent of each other, one to operate from the city power supply and the other run from a gas engine installed at the exchange, the latter is to be used as an emergency set in case of accidents, or a breakdown in the city plant.

To provide ringing current, duplicate ringing machines are ordinarily furnished, one run from the storage battery and the other from the city power supply. These sets may be equipped with interrupters for tone, trouble and busy test service.

No. 9 SWITCHBOARD

The No. 9 switchboard is used in offices up to 800 lines capacity. Two types of this board are furnished, one for use in offices to handle only local and toll traffic and the other in offices such as those in the vicinity of large telephone centers, where calls will be trunked to other exchanges. These are known as the No. 9-D and No. 9-C switchboards respectively, and differ principally in that the No. 9-D is arranged for 24 and the No. 9-C for 38 volt battery supply.

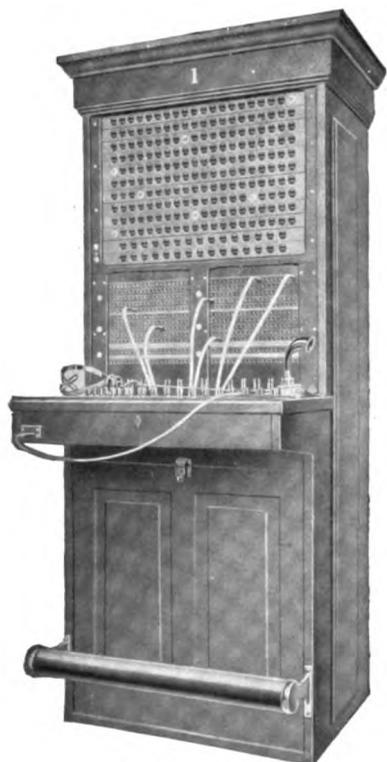
These switchboards are furnished with magnetic line and supervisory signals, and are arranged for negative supervision.

The cord circuits on the subscriber section are equipped with condensers, and those on the toll sections with repeating coils. The toll cord circuits are universal, i.e., they are entirely automatic, being arranged so that either toll to toll or toll to local connections can be made without any additional work by the operator, no keys or switching devices, other than the regular listening and ringing keys, being necessary.

The board is self-contained, terminal strips and connecting rack being mounted on the rear to provide for cross-connecting the multiple jacks and line signals.

This section is a two-panel single operator's section with a capacity for 400 multiple jacks and 200 line signals. The lines are multiplexed every second section, making a total multiple capacity of 800 lines.

PRICES ON REQUEST



No. 9 Switchboard

No. 9 Switchboard—Continued

The following gives the capacity of the subscriber, trunk, toll and combination subscriber and toll sections:

Subscriber Section

	Capacity
Operator's position	1
Subscriber Multiple jacks—20 per strip	400
Trunk Multiple jacks—10 per strip	40
Subscriber line signals (see note)	200
Ring down trunk drops	As specified
Subscriber cord circuits	15
Operator's telephone circuit	1
Auxiliary signal circuit	1
Ringing circuit	1
Call wire circuits	8
Night bell circuit	1
Test lines to wire chief	2

Note.—When a section is equipped with No. 22-A drops for ring down trunks the subscriber line signal capacity will be reduced by 20 for each 15 of these trunks.

Incoming Call Wire Trunk Section

	Capacity
Operator's position	1
Subscriber multiple jacks—20 per strip	400
Trunk multiple jacks—10 per strip	30
Busy back jacks—10 per strip	10
Incoming call wire trunks	28
Trunk operator's telephone circuit	1
Call wire signal circuit	1
Ringing circuits	2
Call wire circuits	8

Toll Section

	Capacity
Operator's position	1
Subscriber multiple jacks—20 per strip	400
Toll and trunk multiple jacks—10 per strip	40
Central battery toll line signals	As specified
Magneto toll line drops	As specified
Through toll line drops	As specified
Recording trunks drops	As specified
Universal toll cord circuits (see note)	7
Operator's telephone circuit	1
Auxiliary signal circuit	1
Ringing circuit	1
Call wire circuits	4
Night alarm circuit	1
Test lines to wire chief	2

Note.—The toll cord circuits are all wired so that they can be used for either magneto or central battery toll and local subscriber lines, and with the repeating coil out on through toll connections or in on all connections. The standard arrangement is to leave the repeating coil out on the first 5 cords and in on the last 2.

Combination Subscriber and Toll Section

	Capacity
Operator's position	1
Subscriber multiple jacks—20 per strip	400
Toll and trunk multiple jacks—10 per strip	40
Subscriber line signals (see note No. 1) }	120
Central battery toll line signals..... }	
Magneto toll line drops }	20
Through toll line drops }	
Recording trunk drops }	
Universal toll cord circuits (see note No. 2)	5
Operator's telephone circuit	1
Auxiliary signal circuit	1
Call wire circuits	4
Night alarm circuit	1
Test line to wire chief	2

PRICES ON REQUEST

No. 9 Switchboard—Continued

Notes:—

1. If a section is equipped with No. 22-A drops for ring down trunks the subscriber line signal capacity will be reduced by 20 for each 15 of these trunks.

2. The toll cord circuits shall all be wired so that they can be used for either magneto or central battery toll and local subscriber lines, and with the repeating coil out on through toll connections or in on all connections. The standard arrangement is to leave the repeating coil out on the first 4 toll cords and in on the last cord.

In addition to these sections we have standard rural and combination subscriber and toll switching trunk sections. We will furnish complete information on any of these upon request.

Exposed parts of the frame on the face of the board are mahogany, others are made of birch and have a mahogany finish. The dimensions of the standard sections are as follows: 6 ft. 3 in. high; 2 ft. 5 in. wide; 2 ft. 9 in. deep, from front of key shelf to rear door.

The equipment in the rear of the section is accessible by removing the rear door.

MAIN DISTRIBUTING FRAMES

The main distributing frame is of iron construction, and may be either the wall type, or arranged to mount separately. In the wall type the lower portion is designed to carry the protectors, consisting of heat coils and carbon block arresters, while the upper portion of the frame carries the fuses.

The separate type is designed so that one vertical may be added at a time, the vertical side carrying the protectors, consisting of heat coils and carbon block arresters, the horizontal side being equipped with terminal strips for connecting the outside lines.

DESKS

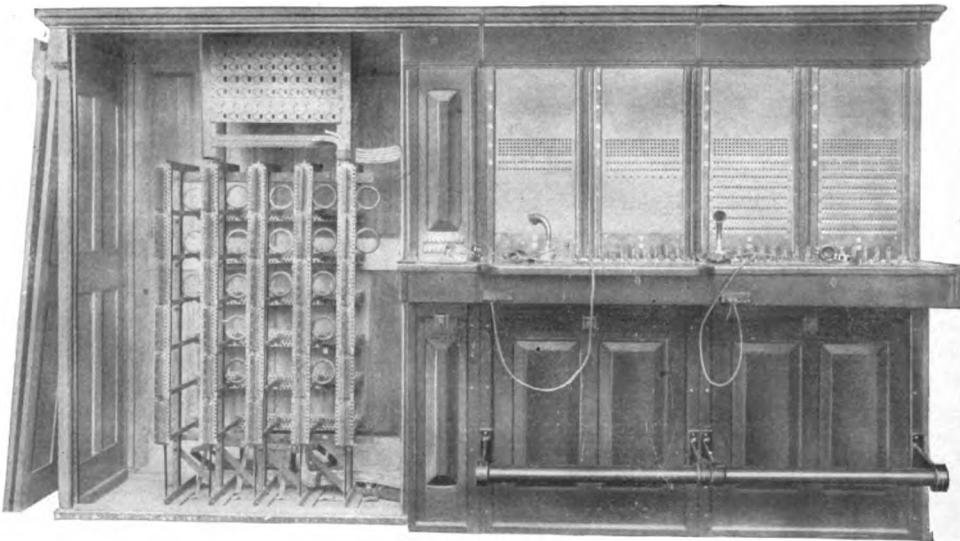
A wire chief's desk and chief operator's desk are provided for use with the No. 9 switchboard when necessary.

POWER PLANT

The power plants of the No. 9-D and No. 9-C switchboards are planned on the basis of 24 and 38 volt battery supply respectively. There is supplied a storage battery (usually E-7 cells), motor, charging generator, together with a power switchboard, on which are mounted the necessary instruments, such as voltmeter, ammeter, switches, fuses, etc.

A ringing machine is not ordinarily used, as it is the usual practice to provide two interrupters to supply the ringing current.

No. 10 SWITCHBOARD



No. 10 Switchboard

The No. 10 switchboard is used in offices up to 1600 lines capacity. In general, it may be said that the No. 10 switchboard possesses the operating and transmitting features of the No. 1 switchboard, it being provided with repeating coils in the cord circuits, and the functions of the cut-off relay being performed by a cut-off jack. The supervisory signals are controlled by back contact relays.

The board is provided with answering jacks and associated lamp signals and lamp supervising signals arranged for positive supervision. It is designed for both single and multi-office districts.

PRICES ON REQUEST

No. 10 Switchboard—Continued

This board is self-contained, except that an intermediate distributing frame is provided for cross connecting. The section is a two panel single operator's section with a capacity for 800 multiple and 120 answering jacks per panel. The lines are multiplied every second section, making a total multiple capacity of 1600 lines. The equipment is arranged as flexible as possible, with a view of meeting all usual requirements shown by careful study.

The following gives the capacity of the subscriber, toll and combination subscriber and toll sections:

Subscriber Section		Capacity
Operator's position.....		1
Subscriber multiple jacks, 20 per strip		800
Trunk multiple jacks, 20 per strip.....		80
Subscriber line equipment jacks, 20 per strip		240
Subscriber cord circuits.....		15
Subscriber operator's telephone circuit.....		1
Ringing circuit.....		1
Call wire circuits.....		32
Auxiliary signal circuits.....		2
Night alarm circuit.....		1
Tone test cords.....		2

Toll Section	Capacity	Combination Toll and Subscriber Section	Capacity
Operator's position.....	1	Operator's position.....	1
Subscriber multiple jacks, 20 per strip.....	800	Subscriber multiple jacks, 20 per strip	800
Trunk multiple jacks, 20 per strip	80	Trunk multiple jacks, 20 per strip.....	80
Magneto toll line jacks, 10 per strip....	10	Subscriber or central battery toll line	
Central battery toll line jacks, 20 per		jacks, 20 per strip.....	120
strip.....	20	Magneto toll line jacks, 10 per strip... ..	10
Universal toll cord circuits:		Subscriber cord circuits.....	10
Repeating coil in on all connections..	2	Universal toll cord circuits:	
Repeating coil out on through con-		Repeating coil in on all connections..	1
nections	8	Repeating coil out on through con-	
Toll operator's telephone circuit.....	1	nections.....	4
Ringing circuit.....	1	Operator's telephone circuit.....	1
Call wire circuits.....	4	Ringing circuit.....	1
Auxiliary signal circuit, magneto toll... ..	1	Call wire circuits.. ..	4
Auxiliary signal circuit, central battery		Auxiliary signal circuit, magneto toll... ..	1
toll.....	1	Auxiliary signal circuit, subscriber or	
Night alarm circuit.....	1	central battery toll.....	1
		Night alarm circuit.....	1

In addition to these sections we have a standard recording, trunk, toll trunk, rural, combination subscriber and toll trunk, combination subscriber and rural sections, and subscriber sections arranged for rural cords. We will furnish complete information on any of these upon request.

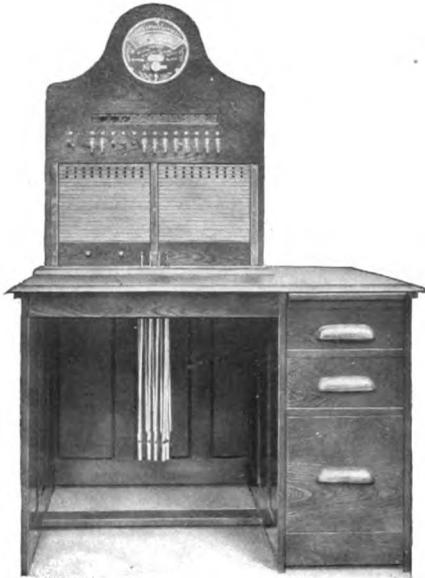
The frame of this board consists of steel enclosed in wood, all the woodwork on the front of the board having a mahogany finish.

The dimensions of the standard section are as follows:—5 ft. 10½ in. high; 2 ft. 5 in. wide; 2 ft. 10½ in. deep, from front of keyshelf to rear door.

The line relays are arranged in the board and are accessible by removing the rear door.

PRICES ON REQUEST

No. 10 Switchboard—Continued



No. 10 Wire Chief's Desk



No. 10 Chief Operator's Desk

DESKS

A wire chief's desk and chief operator's desk are provided for use with the No. 10 switchboard when necessary.

FRAMES AND RACKS

An intermediate distributing frame of iron construction is provided for cross connecting, and can be placed either at the end of the first section, or on a separate floor if desired. This frame is so designed that additions may be made in units of one vertical. When placed in line with the boards it is enclosed in a casing, finished to match the board.

The main frame is of iron construction, and may be either the wall type or arranged to mount separately.

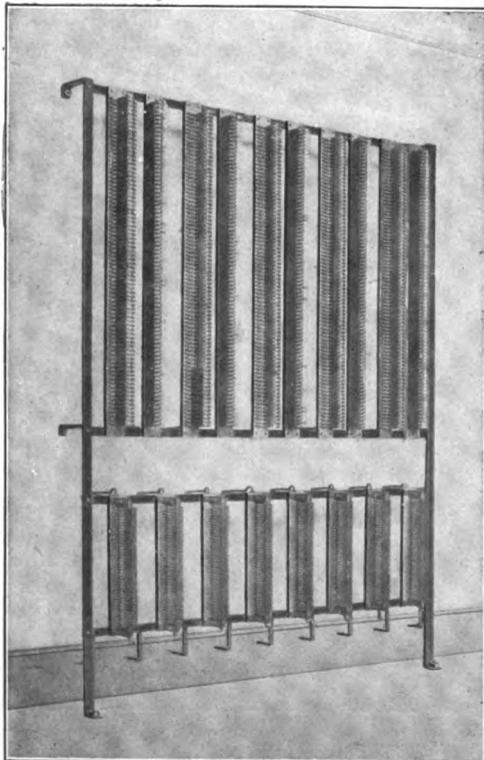
In the wall type the lower portion is designed to carry the protectors, consisting of heat coils and carbon block arresters, while the upper portion of the frame carries the fuses.

The separate type is designed so that one vertical may be added at a time, the vertical side carrying the protectors, consisting of heat coils and carbon block arresters, the horizontal side being equipped with terminal strips for connecting the outside lines.

POWER PLANT

The power plant for the No. 10 switchboard is planned on the basis of a 24-volt battery supply for local connections, and a 48-volt battery supply for toll connections. The equipment is similar to the No. 1 power plant, except that it is smaller.

Standard power plant equipments, with the exception of storage batteries and miscellaneous material, are carried in stock.

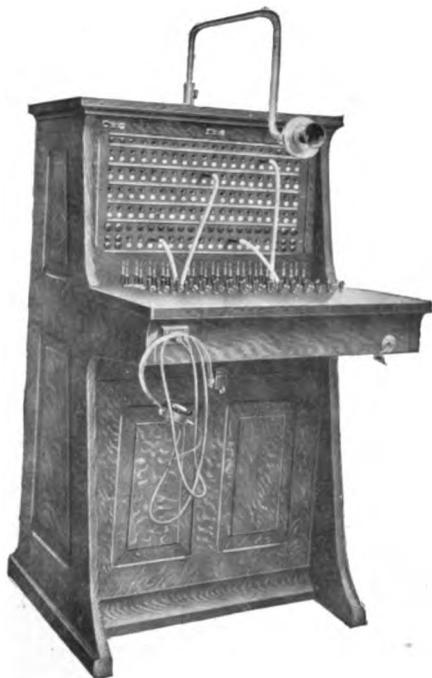
Main Distributing Frame
Wall Type

PRICES ON REQUEST

No. 4 PRIVATE EXCHANGE SWITCHBOARDS



30 Line Section



80 Line Section

In the past few years there has been an increased demand for a private exchange, which will employ lamp signals, provide high efficiency in transmission and conform closely to the standard methods of operation employed in the No. 1 switchboard. This has led to the development of the No. 4 private exchange.

These boards are of the central battery lamp signal type, giving positive supervision. All of the apparatus necessary for their operation is mounted in the framework. Two or more sections may be readily lined up together, thus increasing the capacity of the exchange.

The cord circuits are so arranged that they can be used either for local connections or connections with trunks to a central battery exchange. Any of the subscriber lines may be connected by means of trunk lines direct to the central office, where calls during the night or at other times when the operator is absent, can be handled.

These boards are furnished in two sizes, 30- and 80-line, the capacities of these sections being as follows:

Capacity	30-line	80-line
Subscriber lines.....	30	80
Trunk lines.....	10	15
Cord circuits.....	10	15
List price of one section fully equipped.....	\$ 509.65	\$ 797.50

If the board is connected to a central battery exchange it will with few exceptions be unnecessary to install a storage battery at the private exchange, as the talking and signalling current may be supplied over cable pairs from the central office. If, however, it should be found necessary to install a storage battery, it may if desired be charged over trunks from the central office; two trunk lines in the 30-line board and 3 trunk lines in the 80-line board are wired to permit the addition of the necessary relays. The standard board is designed for use with a central office having available a potential of approximately forty-eight volts.

The 30- and 80-line boards are carried in stock in two finishes,—quarter sawed oak and birch stained to match mahogany. Other finishes than these can be furnished with but a slight increase in cost and delay in delivery. If a special finish is desired a sample should accompany the order.

Either a No. 229-W transmitter with an arm or the chest type (No. 234-W) can be furnished. Unless otherwise specified, the board will be arranged for the transmitter arm.

The buzzer circuit can be arranged to operate from either two cells of dry battery or from the ringing current. It will be arranged to operate from the ringing current unless otherwise specified.

The dimensions of these sections are as follows:

30-line board: 3 ft. 8½ in. high; 1 ft. 11½ in. long; 2 ft. 2½ in. deep, from front of keyshelf to rear door.

80-line board: 3 ft. 10 in. high; 2 ft. 1 in. long; 2 ft. 5½ in. deep, from front of keyshelf to rear door.

Orders for these boards should give the following information:

- Capacity
 - Subscriber lines
- Equipment
 - Subscriber lines
 - Cord circuits
 - Trunk lines
 - Trunk lines arranged for storage battery
- Will transmitter arm or chest transmitter be used
- Will buzzer circuit be connected to dry cells or ringing current
- Finish

WRITE FOR LIBERAL DISCOUNTS

Nos. 101 AND 102 PRIVATE EXCHANGE SWITCHBOARDS

These switchboards are furnished in two sizes, thirty line and eighty line capacity. They are equipped with magnetic line and supervisory signals and are arranged for negative supervision. The trunk circuits are equipped with No. 19 drops. The capacities of these sections are as follows:—



No. 102

Capacity	No. 101	No. 102
Position.....	1	1
Subscriber lines.....	30	80
Subscriber cord circuits.....	10	15
Trunk circuits.....	10	10

List price of one section fully equipped. \$ 350.05 \$ 573.00

If desired two sections may be lined up together, thus increasing the capacity of the exchange.

The cord circuits are arranged so that they can be used either for local connections or connections with trunks to a central battery exchange. Any of the subscriber lines may be connected by means of trunk lines direct to the central office where calls during the night or at other times when the operator is absent can be handled. The standard board is designed for use with a central office having available a potential of approximately twenty-four volts. A storage battery is seldom necessary but may be used if desired.

The standard finish of these sections is birch stained to match mahogany or oak.

In case writing space is desired for the operator, a shelf may be provided and attached to the section.

The No. 229-W transmitter with the No. 23 transmitter arm is used on these sections. The dimensions are as follows:—

- No. 101—4 ft. 2 in. high; 1 ft. 11 in. long; 2 ft. 2½ in. deep.
- No. 102—5 ft. high; 2 ft. 1 in. long; 2 ft. 2½ in. deep.

CORDLESS PRIVATE EXCHANGE SWITCHBOARDS

The cordless private exchange is particularly well adapted for use as a central battery private exchange in small offices, factories, stores, etc. It is very compact and requires less space than a board equipped with connecting cords. All of the apparatus, with the exception of that necessary for the operator, is mounted in the framework, and is readily accessible.

These boards are made in two sizes, one for two trunks and four local stations, and the other for three trunks and seven local stations.

The standard finish is oak.

The local line and supervisory circuits are provided with No. 32 magnetic signals, and the trunks with No. 19 drops.

The connections are made in this board by means of keys, any two local lines or any trunk and any local line may be connected together. The necessary keys are provided in the smaller board for 3 and in the other for 5 simultaneous connections.

The operator's set consists of a No. 20-C desk stand with No. 229-W transmitter, No. 122-W receiver and cord.

List price, smaller, fully equipped, \$ 92.85; larger, \$ 157.60



For 3 trunks and 7 local lines



For 2 trunks and 4 local lines

TOLL SWITCHBOARDS

No. 1 TOLL SWITCHBOARD

This is designed especially for large toll centers, and the cord circuits are arranged to obtain the best possible transmission over long toll lines. The section has an iron framework with selected mahogany on the front of the board.

The capacity is as follows:

Operator's positions per section.....	Capacity
Trunk multiple.....	2
Toll line multiple.....	400
Toll answering jacks.....	200
Toll cord circuits, per position.....	100
	12

The section is 4 ft. 1 in. high; 4 ft. 3¼ in. long; 3 ft. ¾ in. deep, from front of keyshelf to rear door.

The board is arranged for all miscellaneous circuits necessary for the proper operation of the exchange, such as night alarm, ringing, auxiliary signal, supervisors, instruction circuits, etc.

WRITE FOR LIBERAL DISCOUNTS

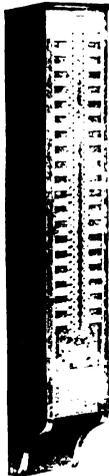
No. 2 TOLL SWITCHBOARD

This is the regular subscriber framework equipped with toll line and toll cord circuits and is arranged to line up with the No. 1 subscriber board, with which it is used. When additions are necessary, adjacent subscriber sections may be converted with very little trouble to toll sections by merely changing the equipment. The subscriber lines will be multiplied through the toll sections. Universal toll cord circuits are provided. These cord circuits are entirely automatic being arranged so that either toll to toll or toll to local connections may be made without any additional work by the operator, no keys or switching devices other than the regular listening and ringing keys being necessary.

This board is arranged with the necessary miscellaneous circuits for its proper operation.



21 Wire toll test board



41 Wire extension

TOLL TEST BOARDS

These are made in twenty-one and forty-one wire capacities and are used as test boards in test stations and small exchanges. The jacks are mounted on a hard rubber panel either in two or four rows as desired. Designation strips are provided so that the jacks may be properly numbered. A telephone and cord circuit are provided and arrangements made for talking and ringing in either direction. The framework is made of mahogany and is arranged to mount on the wall, or on the end of the switchboard.

TOLL TEST BOARD EXTENSIONS

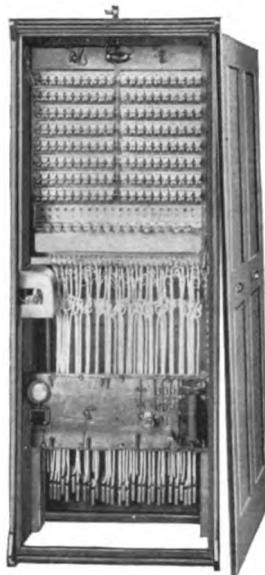
These are furnished in twenty-one and forty-one wire capacities and are similar to the toll test boards, except that they are provided with jacks only, no cord or telephone circuits being provided.

MAGNETO SWITCHBOARDS

Nos. 1101 AND 1102 SWITCHBOARDS



No. 1102—Front



No. 1102 - Rear

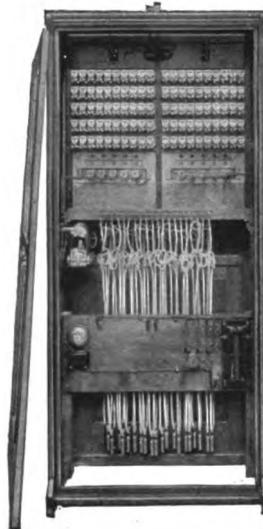
The cabinets are made in two sizes, 100- and 160-line, and are of quarter sawed oak with a dark finish. Two or more may be lined up without any change in the woodwork. Each signal is mechanically associated with its jack so that it is automatically restored when the operator plugs into the jack. The line circuit may be used for either toll or local work. The trunk circuits have lamp signals and are arranged for connection in either direction between sections. The cord circuits with which repeating coils may be used are wired for these and equipped with the keys. The coils are omitted unless otherwise specified. All cord circuits are arranged for ringing on the answering and calling cords. A suspended type of transmitter (No. 232-W) is provided unless the chest type (No. 234-W) is specified. A head receiver is always furnished. A night alarm bell is supplied, together with a key to cut it out of service. A five-bar hand generator is mounted in each section. Two or four party selective ringing may be provided. A generator switch-

PRICES ON REQUEST

Nos. 1101 and 1102 Switchboards—Continued



No. 1101—Front



No. 1101—Rear

ing circuit is arranged with a key to throw in the hand generator or some other source of ringing current. Cable for the equipment ordered is provided sufficient to extend fifteen feet from the base of the section.

In ordering specify the number of circuits to be equipped in each section, the type of the transmitter, and whether two or four party selective ringing is to be provided.

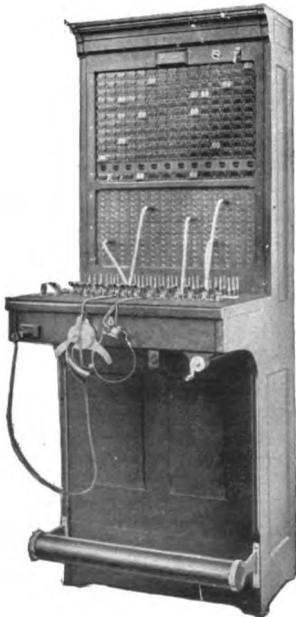
Capacity	No. 1101 Section	No. 1102 Section
Operator's position	1	1
Line circuits	100	160
Trunk circuits	10	20
Cord circuits with repeating coil	3	5
Cord circuits without repeating coil	7	10
List price of one section fully equipped less repeating coils	\$ 436.97	\$ 664.23

Dimensions of No. 1101 cabinet
5 ft. 1 1/4 in. high; 2 ft. 2 1/4 in. long; 2 ft. 3 in. deep.

Dimensions of No. 1102 cabinet
5 ft. 8 1/4 in. high; 2 ft. 2 1/4 in. long; 2 ft. 3 in. deep.

No. 105 SWITCHBOARD

The face of the cabinet is made of mahogany and the unexposed parts of a lighter wood with a mahogany finish. Two or more may be lined up without any change in the woodwork. The trunk circuits are of the call wire type and are arranged for connections between sections. Provision is therefore made for incoming trunks at each section, which will be connected to outgoing trunks at all the other sections. Wiring is always provided for the repeating coils but unless otherwise specified the circuits with which these may be used are equipped the same as those without the coils. All cord circuits are arranged for ringing on the answering and calling cords. A suspended type of transmitter (No. 232-W) is provided unless the chest type (No. 234-W) is specified. A head receiver is always furnished. A night alarm bell is supplied, together with a key to cut it out of service. A five-bar hand generator is mounted in each section. Two or four party selective ringing may be provided. A generator switching circuit is arranged with a key to throw in the hand generator or some other source of ringing current. No cable is provided unless ordered. In ordering specify the number of circuits to be equipped in each section, the type of transmitter and whether two or four party selective ringing is to be provided.



No. 105

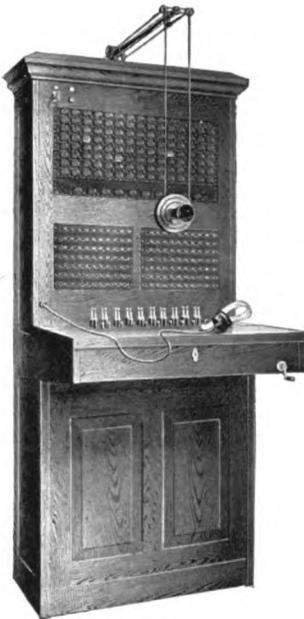
Capacity	No. 105 Section
Position	1
Toll lines	15
Subscriber lines	150
Incoming trunk lines	12
Outgoing trunk lines	45
Call wire circuits	5
Cord circuits with repeating coil	5
Cord circuits without repeating coil	7
List price of one section fully equipped less repeating coils	\$488.32

Dimensions of cabinet, 5 ft. 9 1/2 in. high; 2 ft. 1 in. long; 2 ft. 1 1/8 in. deep.

WRITE FOR LIBERAL DISCOUNTS

No. 1005 SWITCHBOARD

The cabinet is made of selected oak with a light finish. Two or more may be lined up to increase the capacity of an exchange. The board is very similar to the No. 105, except that it is designed for smaller exchanges when it is desired to secure an equipment at a low cost. Trunk jacks may be placed in each section to be connected to drops or signals in the others. Wiring is always provided for the repeating coils, but unless otherwise specified the circuits with which these may be used are equipped the same as those without the coils. The cord circuits are designed for ringing on the calling cords only. A suspended type transmitter (No. 232-W) is furnished, unless the chest type (No. 234-W) is specified. A head receiver is always furnished. A night alarm bell is supplied, together with a key to cut it out of service. A five-bar hand generator is mounted in each section. Two or four party selective ringing may be provided. A generator switching circuit is arranged with a key to throw in the hand generator or some source of ringing current. No cable is provided unless ordered. In ordering, specify the number of circuits to be equipped in each section, the type of transmitter, and whether two or four party selective ringing is to be provided.

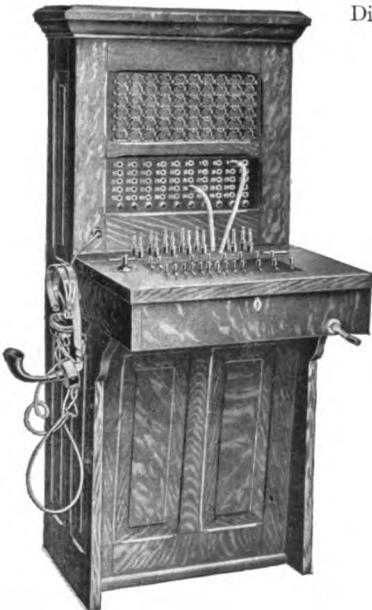


No. 1005.

	Capacity	No. 1005 Section
Position		1
Toll lines.....		15
Subscriber lines.....		100
Trunk jacks.....		15
Cord circuits with repeating coil.....		3
Cord circuits without repeating coil.....		7
List price of one section fully equipped.....		\$ 260.93
Dimensions of cabinet, 4 ft. 10 ¹ / ₈ in. high; 2 ft. 3 in. wide; 2 ft. 1 ¹ / ₄ in. deep.		

No. 1006 SWITCHBOARD

The cabinet is made of quarter sawed oak with a light finish. Two or more may be lined up to increase the capacity of an exchange. The board is very similar to the No. 105 except that it is designed for toll service. Any subscriber line may be equipped for toll service. Trunk jacks may be placed in each section to be connected to drops in the others. Wiring is always provided for the repeating coils, but unless otherwise specified the circuits with which these may be used are equipped the same as those without the coils. All cord circuits are arranged for ringing on the answering and calling cords. A suspended type transmitter (No. 232-W) is provided unless a chest type (No. 234-W) is specified. A head receiver is always furnished. A night alarm bell is supplied together with a key to cut it out of service. A five-bar hand generator is mounted in each section. Two or four party selective ringing may be provided. No generator switching key is ordinarily furnished. No cable is provided unless specified. In ordering specify the number of circuits to be equipped in each section, the type of transmitter, and whether two or four party selective ringing is to be provided.



No. 1006

	Capacity	No. 1006 Section
Position		1
Subscriber lines.....		50
Trunk jacks.....		10
Cord circuits with repeating coils.....		4
Cord circuits without repeating coils.....		4
List price of one section fully equipped less repeating coils.....		\$ 160.00
Dimensions of cabinet: 4 ft. 4 in. high; 1 ft. 9 ¹ / ₄ in. wide; 2 ft. 1 in. deep.		

WRITE FOR LIBERAL DISCOUNTS

No. 1010 SWITCHBOARD



No. 1010

The desk and cabinet are made of oak with a light finish. Any subscriber line may be equipped for toll service, or the board may be equipped for ten through toll lines. No provision is made for trunks. Wiring is always provided for the repeating coils, but unless otherwise specified the circuits with which these may be used are equipped the same as those without the coils. All cord circuits are arranged for ringing on the answering and calling cords. A No. 1020-J desk stand is provided. A head receiver is furnished in all cases. A night alarm bell is supplied together with a key to cut it out of service. A five-bar hand generator is mounted in each desk. No provision is ordinarily made for selective ringing. No generator switching key or cable is furnished unless specified. In ordering specify the number of circuits to be equipped in each section and the type of transmitter.

Capacity	No. 1010 Section
Position	1
Subscriber lines.....	30
Cord circuits with repeating coils	3
Cord circuits without repeating coils.....	3

List price of one section fully equipped less repeating coils. **\$ 135.22**
 Dimensions of desk: 2 ft. 4 in. high; 3 ft. 6 in. wide; 2 ft. 8 in. deep.
 Dimensions of cabinet: 1 ft. 7/8 in. high; 2 ft. 6 in. wide; 10 1/2 in. deep.



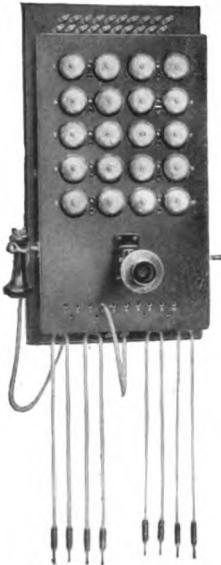
No. 1011

No. 1011 SWITCHBOARD

The cabinet is made of quarter sawed oak with a light finish, and is designed for mounting on a desk or shelf. Any subscriber line may be equipped for toll service. A five-bar hand generator and No. 1020-B desk stand are furnished. The operator answers, listens in and rings with a cord

provided for the purpose. Connections are made by the other cords without the use of keys.

Capacity	No. 1011 Section
Position.....	1
Subscriber lines.....	10
Cord circuits.....	4
List price of one section fully equipped.....	\$ 49.57
Dimensions of cabinet: 1 ft. high; 1 ft. 7 7/8 in. wide; 10 1/2 in. deep.	



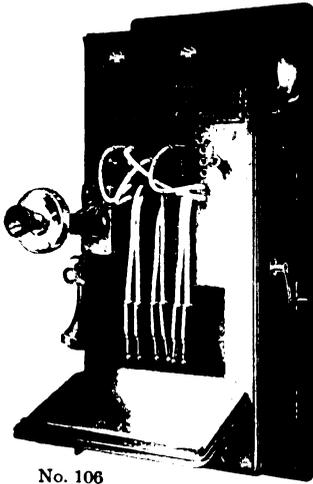
No. 1012

No. 1012 SWITCHBOARD

The cabinet is made of quarter sawed oak with a light finish, and the front is hinged to allow of easy access to the apparatus. A five-bar hand generator, No. 250-W transmitter and No. 122-W receiver are furnished. The ringers are of 1000 ohms resistance, unless otherwise ordered, and are equipped with indicators to show which line is calling. The operator answers, listens in and rings with a cord provided for the purpose. Connections are made by the other cords without the use of keys.

Capacity	No. 1012 Section
Position.....	1
Line circuits.....	10
Cord circuits.....	4
List price of one section fully equipped.....	\$ 56.99
Dimensions of cabinet: 2 ft. 5 1/2 in. high; 1 ft. 3 1/2 in. wide; 6 7/8 in. deep.	

WRITE FOR LIBERAL DISCOUNTS



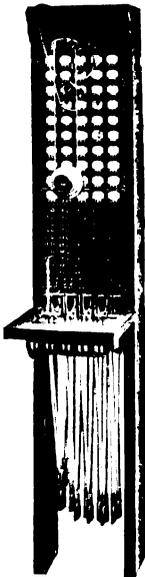
No. 106

No. 106 SWITCHBOARD

The cabinet is made of black walnut and the front is hinged to allow of easy access to the apparatus. The cabinet has a capacity of 10 subscriber lines, 1 toll line and 4 cord circuits. A five-bar hand generator, night alarm circuit, No. 250-W transmitter and No. 122-W receiver are furnished. The drops are 500 ohms resistance and are bridged across the line. They may be of the No. 19 type to operate whenever one subscriber calls another on the same line or, the No. 57 type may be furnished, the latter operating only when a subscriber wishes to signal central office. If the latter service is desired the telephone sets must be equipped with a key and wired so that normally alternating current is delivered, which will ring the bells of the other telephone sets bridged across the line, but will not operate the drop at the central office. When the key is operated, pulsating current is delivered; this will not ring the bell of the telephone sets, but will operate the central office drop. The operator answers, listens in and rings with either of two duplicate cords provided for that purpose, connections are made by the other cords without the use of keys. Four boards are made differing only in the equipment.

In ordering specify only the code numbers.

No. 106-A has 10 subscriber lines equipped with No. 19 drops, 0 toll lines and 4 cord circuits.....	\$ 63.01
No. 106-B has 10 subscriber lines equipped with No. 19 drops, 1 toll line and 4 cord circuits.....	69.44
No. 106-C has 10 subscriber lines equipped with No. 57 drops, 0 toll lines and 4 cord circuits.....	86.30
No. 106-D has 10 subscriber lines equipped with No. 57 drops, 1 toll line and 4 cord circuits.....	92.72



No. 1002

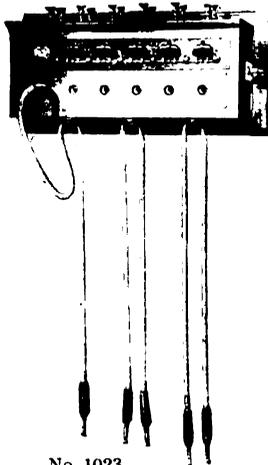
Nos. 1001, 1002 AND 1003 SWITCHBOARDS

These switchboards are of uniform type, varying only in size and capacity; the various capacities being 25, 50 and 100 lines.

The cherry frame is simple in design, and strongly constructed. Each section is equipped with a suspended transmitter, head receiver, hand generator and night alarm circuit. The 100-line switchboard (No. 1001) is equipped with ten pairs of connecting cords; the 50-line switchboard (No. 1002) and the 25-line switchboard (No. 1003) have five pairs of cords each. Any of the subscriber lines may be equipped as toll lines.

In each section space is provided for trunking jacks, the No. 1001 switchboard being drilled for 20, the No. 1002 switchboard for 10, and the No. 1003 switchboard for 5. Two or more of these sections may be easily lined up if desired.

In ordering these boards, it will only be necessary to specify the code number and the number of grounded and metallic lines.



No. 1023

PONY SWITCHBOARDS

The "Pony" switchboards, made in sizes from two to twenty lines, are very simple and inexpensive; and are designed for equipments where it is desired to connect only a few lines; and where the initial expense is an important consideration.

The cabinet is made of black walnut, and is equipped with binding posts on the top, to which the line wires are to be connected.

The board is equipped for either metallic or grounded circuits.

The board is equipped with a night alarm circuit, but not with an operator outfit, as it is intended for use with a separate telephone set, for which a cord and plug are provided.

WRITE FOR LIBERAL DISCOUNTS

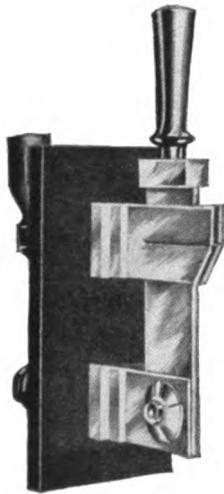
Numbers of "Pony" Magneto Switchboards

Code No.	Capacity		Code No.	Capacity
1021	2 line	magneto switchboard	1026	12-line magneto switchboard
1022	4-line	magneto switchboard	1027	14-line magneto switchboard
1023	6-line	magneto switchboard	1028	16-line magneto switchboard
1024	8-line	magneto switchboard	1029	18-line magneto switchboard
1025	10-line	magneto switchboard	1030	20-line magneto switchboard

In ordering these boards, it will only be necessary to specify the code number, with the number of grounded and metallic lines.

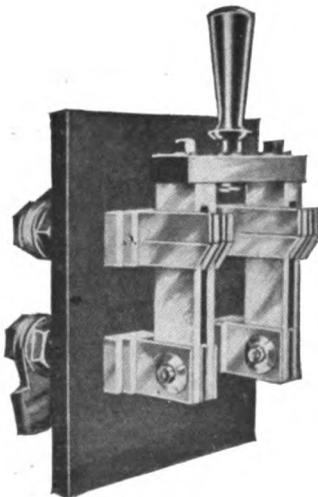
SWITCHES
KNIFE SWITCHES

These have a draw file finish and are arranged for rear of board connections. They are mounted on temporary wood bases. Terminal lugs are not provided unless specified. The Nos. 8, 25, 26 and 27 switches are designed for 500 volts, all other knife switches are designed for a maximum of 250 volts. In this list the following abbreviations are used: S. P. single pole; D. P. double pole; 3 P. three pole; 4 P. four pole; S. T. single throw; D. T. double throw.



No. 17-C

Code No.	Style	Capacity amperes	Use	List Price each
4-A	4-P., D. T.	25	Used with 2 or 3 phase dry auto-starter.....	\$ 34.25
4-B	4-P., D. T.	50	Used with 2 or 3 phase dry auto-starter.....	51.50
4-C	4-P., D. T.	100	Used with 2 or 3 phase dry auto-starter.....	65.50
4-D	4-P., D. T.	200	Used with 2 or 3 phase dry auto-starter.....	84.50
4-E	4-P., D. T.	300	Used with 2 or 3 phase dry auto-starter.....	129.50
8-A	4-P, D. T.	25	Used with 2 or 3 phase dry auto-starter.....	49.50
8-B	4-P., D. T.	50	Used with 2 or 3 phase dry auto-starter.....	64.75
8-C	4-P., D. T.	100	Used with 2 or 3 phase dry auto-starter.....	107.75
14-A	S. P. 3 throw knife switch	25	Used to control counter E. M. F. cells in battery driven ringer sets.....	30.00
15-A	D. P., D. T.		Used with ammeter with two shunts.....	18.40

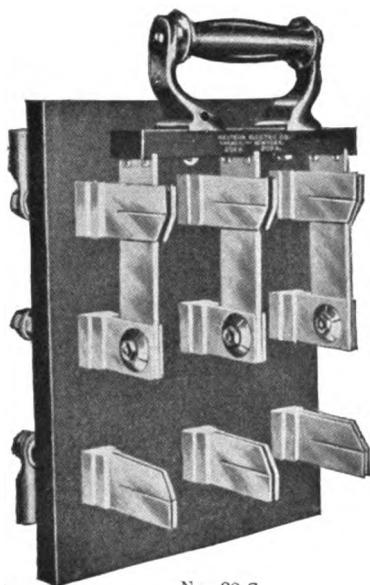


No. 19-H

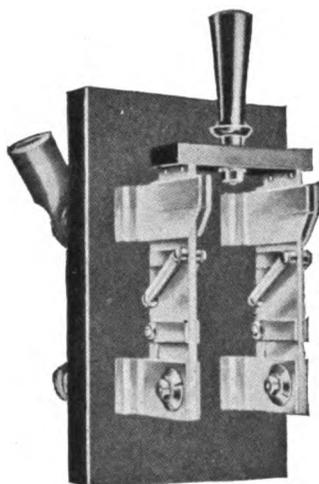
Code No.	Style	Capacity amperes	List Price each
17-A	S.P., S.T.	25	\$ 5.35
17-B	S.P., S.T.	50	6.30
17-C	S.P., S.T.	100	9.10
17-D	S.P., S.T.	200	13.80
17-E	S.P., S.T.	300	17.45
17-F	S.P., S.T.	400	21.60
17-G	S.P., S.T.	600	30.15
17-H	S.P., S.T.	800	38.15
17-J	S.P., S.T.	1200	63.35
18-A	S.P., D.T.	25	7.70
18-B	S.P., D.T.	50	9.40
18-C	S.P., D.T.	100	13.00
18-D	S.P., D.T.	200	19.60
18-E	S.P., D.T.	300	24.50
18-F	S.P., D.T.	400	32.60
18-G	S.P., D.T.	600	41.80
18-H	S.P., D.T.	800	52.00
18-J	S.P., D.T.	1200	87.70
19-A	D.P., S.T.	25	11.30
19-B	D.P., S.T.	50	13.10
19-C	D.P., S.T.	100	18.20
19-D	D.P., S.T.	200	26.60
19-E	D.P., S.T.	300	35.00
19-F	D.P., S.T.	400	47.20
19-G	D.P., S.T.	600	58.30
19-H	D.P., S.T.	800	76.30

WRITE FOR LIBERAL DISCOUNTS

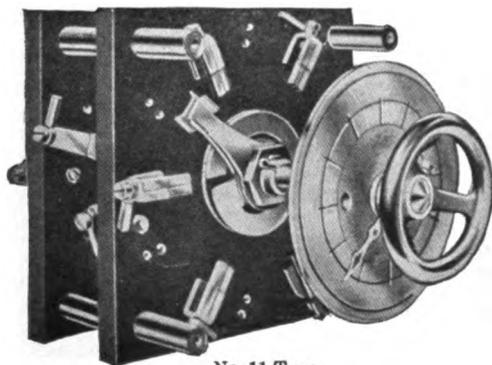
Switches—Continued



No. 22-C



No. 25-B



No. 11-Type

Code No.	Style	Capacity amperes	List Price each
19-J	D.P., S.T.	1200	\$ 126.70
20-A	D.P., D.T.	25	15.70
20-B	D.P., D.T.	50	19.80
20-C	D.P., D.T.	100	27.00
20-D	D.P., D.T.	200	39.50
20-E	D.P., D.T.	300	50.80
20-F	D.P., D.T.	400	68.90
20-G	D.P., D.T.	600	83.80
20-H	D.P., D.T.	800	108.60
20-J	D.P., D.T.	1200	181.40
21-A	3 P., S.T.	25	18.55
21-B	3 P., S.T.	50	21.10
21-C	3 P., S.T.	100	27.10
21-D	3 P., S.T.	200	40.50
21-E	3 P., S.T.	300	50.75
21-F	3 P., S.T.	400	63.30
21-G	3 P., S.T.	600	85.95
21-H	3 P., S.T.	800	106.95
21-J	3 P., S.T.	1200	195.55
22-A	3 P., D.T.	25	24.10
22-B	3 P., D.T.	50	29.00
22-C	3 P., D.T.	100	37.20
22-D	3 P., D.T.	200	54.50
22-E	3 P., D.T.	300	68.20
22-F	3 P., D.T.	400	84.10
22-G	3 P., D.T.	600	113.90
22-H	3 P., D.T.	800	139.40
22-J	3 P., D.T.	1200	259.10
23-A	4 P., S.T.	25	21.40
23-B	4 P., S.T.	50	26.80
23-C	4 P., S.T.	100	36.50
23-D	4 P., S.T.	200	53.70
24-A	4 P., D.T.	25	29.10
24-B	4 P., D.T.	50	38.00
24-C	4 P., D.T.	100	53.70
25-A	D.P., S.T.	25 Quick break	15.20
25-B	D.P., S.T.	50 Quick break	15.20
25-C	D.P., S.T.	100 Quick break	21.00
25-D	D.P., S.T.	200 Quick break	31.00
26-A	D.P., D.T.	25 Quick break	24.00
26-B	D.P., D.T.	50 Quick break	24.00
26-C	D.P., D.T.	100 Quick break	35.50
27-A	3 P., S.T.	25 Quick break	24.40
27-B	3 P., S.T.	50 Quick break	24.40
30-A	5 P., D.T.	25	42.00

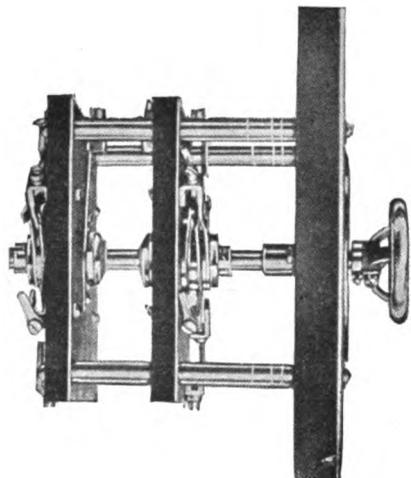
INSTRUMENT SWITCHES

Used with voltmeter or ammeter. The switch includes the hand wheel and index plate. The stamping of the index plate should be specified, except for the No. 11-A.

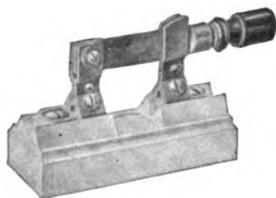
Code No.	Style	Description	List Price each
11-A	16 circuit double scale instrument switch	One scale has 11 contacts and the other 5. Index plate stamped B-1, B-2, G-1, G-2, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11.	\$ 62.70
11-D	Two-scale switch for 4 circuits	Two contacts on each scale.....	50.70
11-E	Two-scale switch for 6 circuits	Three contacts on each scale.....	52.00
11-F	Two-scale switch for 8 circuits	Four contacts on each scale.....	53.35
11-G	Two-scale switch for 10 circuits	Five contacts on each scale.....	54.70
11-H	Two-scale switch for 12 circuits	11 contacts on one scale and 1 on the other	56.00

WRITE FOR LIBERAL DISCOUNTS

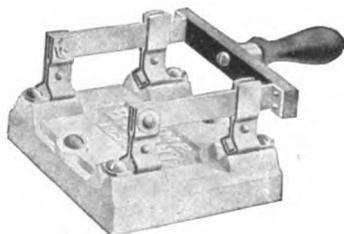
Switches—Continued



No. 11-Type



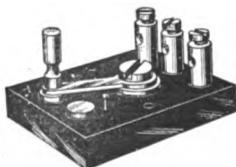
No. 1436



No. 1438



No. 11250



No. 13116

Code No.	Style	Description	List Price each
11-J	Two-scale switch for 16 circuits	11 contacts on one scale and 5 on the other	\$ 62.70
11-K	Two-scale switch for 20 circuits	16 contacts on one scale and 4 on the other	65.35
11-L	Two-scale switch for 24 circuits	20 contacts on one scale and 4 on the other	68.00
11-M	Two-scale switch for 14 circuits	11 contacts on one scale and 3 on the other	61.35
11-N	Two-scale switch for 18 circuits	11 contacts on one scale and 7 on the other	64.00

Code No.	Style	List Price each	Code No.	Style	List Price each
16-A	Single scale switch for 2 circuits.....	\$ 35.35	16-G	Single scale switch for 14 circuits.....	\$ 45.35
16-B	Single scale switch for 4 circuits.....	36.70	16-H	Single scale switch for 16 circuits.....	46.70
16-C	Single scale switch for 6 circuits.....	38.00	16-J	Single scale switch for 18 circuits.....	48.00
16-D	Single scale switch for 8 circuits.....	39.35	16-K	Single scale switch for 20 circuits.....	49.35
16-E	Single scale switch for 10 circuits.....	40.70	16-L	Single scale switch for 22 circuits.....	50.70
16-F	Single scale switch for 12 circuits.....	42.00	16-M	Single scale switch for 24 circuits.....	52.00

SMALL KNIFE SWITCHES

Single-Pole Porcelain Base

Code Word	List No.	Description	Standard Package	List Price each
Fluidify	1436	15 amp., S.P., S.T.	100	\$ 0.34
Fluidize	1437	25 amp., S.P., S.T.	100	.44
Flying	1454	15 amp., S.P., D.T.	100	.60
Flysch	1455	25 amp., S.P., D.T.	100	.74

Double-Pole Porcelain Base, 125 Volts.

Fluidism	1438	15 amp., D.P., S.P.	250	.42
Fluidist	1439	25 amp., D.P., S.T.	250	.50
Outlaid	16040	15 amp., D.P., D.T.	100	.74
Outlay	16041	25 amp., D.P., D.T.	100	.90

ROUND WOOD BASE SWITCHES

Code Word	List No.	Description	List Price each
Farragut	11250	1-Point	\$0.25
Farrington	11251	2-Point	.28
Farwell	11252	3-Point	.30
Faucett	11253	4-Point	.35
Faukland	11254	5-Point	.40
Fayette	11255	6-Point	.45

RUBBER BASE SWITCH

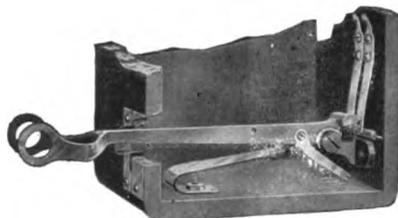
Holgate	13115	1-Point	.70
Holland	13116	2-Point	.75
Hollenburg	13117	Neutral point	.90

WRITE FOR LIBERAL DISCOUNTS

SWITCH HOOKS



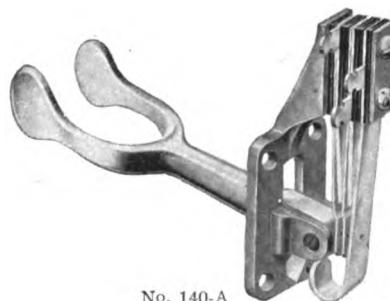
No. 120-A



No. 121-A



No. 140-H



No. 140-A

Code No.	Description	Contacts	List Price each
120-A	Long lever, restoring spring mounted separately, horizontal mounting	2 front	\$ 0.75
121-A	Long lever, restoring spring mounted separately, vertical mounting	2 front	.70
140-A	Short lever, self-contained, vertical mounting	2 front	.75
140-B	Short lever, self-contained, vertical mounting	2 front 1 back opens	.90
140-H	Short lever, self-contained, vertical mounting	2 front 1 passing ground	1.05
140-F	Short lever, self-contained, vertical mounting	1 front 1 back	.70
141-A	Brass wire hook threaded at one end and provided with a cap staked on. For use with No. 1002-A hand set		.03

SIGNALLING SYSTEMS

We give below a brief description of the signalling systems commonly used for giving magneto and central battery telephone service.

MAGNETO SYSTEMS

Code Ringing. In this system a large number of parties may be connected to one line, all of the ringers at the telephone stations and the central office drop being bridged across the line. The ringers are unbiased, and the drop at the central office of the usual type, which is operated by alternating current supplied by the subscribers' hand generators. Whenever a party on the line calls, all of the ringers and the central office drop are operated. When central office rings on the line, likewise, all of the bells are sounded. The proper party is called by a code system made up of various numbers of long and short rings.

2 Party Selective Ringing. In this system two subscribers may be connected to one line. The ringers at the telephone stations are biased and wired to ground, one from each side of the line. The drop at the central office is bridged and operated by alternating current supplied by the subscribers' hand generators. The generators in the subscriber stations are of the two-bar type, and not heavy enough to ring the two bells on the line since these are biased and in series, as far as the ringing current supplied by the hand generator is concerned. The generator, however, is heavy enough to throw the drop at the central office.

Whenever one party calls or is being called the other ringer is not operated. It is impossible for one subscriber to call the other on the same line, except through the central office operator.

The cord circuits at the central office are wired so that alternating ringing current may be sent out on either side of the line to ground by means of a key for each cord circuit, or a master key for all of the cord circuits in a position.

4 Party Selective Ringing. This system is precisely the same as the 2 party selective system, except that there are wired to ground from each side of the line two sets. Both of these sets are biased, and one is so connected to the line that it is operated by positive pulsating current, while the other is operated by negative pulsating current. The cord circuits at the central office are so wired

WRITE FOR LIBERAL DISCOUNTS

Signalling Systems—Continued

that positive and negative pulsating current may be sent out over either side of the line to ground by means of a party line ringing key for each cord circuit or a master key for all of the cord circuits in the position.

Center Checking. This system is used on toll lines where it is desired to have several stations on one line, and yet require all of them to secure connections entirely through one office. The ringers at the stations are all biased and bridged across the line in one way, that is, they either operate on alternating current or on pulsating current in one direction only. The generators at the stations are all arranged to furnish pulsating current of the polarity which does not ring the bells; and accordingly it is impossible for one party on the line to call another, except through the center checking operator. The central office has a bridged drop, operated by the pulsating current, and rings the different parties on the line by means of a code system.

Central Office Selective Signalling. This is just the reverse of the center checking system, that is, there may be placed a large number of subscribers on one line, and they can call one another without signalling central office; or they can call central office without notifying the other parties on the line. This is accomplished in two ways.

The first method is to bridge across the line bells which are biased so that they operate on alternating or pulsating current in one direction. The hand generators in the telephone sets normally deliver to the two sides of the lines alternating current; but when a button is depressed there is delivered to the two sides of the line pulsating current of a polarity which will not operate the bells. This current, however, will throw the drop at the central office. This drop is arranged so that it will not operate on alternating current which, as explained before, is ordinarily used to signal the other subscribers on the line. The central office rings the desired party by a code system.

The other method is to use unbiased ringers and alternating current generators at the telephone stations. The generators normally deliver current to the two sides of the line but when a push button at any set is depressed the generator is connected between one side of the line and ground. At the central office a drop of the regular type is wired from one side of the line to ground and accordingly is not operated unless a subscriber rings with the push button in his set depressed.

CENTRAL BATTERY SYSTEMS

Code Ringing. Several parties may be connected to one line in the central battery system, the bells all being bridged across the line and biased. The line at the central office is wired the same as for single party line service. One party cannot call another on the same line, except through the central office operator, and central office calls the desired party by a code system of ringing.

2 Party Selective Ringing. With this system two parties may be connected to one line, the two bells being biased and connected to ground, one from each side of the line. The line at the central office is wired the same as for single party line service, and the cord circuits are arranged so that alternating current may be sent out over either side of the line by means of a key for each cord circuit, or a master key for all of the cord circuits in the position.

4 Party Selective Ringing. Four parties may be connected to one line, and the line arranged so that any party may be called without signalling the others. There is bridged across the line at each station a high impedance relay, from the local contacts of which the four ringers are wired to ground. These relays are arranged so that when they operate they connect to ground the four ringers, two from each side of the line. These ringers are biased and wired so that one of the pair on each side of the line operates on positive pulsating and the other operates on negative pulsating current. One party cannot call another on the same line, except through the central office operator.

The line circuit at the central office is wired the same as for single party line service. The cord circuits are arranged so that the operator may ring over one side of the line to ground with either positive or negative pulsating current. With either of these currents all four relays on the line operate, connecting to ground all four bells. As the operator rings on only one side of the line with pulsating current of one polarity, only the bell on that side of the line which is connected to respond to that polarity will sound. During conversation all ground connections are open at the substations.

4 Party Semi-Selective Ringing. This is the same as the two party selective system, except that there are connected to ground two stations from each side of the line. The operator thus can ring either pair of bells without operating the other pair. The operator uses a code system of ringing to distinguish between the two parties which form a pair connected to each side of the line.

PRICES ON REQUEST

TELEPHONE SETS CENTRAL BATTERY WALL TYPE

Regularly furnished in oak or walnut. The No. 122-W receiver and standard high resistance transmitter are furnished with these sets, others will be supplied if ordered.



No. 1293-A

Code No.

1293-A For direct, two party selective or four party semi-selective central battery service. 1000-ohm biased ringer and inside binding posts.....

List Price each

\$ 10.06

Includes: 1 No. 8-AG ringer; 1 No. 21-D condenser; 1 No. 3-A transmitter bracket; 1 No. 179, 5½ in. cord; 1 No. 140-A switchhook; 1 No. 20 induction coil; 1 No. 229-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord. This set may be used with the Nos. 132-A or 134-A backboards



No. 1294-A



No. 1293-Y
On No. 136-B Backboard

1296-A For four party selective central battery service. 2500-ohm biased ringer, relay and inside binding posts.....

14.25

Includes: 1 No. 8-BG ringer; 1 No. 140-A switchhook; 1 No. 21-D condenser; 1 No. 3-A transmitter bracket; 1 No. 179, 5½ in. cord; 1 No. 20 induction coil; 1 No. 229-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord; 1 No. 85-B relay. This set may be used with the 132-A backboard.

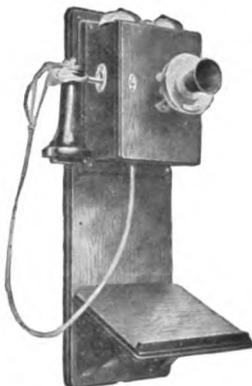
1293-Y For local battery talking and central battery signalling service. 1000-ohm biased ringer and inside binding posts. No provision made for dry cells, but backboard or No. 1 battery box may be provided for them.....

9.80

Includes: 1 No. 8-AG ringer; 1 No. 140-A switchhook; 1 No. 21-D condenser; 1 No. 3-A transmitter bracket; 1 No. 179, 5½ in. cord; 1 No. 13 induction coil; 1 No. 229-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord. This set may be used with Nos. 132-A, 134-A or 136-B backboards.



No. 1098-A



No. 1293-A
On No. 132-A Backboard

1294-A For direct, two party selective or four party semi-selective central battery service. 1000-ohm biased ringer and inside binding posts..

10.60

Includes: 1 No. 7-AG ringer; 1 No. 21-D condenser; 1 No. 140-A switchhook; 1 No. 20 induction coil; 1 No. 250-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord.

1098-A For four party selective central battery service. 2500-ohm biased ringer and relay....

9.70

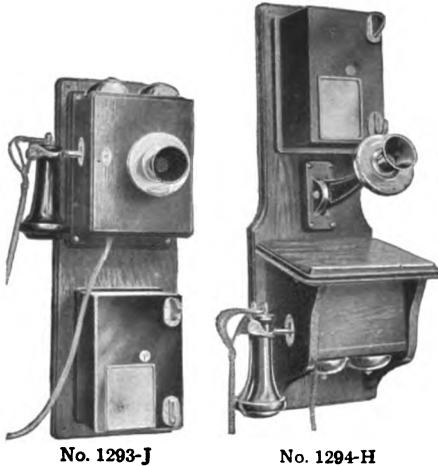
Includes: 1 No. 7-BG ringer; 1 No. 120-A switch hook; 1 No. 5-A condenser; 5 No. 2-A binding posts; 2 No. 3-A binding posts; 1 No. 20 induction coil; 1 No. 250-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord; 1 No. 85-A relay.

WRITE FOR LIBERAL DISCOUNTS

Telephone Sets—Continued
Central Battery Wall Type—Continued

With No. 7 Type Coin Collectors

These are equipped with No. 7-A (for nickels) coin collectors, but others will be furnished if desired. Coin collector sets arranged for four party selective service will be furnished, if specified Regularly furnished in oak or walnut.



No. 1293-J

No. 1294-H

Code No.
1293-J For direct, two party selective or four party semi-selective central battery service with No. 7 type electrically operated coin collector. 1000-ohm biased ringer and inside binding posts..... **List Price each**
\$ 16.00

Includes: 1 No. 8-AG ringer; 1 No. 140-B switch hook; 1 No. 21-D condenser; 1 No. 3-A transmitter bracket; 1 No. 179, 5½ in. cord; 1 No. 20 induction coil; 1 No. 229-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord; 1 No. 7-A coin collector; 1 No. 133-A backboard.

1294-H For direct, two party selective or four party semi-selective central battery service with electrically operated coin collector No. 7-A, 1000-ohm biased ringer and inside binding posts..... **16.45**

Includes: 1 No. 7-AG ringer; 1 No. 21-D condenser; 1 No. 140-B switch hook; 1 No. 20 induction coil; 1 No. 250-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord; 1 No. 7-A coin collector.



No. 2000

Metal Case Wall Type

2002 For direct, two party selective or four party semi-selective central battery service. 1000-ohm biased ringer

Consists of: 1 No. 1130-A wall set, which includes: 1 No. 229-W transmitter; 1 No. 122-W receiver; 1 No. 179, 5½ in. cord; 1 No. 196, 3 ft. cord; 1 No. 180, 6 ft. cord and 1 switchhook and 1 No. 1131-J. Desk Set Box, which includes: 1 No. 17-A ringer, 1 No. 21 E condenser, and 1 induction coil. The cases are metal, and regularly furnished with a black finish..... **9.75**



No. 2002

CENTRAL BATTERY DESK TYPE

Regularly furnished in oak or walnut. Can be furnished for four party selective service.

Code No.
2000 For direct, two party selective or four party semi-selective central battery service..... **Price List each**
11.75
 Includes: 1 No. 1295-A desk set box, 1 No. 1020-B desk stand.

2001 For coin collector service..... **17.45**
 Includes: 1 No. 1295-A desk set box, 1 No. 7-A coin collector, 1 No. 1020-F desk stand.

WRITE FOR LIBERAL DISCOUNTS

Telephone Sets—Continued

CENTRAL BATTERY DESK SET BOXES

These do not include transmitters and receivers, but are intended for use with desk stands, transmitter arms, or hand sets. Furnished regularly in oak or walnut, except the No. 1131-J which has a metal case with black japan finish.



No. 1295-A

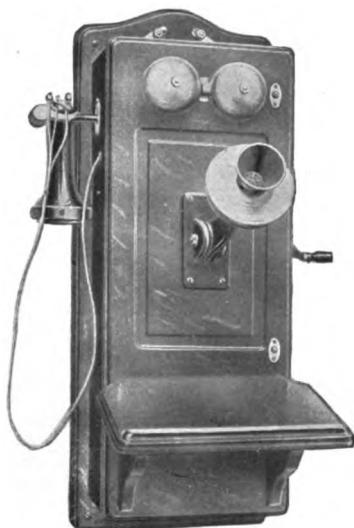


No. 1295-AC

Code No.	Description	List Price each
1131-J	For direct, two party selective or four party semi-selective central battery service. This is used with the No. 1130-A wall set, forming the No. 2002 wall telephone set. Includes: 1 No. 17-A ringer, 1 No. 21-E condenser, 1 No. 20 induction coil.	\$ 4.35
1295-A	For direct, two party selective or four party semi-selective central battery service. May be used either with or without the No. 7 type electrically operated coin collector. 1000-ohm biased ringer and inside binding posts. . . . Includes: 1 No. 8-AG ringer, 1 No. 21-D condenser, 1 No. 20 induction coil.	4.85
1297-A	For four party selective central battery service. 2500-ohm biased ringer, relay and inside binding posts. Includes: 1 No. 8-BG ringer, 1 No. 21-D condenser, 1 No. 20 induction coil, 1 No. 85-B relay.	9.15
1295-AA	For local battery talking and central battery signalling service. 1000-ohm biased ringer and inside binding posts. Includes: 1 No. 8-AG ringer, 1 No. 21-D condenser, 1 No. 13 induction coil.	4.60
1295-AC	For extension to a main telephone set on a direct, two party selective or four party semi-selective central battery system. No ringer, inside binding posts. Includes: 1 No. 21-D condenser, 1 No. 20 induction coil.	3.35

MAGNETO WALL TYPE

These are regularly furnished in oak, and arranged to accommodate 3 standard size dry cells; but the cells are not included in the telephone set, and when desired they should be ordered separately. The No. 122-W receiver and standard high resistance transmitter are furnished with these sets. Others will be supplied if ordered.



No. 317

with the receiver. 5-bar A.C. generator and 1600-ohm unbiased ringer. Includes: 1 No. 2-FG ringer; 1 No. 47-A generator; 1 No. 140-A switch hook; 1 No. 13 induction coil; 1 No. 250-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord; 1 condenser.

Code No.	Description	List Price each
1317-H	For light load bridging service where code ringing is employed. 3-bar A.C. generator and 1000-ohm unbiased ringer. Includes: 1 No. 2-AG ringer; 1 No. 22-A generator; 1 No. 140-A switch hook; 1 No. 13 induction coil; 1 No. 250-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord. This telephone set may be equipped with a condenser wired in the receiver circuit, and will be so furnished if specified on the order.	\$ 11.70
1317-A	For moderate load rural service where code ringing is employed. 5-bar A.C. generator and 1600-ohm unbiased ringer. Includes: 1 No. 2-FG ringer; 1 No. 47-A generator; 1 No. 140-A switch hook; 1 No. 13 induction coil; 1 No. 250-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord.	15.15
1317-E	For heavy load rural service where code ringing is employed. 5-bar A.C. generator and 2500-ohm unbiased ringer. Includes: 1 No. 2-BG ringer; 1 No. 47-A generator; 1 No. 140-A switch hook; 1 No. 13 induction coil; 1 No. 250-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord.	15.15
1317-F	For moderate load rural service where code ringing is employed. Condenser in series with the receiver. 5-bar A.C. generator and 1600-ohm unbiased ringer. Includes: 1 No. 2-FG ringer; 1 No. 47-A generator; 1 No. 140-A switch hook; 1 No. 13 induction coil; 1 No. 250-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord; 1 condenser.	15.90

WRITE FOR LIBERAL DISCOUNTS

Telephone Sets—Continued

Code No.	Description	List Price each
1317-G	For heavy load rural service where code ringing is employed. Condenser in series with receiver, 5-bar A.C. generator and 2500-ohm unbiased ringer Includes: 1 No. 2-BG ringer; 1 No. 47-A generator; 1 No. 140-A switch hook; 1 No. 13 induction coil; 1 No. 250-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord; 1 condenser.	\$ 15.90
1317-J	For two or four party selective service. 2-bar A.C. generator and 2500-ohm biased ringer Includes: 1 No. 6-BG ringer; 1 No. 22-E generator; 1 No. 140-A switch hook; 1 No. 13 induction coil; 1 No. 250-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord.	12.30
1317-K	For heavy load center checking service. 5-bar pulsating and A.C. generator and 2500-ohm biased ringer Includes: 1 No. 6-BG ringer; 1 No. 47-B generator; 1 No. 140-A switch hook; 1 No. 13 induction coil; 1 No. 250-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord.	16.15
1317-L	For heavy load rural line where selective central office signalling service and code ringing are employed. 5-bar pulsating and A.C. generator and 2500-ohm biased ringer Includes: 1 No. 6-BG ringer; 1 No. 47-B generator; 1 No. 140-A switch hook; 1 No. 13 induction coil; 1 No. 92, 3 ft. cord; 1 push button; 1 No. 250-W transmitter; 1 No. 122-W receiver. This telephone set may be obtained with a ringer of 1000 or 1600 ohms resistance and with a 3-bar generator and will be furnished with these if specified on the order.	16.60
1317-M	For series line. 3-bar A.C. generator and 80-ohm unbiased ringer. Includes: 1 No. 250-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord; 1 No. 13 induction coil. These are arranged to accommodate 3 standard size dry cells. Regularly furnished in oak or walnut.	11.25
1240-A	For light load bridging service where code ringing is employed. 3-bar A.C. generator and 1000-ohm unbiased ringer. Walnut Oak	13.70 13.60
	Includes: 1 No. 2-AG ringer; 1 No. 22-A generator; 1 No. 121-A switch hook; 4 No. 2-A binding posts; 2 No. 3-A binding posts; 1 No. 13 induction coil; 1 No. 250-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord; 1 No. 111-C backboard.	
1298-A	For heavy load rural service where code ringing is employed. 5-bar A.C. generator, 2500-ohm unbiased ringer and inside binding posts. Walnut Oak	17.10 17.00
	Includes: 1 No. 2-BG ringer; 1 No. 47-A generator; 1 No. 140-A switch hook; 1 No. 13 induction coil; 1 No. 250-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord; 1 No. 138-A backboard. This telephone set may also be obtained with a 1600-ohm ringer in place of the 2500-ohm ringer, or with a condenser wired in the receiver circuit, and will be furnished with these if specified on the order.	
1240-E	For two or four party selective service. 2-bar A.C. generator and 2500-ohm biased ringer. Walnut Oak	14.50 14.40
	Includes: 1 No. 6-BG ringer; 1 No. 22-E generator; 1 No. 121-A switch hook; 5 No. 2-A binding posts; 2 No. 3-A binding posts; 1 No. 13 induction coil; 1 No. 250-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord; 1 No. 111-C backboard.	



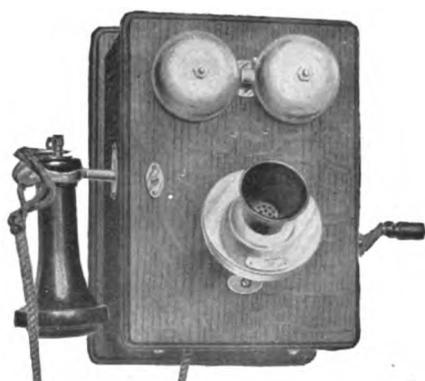
No. 1240-A



No. 1298-A

WRITE FOR LIBERAL DISCOUNTS

Telephone Sets—Continued
Magneto Wall Type—Continued



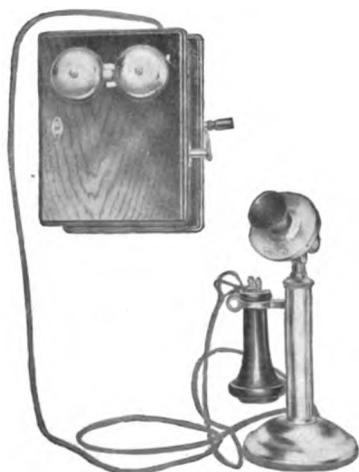
No. 1305-A.

These are not arranged to accommodate the necessary dry cells. It is recommended that the No. 1-A battery box be ordered for this purpose.

Regularly furnished in oak or walnut.

List Price
each

Code No.	Description	List Price each
1305-G	For light load bridging service where code ringing is employed. 3-bar A.C. generator, 1000-ohm unbiased ringer and inside binding posts. Includes: 1 No. 2-AG ringer; 1 No. 22-A generator; 1 No. 140-A switch hook; 1 No. 3-A transmitter bracket; 1 No. 179, 5½ in. cord; 1 No. 13 induction coil; 1 No. 229-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord.	\$ 12.30
	This telephone set may be equipped with a condenser wired in the receiver circuit, and will be so furnished if specified on the order.	
1305-H	For moderate load rural service where code ringing is employed. 5-bar A.C. generator, 1600-ohm unbiased ringer and inside binding posts. Includes: 1 No. 2-FG ringer; 1 No. 47-A generator; 1 No. 140-A switch hook; 1 No. 13 induction coil; 1 No. 3-A transmitter bracket; 1 No. 179, 5½ in. cord; 1 No. 229-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord.	15.75
1305-A	For heavy load rural service where code ringing is employed. 5-bar A. C. generator, 2500-ohm unbiased ringer and inside binding posts. Includes: 1 No. 2-BG ringer; 1 No. 47-A generator; 1 No. 140-A switch hook; 1 No. 3-A transmitter bracket; 1 No. 179, 5½ in. cord; 1 No. 13 induction coil; 1 No. 229-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord.	15.75
1305-J	For moderate load rural service where code ringing is employed. Condenser in series with the receiver. 5-bar A.C. generator, 1600-ohm unbiased ringer and inside binding posts. Includes: 1 No. 2-FG ringer; 1 No. 47-A generator; 1 No. 140-A switch hook; 1 No. 3-A transmitter bracket; 1 No. 179, 5½ in. cord; 1 No. 13 induction coil; 1 No. 229-W transmitter, 1 No. 122-W receiver, 1 No. 92, 3 ft. cord; 1 condenser.	16.50
1305-K	For heavy load rural service where code ringing is employed. Condenser in series with the receiver. 5-bar A.C. generator, 2500-ohm unbiased ringer and inside binding posts. Includes: 1 No. 2-BG ringer; 1 No. 47-A generator; 1 No. 140-A switch hook; 1 No. 3-A transmitter bracket; 1 No. 179, 5½ in. cord; 1 No. 13 induction coil; 1 No. 229-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord; 1 condenser.	16.50



No. 2004

1305-L	For two or four party selective service. 2-bar A.C. generator, 2500-ohm biased ringer and inside binding posts. Includes: 1 No. 6-BG ringer; 1 No. 22-E generator; 1 No. 140-A switch hook, No. 3-A transmitter bracket; 1 No. 179, 5½ in. cord; 1 No. 13 induction coil; 1 No. 229-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord.	12.90
1305-F	For series line. 3-bar A.C. generator and 80-ohm unbiased ringer. Includes: 1 No. 229-W transmitter; 1 No. 122-W receiver; 1 No. 13 induction coil; 1 No. 92, 3 ft. cord. Regularly furnished in oak or walnut.	11.85

MAGNETO DESK TYPE

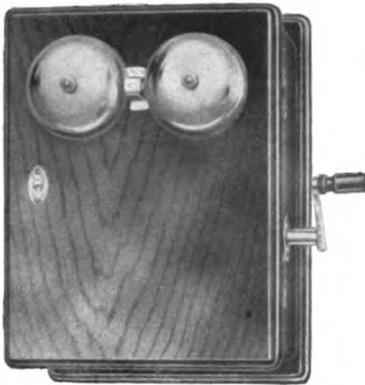
2003	For light load service. Includes: 1 No. 1315-A desk set box, 1 No. 1020-B desk stand.	13.75
2004	For heavy load service. Includes: 1 No. 1300-A desk set box, 1 No. 1020-B desk stand.	17.35

WRITE FOR LIBERAL DISCOUNTS

MAGNETO DESK SET BOXES

These do not include transmitters and receivers, but are intended for use with desk stands, transmitter arms or hand sets. No provision is made in these boxes for the dry cells. It is recommended, however, that the No. 1-A battery box be ordered for this purpose.

Regularly furnished in oak or walnut.



No. 1300-A



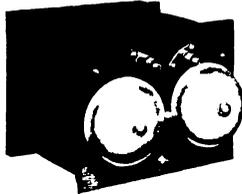
No. 1295-S

Code No.	Description	List Price each
1315-A	For light load bridging service where code ringing is employed. 3 bar A.C. generator, 1000-ohm unbiased ringer and inside binding posts. Includes: 1 No. 2-AG ringer, 1 No. 22-A generator, 1 No. 13 induction coil.	\$ 6.85
1300-F	For moderate load rural service where code ringing is employed. 5-bar A.C. generator, 1600-ohm unbiased ringer and inside binding posts. Includes: 1 No. 2-FG ringer, 1 No. 47-A generator, 1 No. 13 induction coil.	10.45
1300-A	For heavy load rural service where code ringing is employed. 5-bar A.C. generator, 2500-ohm unbiased ringer and inside binding posts. Includes: 1 No. 2-BG ringer, 1 No. 47-A generator, 1 No. 13 induction coil.	10.45
1300-G	For moderate load rural service where code ringing is employed. Condenser in series with the receiver. 5-bar A.C. generator, 1600-ohm unbiased ringer and inside binding posts. Includes: 1 No. 2-FG ringer, 1 No. 47-A generator, 1 No. 13 induction coil, 1 condenser.	11.20
1300-H	For heavy load rural service where code ringing is employed. Condenser in series with the receiver. 5-bar A.C. generator, 2500-ohm unbiased ringer and inside binding posts. Includes: 1 No. 2-BG ringer, 1 No. 47-A generator, 1 No. 13 induction coil, 1 condenser.	11.20
1315-E	For two or four party selective service. 2-bar A.C. generator, 2500-ohm biased ringer and inside binding posts. Includes: 1 No. 6-BG ringer, 1 No. 22-E generator, 1 No. 13 induction coil.	7.45
<p>These are intended for the purpose of giving extension service to main telephone sets, and are not provided with generators. Regularly furnished in oak or walnut.</p>		
1295-S	For light load bridging service where code ringing is employed. 1000-ohm unbiased ringer. Includes: 1 No. 4-AG ringer, 1 No. 13 induction coil.	3.70
1295-Y	For heavy load service where code ringing is employed. 2500-ohm biased ringer. Includes: 1 No. 8-BG ringer, 1 No. 13 induction coil. This set may be obtained with a 1600-ohm ringer in place of a 2500-ohm ringer, or with a condenser wired in the receiver circuit, and will be furnished with these if specified on the order.	4.10
1295-AB	For all classes of bridging magneto service. Condenser in series with receiver. No ringer. Includes: 1 No. 13 induction coil, 1 condenser.	3.10

WRITE FOR LIBERAL DISCOUNTS

EXTENSION BELLS

Regularly furnished in oak or walnut.

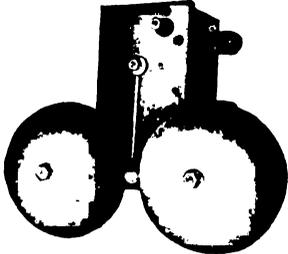


No. 43-A

Code No.	Description	List Price each
43-A	1000-ohm unbiased ringer mounted in box 5 ³ / ₈ in. x 4 ³ / ₈ in. x 4 ³ / ₈ in.	\$ 2.55
43-F	1000-ohm biased ringer mounted in box 5 ³ / ₈ in. x 4 ³ / ₈ in. x 4 ³ / ₈ in.	2.55
43-J	2500-ohm biased ringer mounted in box 5 ³ / ₈ in. x 4 ³ / ₈ in. x 4 ³ / ₈ in.	3.15

LOUD RINGING EXTENSION BELLS

These have metal cases finished in black japan. The gongs are nickel plated.

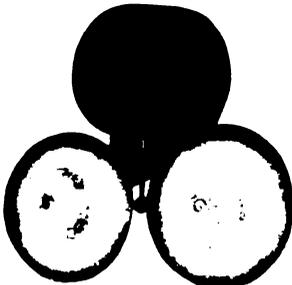


No. 292-A

Code No.	Description	List Price each
292-A	1000-ohm unbiased, operates on alternating current. . .	\$ 5.25
292-J	1000-ohm biased, operates on pulsating or alternating current.	5.80
292-E	2500-ohm unbiased, operates on alternating current. . .	5.65
292-K	2500-ohm biased, operates on pulsating or alternating current.	6.15

EXTENSION BELL FOR MINES

These operate on alternating current.

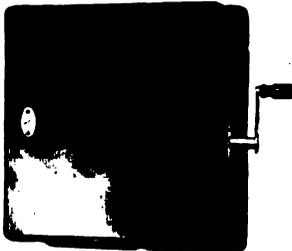


No. 292-A

Code No.	Description	List Price each
292-A	1000-ohm unbiased. Gongs and case protected by a coating of lead.	\$ 15.75

HAND GENERATOR BOXES

Regularly furnished in oak or walnut.



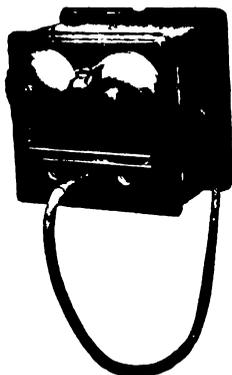
No. 299-A

Code No.	Description	List Price each
299-A	5-bar A.C. Generator mounted in box 7 ¹ / ₂ in. x 9 in. x 5 ¹ / ₂ in.	\$ 7.30
299-E	5-bar Pulsating and A.C. Generator mounted in box 7 ¹ / ₂ in. x 9 in. x 5 ¹ / ₂ in.	8.25
303-A	3-bar A.C. Generator mounted in box 6 ¹ / ₂ in. x 8 ¹ / ₂ in. x 4 ¹ / ₂ in.	4.35

CUT IN STATION SETS FOR TOLL LINES

For use at intermediate station on a toll line to cut the line off in either direction.

Regularly furnished in oak or walnut.



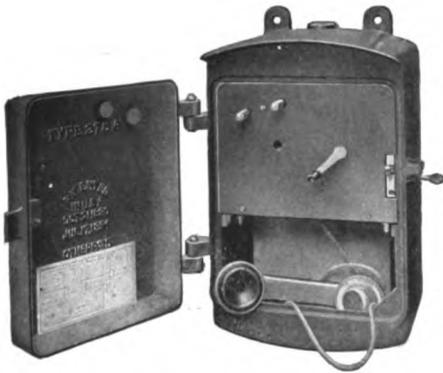
No. 319-A

Code No.	Description	List Price each
319-A	For series service; equipped with an 80-ohm unbiased ringer, three jacks, a two-conductor cord and plug.	\$ 5.00
319-E	Similar to No. 319-A but for use on a bridging line and equipped with a 1000-ohm unbiased ringer.	5.30
319-F	Similar to No. 319-E but equipped with a 1600-ohm unbiased ringer.	5.90
319-G	Similar to No. 319-E but equipped with a 2500-ohm unbiased ringer.	5.90

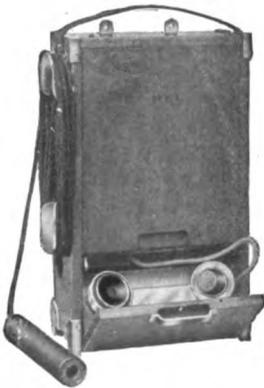
WRITE FOR LIBERAL DISCOUNTS

LOCAL BATTERY TELEPHONE SETS FOR STREET RAILWAYS

These are particularly well adapted to street railway work where the telephone lines are strung with the trolley and feed wires (on the same poles) and where the need of the best known protective devices is apparent.



No. 1278-A



No. 1280-A



No. 1302-A

Pole Type

Code No.	Description	List Price each
1278-A	Includes: 1 No. 47-G, 5-bar generator; 1 No. 25-E repeating coil; 2, 1-amp. fuses; 2 carbon cutouts; 1 No. 13 induction coil; 1 No. 244-W transmitter; 1 No. 131 W receiver; 1 No. 1 hand-set handle; 1 No. 242, 18 in. cord, 1 No. 243, 8 in. cord; 2 switches for automatically opening the line and battery circuits when the door is closed. Arranged for 2 Blue Bell dry cells, but these are not furnished unless specified	\$ 43.75

Portable Type

1280-A	Includes: 1 No. 20-B, 5-Bar generator, 1 No. 34-A repeating coil; 1 No. 126 plug; 1 No. 309, 15 ft. cord; 1 No. 70-A protector; 1 No. 13 induction coil; 1 No. 244-W transmitter; 1 No. 131-W receiver; 1 No. 1 hand-set handle; 1 No. 285, 18 in. cord; 1 No. 243, 8 in. cord; 1 switch for automatically opening the battery circuit when the set is closed. Arranged for 2 Blue Bell dry cells, but these are not furnished unless specified. Weight, 33 lbs.....	43.10
1302-A	Includes: 1 No. 43-B, 3-bar generator; 1 No. 25-E repeating coil; 1 No. 126 plug; 1 No. 309, 15 ft. cord; 1 No. 70-A protector; 1 No. 13 induction coil; 1 No. 228-W transmitter; 1 No. 133-W receiver; 1 No. 179, 5½ in. cord; 1 No. 311, 3 ft. cord; 1 switch for automatically opening the battery circuit when the receiver is placed in holder. Arranged for 2 Blue Bell dry cells, but these are not furnished unless specified. Weight, 27 lbs.....	29.00

TELEPHONE SETS FOR USE ON "RAILWAY COMPOSITE" LINES

Special telephone sets used in railway systems for simultaneous telephony and telegraphy. These are arranged to signal by means of high frequency current which operates a howler, producing a loud tone.

In equipping a line for this service it is necessary to install at each terminal telephone station a differentiator known as the No. 28-B condenser; at each intermediate telegraph station a No. 27-B condenser and No. 31-A resistance coil.

WRITE FOR LIBERAL DISCOUNTS

Telephone Sets—Continued

Telephone Sets for use on "Railway Composite"
Lines—Continued

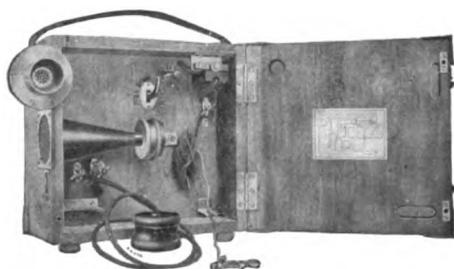


No. 1312-A

Wall Type

Code No.	Description	List Price each
1312-A	Includes: 1 No. 12-G retardation coil; 1 No. 21-D condenser; 1 No. 21-U condenser; 1 No. 21-H condenser; 1 No. 140-B switch hook; 1 No. 1-A howler; 1 No. 5 induction coil; 1 No. 250-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord; 1 No. 390-B key.....	\$ 28.35

Portable Type



No. 1314-A

1314-A	Includes: 1 No. 12-M retardation coil; 1 No. 140-F switch hook; 1 No. 390-B key; 1 No. 21-D condenser; 1 No. 21-U condenser; 1 No. 1-B howler; 1 No. 3-B binding post; 3 No. 3-C binding posts; 1 No. 311, 3 ft. cord; 1 No. 179, 5½ in. cord; 1 No. 267, 10 ft. cord, 1 No. 2 line pole; 1 No. 228-W transmitter; 1 No. 133-W receiver; 1 No. 5 induction coil; 4 Blue Bell dry cells; 1 rail clamp.....	47.45
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No. 1320-A Open

TELEPHONE SETS FOR POLICE SERVICE

This is a central battery telephone set enclosed in a cast iron case about 12 in. x 12 in. x 6½ in. and especially adapted to police patrol service. The lettering on the case can be arranged as ordered. All the telephone parts are mounted on a frame which can be removed as a unit from the case. The door is flanged to make it weather proof and is provided with a strong spring lock of special design.



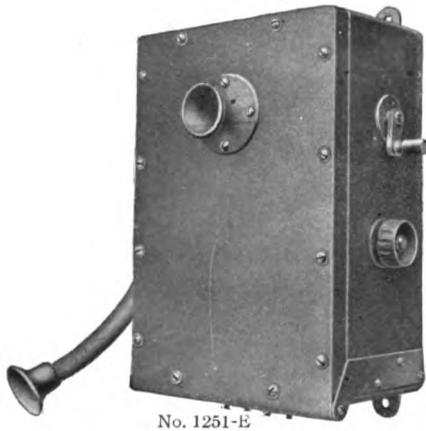
No. 1320-A Closed

Code No.	Description	List Price each
1320-A	Furnished with all the necessary apparatus. Includes: 1, 1000-ohm unbiased ringer; 1 No. 21-D condenser; 1 No. 20 induction coil; 2 No. 3-A binding posts; 2 No. 2-A binding posts; 1 No. 92, 12 in. cord, 1 No. 229-W transmitter; 1 No. 122-W receiver; 1 switch hook.....	\$ 40.25

WRITE FOR LIBERAL DISCOUNTS

Telephone Sets—Continued

TELEPHONE SETS FOR USE IN MINES



No. 1251-E

Code No.	Description	List Price each
1251-E	This contains all the apparatus except the extension bell. The case is covered with lead as a protection against corrosion and decay, 5 bar generator	\$ 35.00

Includes: 1 No. 20-A generator, 1 key for battery circuit, 1 No. 13 induction coil, 1 No. 228-W transmitter, 1 No. 128-W receiver less head band and cap.

The No. 283-A extension bell is used with this set.

INTERCOMMUNICATING TELEPHONE SETS

Regularly furnished in oak

These sets are designed for intercommunicating service between different rooms or departments in the same building or adjoining buildings. They are built in two styles, one being equipped with keys for making the desired connections and the other with jacks and a cord and plug. The former is furnished in three sizes, ten, twenty and thirty line capacities and the latter in twenty four line capacity with equipment as specified. Either wall or desk type telephone sets can be furnished. Two groups of dry batteries are necessary, one for ringing and the other for talking. These sets are wired for metallic service but may be used on a common return system if desired.



No. 1321-A



No. 2005

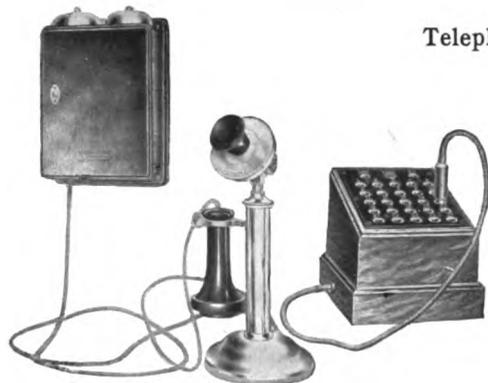


No. 1322-A

Code No.	Description
1321-A	10 line wall telephone set equipped with keys for making connections.
1321-E	20 line wall telephone set equipped with keys for making connections.
1321-F	30 line wall telephone set equipped with keys for making connections.
2005	10 line desk telephone set with keys for making connections. Includes 1 desk set box, 1 No. 1020-H desk stand, 1 No. 371-A key.
2006	20 line desk telephone set with keys for making connections. Includes 1 desk set box, 1 No. 1020-H desk stand, 1 No. 371-B key.
2007	30 line desk telephone set with keys for making connections. Includes 1 desk set box, 1 No. 1020-H desk stand, 1 No. 371-C key.
1322-A	24 line wall telephone set equipped with jacks and plug and cord for making connections. Equipment of jacks to be specified.

PRICES ON REQUEST

Telephone Sets—Continued



No. 2008

Intercommunicating Telephone Sets—Continued

Code No. Description
2008 24 line desk telephone set with jacks, plug and cord for making connections. Includes 1 desk set box, 1 No. 1020-H desk stand, 1 jack box. Equipment of jacks to be specified.

PRIVATE LINE TELEPHONE SET

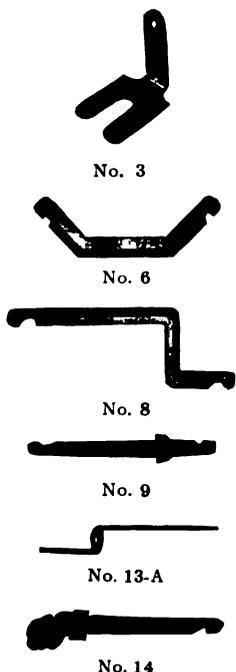
This set is suitable for use on short lines connecting different rooms or departments in the same building, or for connecting house and stable, only two wires between stations being necessary. More than two stations may be connected to the line if desired. The batteries are located at each station and signalling is accomplished by means of a push button which operates direct current ringers at the other stations.



No. 1293-AB

Code No.
1293-AB Furnished in oak or walnut as specified.

TERMINAL PUNCHINGS



Code No.	Description	List Price per hundred
3	German silver, used on fuse posts and fuse blocks	\$ 0.45
6	Brass, used for the ground side of the ringing leads . . . . .	.90
8	Heavy brass, used on double sided connecting racks	2.25
9	Brass, used on No. 10 switchboard . . . . .	.85
13-A	Brass, used on double sided connecting racks	1.15
13-B	Brass, used on double sided connecting rack, similar to No. 13-A only longer	1.15
14	Brass, screw connection	2.65
15-A	Brass, used on one sided connecting racks	1.30
16	Brass, used on repeating coils and retardation coils . . . . .	.45
17-A	Brass, used on induction coils and telephone sets55



No. 15-A

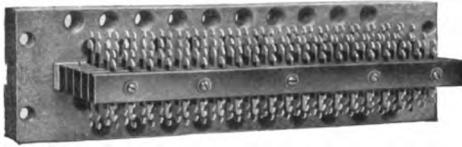


No. 16

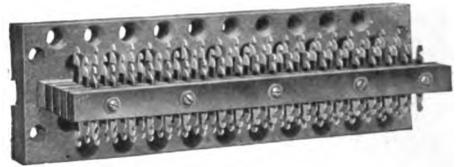


No. 17-A

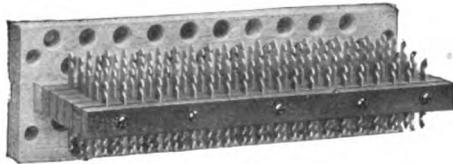
WRITE FOR LIBERAL DISCOUNTS



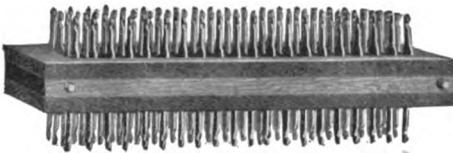
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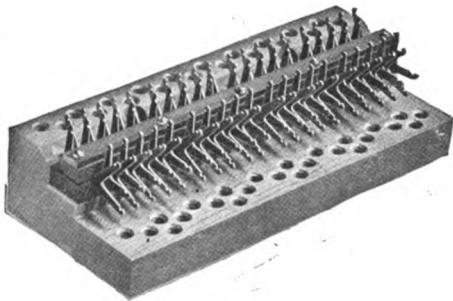
No. 35



No. 37



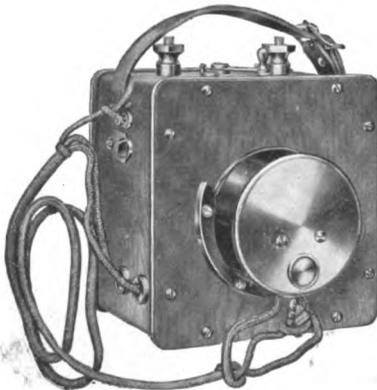
No. 49



No. 65



No. 53



No. 1006-A

TERMINAL STRIPS

These strips consist of a maple base drilled for connecting wires and equipped with terminal punchings held in place by hard rubber insulating strips.

Used on Intermediate Distributing Frame

Code No.	Number of Terminals in each Row	Number of Rows of Terminals	Length of Strip inches	List Price each
35	20	3	7 1/4	\$ 1.50
36	20	4	7 3/4	1.80
37	20	5	7 3/4	2.10
38	20	3	6 1/2	1.20
39	20	4	6 1/2	1.50
40	20	5	6 1/2	1.80
41	20	6	6 1/2	2.10
43	20	4	6 1/2	for No. 9 exchange .53
49	20	3	6 1/2	for No. 9 exchange .48

Used on Main Distributing Frame

65	1 Row of 40 three-way terminals; 7 1/4 in. long.....			1.20
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Used on No. 9 Section

53	20	2	10	.45
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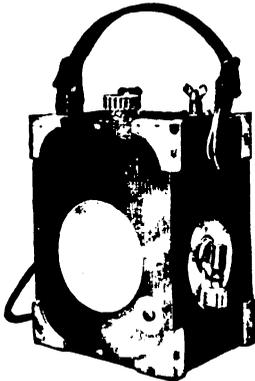
TEST SETS

The No. 125-W receiver on the No. 1006 type sets is used both as transmitter and receiver.

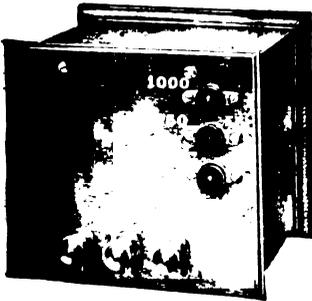
Code No.	Will ring through ohms	Contains	Size of Case inches	Finish	List Price each
1006-A	2500	1 No. 2-A buzzer 1 No. 29-A generator 1 switch 1 No. 125-W receiver with cord. Receiver holder	6x5 1/2x4 1/2	Cherry	\$ 11.05
1006-B	3500	1 No. 2-B buzzer 1 No. 29-A generator 1 switch 1 No. 125-W receiver with cord. Receiver holder	6x5 1/2x4 1/2	Cherry	11.35
1006-C	2500	1 No. 2-A buzzer 1 No. 29-A generator 1 switch 1 No. 125-W receiver with cord	6x5 1/2x4 1/2	Cherry	10.60
1006-D	5000	1 No. 2-A buzzer 1 No. 22-B generator 1 switch 1 No. 125-W receiver with cord Receiver holder	6 1/2x6x4 1/2	Cherry	12.55

WRITE FOR LIBERAL DISCOUNTS

Test Sets—Continued



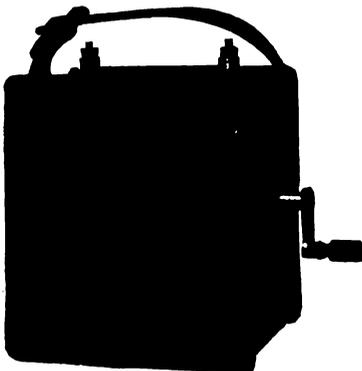
No. 1017-A



No. 9-A



No. 16-A



No. 90510

Code No.	Will ring through ohms	Contains	Size of Case inches	Finish	List Price each
1006-E	5000	1 No. 2-A buzzer 1 No. 22-B generator 1 switch 1 No. 125-W receiver with cord	6 3/4 x 6 x 4 1/2	Cherry	\$ 12.10
1017-A	2500	1 No. 2-D buzzer 1 No. 29-B generator 1 switch 1 No. 337 cord 1 dry battery 1 No. 13 induction coil 1 No. 266-W transmitter 1 No. 128-W receiver less head band	7 1/4 x 6 1/2 x 4 1/2	Birch Mahogany	14.55
9-A		For testing super-3 visory re-lays 1 No. 117 jack 3 No. 89-A keys 1 No. 5-K resistance, (750 ohms) 1 No. 5-S resistance (9000 ohms) 1 No. 5-AH resistance (250 ohms)	5 1/2 x 5 1/2 x 4 1/2	Oak nickel trimming	8.25
16-A		For cable testing 6 O.K. dry cells No. 2 1 No. 31-A condenser 1 No. 13115 switch 1 buzzer 4 No. 2-A binding posts	7 1/8 x 5 1/8 x 7 1/2	Oak nickel trimming	12.45

These test sets are 5 1/2 in. x 6 3/8 in. x 5 1/2 in.

List No.	Will ring through ohms	Contains	Finish	List Price each
90530	10000	1 No. 22-K generator 1 No. 18-A ringer	Birch	\$ 7.00
90510	35000	1 No. 22-K generator 1 No. 18-B ringer	Birch	8.50
90511	50000	1 No. 22-N generator 1 No. 19-A ringer	Birch	9.50
90512	100000	1 No. 22-N generator 1 No. 19-B ringer	Birch	11.00

WRITE FOR LIBERAL DISCOUNTS



No. E-3200

THE QUEEN ACME PORTABLE TESTING SETS

This is a combined resistance box and galvanometer used for general resistance measurement work.

List No.	Range in ohms	List Price each
E-3200	0.01 to 1,000,000	\$ 100.00



No. 25

No. 28



No. 34



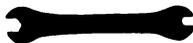
No. 35



No. 39



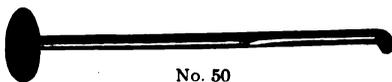
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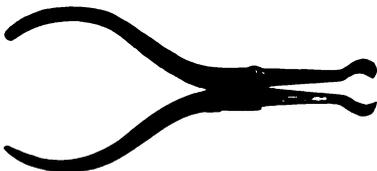
No. 43



No. 46



No. 50



No. 58

TOOLS

FOR CENTRAL OFFICES

Code No.	Used for	List Price each
25	Spring adjustment of horizontal key.....	\$ 0.25
28	Nos. 4 and 65 protector nuts.....	.30
34	Wrench and screw driver for $\frac{7}{8}$ in. hexagonal nuts on No. 7 protector.....	1.00
35	Plug and drop screws.....	.30
39	Shutter support adjuster, used on drops...	.30
40	Double screw driver for drops.....	.30
43	Fits $\frac{1}{8}$ in. and $\frac{1}{4}$ in. nuts.....	.30
46	Removing cap nuts from relays of No. 122 type.....	.55
48	Wrench and screw driver for adjusting armature contacts of No. 185-A relay. Will fit $\frac{1}{4}$ in. and $\frac{3}{8}$ in. nuts.....	.90
50	Relay spring adjustment.....	.40
58	Handling heat coils of protectors.....	.75

WRITE FOR LIBERAL DISCOUNTS

Tools—Continued



No. 64



No. 66



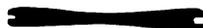
No. 68



No. 67



No. 72



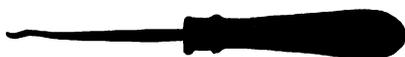
No. 74



No. 77



No. 80



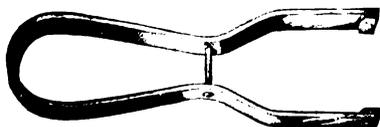
No. 81



No. 85



No. 87



No. 90



No. 91



No. 92



No. 93



No. 97

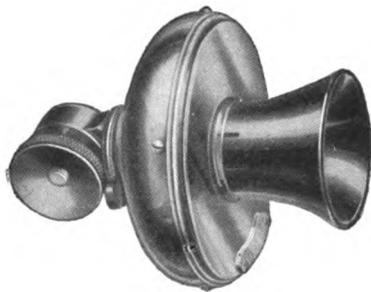


No. 105

Code No.	Used for	List Price each
64	Wrench and screw driver for adjusting Nos. 4 and 16 jack fasteners.....	\$1.90
66	Extracting line and supervisory lamps.....	.30
67	Adjusting ring springs of No. 49 jacks....	.40
68	Adjusting tip springs of No. 49 jacks.....	.40
72	Wrench and screw driver for adjusting armature contact screws, $\frac{1}{8}$ in. and $\frac{5}{16}$ in. hexagonal nuts.....	.85
74	Fits $\frac{5}{16}$ in. and $\frac{7}{16}$ in. nuts.....	.45
77	Holding wires to terminals of jacks for soldering.....	1.15
80	Extracting Nos. 2 and 4 type lamp caps..	.30
81	Adjusting tip and ring springs of No. 92 jacks.....	.40
85	Extracting No. 4 type lamps.....	.30
87	Extracting No. 8 type lamp caps.....	.30
90	Removing caps of service meters.....	.90
91	Removing cover of No. 89 type relay.....	.55
92	Nuts on Nos. 18 and 19 resistances.....	.55
93	Multiple cable lifter.....	.25
97	$\frac{3}{8}$ in. hexagonal nuts on No. 7 type fuses...	.45
105	Adjusting springs on No. 453 type keys...	.45

WRITE FOR LIBERAL DISCOUNTS

TRANSMITTERS



No. 229-W



No. 232-W



No. 234-W



No. 250-W

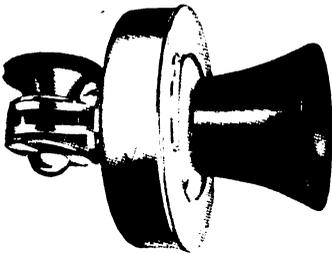
Code No.	Description	Used with	List Price each
226-W	Low resistance transmitter without lug.		\$ 1.40
227-W	Low resistance transmitter with lug.		2.00
228-W	High resistance transmitter without lug.	Nos. 1251-E, 1302-A and 1314-A telephone sets.....	1.40
229-W	High resistance transmitter with lug.	Desk stands, transmitter arms and small telephone sets	2.00
232-W	High resistance transmitter arranged to be suspended by two cords entering side of case.	Nos. 7-A and 19-A transmitter arms for switchboards.	2.55
234-W	Operator's chest transmitter arranged to be supported by a band around the operator's neck. This attachment is not furnished with the transmitter.	Switchboards as operator's transmitter. No. 3 type of transmitter attachment used as support.....	2.95
244-W	High resistance transmitter arranged to be fixed to No. 1 hand set handle.	No. 1001 hand set ..	2.25
250-W	High resistance bracket type transmitter.	All wall telephone sets that require bracket type transmitter.....	2.00

WRITE FOR LIBERAL DISCOUNTS

Transmitters— Continued



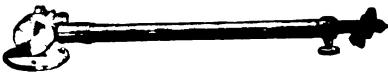
No. 266-W



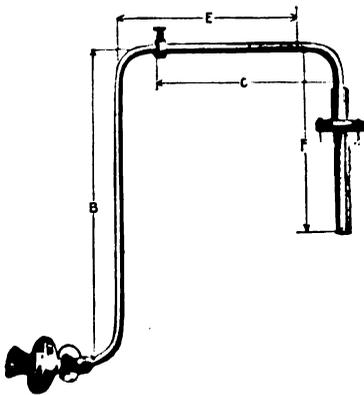
No. 269-W



No. 7-A



No. 19-A



No. 11

Code No.	Description	Used with	List Price each
251-W	Low resistance bracket type transmitter.		\$ 2.00
266-W	Transmitter to be fastened inside case.	No. 1017-A test set	1.30
267-W	Transmitter arranged to be fixed to No. 2 type hand set handle.	No. 1002-A hand set.....	1.55
269-W	High resistance transmitter having small insulated case.	Intercommunicating wall telephone sets	2.00
270-W	High resistance transmitter of the bracket type having insulated case.	All wall telephone sets that require bracket type transmitter	2.00
271-W	High resistance transmitter having insulated case with lug.	No. 1020-P desk stand.....	2.00
272-W	High resistance transmitter having insulated case with lug, and equipped with two 5½ in. No. 329 cords.	Wall telephone sets (except intercommunicating) that require transmitter with lug.....	2.00

TRANSMITTER ARMS

FOR SWITCHBOARDS

Using Suspended Transmitter

The code number does not include transmitter, receiver or cords.

Code No.	Description	List Price each
7-A	This includes the two cord escutcheon tubes, hanger and two No. 103 cord weights. Furnished in brass finish unless otherwise specified. In ordering, state whether the tubes through which the cord runs shall be 7 or 13 inches long.....	\$ 4.90
19-A	Nickel plated unless otherwise specified.....	5.85

Using Transmitter with Lug

The code number does not include transmitter, receiver or cords. No. 11 type is nickel plated unless otherwise specified.

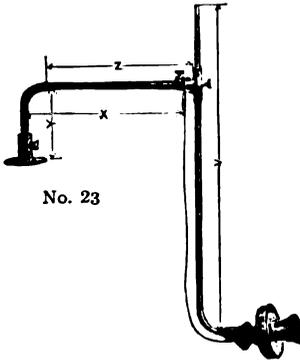
	Dimensions in inches				List Price each
	B	C	E	F	
11-A	19	12	12	12	\$ 5.85
11-B	12	11	11	12	5.85
11-C	18	12	12	16	5.85
11-D	12	16	16	15	5.85
11-E	6	12	12	11	5.85

WRITE FOR LIBERAL DISCOUNTS

Transmitter Arms—Continued

For Switchboards—Continued

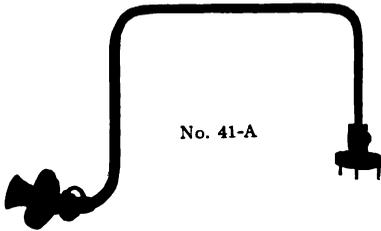
No. 23 type is nickel plated unless otherwise specified,



No. 23

Code No.	Dimensions, inches				List Price each
	V	X	Y	Z	
23-A	27	11	5	10	\$ 3.60
23-B	18	11	5	10	3.60
23-C	12	8	6	7	3.60
23-D	20	14	4	13	3.60
23-E	12	14	8	13	3.60
23-F	8	14	4	13	3.60

No. 41 type is nickel plated unless otherwise specified.



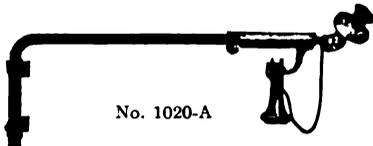
No. 41-A

41-A Used with No. 4 private exchanges..... **5.65**

FOR DESKS

With Transmitters, Receivers and Cords

The No. 122-W receiver and standard high resistance transmitter are furnished with these transmitter arms, as specified below. Others will be furnished if ordered.



No. 1020-A

Code No.	Description	Finish	List Price each
1020-A	For regular local battery bridging or central battery service. Used on flat top desks.	Rust proof dull black	\$ 12.35

Includes: 1 No. 20-A transmitter arm
 1 No. 229-W transmitter
 1 No. 122-W receiver
 1 No. 310 cord



No. 1040-B

1040-B	For regular local battery bridging or central battery service. Mounts on wall.	Black enamel	9.05
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Includes: 1 No. 40-B transmitter arm
 1 No. 229-W transmitter
 1 No. 122-W receiver
 1 No. 308 cord



No. 1040-D

1040-D	For regular local battery bridging or central battery service. Used on roll top desks.	Black enamel	9.20
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Includes: 1 No. 40-D transmitter arm
 1 No. 229-W transmitter
 1 No. 122-W receiver
 1 No. 308 cord

WRITE FOR LIBERAL DISCOUNTS



No. 1040-F

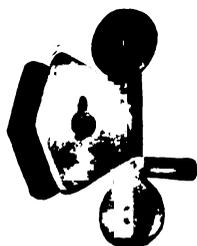
**Transmitter Arms—Continued
For Desks—Continued**

Code No.	Description	Finish	List Price each
1040-F	For regular local battery bridging or central battery service. Used on flat top desks. Includes: 1 No. 40-F transmitter arm 1 No. 229-W transmitter 1 No. 122-W receiver 1 No. 308 cord	Black enamel	\$ 9.20

Without Transmitters, Receivers or Cords

These are similar to those listed above except that the transmitters, receivers and cords are omitted.

Code No.	Description	Finish	List Price each
20-A	Regular local battery bridging or central battery service. Used on flat top desks.	Rust proof dull black	\$ 7.50
40-B	Regular local battery bridging or central battery service. Mounts on wall.	Black enamel	4.35
40-D	Regular local battery bridging or central battery service. Used on roll top desks.	Black enamel	4.50
40-F	Regular local battery bridging or central battery service. Used on flat top desks.	Black enamel	4.50



No. 3-A

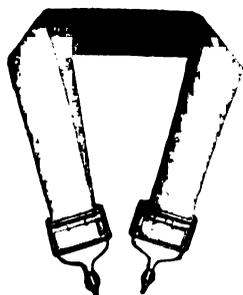
TRANSMITTER BRACKET

Code No.	Description	List Price each
3-A	Nickel plated bracket for mounting transmitter on front of telephone set	\$ 0.18

TRANSMITTER ATTACHMENTS

Used to Support the Operator's "Chest" Transmitter

Code No.	Description	List Price each
2-A	Buckle only	\$ 0.07
3-A	Buckles and slate colored tape	.15
3-B	Buckles and black colored tape	.15
3-C	Buckles and white tape	.15



No. 3-A

TROUBLE CAPS

These are split fibre tubes for placing over a plug to designate trouble in the cord circuit apparatus.

Code No.	Color	To be used on Plugs number	List Price each
1-A	Black	109	\$ 0.0225
1-B	Red	109	.0225
2-A	Black	110	.0225
2-B	Red	110	.0225

WESTON AMMETERS

For power switchboards; flush mounting; finished in polished copper and black dip; provided with external shunt; scales may have zero at left or at the center as ordered.

Model 57 has a face plate 9½ in. in diameter.

Model 24 has a face plate 7¼ in. in diameter.

Order thus:

1 Model... Weston 200 - 0 - 200 scale ammeter, flush mounted; with external shunt provided with leads feet long; finished in polished copper and black dip.



No. 1-A

WRITE FOR LIBERAL DISCOUNTS

WESTON VOLTMETERS



For Wire Chief's Desk and Telephone Switchboards

These have high resistance coils of 2500 ohms per scale volt; are arranged for flush mounting, and are finished in nickel and black dip. These are used in the testing circuits. Model 57 instruments have face plates $9\frac{1}{2}$ in. in diameter. They are usually provided with 0 to 4 and 0 to 40 scales.

Order thus:—

1 Model 57 Weston flush mounted voltmeter, finished in nickel and black dip; scales 0 to 4 and 0 to 40; resistance of 4 volt coil 10,000 ohms and of the 40 volt coil 100,000 ohms.

For Power Switchboards

Flush mounting, finished in polished copper and black dip; Model 57 has a face plate $9\frac{1}{2}$ in. in diameter and the Model 24 has a face plate $7\frac{1}{4}$ in. in diameter.

Order thus:—

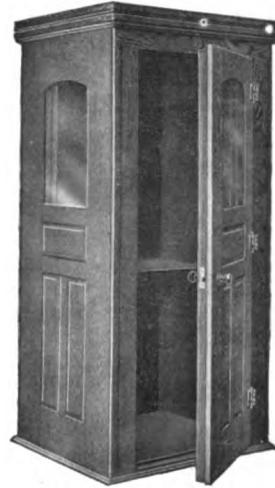
1 Model... Weston flush mounted voltmeter, finished in polished copper and black dip; scales 0 to 5 and 0 to 50.

INTEGRATING WATTMETERS

These may be furnished for recording the current consumed, or the current delivered by the power plant. Various styles are carried.

PRICES ON REQUEST

TELEPHONE AND TELEGRAPH SUPPLIES



TELEPHONE BOOTHS

Sound Proof

We are prepared to furnish, on request, a complete catalogue illustrating and describing our line of standard sound-proof telephone booths.

All styles, sizes and finishes to match interior fixtures and decorations.



PRICES ON REQUEST



No. 52031

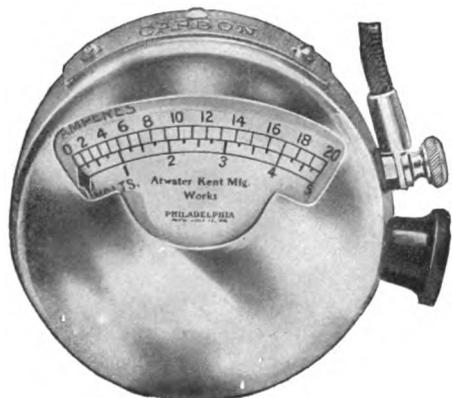
No. 94020

CARBONIC ACID GAS HAND FIRE EXTINGUISHERS

The fire extinguisher, as illustrated, is ready for instant use, being constructed to compel the immediate mixing of the chemicals the instant the extinguisher is turned bottom up. It will throw a stream of fire-killing liquid from 40 to 50 feet, thus enabling the user to reach fires above the surface of the floor, in ceilings, curtains and elsewhere.

This liquid is heavily charged with carbonic acid gas, and is many times more effective than water, readily extinguishing burning varnish, celluloid, tar, coal oil, and naphtha.

Code Word	List No.	Name
Hygeian	52031	Newark
Mertertjes	94029	Accurate



No. 16520

KENT AUTOMATIC POCKET VOLT-AMMETER

This instrument is designed and calibrated especially for testing batteries. The needle is delicately pivoted and the readings are accurate.

A flexible lead of ample capacity is provided with each instrument.

No change is made in the connection to the battery for the two readings, as that in amperes is obtained by simply pressing the button.

A hand-sewed leather case is furnished with each instrument.

Code Word	List No.	
Kieselherz	96305	0-5 volts, 0-20 amperes

Other scales will be furnished on request.

LEAD SLEEVES

For Making Straight Splices

Size and Gauge Cable	Inside Diameter of Sleeve, inches	Length inches	Size and Gauge Cable	Inside Diameter of Sleeve, inches	Length inches
15 pair No. 22	1	16	15 pair No. 19	1	16
20 pair No. 22	1	16	20 pair No. 19	1½	16
25 pair No. 22	1½	16	25 pair No. 19	1½	16
30 pair No. 22	1½	16	30 pair No. 19	2	16
50 pair No. 22	2	16	50 pair No. 19	2	16
75 pair No. 22	2½	16	75 pair No. 19	2½	16
100 pair No. 22	2½	16	100 pair No. 19	3	16
150 pair No. 22	2½	16	150 pair No. 19	3	18
180 pair No. 22	2½	16	180 pair No. 19	3½	18
200 pair No. 22	3	18	200 pair No. 19	3½	18
300 pair No. 22	3½	18	300 pair No. 19	4½	22
400 pair No. 22	3½	22			

For Making "Y" Splices

Size and Gauge Cable	Inside Diameter of Sleeve, inches	Length inches	Size and Gauge Cable	Inside Diameter of Sleeve, inches	Length inches
10 pair No. 22	1	16	10 pair No. 19	1	16
20 pair No. 22	1½	16	20 pair No. 19	1½	16
25 pair No. 22	1½	16	25 pair No. 19	1½	16
30 pair No. 22	2	16	30 pair No. 19	2	16
50 pair No. 22	2½	16	50 pair No. 19	2½	16
75 pair No. 22	3	16	75 pair No. 19	3	16
100 pair No. 22	3½	18	100 pair No. 19	3½	18
150 pair No. 22	4	18	150 pair No. 19	4	18
180 pair No. 22	4	18	180 pair No. 19	4½	18
200 pair No. 22	4	18	200 pair No. 19	4½	22
300 pair No. 22	4½	22	300 pair No. 19	4½	22
400 pair No. 22	4½	22			

PRICES ON REQUEST

Lead Sleeves—Continued

For Potheads

Size and Gauge Cable	Inside Diameter of Sleeve, inches	Length inches	Size and Gauge Cable	Inside Diameter of Sleeve, inches	Length inches
25 and 30 pair No. 22	2	20	25 and 30 pair No. 19	2	20
50 pair No. 22	2½	20	50 pair No. 19	2½	20
60 pair No. 22	3	20	60 pair No. 19	3	20
100 pair No. 22	3½	24	100 pair No. 19	3½	24
120 pair No. 22	3½	26	120 pair No. 19	3½	26
150 pair No. 22	3½	26	150 pair No. 19	4	26
180 pair No. 22	4	26	180 pair No. 19	4	30
200 pair No. 22	4	26	200 pair No. 19	4	30
400 pair No. 22	4½	26			

CABLE PASTERS

Code Word List No.
Maseteric 100000

Used to limit the length of wiped joint. Sold by thousand.

IMPROVED PAPER SLEEVES

Code Word	List No.	Size, inches	Code Word	List No.	Size, inches
Plagiandum 25944		½ x 2½	Plagiarism 25947		½ x 18
Plagianthe 25945		⅜ x 3	Plagiarize 25948		⅜ x 18
Plagiara 25946		⅞ x 3	Plagiat 25949		⅞ x 18

PARAFFINE

Code Word List No.
Hymnirent 52002

BEESWAX

Code Word List No.
Hyenide 52003

W. E. POTHEAD COMPOUND

Code Word List No.
Escatimeis 7944

5 lb. cans

WIRES

DOUBLE GALVANIZED TELEPHONE WIRE

There are three grades of telephone wire, classified as follows:

- EXTRA BEST BEST (E. B. B.)
- BEST BEST (B. B.)
- STEEL

Extra Best Best (E. B. B.) wire is made from a special stock of great purity, producing wire of absolutely uniform quality, in which the elements of softness and elongation are combined with low electrical resistance to a marked degree. It is largely employed in long lines or service where low electrical resistance is both desirable and necessary.

Best Best (B. B.) wire is made from a stock of high quality, producing a wire somewhat less uniform and of higher resistance than E. B. B., but of greater tensile strength. This grade is used almost exclusively for the construction of iron open wire lines.

Steel wire has a greater tensile strength than either E. B. B. or B. B., but on account of its greater electrical resistance is not very generally used.

As indicated by heading, the different grades of wire are double galvanized, each coat being uniform in its application, thereby insuring uniform durability.

Code Word	List No.	Size	Diameter inches	Breaking Strain in Pounds			Weight Pounds per Mile	Coils
				E. B. B.	B. B.	Steel		
Plaidrons 25976		10	.135	780	858	962	260	½ mile
Plainly 25977		11	.120	642	706	792	214	½ mile
Plainness 25978		12	.105	495	545	611	165	½ mile
Plaintful 25979		14	.080	288	317	355	96	½ mile

RUBBER COVERED COPPER WIRE (BRAIDED)

Code Word	List No.	Description
Hydatide 52152		No. 14, B. & S., ⅝ in. rubber insulation, outside distributing wire, double conductor, braided and twisted; for drop wires and outside work.
Hydatiform 52153		No. 18, B. & S., ⅜ in. rubber insulation, double conductor, braided and twisted; for bridling, entrance or ground wire.
Hydatigere 52154		No. 19, B. & S., ⅜ in. rubber insulation interior wire, single conductor, finished braid.
Hydatism 52155		No. 19, B. & S., ⅜ in., same as above, double conductor, braided and twisted, finished braid, oak or olive green; for interior use.

PRICES ON REQUEST

Wires—Continued

Rubber Covered Copper Wire (Braided)—Continued

Code Word	List No.	
Hydatoid	52156	No. 19, B. & S., $\frac{3}{32}$ in., same as above, triple conductor; for interior use.
Hydatule	52157	No. 20, B. & S., rubber insulation flame-proof wire, double conductor, braided and twisted; distributing frame jumper wire.
Hyderode	52158	No. 22, B. & S., rubber insulation flame-proof wire, double conductor, braided and twisted; distributing frame jumper wire.
Hyderzahn	52159	No. 22, B. & S., same as above, triple conductor; distributing frame jumper wire.

RUBBER COVERED COPPER WIRE (PLAIN)

Code Word	List No.	
Hydnei	52160	No. 16, B. & S., $\frac{3}{32}$ in. insulation, double conductor, twisted, no braid; used for pot heads.
Hydnocarpe	52161	No. 19, B. & S., $\frac{3}{32}$ in. insulation, double conductor, twisted, no braid; used for pot heads.
Hydnopore	52162	No. 20, B. & S., $\frac{3}{32}$ in. insulation, double conductor, twisted, no braid; used for pot heads.

GALVANIZED STEEL WIRE STRAND

(Sometimes called Signal Strand.)

These galvanized steel strands are largely employed as messengers or suspension cables for hanging aerial telephone and other cables.

Composed of seven galvanized wires twisted together.

Code Word	List No.	For Cables		Diameter inches	Weight pounds per hundred feet	Breaking Strain pounds
		No. 19 Gauge over 100 pairs	No. 22 Gauge over 200 pairs			
Methocampe	94031			$\frac{7}{16}$	40	16,000
Methionate	94030	100 pairs	200 pairs	$\frac{3}{8}$	30	10,000
Aboriginal	3052			$\frac{1}{2}$	52	8,320
Aborsement	3054	50 pairs	100 pairs	$\frac{7}{16}$	40	6,000
Coupe	3055			$\frac{3}{8}$	30	4,700
Coupling	3056			$\frac{1}{16}$	22	3,300
Abounding	3059			$\frac{1}{4}$	13	1,750
Abrade	3061			$\frac{3}{16}$	8	1,000
Abraham	3092			$\frac{5}{32}$	5	700
Abreast	3093			$\frac{1}{2}$	3.50	375
Abridge	3065			$\frac{3}{32}$	2.25	320

WEATHER-PROOF IRON LINE WIRE

This is sometimes classified as tree wire. Its use is advised where branches of trees interfere with line.

This wire is guaranteed genuine double galvanized B. B. iron wire.

This wire can be furnished with double or triple braid. In either case the braid is thoroughly saturated with weather-proof compound, which gives it a highly polished finish.

Put up in half-mile coils only.

Code Word	List No.	Size B. W. G.	Pounds per Mile		Coils
			Double Braid	Triple Braid	
Hydage	52146	10	370	400	$\frac{1}{2}$ mile
Hydarnes	52147	12	225	250	$\frac{1}{2}$ mile
Hydaspei	52148	14	145	165	$\frac{1}{2}$ mile

WEATHER-PROOF COPPER WIRE

Especially adapted for drops or leads from main line to telephone.

This wire is furnished in coils.

Furnished with double or triple insulation, as ordered.

Code Word	List No.	Size B. & S. Gauge	Feet per Pound		Pounds per thousand feet	
			Double Braid	Triple Braid	Double Braid	Triple Braid
Hydaspeos	52149	14	56	38	18	26
Hydaspeum	52150	16	76	48	13	21
Hydatidome	52151	18	100	67	10	15

PRICES ON REQUEST

Wires—Continued

ANNUNCIATOR WIRE

Has covering consisting of two wraps of cotton saturated with paraffine. The outer covering is made in solid color or combination of colors. The following sizes can be furnished tinned.

Code Word	List No.	Size B. & S. Gauge	Pounds per thousand feet
Hydracid	52163	16	9½
Hydraemia	52164	18	6½
Hydragogos	52165	20	4½
Hydragogue	52166	22	4

WEATHER-PROOF ANNUNCIATOR WIRE

Code Word	List No.	No.	Description
Hydraire	52167	No. 18,	same as above, saturated with weather-proof compound. Furnished in black only. Weight, per thousand ft., 6½ lbs.

DAMP-PROOF OFFICE WIRE

For interior work not exposed to heavy moisture

Single Conductor				Double Conductor			
Code Word	List No.	Size B. & S. Gauge	Pounds per thousand feet	Code Word	List No.	Size B. & S. Gauge	Pounds per thousand feet
Hydracool	52168	16	13½	Hydramide	52171	16	18½
Hydraleta	52169	18	10	Hydranos	52172	18	12½
Hydraletes	52170	20	8	Hydranths	52173	20	10

GERMAN SILVER RESISTANCE WIRE

Bare

Code Word	List No.	Size B. & S. Gauge	Ohms per thousand feet	Code Word	List No.	Size B. & S. Gauge	Ohms per thousand feet
Hydraotes	52174	16	75.22	Hydreleon	52187	29	1,533
Hydragyre	52175	17	94.84	Hydrellie	52188	30	1,933
Hydrarum	52176	18	119.6	Hydreuma	52189	31	2,437
Hydraspis	52177	19	155.1	Hydreumata	52190	32	3,073
Hydrastina	52178	20	190.2	Hydriade	52191	33	3,875
Hydratado	52179	21	239.8	Hydric	52192	34	4,888
Hydratant	52180	22	302.4	Hydridae	52193	35	6,163
Hydrate	52181	23	381.3	Hydrinorum	52194	36	7,770
Hydraula	52182	24	480.8	Hydriodeux	52195	37	9,797
Hydraules	52183	25	606.3	Hydriodico	52196	38	12,357
Hydrauliam	52184	26	764.6	Hypanthe	52197	39	15,570
Hydraulica	52185	27	964.1	Hypanthium	52198	40	19,653
Hydrazote	52186	28	1,215.				

MAGNET WIRE

Single Cotton Covered

Double Cotton Covered

Code Word	List No.	Size B. & S. Gauge	Pounds per thousand feet	Code Word	List No.	Size B. & S. Gauge	Pounds per thousand feet
Jean	1704	24	1.30	Joyously	1725	24	1.37
Jears	1705	25	1.04	Joyousness	1726	25	1.11
Jeer	1706	26	.84	Jubilant	1727	26	.89
Jeered	1707	27	.67	Jubilate	1728	27	.72
Jeerer	1708	28	.53	Jubilation	1729	28	.59
Jeering	1709	29	.42	Judah	1730	29	.47
Jungly	1710	30	.34	Judicial	1731	30	.39
Junior	1711	31	.28	Judicious	1732	31	.32
Jockeyism	1712	32	.22	Josephine	1733	32	.26
John	1713	33	.18	Joshua	1734	33	.22
Joinder	1714	34	.15	Josiah	1735	34	.19
Jollify	1715	35	.13	Jostle	1736	35	.17

PRICES ON REQUEST

Wire—Continued

Magnet Wire—Continued

Single Cotton Covered				Double Cotton Covered			
Code Word	List No.	Size B. & S. Gauge	Pounds per thousand feet	Code Word	List No.	Size B. & S. Gauge	Pounds per thousand feet
Jolliment	1716	36	.11	Jostled	1737	36	.15
Jollity	1717	37	...	Jove	1738	37	...
Jonas	1718	38	...	Jovial	1739	38	...
Jonathan	1719	39	...	Jovialty	1740	39	...
Joseph	1720	40	...	Joy	1741	40	...
Single Silk Covered				Double Silk Covered			
Jervin	1658	24	1.25	Jeweling	1683	24	1.28
Jested	1659	25	1.00	Jewelry	1684	25	1.02
Jester	1660	26	.79	Jewess	1685	26	.81
Jestful	1661	27	.67	Jewish	1686	27	.69
Jesting	1662	28	.50	Jib	1687	28	.52
Jesuit	1663	29	.39	Jibboom	1688	29	.41
Plantensap	1664	30	.31	Jibdoor	1689	30	.33
Plantenwas	1665	31	.25	Jibe	1690	31	.26
Jelly	1666	32	.20	Jibing	1691	32	.21
Jemima	1667	33	.16	Jigger	1692	33	.17
Jennet	1668	34	.13	Jiggish	1693	34	.14
Jenneting	1669	35	.11	Jiggling	1694	35	.12
Jentling	1670	36	.09	Jill	1695	36	.10
Jeopard	1671	37	.07	Jilted	1696	37	.08
Jeoparder	1672	38	.06	Jilting	1697	38	.07
Jeoparding	1673	39	.05	Jingle	1698	39	.06
Jeopardize	1674	40	.04	Jingled	1699	40	.05

ENAMELED MAGNET WIRE

Enameled insulation is an elastic, yet resistant and firmly adherent film, which is applied to the wire by specially constructed machinery of our own design. The insulation is unaffected by chemical re-agents which will not affect the wire itself, diluted acids, alkalis, alcohol, benzine, turpentine, etc., having little or no effect on it. Excessive humidity will cause silk or cotton insulation to become practically useless as insulators, but has little or no effect on the enameled insulation.

A great saving of space required for magnet windings may be made by using this enameled wire, as the insulation is only about one-quarter as thick as that of silk covering affording the same degree of insulation. Consequently, a given winding space will with No. 32 gauge wire hold 30 per cent. more enameled insulated wire than the silk insulated. At No. 40 gauge the increased number of turns is 120 per cent. more than single silk. With wire insulated with No. 100 cotton a saving in favor of the enameled wire is for No. 24 gauge equal to 30 per cent. and for No. 40 gauge equal to 500 per cent.

A saving in the price of the wire is possible, as the cost of the enamel is only a small fraction of that of the silk.

Size B. & S. Gauge	Pounds per thousand feet	Size B. & S. Gauge	Pounds per thousand feet
24	1.24	33	.16
25	.98	34	.12
26	.78	35	.098
27	.62	36	.078
28	.48	37	.062
29	.39	38	.050
30	.31	39	.040
31	.25	40	.031
32	.20		

SWITCHBOARD WIRE

Copper wire with double silk and single cotton paraffined insulation of assorted colors.

Code Word	List No.	Size B. & S. Gauge
Mezclabais	94056	No. 19 single conductor
Miccianza	94076	No. 22 single conductor
Miccichino	94077	No. 19 twisted pair conductors
Micciebant	94078	No. 22 twisted pair conductors

PRICES ON REQUEST

Wire—Continued
BARE COPPER WIRE
TINNED

For Strapping Apparatus Terminals

Size B. & S. Gauge	Feet per pound	Size B. & S. Gauge	Feet per pound
No. 14	80	No. 18	203
No. 16	127	No. 20	323
		No. 22	513

HABIRSHAW INSULATED WIRE

Solid Copper Conductors, Tinned, Double Coated Rubber Insulation, Braided and Waxed

White Core		Red Core		Size B. and S.	Diameter over Braid, inches	Thickness of Insulation without Braid inches	Weight per mile pounds
Code Word	List No.	Code Word	List No.				
Platmaken	27040	Plasmabunt	26080	18	.136	$\frac{3}{8}$	84.48
Platole	27041	Plasmadora	26081	16	.162	$\frac{3}{8}$	110.88
Platometer	27042	Plasmados	26082	14	.203	$\frac{3}{8}$	168.96
Platon	27043	Plasmammo	26083	12	.225	$\frac{3}{8}$	221.76
Platonical	27044	Plasmando	26084	11	.235	$\frac{3}{8}$	253.44
Platonis	27045	Plasmarian	26085	10	.246	$\frac{3}{8}$	311.52
Platonize	27046	Plasmarono	26086	9	.256	$\frac{3}{8}$	359.04
Platschelp	27047	Plasmassi	26087	8	.272	$\frac{3}{8}$	422.40
Platt	27048	Plasmata	26088	7	.288	$\frac{3}{8}$	501.00
Platteland	27049	Plasmatic	26089	6	.328	$\frac{3}{8}$	654.72
Plattgarn	27050	Plasmatori	26090	5	.387	$\frac{1}{2}$	839.52
Platthaupt	27051	Plasmavate	26091	4	.409	$\frac{1}{2}$	997.92
Platthin	27052	Plasmogony	26092	3	.434	$\frac{1}{2}$	1209.12
Platthuf	27053	Plasmome	26093	2	.463	$\frac{1}{2}$	1457.28
Platlack	27054	Plassabat	26094	1	.494	$\frac{1}{2}$	1789.92
Plattnarbe	27055	Plassabor	26095	0	.530	$\frac{1}{2}$	2164.80

Stranded Copper Conductors, Tinned, Double Coated Rubber Insulation, Braided and Waxed

White Core		Red Core		Size B. and S.	Strand	Diameter of Insulation over Braid inches	Thickness of Insulation without Braid inches	Weight per mile pounds
Code Word	List No.	Code Word	List No.					
Plaudebat	27072	Platanine	27012	14	7-.025	.226	$\frac{3}{8}$	174.24
Plaudendum	27073	Plataninos	27013	13	7-.028	.232	$\frac{3}{8}$	211.20
Plaudit	27074	Plataniste	27014	12	7-.032	.247	$\frac{3}{8}$	253.44
Plauditory	27075	Platanonis	27015	11	7-.035	.256	$\frac{3}{8}$	290.40
Plaudunt	27076	Platanorum	27016	10	7-.038	.265	$\frac{3}{8}$	337.92
Plaurorato	27077	Platband	27017	9	7-.043	.280	$\frac{3}{8}$	385.44
Plausible	27078	Platearas	27018	8	7-.048	.295	$\frac{3}{8}$	454.08
Plausisset	27079	Platessa	27019	7	7-.053	.313	$\frac{3}{8}$	528.00
Plausisti	27080	Platessis	27020	6	7-.063	.365	$\frac{3}{8}$	686.40
Plausitabo	27081	Platform	27021	5	7-.069	.412	$\frac{1}{2}$	887.04
Plausitavi	27082	Platheid	27022	4	7-.077	.436	$\frac{1}{2}$	1024.32
Plausuram	27083	Platiasme	27023	3	19-.052	.465	$\frac{1}{2}$	1209.12
Plausuri	27084	Platicos	27024	2	19-.059	.500	$\frac{1}{2}$	1525.92
Plautarum	27085	Platifillo	27025	1	19-.066	.535	$\frac{1}{2}$	1890.24
Plautia	27086	Platija	27026	0	19-.074	.575	$\frac{1}{2}$	2212.32
Plautianos	27087	Platille	27027	00	19-.083	.620	$\frac{1}{2}$	2740.32
Plautidis	27088	Platillos	27028	000	19-.093	.670	$\frac{1}{2}$	3379.20
Plautilla	27089	Platinage	27029	0000	19-.104	.788	$\frac{3}{4}$	4329.60

Stranded Copper Conductors, Tinned, Double Coated Rubber Insulation, Taped, Braided and Waxed

White Core		Red Core		Circular Mils	Strand	Diameter over Braid inches	Weight per Mile pounds	Wall of Insulation inches
Code Word	List No.	Code Word	List No.					
Pleiteas	28032	Playground	28000	200000	37-.073	.772	4065	$\frac{5}{8}$
Pleitesia	28033	Playhouse	28001	210000	37-.075	.786	4292	$\frac{5}{8}$
Pleitkunst	28034	Playless	28002	220000	37-.077	.800	4519	$\frac{5}{8}$
Pleitos	28035	Playones	28003	230000	37-.078	.807	4688	$\frac{5}{8}$
Pleitvogel	28036	Playsome	28004	240000	37-.080	.821	4873	$\frac{5}{8}$
Plejaden	28037	Plaything	28005	250000	37-.082	.835	5047	$\frac{5}{8}$
Plejadis	28038	Playtime	28006	260000	37-.083	.842	5216	$\frac{5}{8}$
Pleminius	28039	Playwright	28007	270000	37-.085	.856	5401	$\frac{5}{8}$
Plemmyrium	28040	Pleadable	28008	280000	37-.086	.863	5570	$\frac{5}{8}$
Plemnæus	28041	Pleading	28009	290000	37-.088	.877	5739	$\frac{5}{8}$
Plempe	28042	Pleadingly	28010	300000	37-.089	.884	5924	$\frac{5}{8}$
Plenarias	28043	Pleasance	28011	325000	37-.092	.908	6367	$\frac{5}{8}$

PRICES ON REQUEST

Wires—Continued

Habirshaw Insulated Wire—Continued

White Core		Red Core		Circular Mils	Strand	Diameter over Braid inches	Weight per mile pounds	Wall of Insulation inches
Code Word	List No.	Code Word	List No.					
Plenarily	28044	Pleasedly	28012	350000	37-.096	.933	6811	$\frac{5}{64}$
Plenarty	28045	Plebaglia	28013	375000	37-.100	.958	7260	$\frac{5}{64}$
Plendorum	28046	Plebamus	28014	400000	37-.103	.982	7703	$\frac{5}{64}$
Plengfeest	28047	Plebe	28015	425000	37-.106	1.003	8120	$\frac{5}{64}$
Plenilune	28048	Plebeity	28016	450000	37-.110	1.031	8627	$\frac{5}{64}$
Plenipos	28049	Plebejorum	28017	475000	37-.112	1.045	8986	$\frac{5}{64}$
Plenishing	28050	Plebejum	28018	500000	37-.115	1.066	9435	$\frac{5}{64}$
Plenisme	28051	Plebitatem	28019	525000	37-.118	1.087	9847	$\frac{5}{64}$
Plenitas	28052	Plebitatis	28020	550000	37-.121	1.108	10311	$\frac{5}{64}$
Plenitatis	28053	Plechtig	28021	575000	37-.123	1.122	10755	$\frac{5}{64}$
Plenitude	28054	Pledgeless	28022	600000	61-.098	1.143	11172	$\frac{5}{64}$
Plenteous	28055	Pleegkind	28023	700000	61-.106	1.245	13110	$\frac{5}{64}$
Plentiful	28056	Plegaberes	28024	750000	61-.110	1.275	14013	$\frac{5}{64}$
Platineux	27030	Plegadoras	28025	800000	61-.114	1.317	14868	$\frac{5}{64}$
Platinic	27031	Plegmation	28026	850000	61-.117	1.344	15734	$\frac{5}{64}$
Platinides	27032	Plegueis	28027	900000	61-.120	1.371	16595	$\frac{5}{64}$
Platinise	27033	Pleister	28028	1000000	61-.127	1.443	18448	$\frac{5}{64}$
Platinmohr	27034	Pleitdag	28029	1250000	61-.141	1.580	22820	$\frac{5}{64}$
Platinous	27035	Pleiteagen	28030	1500000	61-.155	1.718	27192	$\frac{5}{64}$
Platinoxyd	27036	Pleiteabas	28031	2000000	91-.148	1.900	36141	$\frac{5}{64}$

ENAMELED STEEL CONDUIT AND FITTINGS

The enameled steel conduit is made from mild drawn steel tubing, which is thoroughly freed by a special process from scales, burrs and silicates before the enamel is applied.

The enamel forms a homogeneous coating, adhering closely to the surface pores of the metal, and retaining its flexibility under all changes of temperature. It is acid-proof, water-proof, rust-proof, and forms a glass smooth coating to both the outside and inside of the tubing, allowing wires to be pulled through it very easily.

This conduit is soft, and may be easily bent, without danger of breaking the tubing or injuring the protecting enamel. It is manufactured in lengths of ten feet, threaded on each end, and furnished with one coupling for each length.

As this conduit has the same outside diameter as the standard gas pipes, no special dies or tools are necessary when it is being installed.

CONDUIT

Code Word	List No.	Nominal Size inches	Inside Diameter inches	Outside Diameter inches	Weight per hundred feet pounds
Kohaerenz	96581	$\frac{1}{2}$	.62	.84	85
Kohautee	96582	$\frac{3}{4}$	.82	1.05	112
Kohlacker	96583	1	1.04	1.31	167
Kohlenader	96584	1 $\frac{1}{4}$	1.38	1.66	224
Kohlenbett	96585	1 $\frac{1}{2}$	1.61	1.90	268
Kohlenerz	96586	2	2.06	2.37	361
Kohlenhaus	96587	2 $\frac{1}{2}$	2.46	2.87	574
Kohlenholz	96588	3	3.06	3.50	754
Kohlenkalk	96589	3 $\frac{1}{2}$	3.54	4.00	900
Kohlenloch	96590	4	4.02	4.50	1066

ELBOWS

Code Word	List No.	Size inches	Pounds per hundred	Radius inches	Offset inches
Legumaio	98358	$\frac{1}{2}$	73	4.25	7.50
Leguminoso	98359	$\frac{3}{4}$	132	5.37	9.25
Leguminous	98360	1	200	5.75	10.12
Leguminum	98361	1 $\frac{1}{4}$	300	7.25	11.50
Lehenrecht	98362	1 $\frac{1}{2}$	415	8.50	12.62
Lehensherr	98363	2	700	9.50	15.25
Lehensstab	98364	2 $\frac{1}{2}$	1138	10.50	17.75
Lehenstaxe	98365	3	1885	13.00	19.37
Lehmmuehle	98366	3 $\frac{1}{2}$	2100	15.00	21.00
Lehmmergel	98367	4	2160	16.00	22.50

PRICES ON REQUEST

Enameled Steel Conduit and Fittings—Continued

COUPLINGS

Code Word	List No.	Sizes inches	Pounds per hundred	Code Word	List No.	Size inches	Pounds per hundred
Lehmsandes	98368	1½	15½	Lehnseessel	98373	2	132
Lehmziegel	98369	¾	25½	Lehnstreue	98374	2½	185
Lehnbauer	98370	1	40½	Lehnstueck	98375	3	300
Lehngueter	98371	1½	57½	Lehnzins	98376	3½	400
Lehnhoeften	98372	1½	71½	Lehrbild	98377	4	412

BUSHINGS

Code Word	List No.	Size inches	Standard Package	Code Word	List No.	Size inches	Standard Package
Laetaverit	97759	1½	1000	Laetitatem	97766	3	25
Laetice	97760	¾	100	Laetorio	97767	3½	20
Laeticorum	97761	1	100	Laetorius	97768	4	20
Laeticos	97762	1½	100	Laetzlein	97769	4½	20
Laetificet	97763	1½	50	Laeusebaum	97770	5	20
Laetiscet	97764	2	50	Laeutete	97771	6	15
Laetiscunt	97765	2½	25				

SIZE IN INCHES OF ENAMELED STEEL CONDUIT

Size of Wire	For			
	1 Wire	2 Wires	3 Wires	4 Wires
14	1½	¾	¾	1
12	1½	¾	1	1½
10	1½	1	1	1½
8	1½	1	1½	1½
6	1½	1	1½	1½
5	1½	1½	1½	1½
4	1½	1½	1½	1½
2	1	1½		
0	1	1½		
00	1½	2		
000	1½			
0000	1½			

Circular Mills	1 Wire	Circular Mills	1 Wire
250.000	1½	650.000	2
300.000	1½	700.000	2
350.000	1½	750.000	2½
400.000	1½	800.000	2½
450.000	2	850.000	2½
500.000	2	900.000	2½
550.000	2	950.000	2½
600.000	2	1,000.000	2½

GALVANIZED FLEXIBLE STEEL CONDUIT AND FITTINGS

CONDUIT

Code Word	List No.	Inside diameter inches	Approximate Feet in Coil
Koppelhaak	96729	1½	250
Koppelhout	96730	¾	250
Koppeljagd	96731	¾	100
Koppelriem	96732	¾	50
Koppelseil	96733	1	50
Koppelstuk	96734	1½	50
Koppeltjes	96735	1½	50
Koppeltouw	96736	2	50

PRICES ON REQUEST

Galvanized Flexible Steel Conduit and Fittings—Continued

FITTINGS

In ordering by telegraph specify two code words, one for style and one for size.

Code Word	Description	Code Word	Description
Ladierinha	Couplings.	Ladezeiten	Pipe hooks.
Ladenzeug	Lead bushings.	Ladhoelzer	Bushing tools

Sizes

Code Word	Size inches	Code Word	Size inches
Ladholz	$\frac{1}{2}$	Ladrasemos	$1\frac{1}{2}$
Ladislao	$\frac{3}{4}$	Ladrillazo	$1\frac{1}{2}$
Ladogasee	$\frac{1}{2}$	Ladroasso	2
Ladrao	1		

PIPE STRAPS

Code Word	List No.	For
Kruitvaten	97294	For $\frac{1}{2}$ in. conduit
Kruitwagen	97295	For $\frac{3}{4}$ in. conduit
Garcia	11485	For 1 in. conduit
Kruitzak	97297	For $1\frac{1}{4}$ in. conduit
Kruitzakje	97298	For $1\frac{1}{2}$ in. conduit

SIZE IN INCHES OF FLEXIBLE STEEL CONDUIT

Size of Wire	For			
	1 Wire	2 Wires	3 Wires	4 Wires
14	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{3}{4}$	1
12	$\frac{1}{2}$	$\frac{3}{4}$	1	
10	$\frac{1}{2}$	1	1	
8	$\frac{1}{2}$	1		
6	$\frac{3}{4}$	1		
4	$\frac{3}{4}$			
2	1			
0	1			
00	1			

MICHIGAN CEDAR POLES

Poles up to and including 30 feet in length may be loaded on cars taking 24000 pounds minimum; 35s require a car taking 30000 pounds minimum; double loads (45s and longer) require cars taking 30000 pounds minimum or 60000 pounds for the double load. We do not advise shipment by the small cars taking 24000 pounds minimum as the railroads will not use them except under certain restrictions and thus shipments are delayed.

The Northwestern Cedarman's Specifications govern all inspections.
Write us for our pamphlet on poles.

Code Word	List No.	Length feet	Top inches	Weight pounds	Number per Load
Kwikpil	31714	20	4	100	240 to 420
Kwikovens	31715	20	5	130	185 to 325
Kwikolie	31716	20	6	175	137 to 250
Methodical	94032	22	5	175	137 to 250
Kwikmelk	31717	25	4	150	160 to 280
Kwikkebil	31718	25	5	200	120 to 210
Kwikjes	31719	25	6	250	100 to 170
Kwikhaag	31720	25	7	350	70 to 130
Kwikhad	31721	30	5	275	80 to 150
Kwidams	31722	30	6	350	70 to 120
Kwibus	31723	30	7	450	55 to 95
Kwendel	31724	35	6	450	70 to 90
Kwelsters	31725	35	7	600	50 to 70
Kwellen	31726	40	6	625	50 to 65
Kwellage	31727	40	7	800	40 to 55
Kwaststok	31729	45	7	1000	60 to 70
Kuthan	31730	50	7	1250	48 to 55
Kuteiba	31733	55	7	1550	39 to 42
Kustvaart	31734	60	7	2000	30 to 33
Kustoden	31735	65	7	2700	23 to 25

PRICES ON REQUEST

CROSS ARMS

YELLOW OR NORWAY PINE

Standard Cross Arms—Size, 3½ in. x 4½ in., bored for 1½ in. or 1¼ in. pins; two ½ in. lag screws or one ¾ in. machine bolt and two ¾ in. brace bolts. Painted red.



No. 23573

Code Word	List No.	Length feet	Number of Pins	Spacings			Weight each pounds
				End, inches	Center inches	Sides inches	
Otley	23563	3	2	4	28	..	12
Otesgo	23564	4	4	4	16	12	16
Ottawa	23565	5	4	4	18	17	20
Otto	23566	6	4	4	22	21	24
Ottumwa	23567	6	6	4	16	12	24
Overton	23568	8	6	4	18	17½	32
Ovid	23569	8	8	4	16	12	32
Owego	23572	10	8	4	17	15½	40
Oxford	23573	10	10	4	16	12	40

Light Weight Cross Arms—Size, 2½ in. x 3½ in., bored for 1½ in pins; two ½ in. lag screws or one ¾ in. machine bolt and two ¾ in. brace bolts 28 in. apart. Painted red.

Code Word	List No.	Length inches	Number of Pins	Spacings			Weight each pounds
				End inches	Center inches	Sides inches	
Newburn	15460	24	2	3	18	..	6
Newburg	15461	30	2	3	24	..	7
Newton	15462	36	2	3	30	..	9
Niagara	15463	42	4	3	16	10	10
Niantic	15464	62	6	3	16	10	16
Nichols	15465	82	8	3	16	10	21
Nicolleti	15466	102	10	3	16	10	25
Niles	15467	120	12	3	16	10	30

WASHINGTON FIR

The use of Washington fir is recommended, owing to its clear, straight-grained quality and its freedom from defects.

The life of these arms is greater than that of other woods.

Washington fir arms have been adopted for use by the American Telephone and Telegraph Co., the Western Union, and Postal Telegraph Companies.

Standard Cross Arms—Size, 3½ in. x 4½ in.; bored for 1½ in. or 1¼ in. pins; two ½ in. lag screws or one ¾ in. machine bolt and two ¾ in. brace bolts. Unpainted.

Code Word	List No.	Length feet	Number of Pins	Spacings			Weight each pounds
				Center inches	Sides inches	End inches	
Masstabes	100005	3	2	28	..	4	10
Massvoller	100006	4	4	16	12	4	13
Massylorum	100007	5	4	18	17	4	17
Masteiche	100008	6	4	22	21	4	20
Mastenhoch	100009	6	6	16	12	4	20
Masterhood	100010	8	6	18	17½	4	27
Mastfutter	100011	8	8	16	12	4	27
Mastgelder	100012	10	8	17½	15½	4	34
Masthafer	100013	10	10	16	12	4	34

PRICES ON REQUEST

Cross Arms—Continued

Washington Fir—Continued

Light Weight Cross Arms—Size, 2½ in. x 3½ in., bored for 1½ in. pins, two ½ in. lag screws or one ¾ in. bolt and two ¾ in. brace bolts 28 in. apart. Unpainted.

Code Word	List No.	Length inches	Number of Pins	Center inches	Spacings Sides inches	End inches	Weight each pounds
Masticine	100014	24	2	18	..	3	5
Masticinos	100015	30	2	24	..	3	6½
Masticinum	100016	36	2	30	..	3	7
Masticorum	100017	42	4	16	10	3	9
Mastixoel	100019	62	6	16	10	3	12½
Mastkorf	100021	82	8	16	10	3	17
Mastochsen	100023	102	10	16	10	3	21½
Mastoideal	100024	120	12	16	10	3	25

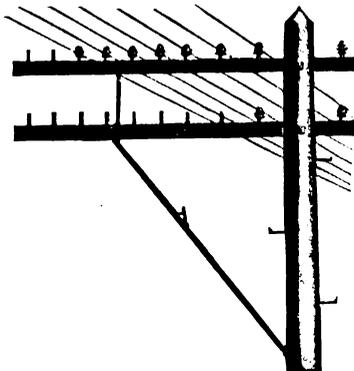
CROSS ARM BRACES

Plain		Galvanized		Size inches	Weight pounds per hundred	
Code Word	List No.	Code Word	List No.		Plain	Galvanized
Plassor	26052	Plantadora	26066	20x1 7/8 x 7/8	141	148
Plateful	26053	Planquetas	26067	22x1 7/8 x 7/8	154	164
Plateau	26054	Platbekkig	26068	24x1 7/8 x 7/8	168	175
Platine	26055	Platylophe	26069	26x1 7/8 x 7/8	182	190
Platkop	26056	Platypalpe	26070	28x1 7/8 x 7/8	196	205
Platrant	26057	Platypyges	26071	30x1 7/8 x 7/8	210	220
Playbill	26058	Platybune	26072	32x1 7/8 x 7/8	224	235
Playbook	26059	Platyholme	26073	20x1 1/2 x 1/2	175	183
Plauso	26060	Platylobes	26074	22x1 1/2 x 1/2	188	195
Platschig	26061	Platygenie	26075	24x1 1/2 x 1/2	200	210
Platschaaf	26062	Platyonyx	26076	26x1 1/2 x 1/2	213	223
Platbek	26063	Platypus	26077	28x1 1/2 x 1/2	225	238
Plasmavamo	26064	Platynemes	26078	30x1 1/2 x 1/2	238	250

CROSS ARM BACK BRACES

This back brace is punched at the center for a ¾-inch cross arm bolt. The ends of the brace are bolted to the arm by carriage bolts or lag screws.

Code Word	List No.	
Hybridity	52140	Flat Braces, galvanized
Hybridous	52141	Angle Braces, galvanized
Made in 3 ft., 3 ft. 6 in., 4 ft., 4 ft. 6 in., 5 ft., and 6 ft. lengths.		



No. 52134

ALLEY ARM BRACE

The side or alley arm braces, as illustrated, are made of angle iron—stiffer and lighter than pipe or rod braces. A step is placed so that the end pins may be conveniently reached. Angle iron upright braces are used to support arms above the bottom one. In the table below, "A" is the distance between the center of the pole and the point on the arm where the brace is bolted—thus a 5-ft. brace hits the cross arm 5 ft. from the pole. The foot of the brace meets the pole 5 ft. below the cross arms.

"A," 4 ft., 5 ft., 6 ft., 7 ft., 8 ft.

Number of arms 2, 3, 4, 5, 6, 7, 8, 9, 10

Code Word	List No.	
Hydruntina	52134	Uprights, galvanized, 18 in. gain spacing
Hydrureto	52135	Uprights, galvanized, 24 in. gain spacing

PRICES ON REQUEST

BUTT GUARDS AND BUTT PROTECTORS

Made of $\frac{1}{8}$ in. steel plate, 18 in. high x 22 in. long, bent into half circle. These are finished in black.

Code Word
Hyempal

List No.
52138

Butt Guards

Made of No. 24 sheet iron, 4 ft. long x 2 in. wide, galvanized Clipped to points at both ends and punched with nail holes.

Hybridists

52139

Pole Protectors



Nos. 52138
52139

MACHINE BOLTS

FURNISHED PLAIN OR GALVANIZED

With Square Heads and Square Nuts, Finished Points.

Weight in Pounds per 100. Not Galvanized
Length inches

Diam. inch	1½	2	2½	3	3½	4	4½	5	5½
$\frac{1}{4}$	3.75	4.33	4.91	5.50	6.21	6.92	7.63	8.35	9.06
$\frac{5}{16}$	6.12	7.10	8.08	9.06	10.14	11.22	12.30	13.38	14.46
$\frac{3}{8}$	9.3	10.9	12.5	14.1	15.5	16.9	18.3	19.7	21.1
$\frac{7}{16}$	14.7	16.6	18.4	20.3	22.4	24.4	26.5	28.5	30.6
$\frac{1}{2}$	20.2	22.8	25.3	27.9	30.4	32.9	35.4	37.9	40.4
$\frac{5}{8}$	36.5	40.8	45.0	49.3	53.6	57.9	62.2	66.4	70.7
$\frac{3}{4}$	58.0	63.9	69.9	75.8	81.7	87.7	93.6	99.6	105.5
$\frac{7}{8}$	....	88.5	98.0	107.5	117.0	126.5	136.0	145.5	155.0
1	....	142.	152.	162.	172.	182.	192.	202.	212.



Length inches

Diam. inch	6	6½	7	7½	8	9	10	11	12
$\frac{1}{4}$	9.77	10.48	11.19	11.90	12.62	....	....	....	....
$\frac{5}{16}$	15.54	16.62	17.70	18.78	19.87	....	....	....	....
$\frac{3}{8}$	22.5	23.9	25.3	26.7	28.1	30.9	33.8	36.6	39.4
$\frac{7}{16}$	32.6	34.7	36.7	38.8	40.8	44.9	49.0	53.1	57.2
$\frac{1}{2}$	42.9	45.4	47.9	50.4	52.9	57.9	62.9	67.9	72.9
$\frac{5}{8}$	75.0	79.3	83.4	87.6	91.8	100.	109.	117.	126.
$\frac{3}{4}$	111.5	117.5	123.6	129.6	136.	148.	160.	172.	184.
$\frac{7}{8}$	164.5	173.0	181.0	189.0	....	....	....	....	....
1	222.	232.	243.	253.	....	....	....	....	....

Length inches

Diam. inch	13	14	15	16	17	18	19	20
$\frac{1}{4}$	....	....	....	....	....	....	....	....
$\frac{5}{16}$	....	....	....	....	....	....	....	....
$\frac{3}{8}$	....	....	....	....	....	....	....	....
$\frac{7}{16}$	....	....	....	....	....	....	....	....
$\frac{1}{2}$	77.9	82.9	87.9	92.9	97.9	102.9	107.9	112.9
$\frac{5}{8}$	134.	143.	151.	160.	168.	176.	185.	193.
$\frac{3}{4}$	196.	208.	220.	232.	244.	256.	268.	280.

PRICES ON REQUEST

FETTER DRIVE SCREWS
FURNISHED PLAIN OR GALVANIZED
Pounds per 100. Not Galvanized



Diam. inches	Length inches							
	1½	2	2½	3	3½	4	4½	5
5/16	3.5	4.4	5.3	6.2	7.1	8.0	9	10
3/8	5.8	7.1	8.5	9.8	11.1	12.5	13.8	14.9
7/16	9.1	11	12.9	14.8	16.5	18.2	19.9	21.8
1/2	....	15	17.3	19.5	21.6	23.8	26.3	28.8
5/8	....	26.3	29.9	33.5	37.1	40.7	44.5	48.3
3/4	....	....	....	46.1	51.5	57.1	62.9	68.8
7/8	....	....	....	71.8	78.5	85.3	92	98.6
1	....	....	....	103	112	121	130	141

Diam. inches	Length inches							
	5½	6	7	8	9	10	11	12
5/16	11	12	....	....	....	....	....	....
3/8	16	17.2	....	....	....	....	....	....
7/16	23.5	25.2	....	....	....	....	....	....
1/2	31.3	33.8	38.9	44	48.5	53	57.5	62
5/8	52.0	55.7	63.2	69.3	76.4	83.5	90.6	97.8
3/4	74.7	80.5	92.3	104	115.4	126.8	138.2	149.5
7/8	105.3	112	125.4	138.8	156.3	173.8	191.3	208.8
1	153	164	185	205	225	245	265	285



CARRIAGE BOLTS
FURNISHED PLAIN OR GALVANIZED
Pounds per 100. Not Galvanized

Diam. inches	Length inches									
	1½	2	2½	3	3½	4	4½	5	5½	6
1/2	3.7	4.2	4.9	5.6	6.2	7	7.7	8.5	9.2	9.9
5/16	6.2	7.2	8.2	9.2	10.2	11.2	12.3	13.5	14.7	16
3/8	9.7	11.2	12.7	14.5	16	18	19	21	22	24
7/16	14	16	18	20	22	24	26	28	30	32
1/2	20.2	23.2	26	28	30	33	36	39	41	44
5/8	....	38	42	46	50	55	59	63	67	71

DOUBLE ARMING BOLTS

Furnished with 2 nuts and 3-inch threads on each end of bolt, but no washers; plain or galvanized.

Code Word	List No.	Size inches	Weight pounds per hundred	Code Word	List No.	Size inches	Weight pounds per hundred
Hylogenie	52067	1/2x12	172	Hylonomous	52072	1/2x17	202
Hylognosie	52068	1/2x13	178	Hylophile	52073	1/2x18	208
Hylogyne	52069	1/2x14	184	Hylotheist	52074	1/2x19	214
Hylolist	52070	1/2x15	190	Hylotome	52075	1/2x20	220
Hylology	52071	1/2x16	196	Hylotropie	52076	1/2x22	232

PRICES ON REQUEST

ROUND WASHERS

Furnished Plain or Galvanized

Code Word	List No.	For Size Bolt inches	Weight pounds per thousand	
			Plain	Galvanized
Hylozoic	52077	$\frac{3}{8}$	13 $\frac{1}{2}$	15
Hylozoical	52078	$\frac{1}{2}$	34 $\frac{1}{2}$	37
Hylozoism	52079	$\frac{3}{4}$	77	82 $\frac{1}{2}$

SQUARE WASHERS

Furnished Plain or Galvanized

Code Word	List No.	Size inches	For Size Bolt inches	Number per hundred pounds	
				Plain	Galvanized
Hylozoists	52080	2 x 2 x $\frac{1}{8}$	$\frac{1}{8}$	500	450
Hymeas	52081	2 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x $\frac{1}{8}$	$\frac{3}{8}$	410	380
Hymenaical	52082	2 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x $\frac{1}{4}$	$\frac{1}{4}$	315	295
Hymenaicos	52083	2 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x $\frac{3}{8}$	$\frac{7}{8}$	165	150
Hymenaicum	52084	3 x 3 x $\frac{1}{4}$	1	87	80
Hydriote	52085	3 $\frac{1}{2}$ x 3 $\frac{1}{2}$ x $\frac{3}{8}$	1 $\frac{1}{2}$	65	60
Hydroarion	52086	4 x 4 x $\frac{3}{8}$	1 $\frac{1}{2}$	48	44
Hydrobate	52087	4 $\frac{1}{2}$ x 4 $\frac{1}{2}$ x $\frac{3}{8}$	1 $\frac{1}{2}$	40	36
Hydrobryon	52088	5 x 5 x $\frac{3}{8}$	1 $\frac{3}{8}$	28	26
Hydrocampe	52089	6 x 6 x $\frac{1}{2}$	1 $\frac{1}{2}$	24	22

POLE STEPS



No. 15480

Plain			Galvanized		
Code Word	List No.	Size inches	Code Word	List No.	Size inches
Norton	15480	$\frac{9}{16}$ x 9	Norwolk	15481	$\frac{9}{16}$ x 9
Ligazones	98877	$\frac{7}{8}$ x 10	Ligerice	98878	$\frac{9}{16}$ x 10
Norway	15482	$\frac{3}{4}$ x 9	Norwich	15483	$\frac{3}{4}$ x 9
Boom	3533	$\frac{3}{4}$ x 10	Bootless	3539	$\frac{3}{4}$ x 10

WOODEN POLE STEPS

Code Word	List No.
Koestaart	96245

PINS AND BRACKETS

UNPAINTED LOCUST PINS

Code Word	List No.	Size inches	Weight pounds per thousand
Hydrocleis	52093	1 $\frac{1}{2}$ x 8	280
Hydrocoque	52094	1 $\frac{1}{2}$ x 9	300

WESTERN UNION STEEL PINS

Essandole	19310	$\frac{1}{2}$ x 9 $\frac{1}{2}$	640
Essayames	19311	$\frac{3}{8}$ x 9 $\frac{1}{2}$	880

PRICES ON REQUEST



No. 52093



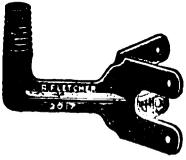
No. 19310



No. 94082

Pins and Brackets—Continued

PAINTED OAK BRACKETS



No. 02017



No. 01020

Code Word
Micciverat

List No.

94082 A. T. & T. Co. Standard Bracket, 12 in. long by 2 in. deep.



No. 01071



No. 01018

Code Word
Knoud

List No.

01028 Curved back bracket

FLETCHER BRACKETS

Knotwort

01027 Corner bracket



No. 01019



No. 01021



No. 02009

Kirap

02017 Malleable corner bracket

Kwumtad

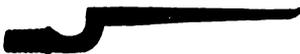
01071 Wall bracket

Solely

01020 Short wall bracket

Certified

01018 Short wall bracket



No. 01023

Certify

01019 Short wall bracket

Kontow

01029 Heavy malleable bracket

Solemnity

0920 Iron pin



No. 01029



No. 93079

Solemn

02009 Roof pin

Knotting

01021 Ridge bracket

Solecise

01023 Drive bracket

PIERCE BRACKETS



No. 93080

Code Word
Manubriolo

List No.

93079 1-point bracket

Manuaberis

93080 2-point 8 in. bracket

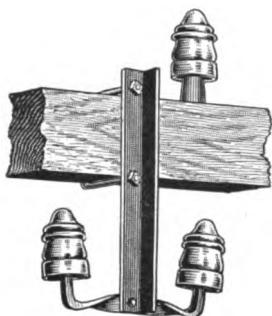
Mantieiro

93081 2-point 8 in. three piece bracket

Manticione

93082 2-point 9 in. three piece bracket

PRICES ON REQUEST



No. 98352

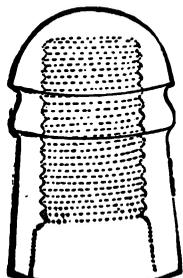
Code Word
Legranzi
Legstonlen
Leguario
Legueriez
Legracasco
Legniperda

List No.
98352
98353
98354
98355
98351
98349

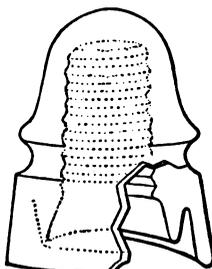
Pins and Brackets—Continued

Pierce Brackets—Continued

Underhang bracket
 Break arm
 2-point transposition bracket
 4-point transposition bracket
 Terminal bracket
 1-point corner bracket



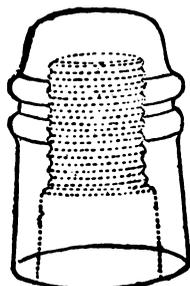
No. 2351



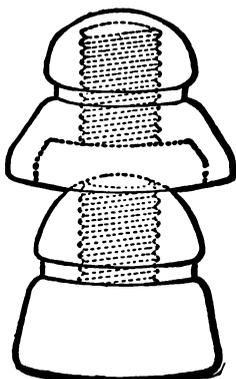
No. 2354

INSULATORS

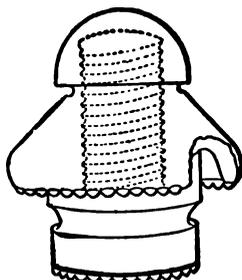
Code Word	List No.		Number in Barrel	Weight per thousand Packed Pounds
Eloquence	2351	No. 9 pony glass	350	740
Elsewhere	2354	Pony double petticoat	275	950
Foreseen	4765	Long distance regular	225	1050
Forestless	4780	Single piece transposition	100	2400
Foresty	4781	Two-piece transposition	125	2000



No. 4765



No. 4781

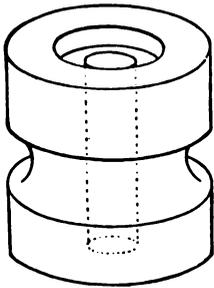


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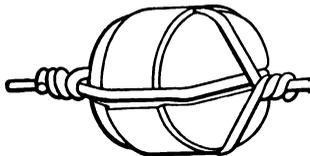
PRICES ON REQUEST

Insulators—Continued

GLASS BREAK KNOBS

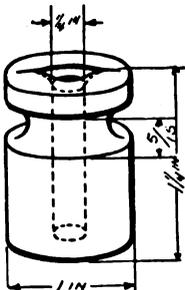


No. 24606



No. 24605

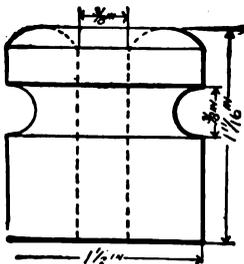
Code Word	List No.	Standard Package	Weight per thousand Packed pounds
Empty	2337 No. 1 Break knob 1½ in. long, 1½ in. wide, ¾ in. hole	500	220
Phrynes	24606 No. 2 Break knob 1½ in. long, 2 in. wide, ¾ in. hole	500	500
Forestry	4786 No. 10, for guy wires	500	850
Phrygibus	24605 No. 15, for guy wires	250	1260



No. 25444

PORCELAIN KNOBS

Code Word	List No.	Standard Package	Pounds per thousand
Accipient	25444	500	69
Accipenser	25443	1800	200
Empress	9266	1300	342



No. 25443

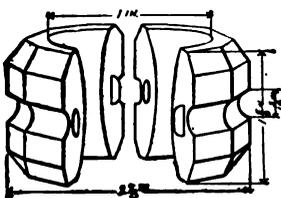
PORCELAIN TUBES

In ordering by telegraph use two code words, one for diameter and one for length.

Code Word	Diameter, inches		Code Word	Diameter, inches	
	Inside	Outside		Inside	Outside
Lecitidee	5/8	1 1/8	Leckwasser	1/2	1 1/2
Leckereien	3/4	1 1/4	Lectaremus	3/4	1 3/8

Length

Code Word	Length, inches	Code Word	Length, inches
Lederprobe	3	Lederzeug	8
Ledersteg	4	Ledocarpon	10
Lederstof	5	Leedwezen	12
Lederwaare	6	Leefregels	14



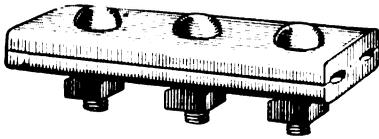
No. 9266

We can furnish any size tube from 1/8 in. inside diameter to 2½ in. inside diameter, and from 3 in. to 24 in. in length of the standard sizes.

PRICES ON REQUEST

GALVANIZED GUY CLAMPS

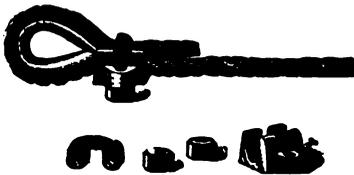
Rolled steel with high carbon steel bolts.



No. 96597

Code Word	List No.	
Kohlenoxyd	96594	2 bolt, galvanized, for $\frac{3}{8}$ and $\frac{1}{2}$ in. strand.
Kohlenraum	96595	2 bolt, galvanized, for $\frac{3}{8}$ in. and larger strand.
Kohlenrost	96596	3 bolt, galvanized, for $\frac{3}{8}$ and $\frac{1}{2}$ in. strand.
Kohlensack	96597	3 bolt, galvanized, for $\frac{1}{2}$ in. and larger strand.

CROSBY CLIPS



No. 15484

Code Word	List No.	Diameter of Strand inches
Oakville	15484	$\frac{3}{8}$
Oakland	15485	$\frac{1}{2}$
Oaklawn	15486	$\frac{5}{8}$
Oakdale	15487	$\frac{3}{4}$
Oakfield	15488	$\frac{7}{8}$
Oakford	15489	1
Oakwood	15490	1 $\frac{1}{8}$
Obeida	15491	1 $\frac{1}{4}$
Oconto	15492	1 $\frac{3}{8}$
Ocean	15493	1 $\frac{1}{2}$

THIMBLES



No. 26023



No. 52108

Code Word	List No.	Diameter of Strand inches
Meterschap	94012	$\frac{1}{4}$
Plangent	26022	$\frac{5}{8}$
Plangimur	26023	$\frac{3}{8}$
Plangorum	26024	$\frac{7}{8}$
Planhammer	26025	$\frac{1}{2}$
Planheid	26026	$\frac{5}{8}$
Planiforme	26027	$\frac{3}{4}$

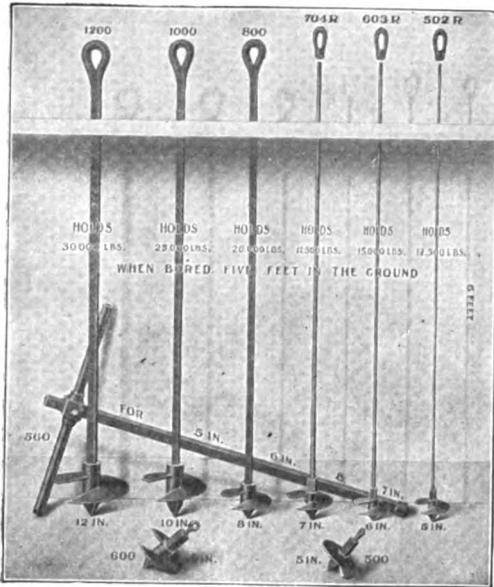
TELEPHONE GROUND RODS

Code Word	List No.	
Hydrologo	52108	$\frac{1}{2}$ in. x 5 ft. Galvanized. Pierced for ground wire with soldered connection.
Hydrolure	52109	$\frac{1}{2}$ in. x 6 ft. Galvanized. Pierced for ground wire, but no soldered connection.
Methymnaeo	94033	$\frac{1}{2}$ in. x 5 ft. Not galvanized. Pierced for ground wire with soldered connection.
Meticuloso	94034	$\frac{1}{2}$ in. x 6 ft. Not galvanized. Pierced for ground wire but no soldered connection.

ROCK GUY BOLT

Metitionis	94039	1 in. x 18 in., 2 in. eye galvanized.
Metochite	94040	1 in. x 18 in., 2 in. eye plain.

PRICES ON REQUEST



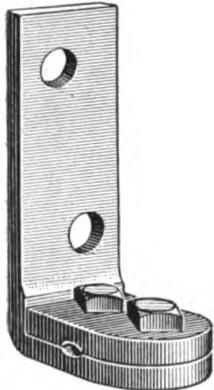
Nos. 2899 to 2997

ANCHOR OR GUY RODS

Diameter inches	Length over all feet	Approximate Weight Pounds per hundred	
		Plain	Galvanized
$\frac{1}{2}$	6	687	721
$\frac{3}{8}$	7	791	830
$\frac{1}{2}$	8	895	940
$\frac{3}{4}$	9	999	1049
$\frac{1}{2}$	6	997	1046
$\frac{3}{4}$	7	1147	1206
$\frac{1}{2}$	8	1297	1361
$\frac{3}{4}$	9	1447	1520

STOMBAUGH GUY ANCHORS

Rods are 6 ft. long.

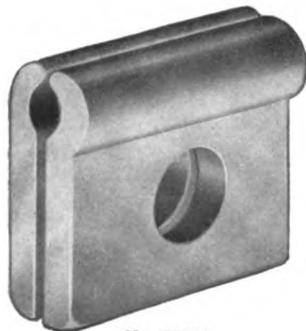


No. 96606

Code Word	List No.	Trade numbers	Diameter of Anchor inches	Class of Work	Diameter of Rod inches	Weight pounds
Fordo	2993	500	5	Light Strains	No rod	2½
Fordrive	2994	600	6	Medium Strains	No rod	4½
Fordless	2943	502R	5	Light Strains	$\frac{1}{2}$	6½
Fordede	2989	603R	6	Medium Strains	$\frac{3}{8}$	10
Kokermof	96591	704R	7	Medium Strains	$\frac{1}{2}$	15
Forcible	2899	800	8	Heavy Strains	1½	38
Forcibly	2904	1000	10	Heavier Strains	1½	50
Forcing	2928	1200	12	Heaviest Strains	1½	80
Forearm	2996	560	Wrench for 5 in. and 6 in. anchors, weight 15 lbs.			
Forebear	2997	707	Wrench for 7 in. anchor, weight 20 lbs.			

No wrench required to install 8 in., 10 in. or 12 in. anchors

GALVANIZED MESSENGER CLAMPS



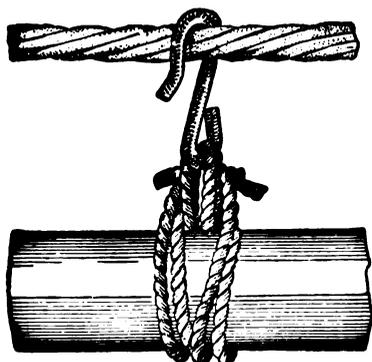
No. 52111

Code Word	List No.	Description
Kohlensalz	96598	1 bolt, plain, for $\frac{1}{8}$ and $\frac{1}{16}$ in. strand.
Kohlenwerk	96605	1 bolt, galvanized, for $\frac{1}{8}$ and $\frac{1}{16}$ in strand.
Kohlvoegel	96606	2 bolt, plain, for $\frac{1}{8}$ and $\frac{1}{16}$ in. strand.
Kokapillen	96607	2 bolt, galvanized, for $\frac{1}{8}$ and $\frac{1}{16}$ in. strand.
Kokendheet	96608	2 bolt, plain, for $\frac{1}{8}$ and $\frac{1}{16}$ in. strand.
Kokermaker	96609	2 bolt, galvanized, for $\frac{1}{8}$ and $\frac{1}{16}$ in. strand.
Kohlemnass	96592	Plain
Hydromania	52111	Galvanized.

PRICES ON REQUEST

MARLINE CABLE HANGER

Furnished galvanized and regalvanized (the wire hooks galvanized a second time after they have been cut and formed). Size of cable in pairs which different size loops will hold.

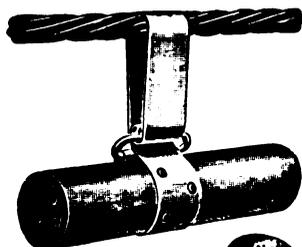


No. 96831

Code Word	List No.	Length of Loop inches	Will Support Cables	
			No. 19 B. & S.	No. 22 B. & S.
Korzelig	96826	9	24 pairs	49 pairs
Koslarniza	96828	11	49 pairs	99 pairs
Kossynier	96831	14	99 pairs	199 pairs
Kosterijen	96832	16	150 pairs	300 pairs
Kosters	96833	19	above 150 pairs	above 300 pairs

CABLE CLIP

Code Word	List No.	Type
Pilleurs	25709	Type A
Kohlenzug	96599	Type B

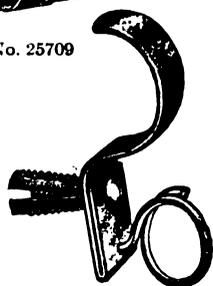


No. 25709

"LONG SAUT" COMBINATION CABLE CLAMP AND BRIDLE RING

GALVANIZED STRAPS

Does not include bridle ring or expansion bolt. The Nos. 94064 and 94065 are not drilled for bridle rings.



No. 94071 with bridle ring and expansion bolt

Code Word	List No.	Diameter of Cable, inches
Mezzaiolo	94064	$\frac{1}{2}$
Mezzananza	94065	$\frac{3}{8}$
Mezzanetto	94066	$\frac{1}{2}$
Mezzina	94067	1
Mezzissimo	94068	1 $\frac{1}{4}$
Mezzotint	94069	1 $\frac{1}{2}$
Miagolando	94070	2
Miargyrite	94071	2 $\frac{3}{4}$

Made also in other sizes and with nickel plate finish.

BRIDLE RINGS

Threaded to Fit the Galvanized Straps

Code Word	List No.	Wire Size	Eye Size	Material
Miaveritis	94072	No. 10 wire	$\frac{3}{4}$ in.	brass
Micaceous	94073	No. 10 wire	1 $\frac{1}{4}$ in.	brass
Micaiah	94074	No. 10 wire	$\frac{3}{4}$ in.	galvanized
Mication	94075	No. 10 wire	1 $\frac{1}{4}$ in.	galvanized

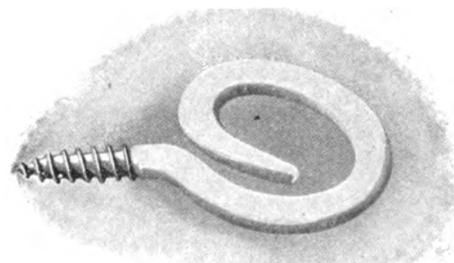
BRIDLE OR DISTRIBUTING RINGS

Enameled or Galvanized

Code Word	List No.	Style	Eye	Shank
Hydrotheca	52126	Style A	1 $\frac{3}{4}$ in.	1 $\frac{1}{2}$ in.
Hydrous	52127	Style C	1 $\frac{1}{4}$ in.	1 $\frac{1}{4}$ in.
Hydroxyde	52128	Style E	$\frac{3}{4}$ in.	$\frac{3}{4}$ in.
Hydrozoal	52129	Style F	3 in.	1 $\frac{1}{2}$ in.

Without Screw, Type "DX"

Meubleront	94046	1 in.	galvanized
Meurtrier	94047	1 $\frac{3}{8}$ in.	galvanized
Meurtriras	94048	1 $\frac{1}{2}$ in.	galvanized
Mevaniensi	94049	1 in.	enameled
Mevaniola	94050	1 $\frac{3}{8}$ in.	enameled
Mevrouw	94051	1 $\frac{1}{2}$ in.	enameled



No. 52126

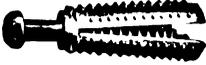


No. 94046

PRICES ON REQUEST

EXPANSION BOLTS

COMPOSITION ONE-PIECE SHIELD, COMPLETE WITH BRIGHT IRON SCREWS



Shield Not Over 1 in. Long

Size of Screw	Length of Screw
No. 5 or 6	$\frac{3}{4}$ in., 1 in., $1\frac{1}{2}$ in.
No. 9, 10 or 11	$\frac{3}{4}$ in., 1 in., $1\frac{1}{2}$ in., 2 in.
No. 12, 13 or 14	$\frac{3}{4}$ in., 1 in., $1\frac{1}{2}$ in., 2 in.
No. 15, 16, 17 or 18	1 in., $1\frac{1}{2}$ in., 2 in., $2\frac{1}{2}$ in.

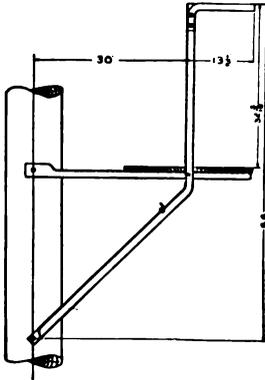


Shields $1\frac{1}{2}$ in. Long

No. 9, 10 or 11	2 in., $2\frac{1}{2}$ in., 3 in.
No. 12, 13 or 14	2 in., $2\frac{1}{2}$ in., 3 in., $3\frac{1}{2}$ in.

MALLEABLE TWO-PIECE SHIELD COMPLETE WITH LAG SCREW

Length of Lag Screw	Diameter of Lag Screw
2 in.	$\frac{1}{4}$ in., $\frac{5}{16}$ in.
$2\frac{1}{2}$ in.	$\frac{1}{4}$ in., $\frac{5}{16}$ in., $\frac{3}{8}$ in., $\frac{1}{2}$ in., $\frac{5}{8}$ in., $\frac{3}{4}$ in.
3 in.	$\frac{1}{4}$ in., $\frac{5}{16}$ in., $\frac{3}{8}$ in., $\frac{1}{2}$ in., $\frac{5}{8}$ in., $\frac{3}{4}$ in.
4 in.	$\frac{1}{4}$ in., $\frac{5}{16}$ in., $\frac{3}{8}$ in., $\frac{1}{2}$ in., $\frac{5}{8}$ in., $\frac{3}{4}$ in.
5 in.	$\frac{1}{4}$ in., $\frac{5}{16}$ in., $\frac{3}{8}$ in., $\frac{1}{2}$ in., $\frac{5}{8}$ in., $\frac{3}{4}$ in.
6 in.	$\frac{1}{4}$ in., $\frac{5}{16}$ in., $\frac{3}{8}$ in., $\frac{1}{2}$ in., $\frac{5}{8}$ in., $\frac{3}{4}$ in.



No. 1-A

COMPOSITION ONE-PIECE SHIELD

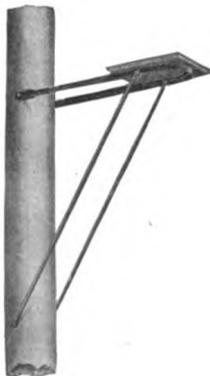
For Screw	Length of Shield inches	Outside Diameter inches
Nos. 5, 6, 7	$\frac{5}{8}$	$\frac{1}{4}$
Nos. 8, 9, 10, 11	$\frac{3}{4}$	$\frac{5}{16}$
Nos. 9, 10, 11	$1\frac{5}{8}$	$\frac{5}{16}$
Nos. 12, 13, 14	$\frac{7}{8}$	$\frac{3}{8}$
Nos. 12, 13, 14	$1\frac{1}{2}$	$\frac{7}{16}$
Nos. 12, 13, 14	$2\frac{1}{2}$	$\frac{7}{16}$
Nos. 15, 16, 17, 18	1	$\frac{7}{16}$
Nos. 22, 23, 24	$1\frac{1}{4}$	$\frac{9}{16}$

No. 1-A CABLE POLE BALCONY

As an adjunct to the No. 15 cable terminal, a pole balcony as inconspicuous as possible has been designed to be used on poles carrying cable terminals of such height as to require linemen to stand while at work upon them.

While the feature of appearance has been an important one affecting the design, the necessity for substantial construction has been by no means disregarded. The framework is of angle iron to secure ample strength and the flooring is of oak. A permanent guard-rail is provided.

All parts are given a coating of asphaltum paint.



No. 94045

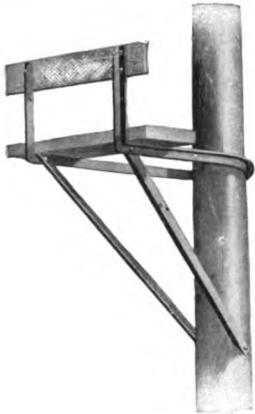
WESTERN ELECTRIC COMPANY POLE SEAT

The frame is made of $1\frac{1}{2}$ in. x $1\frac{1}{2}$ in. x $\frac{1}{4}$ in. angle iron with a brace of $\frac{3}{8}$ in. round iron. The frame is 2 ft. $7\frac{3}{4}$ in. long and has a pine seat 11 in. x 13 in. bolted to it. All parts are given a coat of asphaltum paint.

Code Word
Meubleriez

List No.
94045

PRICES ON REQUEST



No. 52132



No. 52136

POLE SEAT

For use at small terminals or in places where a platform would be too conspicuous our pole seat cannot be surpassed. Its angle frame is rigid. Its back and seat board are of oak. We can furnish this seat, fitted with an over balance weight that will keep it tipped up when not in use—clear of snow and sleet.

Code Word	List No.	
Hydrusa	52132	Black
Hydurilate	52133	Galvanized

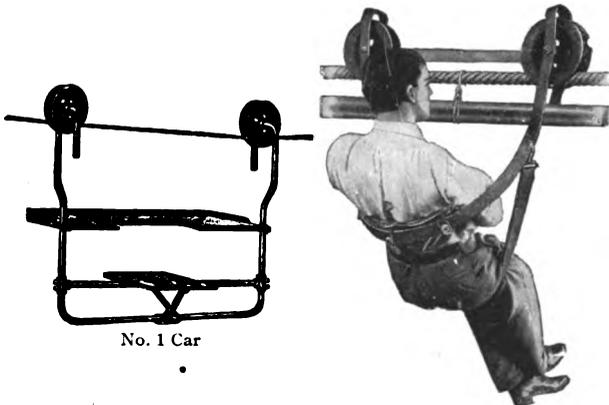
This platform has two strong angle rails, an oak floor on an iron frame, and two round rod braces. This is the platform to use on important terminal poles—where a good deal of work is done—the sense of security imparted by the railing makes it possible for the lineman to give his entire attention to his work.

POLE PLATFORM

Code Word
Hyemated
Hyemation

List No.
52136
52137

Galvanized
Painted



No. 1 Car

No. 3 Car

CABLE CARS

Cable car No. 1 is a combined seat and table. The framework of the car is continuous, without joints. The seat is of wood, and the rollers of malleable iron. The table is adjustable. Tested for 1000 pounds.

Car No. 3 is lighter than No. 1 and is not equipped with a table. It is intended for use with a lineman's safety belt. The height of the seat is adjustable.

Code Word	List No.	
Massiccio	10002	Cable car No. 1
Massicoter	10003	Cable car No. 3

TOOLS

CARRYING HOOKS

Code Word	List No.	
Skill	24064	With swivel bearing, 4 ft. handle
Maro	15010	Extra heavy, 7 ft. handle
Marquan	15011	Heavy, 6 ft. handle
Marquette	15012	Medium, 5 ft. handle
Feign	4402	Standard weight, 4 ft. handle

CANT HOOKS

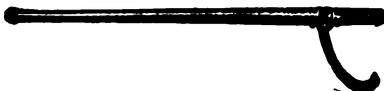
Merwin	15007	Length, 4 ft.
Penonne	24890	Length, 4½ ft.

TAMPING BARS

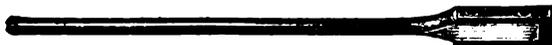
Skinch	24075	Hard wood, iron shoe, length 7 ft.
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No. 24064



No. 15007



No. 24075

PRICES ON REQUEST

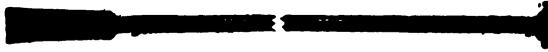
Tools—Continued



No. 4412

SPLITWOOD HANDLE DIGGER

Code Word	List No.	Length feet
Felbovinum	4412	5 ft. handle
Feld	4413	7 ft. handle

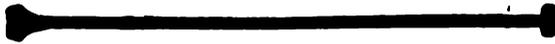


No. 25093

THE ELECTRIC SPUD

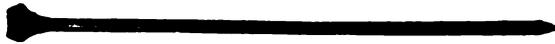
Songstress	25093	With tamping end, 9 ft. long
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TAMPING AND DIGGING BARS



No. 4421

Felician	4421	1½ in. octagon tool steel, 8 ft. long, weight, 30 lbs.
Felicify	4422	1 in. octagon tool steel, 8 ft. long, weight, 25 lbs.
Ejerzo	5924	1 in. round tool steel, 7 ft. long, weight, 19 lbs.



No. 4423

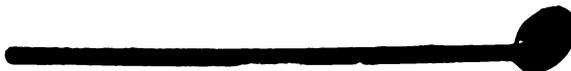
CROW AND DIGGING BARS

Ejointage	5925	1 in. round steel, 7 ft. long, weight, 17 lbs.
Felicitate	4423	1 in. octagon steel, 7 ft. long, weight, 17 lbs.
Felicitous	4424	1½ in. octagon steel 8 ft. long, weight, 28 lbs.



No. 4407

LONG-HANDLED SHOVELS



No. 4410

Pioveva	25771	5 ft. or 6 ft. shovel, 9 in. strap
Pipabimus	25772	7 ft. shovel, 9 in. strap
Pipabunt	25773	8 ft. shovel, 9 in. strap
Feisty	4407	5 ft. or 6 ft shovel 18 in. strap
Metcalf	14912	7 ft. shovel, 18 in. strap
Metropolitan	14913	8 ft. shovel 18 in. strap



No. 3869

LONG-HANDLED SPOONS

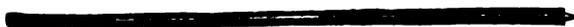
Piparote	25776	6 ft. solid spoons, 9 in. strap
Pipaste	25777	7 ft. solid spoons, 9 in. strap
Pipavisset	25778	8 ft. solid spoons, 9 in. strap
Felanders	4410	6 ft. spoon, 18 in. strap
Beefall	3782	7 ft. spoon, 18 in. strap
Befit	3783	8 ft. spoon, 18 in. strap



No. 3870

GRADING SHOVELS

Binocular	3869	Round point
Binoculate	3870	Square point

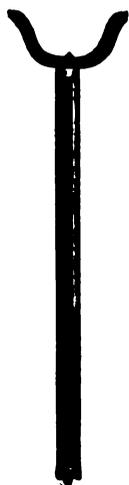


No. 14928

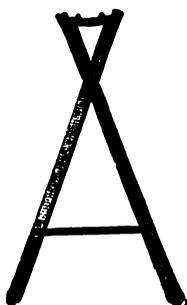
PIKE POLES

		Length feet
Millerton	14928	12
Millenburg	14929	14
Millar	14930	16
Millerburg	14931	18
Piously	25768	20

PRICES ON REQUEST



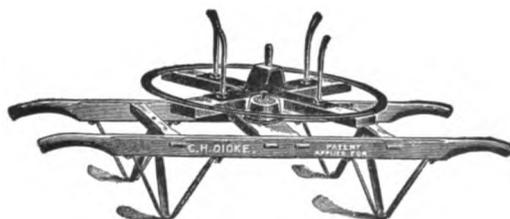
No. 24078



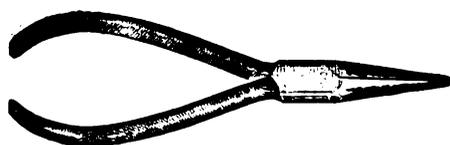
No. 14932



No. 15015



No. 2545



No. 4519

Tools—Continued

POLE SUPPORTS

Mule Pattern

Code Word	List No.	Length feet
Skinless	24079	6
Skinner	24080	7½

Jenney Pattern

Pilanga	14932	height, 6 ft.
Millercan	14933	height, 7½ ft.

RAISING FORKS OR GUARDED PIKE POLES

Feliform	4427	10 ft. handle, 1½ in. thick
Millanvill	14925	12 ft. handle, 1½ in. thick
Millanfeld	14926	14 ft. handle, 2½ in. thick
Millervill	14927	16 ft. handle, 2½ in. thick
Felinal	4428	18 ft. handle, 2½ in. thick

REELS

Take-Up Reels

Martel	15015	Improved take-up reel
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Common Pay-Out Reel

Pilantium	2544	Pay-out reel
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Ball-Bearing Pay-Out Reel with Carrying Handles

Pilanorum	2545	Pay-out and take-up reel, heavy
Piove	25769	Same, but much lighter
Pilaremus	2546	Reel straps, one set

VOM CLEFF'S LONG NOSE CHAIN PLIERS

Not Side Cutting—First Quality

Code Word	List No.	Length inches
Fensome	4519	4
Fensucked	4520	4½
Fensure	4521	5
Fent	4522	5½
Fenugreck	4523	6

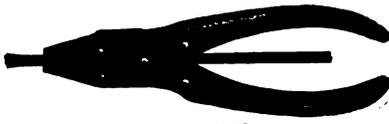
VOM CLEFF'S ROUND, LONG NOSE

Cordwain	2881	4
Corelation	2882	4½
Corinne	2883	5
Corinthian	2884	5½
Cork	2885	6

PRICES ON REQUEST

Tools—Continued

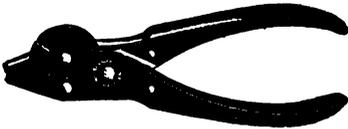
BERNARD'S PARALLEL PLIERS



No. 2688

Code Word	List No.	Length inches
Consummate	2688	4½
Pingres	2689	5½
Pinguamen	2690	6½
Contact	2691	7½

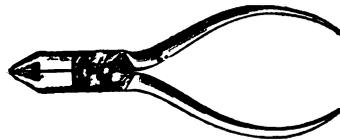
BERNARD'S COMBINED PARALLEL AND CUTTING PLIERS



No. 3789

Code Word	List No.	Length inches	Will Cut Wire	Width between plying jaws when open, inches
Beholder	3789	4½	No. 9 B. & S.	½ in.
Beholding	3790	5½	No. 7 B. & S.	¾ in.
Behoove	3791	6½	No. 5 B. & S.	1 in.
Belabor	3792	7½	No. 3 B. & S.	1¼ in.

VOM CLEFF'S LINEMAN'S PLIERS



No. 3746

Code Word	List No.	Length inches
Forefend	3746	3½
Forefinger	3747	5
Forefoot	3748	5½
Forefront	3749	6

STUBS' SIDE CUTTING PLIERS



No. 2871

Anarchist	3663	4
Anarchy	3664	4½
Anatomist	3665	5
Anatomy	3667	6
Anatron	3668	7
Ancestor	3669	8
Milbrook	2523	9

VOM CLEFF'S DIAGONAL CUTTING PLIERS



No. 8633

Cord	2871	4
Cordage	2872	4½
Cordate	2873	5
Corded	2874	5½
Cordelia	2875	6
Cordially	2877	7
Cordon	2878	8

STUBS' DIAGONAL CUTTING PLIERS



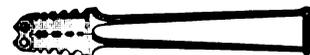
No. 5109

Foregaff	3750	5
Foreganger	3751	5½
Foregather	3752	6

SPLICING CLAMPS

Contagious	8633	For Nos. 8, 10, 12, 14 B. & S. gauge wires and finer.
Pingendos	5109	For wire connectors on Nos. 8, 10, 12 and 14 B. & S. gauge wires.
Forelay	3769	For wire connectors on Nos. 8, 10, 12, 14 B. & S. gauge or Nos. 10, 12, 16 British gauge copper wire on one side and No. 6 and finer iron wire on the other side.

FRY'S PATENT LINEMAN'S SPLICING PLIERS



No. 3769

Code Word	List No.	Length inches
Ejulatum	5927	7 in.
Eclairage	5090	8 in.

PRICES ON REQUEST

Tools—Continued

WIRE JOINTS

For splicing wires together. Made to accommodate two wires of the same or different sizes and in two lengths—full and half—the former being about 4 in. long for No. 14 wire, and the latter about 2½ in. long for the same size wire. Made of plain copper for use with copper wires and of tinned copper for use with galvanized iron wires. Splicing clamps are used to twist the joints.

Orders should state size and kind of wire to be accommodated and whether full or half length joints are desired.



No. 24578

THE ANTI-HUM

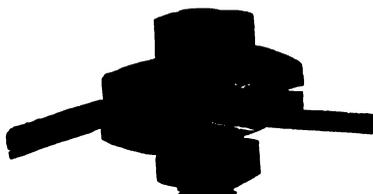
Humming of line wires easily and cheaply remedied

Code Word **Ossiopia** List No. **24578**

COPPER TEST CONNECTOR

It securely grips wires of the same or different sizes. The convex surface allows the clamp to readily adjust itself.

Code Word **Hydrozoon** List No. **52130**



No. 52130

NEW YORK GROUND CLAMP

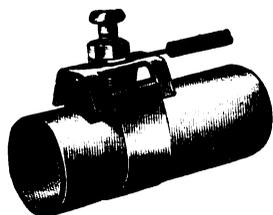
For connecting telephone and telegraph ground wires to pipes or cables

Code Word **Pillottano** List No. **25711**

STEEL LAG SCREW WRENCH

This wrench is very convenient for drawing up lag screws through cross arms. The jaw is made tapering to accommodate variations in bolt heads.

Code Word **Mekers** List No. **15078**



No. 25711

COMBINATION LAG SCREW AND NUT WRENCH

Will take lag screws and nuts for ¾ in., ½ in., and ⅜ in. bolts.

Code Word **Medway** List No. **15077**



No. 15078

STEEL TIE WRENCH

The purpose of this tool is to make the tie around the line wire, where it is fastened to the insulators. It will wind the tie around line smoothly, without marring the hard drawn copper wire on which it is intended for use.

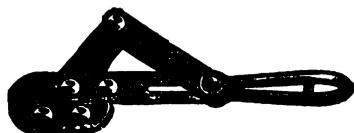
Code Word **Medora** List No. **15076**



No. 15077

BUFFALO GRIPS

Code Word Milesburg	List No. 14946	No. 1, extreme opening .22 in., holding wire from the smallest to No. 6, inclusive.
Forborn	2519	No. 1, with pulley; will accommodate rope ¾ in.
Milipitus	14945	No. 2, extreme opening .35 in., holding all sizes from the smallest to No. 0, inclusive.
Forby	2565	No. 2, with pulley; will accommodate rope 7/8 in.
Acosmism	25594	No. 3, extreme opening .48 in., holding all sizes of wire from the smallest to No. 0000 inclusive.
Forcause	2663	No. 3, with pulley; will accommodate rope ¾ in.
Force	2664	No. 4, extreme opening .52 in.; for insulated wire.



No. 14946



No. 2519

PRICES ON REQUEST



No. 2667

Tools—Continued

BUFFALO LINEMAN'S TOOL

Latest adaptation to needs of line construction men. Self-adjusting brake, which holds securely under severest tension.

Code Word	List No.	
Forcedly	2667	Lineman's tool, with No. 1 grip, .22 in. opening
Forcedness	2677	Lineman's tool, with No. 2 grip, .35 in. opening
Piomesi	26762	Lineman's tool, with No. 4 grip, .52 in. opening

HAVEN'S CLAMP



No. 3494

Blundering	3494	Small size, for No. 8 wire and finer
Blunt	3495	Large size, for 1/2 in. and finer

ECCENTRIC CLAMPS

Skeed	24099	For No. 9 wire and finer
--------------	--------------	--------------------------

KLEIN'S PLAIN ECCENTRIC

Beauty	3705	Brass, for No. 8 wire and finer
Beautyspot	3706	Steel, for No. 8 wire and finer

CAST STEEL VISES



Nos. 1109 and 2548

Bilking	2547	5 1/2 in.
Billbrook	2548	6 in.
Billet	2549	5 1/2 in. copper-faced jaws
Milville	2538	6 in. copper-faced jaws

WISE OR ECCENTRIC STRAPS

Milroy	1109
---------------	-------------

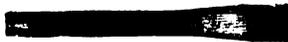
WRENCHES



No. 3496

Code Word	List No.	Length, inches
Blunted	3496	6
Blunting	3497	8
Bluntly	3498	10
Blur	3499	12
Blurred	3500	15
Blurring	3501	18
Elfjarig	6187	21

8-INCH COLD CHISEL



No. 15180

Code Word	List No.	Width, inches
Momence	15180	3/8
Mona	15181	1/2
Moncure	15182	5/8
Monclova	15183	3/4
Pinuelos	25757	7/8

PRICES ON REQUEST

Tools—Continued

BELL HANGER'S GIMLET



No. 15152

Code Word	List No.	Length inches	Diameter inches
Minedosa	15152	15	$\frac{9}{32}$
Mineota	15153	15	$\frac{10}{32}$
Minewakan	15154	15	$\frac{12}{32}$
Minock	15155	24	$\frac{9}{32}$
Minuka	15156	24	$\frac{10}{32}$
Minster	15157	24	$\frac{12}{32}$
Mishawaka	15158	36	$\frac{9}{32}$
Misoula	15159	36	$\frac{10}{32}$
Missoura	15160	36	$\frac{12}{32}$



No. 1750

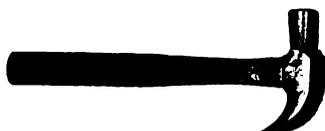
SAWS



No. 15085

Code Word	List No.	Length inches
Connive	1750	18
Connivency	1751	20
Connivent	1752	22
Conniver	1753	24

DRAW KNIVES



No. 15116

Melborn	15085	12
Melvin	15086	14

NAIL HAMMERS

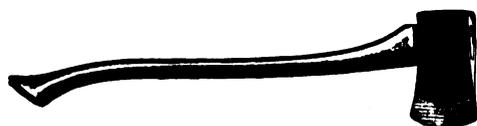
Plain Eye



No. 15122

Code Word	List No.	Weight ounces
Mewdota	15116	12
Menlo	15117	15
Mento	15118	18

HATCHETS



No. 15130

Meridan	15122	3 $\frac{1}{2}$ in. cut
Meridia	15123	4 in. cut

LINEMAN'S AXE



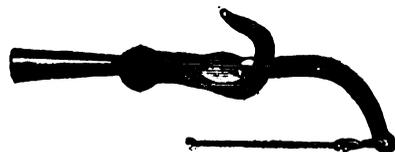
No. 15125

Merillian	15130	With handle
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HAND AXES

Merigold	15124	4 $\frac{1}{2}$ in. cut
Merom	15125	5 in. cut
Merian	15126	5 $\frac{1}{2}$ in. cut
Merricourt	15127	6 in. cut

TREE TRIMMERS



No. 2520

Minburne	2520	Small size, 18 in. over all
Minden	2521	Large size, 21 in. over all
Pinguesco	5177	18 ft. handles for above
Melton	15080	Best cast steel; length, 12 in., 2 in. cutters

PRICES ON REQUEST

Tools—Continued



Dicke Type

DICKE LOCK FERRULE SCREW DRIVER

Blades forged from finest tool steel, polished malleable ferrules, fluted handles.

Cabinet—Length of blade. 2½ 3½ 4½ 5½ 6½ 8½ 10½ 12½
Machinists—Length of blade. 2½ 3 4 5 6 7 8 9 10 11 12

Blades and handles of the Dicke screw driver are warranted not to turn in the ferrule



No. 5168

“YANKEE” RATCHET SCREW DRIVER

No. 10

Right and Left Hand, and Rigid

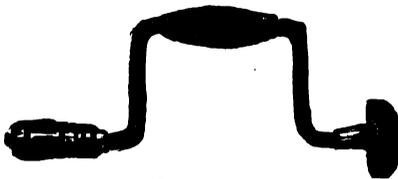
Code Word	List No.	Length of Blade inches
Economicas	5166	2
Pilcrow	5167	3
Economique	5168	4
Economist	5169	5
Economizar	5170	6
Pildish	5171	8
Pildora	5172	10
Pildanthe	5173	12



No. 15185

SOCKET FRAMING CHISEL

Code Word	List No.	Width inches
Pinulam	25758	½
Pinus	25759	¾
Monster	15185	1
Mondamin	15186	1½
Mondola	15187	2



No. 2917

RATCHET BRACE

Code Word	List No.	Sweep inches
Pinfeather	2917	8
Conjunctly	2918	10

BITS

Diameters by thirty-second inch from ⅜ in. to ⅝ in.

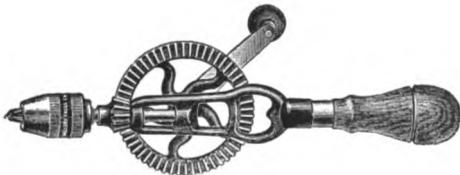
Diameters by sixteenth inch from ⅜ in. to 1¼ in.

No. 4491 expansion bit bores from ½ in. to 1½ in.

No. 4492 expansion bit bores from ⅜ in. to 3 in.

HAND DRILL

The chuck will hold twist drills from ⅜ in. to 1 inch. Six drill points are furnished with each drill. The drills are made of malleable iron, nickel plated; with steel spindle and rosewood head and handle.



No. 4485

Code Word	List No.	Description
Feminate	4485	Single gear, hollow handle

BREAST DRILL

Pinetorum	6216	Miller's Falls No. 13
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TOOL BELTS

Code Word	List No.	Description
Monongah	15200	Plain tool belt
Pindenisso	5033	Tool belt, for use with safety strap
Pindonga	5034	Safety strap to attach to tool belt; heavy snap on each end



Nos. 5033 and 5034

LINEMAN'S TOOL BAG

Pindariser	15201	Canvas, 20 in., with leather bottom
Pindarismo	6227	12 in., with leather bottom
Pindemonte	5031	Leather, best russet, with shoulder stay

PRICES ON REQUEST

Tools—Continued

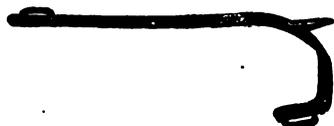
INSPECTOR'S TOOLS



No. 15165

- | Code Word | List No. | |
|----------------|--------------|---|
| Modena | 15165 | Complete set in morocco case, containing everything necessary for adjusting telephone apparatus, telegraph and stock-printing instruments, etc. |
| Modesta | 15166 | Case only. |

KLEIN EASTERN CLIMBERS



No. 24093

- | | | |
|-------------------|--------------|------------------|
| Skittish | 24093 | Without straps |
| Skittishly | 24094 | Straps |
| Meerelster | 93501 | Sheep lined pads |
| Meerdistel | 93502 | Felt lined pads |

DICKE EASTERN CLIMBERS

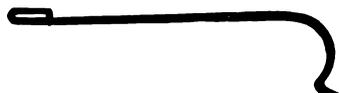


EASTERN

- | | | |
|-----------------|--------------|----------------|
| Pintoja | 25753 | Without straps |
| Pintojos | 25754 | Straps |

KLEIN WESTERN CLIMBERS

16 in. to 18 in.



No. 24091

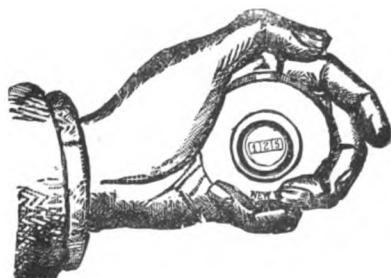
- | | | |
|-----------------|--------------|----------------|
| Skirt | 24091 | Without straps |
| Skirting | 24092 | Straps |



WESTERN

DICKE WESTERN CLIMBERS

- | | | |
|-----------------|--------------|----------------|
| Pintonas | 25755 | Without straps |
| Pinturas | 25756 | Straps |



No. 15218

POLE COUNTER OR TALLY REGISTER

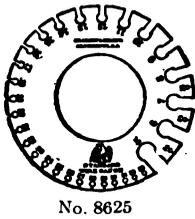
- | | | |
|-----------------|--------------|------------------|
| Pilobole | 25718 | Records to 1000 |
| Pilofora | 25719 | Records to 10000 |

PRICES ON REQUEST

Tools—Continued

GAUGES

Standard Wire Gauge



No. 8625

Code Word	List No.	
Pindongueo	8624	American, Nos. 0 to 36.
Constrain	8625	American, Nos. 5 to 36.
Pindust	8626	English, Nos. 1 to 36.
Pinenchyma	8627	English, Nos. 6 to 36.

TAPE LINES

Linen tape reinforced with wire; hard leather case.



No. 15205

Code Word	List No.	Length, Feet
Monrovia	15205	25
Monsin	15206	50
Pilogyne	25720	75
Montague	15207	100

Steel Tape

Pilosisme	25725	25
Pilosorum	25726	50
Pilostyle	25727	75
Pilotage	25728	100

VULCAN ELECTRIC SOLDERING IRON



No. 98904

Code Word	List No.	Equivalent
Lignidion	98889	1½ lb. per pair.
Ligniperde	98892	3 lb. per pair.
Lijboelijn	98904	1 lb. per pair.

SOLDERING COPPERS

Pointed



No. 3513

Code Word	List No.	
Pignattini	24876	1 lb. to the pair.
Pignattone	24877	1½ lb. to the pair.
Pignolato	24889	2 lb. to the pair.
Blustrous	3513	2½ lb. to the pair.

RITTER SOLDERING COPPER



No. 4532

This soldering copper is designed to be attached to any gasoline blow torch. This is an exceedingly convenient soldering iron for linemen, inside wiremen, or for shop use. The temperature of the copper is maintained constant when the torch is in operation.

Code Word	List No.
Feral	4532

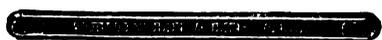
EXCELSIOR SOLDERING COPPERS



No. 4711

Code Word	List No.	
Fiberd	4711	For joints on Nos. 12, 14, 16 wire.
Fibration	4712	For joints on Nos. 9, 12, 14 wire.
Fibrillous	4713	For joints on Nos. 4, 6, 8 wire.

PRICES ON REQUEST



No. 3338

Tools—Continued

ALLEN SOLDERING STICK

Code Word	List No.
Solemnnes	24459



No. 3339

Concord	3340
Concolor	3338
Pinillosie	3339

SOLDER

Resin core solder
Strictly half and half
Wire solder

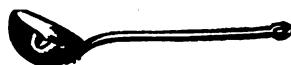


No. 3507

SOLDER POTS

Code Word	List No.
Blushfully	3507
Blushless	3509

Diameter inches
6
8



No. 2550

SOLDER LADLES

Carabine	2550
Caravan	2551
Cardine	2552
Careen	2553

2½
3
4
5



No. 96354

VICTOR SOLDERING SALTS

Code Word	List No.
Arbitrate	3205
Labrodores	97803
Labriegas	97804

Package
In ½ lb. bottles
In 1 lb. bottles
In 5 lb. bottles

BURNLEY SOLDERING PASTE

Pipitanas	25799
Plangence	26021

In 2 oz. boxes
In 4 oz. boxes



No. 96335

HIGHLAND SOLDERING PASTE

Ferant	4534
Planetule	26019
Plangebat	26020

In boxes containing 2 ozs.
In boxes containing 1 lb.
In boxes containing 5 lbs.

COMBINATION "HOT BLAST" BLOW TORCH

Code Word	List No.
Kinasiroop	96335

Capacity 1 quart

IMPERIAL "HOT BLAST" BLOW TORCH

Kinderwerk	96354
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Capacity 1 quart

PRICES ON REQUEST

Tools—Continued



No. 96546

COMBINATION "HOT BLAST" FURNACE

Code Word **Koorzanger** List No. **96546** Capacity 1 gallon

COMBINATION SOLDERING TORCH

For Alcohol

Code Word **Montcell** List No. **15225**

This torch can be carried in the pocket or tool bag. The handle contains a vial for acid, doing away with carrying an extra acid bottle. The blow pipe is adjustable and the wick large. It is made entirely of brass, and highly polished.

SOLDERING IRON FURNACES



No. 94060



No. 94062

Code Word	List No.	
Mezereum	94060	No. 1 Soldering Furnace (American Meter Co.)
Mezinheira	94061	No. 2 Hercules Furnace
Meziriac	94062	No. 2 Fire King Furnace
Mezzabout	94063	No. 3 Superior Furnace



No. 94061



No. 94063

MORRIS FIBRE CLEATS

For interior telephone wiring. $\frac{3}{8}$ in. wide, $\frac{1}{4}$ in. thick. Groove $\frac{1}{8}$ in. deep.

Style A	$\frac{3}{4}$ in. long, single groove, for one or two wires
Style B	$\frac{3}{4}$ in. long, double groove, for two wires
Style C	$\frac{1}{2}$ in. long, corner cleat, for one or two wires
Style D	$1\frac{1}{4}$ in. long, triple groove, for three wires



Style A



Style C



Style B



Style D

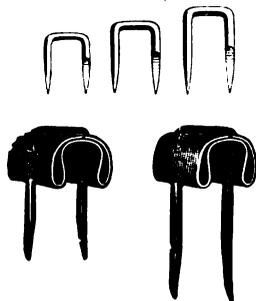
DOUBLE-POINTED TACKS

Code Word	List No.	Length, inches
Grafton	11950	$\frac{3}{8}$
Grayson	11951	$\frac{1}{2}$
Ossiculo	11952	$\frac{5}{8}$

BLAKE INSULATED STAPLES

For use on all low voltage circuits of interior wiring, such as telephone work.

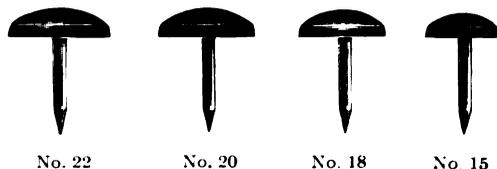
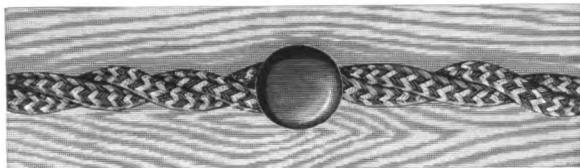
These are a standard, square shouldered staple having good driving qualities the upper part of which is so protected by a sheet fibre insulation as to prevent the covering on the wire coming in contact with the metal of the staple.



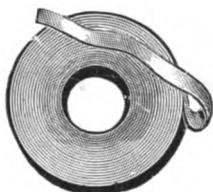
Code Word	List No.	Length, inches
Laissions	97924	$\frac{1}{2}$
Lakennaald	97926	$\frac{3}{8}$
Lakenmaker	97925	$\frac{3}{4}$
Lakenraam	97927	$\frac{7}{8}$

PRICES ON REQUEST

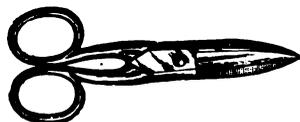
MILONITE NAILS



Used in installing twisted pair wires. The head is of insulating material and the shank is covered with an insulating paint. The heads are made in four sizes as shown full size herewith and may be obtained in gray, dark green and dark brown.



No. 24892



No. 16150

Code Word
Minusseite
Pignorasse
Beamlet
Beamtree
Pigorada
Beancaper
Beancod
Beanfed
Creased
Escatimado

List No.
94221 Amazon, black
24892 Victor, black
3638 Grimshaw, black
3639 Grimshaw, white
24891 Competition
3642 Okonite
3643 Manson, black
3644 Manson, white
8746 Kerite, black
7943 P. & B.

TAPE

ELECTRICIAN'S SCISSORS

Code Word
Mingo

List No.
16150 Nickel plated.

WEBBING

For wrapping multiple cables in switchboards.

Code Word
Mezclarian
Mezeillade

List No.
94057 Cotton, 1½ in. wide, slate.
94058 Cotton, 1½ in. wide, black.

TWINE

For sewing switchboard cables in runs.

Code Word
Mezereine

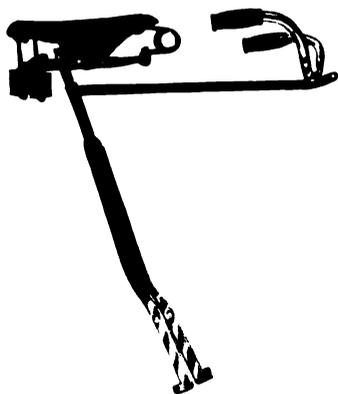
List No.
94059 12 strand linen.

INDIAN MOTOCYCLE

These are offered in following styles with attachments:
 Single cylinder 2½ horsepower
 Double cylinder, 4 horsepower
 Tandem attachment
 Luggage carrier attachment (capacity 50 pounds)



Indian Motorcycle



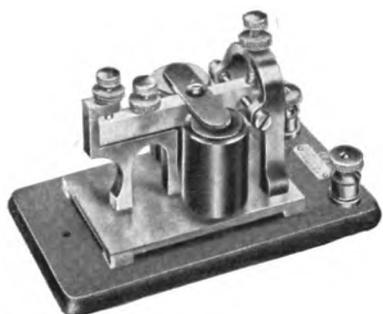
Tandem Attachment

PRICES ON REQUEST

GENERAL SUPPLIES

The preceding pages list only those supplies required particularly by telephone and telegraph companies. We however manufacture or supply a full line of general electrical supplies and power machinery, which is described in a catalogue devoted almost exclusively to this purpose.

TELEGRAPH APPARATUS



No. 1-A

TELEGRAPH APPARATUS

The majority of the instruments listed and shown below are the standard Western Union instruments.

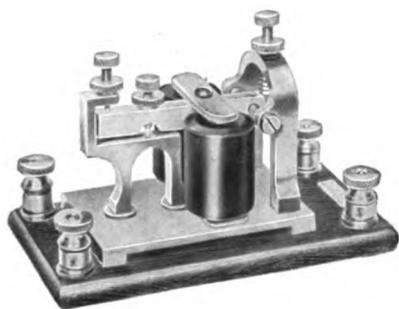
In ordering telegraph apparatus kindly use code numbers whenever possible.

SOUNDERS

Aluminum Lever

Mounted on wooden base.

Code Word	List No.	Code No.	Resistance ohms	Size of Base inches	Finish	List Price each
Hankinson	12518	1-A	4	5½x3	Brass lacquered	\$ 3.40
Hannibal	12519	1-C	20	5½x3	Brass lacquered	3.90
Hanse	12520	1-B	4	5½x3	Nickel plate	3.70
Hants	12521	1-D	20	5½x3	Nickel plate	4.20



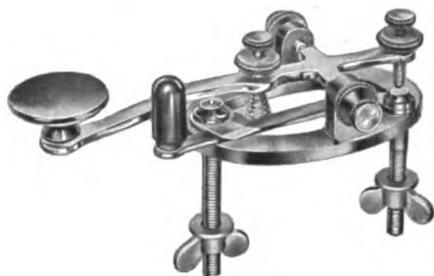
No. 2-A

REPEATING SOUNDERS

Aluminum Lever

Mounted on wooden base.

Code Word	List No.	Code No.	Resistance ohms	Size of Base inches	Finish	List Price each
Hantsport	{ 53004 } { 12526 }	2-A	4	5½x3	Brass lacquered	\$ 5.60
Miccivisti	94083	2-C	20	5½x3	Brass lacquered	6.10
Hapoor	12527	2-B	4	5½x3	Nickel plate	5.80
Miccotrogo	94084	2-D	20	5½x3	Nickel plate	6.30



No. 3-MA

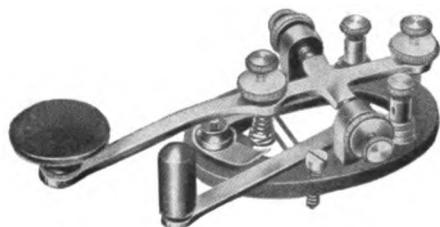
KEYS

Leg Keys

Code Word	List No.	Code No.	Finish	List Price each
Harding	{ 25919 } { 12533 }	3-MA	Brass lacquered	\$ 2.30
Hardeman	12534	3-MB	Nickel plate	2.50

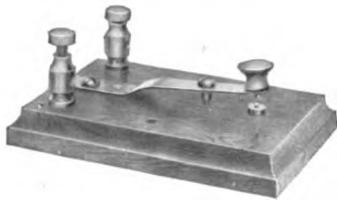
Legless Keys

Hardenberg	{ 25921 } { 12531 }	4-MA	Brass lacquered	2.80
Harderwick	12532	4-MB	Nickel plate	3.00

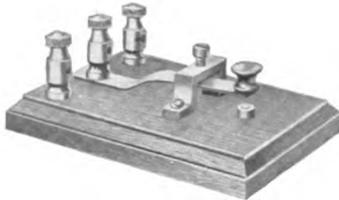


No. 4-MA

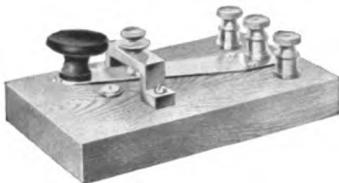
WRITE FOR LIBERAL DISCOUNTS



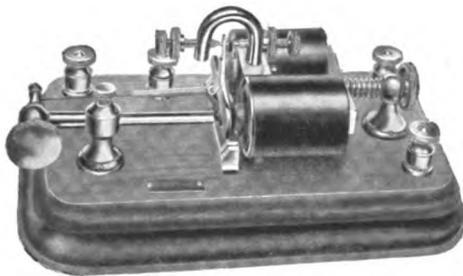
No. 5-MA



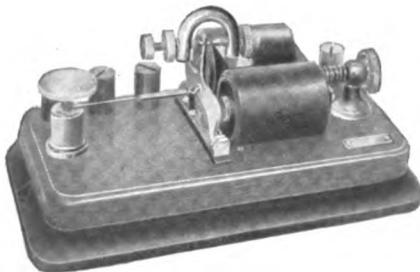
No. 5-MB



No. 5-MC



No. 1-MA



No. 3-MA

Keys—Continued**Strap Keys**

Mounted on wooden base.

Code Word	List No.	Code No.	Contacts	Size of Base inches	Finish	List Price each
Haldimond	11443	5-MA	Lower	2½x4	Brass lacquered	\$ 0.85
Haleak	11444	5-MB	Upper and lower	2½x4	Brass lacquered	1.00
Minuciosas	62840	5-MC	Upper and lower	3½x5½	Brass lacquered	2.50

RELAYS**MAIN LINE RELAYS**

Mounted on wooden base with cast iron sub-base.

Code Word	List No.	Code No.	Resistance ohms	Size of Base inches	Finish	List Price each
Hallowell	12500	1-MA	150	8x4½	Brass lacquered	\$ 6.70
Micotomisa	94085	1-MC	35	8x4½	Brass lacquered	6.20
Hallton	12501	1-ME	200	8x4½	Brass lacquered	7.20
Halltown	12502	1-MG	300	8x4½	Brass lacquered	7.70
Halla	12503	1-MB	150	8x4½	Nickel plate	7.20
Michelozzo	94086	1-MD	35	8x4½	Nickel plate	6.70
Halligen	12504	1-MF	200	8x4½	Nickel plate	7.70
Hallingdal	12505	1-MH	300	8x4½	Nickel plate	8.20
Minneselig	25925	3-MA	150	7½x4½	Brass lacquered	6.70
Minnevlaag	25927	4-MA	150	7½x4½	Slate base Brass lacquered	7.00

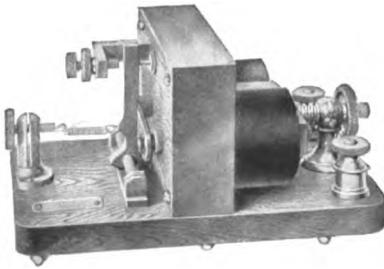
WRITE FOR LIBERAL DISCOUNTS

Relays—Continued

BARCLAY BOX RELAYS

Without Key

Mounted on wooden base.

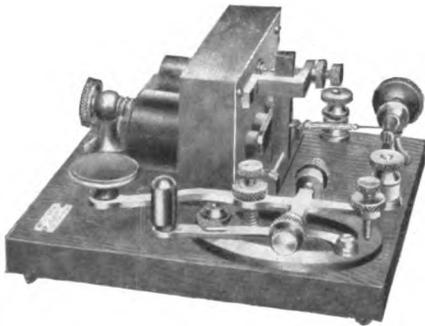


No. 10-MM

Code Word	List No.	Code No.	Resistance ohms	Size of Base inches	Finish	List Price each
Hamden	62845	10-MD	150	5½x3¾	Brass lacquered	\$ 8.00
Michuacane	94087	10-MH	150	5½x3¾	Nickel plate	8.50
Micraniche	94088	10-MM	35	5½x3¾	Brass lacquered	7.50
Micranico	94089	10-MS	35	5½x3¾	Nickel plate	8.00

With Key

Mounted on wooden base.

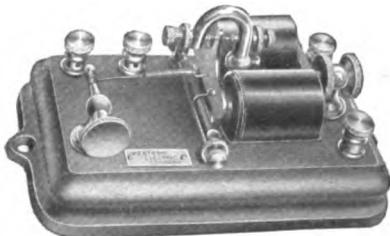


No. 10-MA

Maienkranz	62842	10-MA	150	6x5½	Brass lacquered	10.50
Micranthe	94090	10-ME	150	6x5½	Nickel plate	11.00
Microchloe	94091	10-MJ	35	6x5½	Brass lacquered	10.00
Microcyte	94092	10-MN	35	6x5½	Nickel plate	10.50
Malheridas	62843	10-MB	150	8¾x4¾	Brass lacquered	10.50
Microfarad	94093	10-MF	150	8¾x4¾	Nickel plate	11.00
Minionship	94213	10-MK	35	8¾x4¾	Brass lacquered	10.00
Miniscibar	94214	10-MP	35	8¾x4¾	Nickel plate	10.50
Hamley	62844	10-MC	150	11¾x5	Brass lacquered	11.00
Miniver	94215	10-MG	150	11¾x5	Nickel plate	11.50
Minnares	94216	10-ML	35	11¾x5	Brass lacquered	10.50
Minnarijen	94217	10-MR	35	11¾x5	Nickel plate	11.00

PONY RELAYS

Mounted on wooden base with cast iron sub-base.



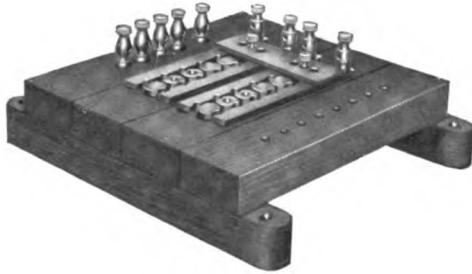
No. 2-MA

Halsey	12506	2-MA	5	6½x3½	Brass lacquered	5.00
Halstead	12507	2-MC	20	6½x3½	Brass lacquered	5.50
Halliwell	12508	2-MB	5	6½x3½	Nickel plate	5.30
Hallwil	12509	2-MD	20	6½x3½	Nickel plate	5.80

WRITE FOR LIBERAL DISCOUNTS

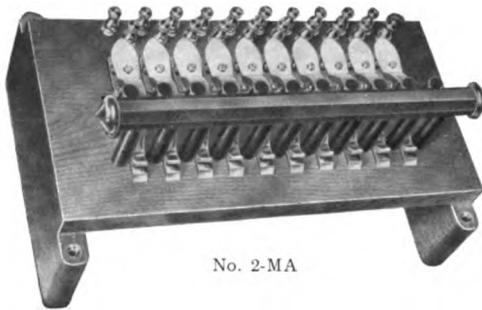
PEG SWITCHBOARDS

These consist of brass straps, discs and lightning arrester mounted on a wood panel, straps, discs and lightning arrester connected to binding posts mounted on front of board. Peg plugs for connecting the straps and discs are furnished as listed in the table.



No. 1-MB

Code Word	List No.	Code No.	Lines	Straps	Discs	Rows of Peg Plugs	List Price each
Hartville	12570	1-MA	1	2	4	4	\$ 2.60
Harvard	12571	1-MB	2	4	6	8	6.20
Harvel	12572	1-MC	3	6	8	12	8.70
Harvey	12573	1-MD	4	8	10	16	13.60
Harwich	12574	1-ME	5	10	12	20	18.60
Harwood	12575	1-MF	6	12	14	24	22.20
Haseltown	12576	1-MG	7	14	16	28	28.40
Haskell	12577	1-MH	8	16	18	32	33.40
Hastings	12578	1-MJ	9	18	20	36	45.60
Hatboro	12579	1-MK	10	20	22	40	58.00
Hatcher	12580	1-ML	11	22	24	44	60.00
Hatfield	12581	1-MM	12	24	26	48	61.70
Hattiesburg	12582	1-MN	13	26	28	52	74.00
Havana	12583	1-MP	14	28	30	56	81.50
Haverhill	12584	1-MR	15	30	32	60	87.80

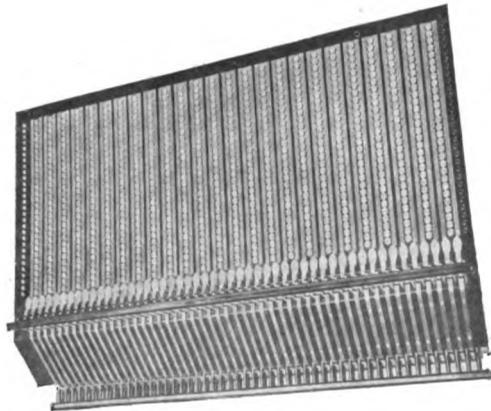


No. 2-MA

SPRING JACK SWITCHBOARD

This consists of a board on which are mounted a single row of spring jacks, number of jacks to be specified. Binding posts to be mounted on front or back of board as specified.

Code Word	List No.	Code No.	List Price per wire
Haverstraw	12585	2-MA	\$ 3.10



No. 4-A

WESTERN UNION PEG SWITCHBOARDS

These consist of rows of brass discs and straps, with peg plugs for making connections. On the marginal panel at each end of the board is a single row of binding posts, one post for each row of discs. When ordering, rows of discs and number of straps should be specified.

Code Word	List No.	Code No.	Description	List Price each
Minnegloed	94218	3-A	With a single row of spring jacks at the bottom	On Request
Minnegodje	94219	4-A	With a double row of spring jacks at the bottom	On Request

WEDGES



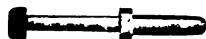
No. 1-A

Code Word	List No.	Code No.	Width inches	Contacts	Drilled for Cord	Description	List Price each
Minnezucht	54026	3-A	7/16	Brass on one side	Yes	7/16 in. standard W. U. single wedge.	\$ 1.25
Hartsells	12563	1-A	7/16	Brass on both sides	Yes	7/16 in. standard W. U. double wedge.	1.50
Mintrietis	54029	1-B	3/8	Brass on both sides	Yes	3/8 in. standard W. U. double wedge.	1.50

WRITE FOR LIBERAL DISCOUNTS



No. 2-A



No. 5-A

Wedges—Continued

Code Word	List No.	Code No.	Width inches	Contacts	Drilled for Cord	Description	List Price each
Mintriendo	54028	4-A	$\frac{1}{8}$	Brass on one side	Yes	$\frac{1}{8}$ in. single ribble wedge....	\$ 1.25
Minorammo	54027	2-A	$\frac{1}{8}$	Brass on both sides	Yes	$\frac{1}{8}$ in. double ribble wedge....	1.50
Minnezorg	54025	5-A	$\frac{1}{8}$	Brass on both sides. Resistance wire wound on handle to any desired resistance	No	$\frac{1}{8}$ in. standard W. U. resistance wedge..	2.50



No. 1-A

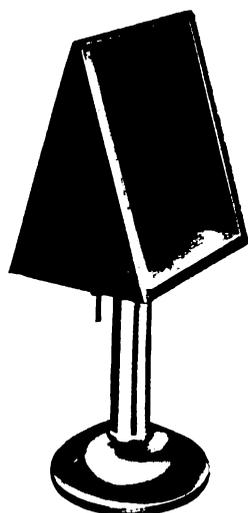


No 4 A

CORDS

NOTE: When ordering always specify length.

List No.	Code No.	Description
54018	4-MC	Postal single conductor switch cord, one end equipped with No. 4-A wedge and the other end with tips.
54014	3-MD	Postal double conductor switch cord, one end equipped with No. 2-A wedge and one end with tips.
54020	4-MA	Postal single conductor switch cord, both ends equipped with tips.
54013	3-MA	Postal double conductor switch cord, both ends equipped with tips.
54002	1-MD	Western Union single conductor switch cord, one end equipped with No. 3-A wedge and other end with tips.
54008	2-MD	Western Union double conductor switch cord, one end equipped with No. 1-A wedge and the other end with tips.
54000	1-MA	Western Union single conductor switch cord, both ends equipped with tips.
54006	2-MA	Western Union double conductor switch cord, both ends equipped with tips.



No 3 A

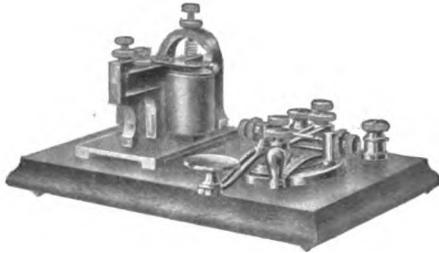
RESONATORS

Code Word	List No.	Code No.	Type	List Price each
Cuajo	7153	1-A	Fixed, on straight brass standard, fibre back box.....	\$ 4.50
Minnevuur	38250	3-A	Portable, mahogany, oak or ebony box..	4.50
Minurrias	53008	4-A	Adjustable, on swinging arm, mahogany box.....	6.00

WRITE FOR LIBERAL DISCOUNTS

PRIVATE LINE SETS

These consist of key and sounder mounted on a single wooden base.

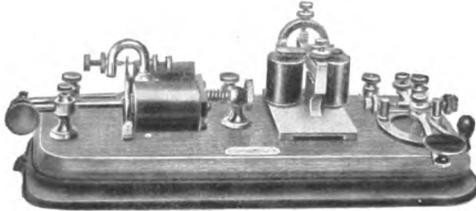


No. 1-A

Code Word	List No.	Code No.	Size of Base inches	Finish	List Price each
Harlan	12537	1-A	8x5½	Brass lacquered	\$ 6.20
Harlem	12538	1-C	8x5½	Brass lacquered	6.70
Harleton	12539	1-B	8x5½	Nickel plate	6.60
Harlton	12540	1-D	8x5½	Nickel plate	7.10

COMBINATION SETS

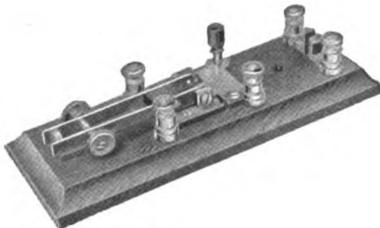
These consist of key, sounder and relay mounted on a single wooden base.



No. 1-A

Code Word	List No.	Code No.	Size of Base inches	Finish	List Price each
Hardwick	12535	1-A	13½x5½	Brass lacquered	\$ 16.00
Harkness	12536	1-B	13½x5½	Nickel plate	17.00

CUT-OUTS



No. 1-A

Code Word	List No.	Code No.	Description	List Price each
Harrington	12554	1-A	Lightning arrester and ground switch mounted on wooden base, all connections on top. Finished in nickel plate. . . .	\$ 5.50
Minuiscis	62846	4-A	A plug cut-out consisting of three brass straps mounted on a single wooden base. Known as Testo cut-out. . . . .	.50

PLUGS



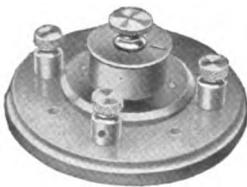
No. 2-MA

Code Word	List No.	Code No.	Type	Description	Finish	List Price each
Hartford	12560	2-MA	Split	Loop switch plug, halves insulated	Brass lacquered	\$ 1.50
Hartland	12561	3-MA	Peg	Cut-out and lightning arrester plug	Brass lacquered	.20
Hartsburg	12562	4-MA	Peg	Switchboard plug	Brass lacquered	.30

LIGHTNING ARRESTERS



No. 1-A



No. 2-A

Code Word	List No.	Code No.	Type	Description	Size of Base inches	List Price each
Hawley	12590	1-A	Union lightning arrester	3 brass plates mounted on a wooden base	2½x3½	\$ 1.00
Minuriebat	12590½	1-B	Combination Union Lightning arrester	5 brass plates mounted on a wooden base	2½x3½	1.25
Hawthorne	12591	2-A	Quadruplex lightning arrester with extra coil	Circular hard rubber base with springs	2½ diameter	4.00

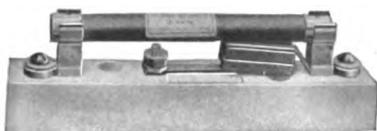
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No. 93461



No. 93462



No. 93463



No. 93464



No. 2-A

FUSES

Code Word	List No.	Description	List Price each
Mederaffel	93465	Special enclosed type, 2000 volt D. & W. fuse arranged for mounting on 4½ in. centers. Capacity, .8, 1, 3 or 5 amperes, as specified.....	\$ 0.22

FUSE BLOCKS

SINGLE

Code Word	List No.	Description	List Price each
Medespeler	93461	Porcelain fuse mounting 1 in. x 6 in. with one pair of brass spring fuse clips on 4½ in. centers	\$ 0.25

DOUBLE

Medeslaan	93462	Porcelain fuse mounting 2 in. x 6 in. with two pairs of brass spring fuse clips on 4½ in. centers.....	.35
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SINGLE WITH ARRESTER

Mederiaccum	93463	Single porcelain fuse mounting, 1 in. x 6 in. with one pair of brass spring fuse clips on 4½ in. centers and a carbon block lightning arrester.....	.50
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DOUBLE WITH ARRESTER

Medereizen	93464	Double porcelain fuse mounting 2 in. x 6 in. with two pairs of brass spring fuse clips on 4½ in. centers and two carbon block arresters.....	.60
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WHEATSTONE BRIDGES

These measure from one-hundredth of an ohm to 1,110,000 ohms. Size, 8½x10x5½ inches. The arrangement of coils is such that one plug only is used to each row, thus avoiding the multiplicity of bad connections on account of ill-fitting plugs, and making the reading as simple as possible.

Code Word	List No.	Code No.	Type	List Price each
Midst	2261	2-A	Plug	\$ 85.00

WRITE FOR LIBERAL DISCOUNTS

Wheatstone Bridges—Continued

WITHOUT CARRYING STRAP

These measure from one-hundredth of an ohm to 1,110,000 ohms. Size 10 $\frac{1}{4}$ x8 $\frac{1}{2}$ x6 inches high.

Code Word	List No.	Code No.	Type	List Price each
Minnepraat	25916	1-A	Lever	\$ 100.00

WITH CARRYING STRAP

Minneschuw	25917	1-B	Lever	100.00
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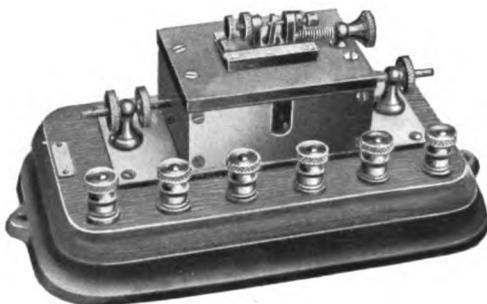


No. 1-A

QUADRUPLEX AND DUPLEX APPARATUS

POLAR RELAY

Mounted on wooden base with cast iron sub-base.

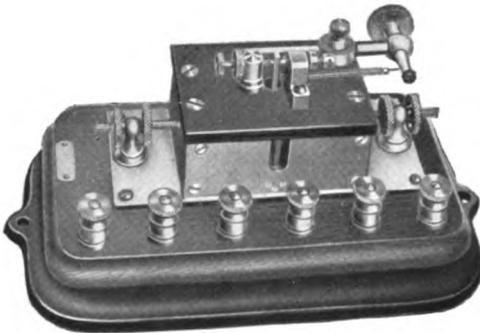


No. 2-MA

Code Word	List No.	Code No.	Resistance ohms	Size of Base inches	Finish	List Price each
Malbroeken	25928	2-MA	800	9x5	Brass lacquered	\$ 15.00

NEUTRAL RELAY

Mounted on wooden base with cast iron sub-base.



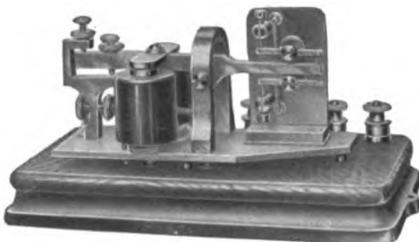
No. 12-MA

Code Word	List No.	Code No.	Resistance ohms	Size of Base inches	Finish	List Price each
Maleficio	54030	12-MA	800	9x5	Brass lacquered	\$ 15.00

POLE CHANGERS

BATTERY

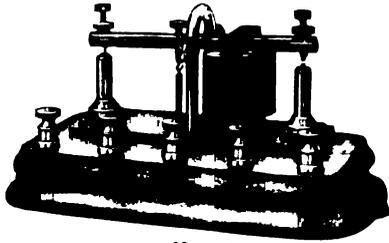
Mounted on wooden base and cast iron sub-base.



No. 3-A

Code Word	List No.	Code No.	Resistance ohms	Finish	List Price each
Minurriunt	94220	3-A	6	Brass lacquered	\$ 15.00

WRITE FOR LIBERAL DISCOUNTS



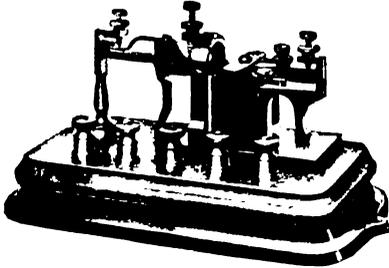
No. 2-A

Pole Changers—Continued

DYNAMO

Mounted on wooden base with cast iron sub-base.

Code Word	List No.	Code No.	Resistance ohms	Finish	List Price each
Minnetocht	25926	2-A	6	Brass lacquered	\$ 10.00

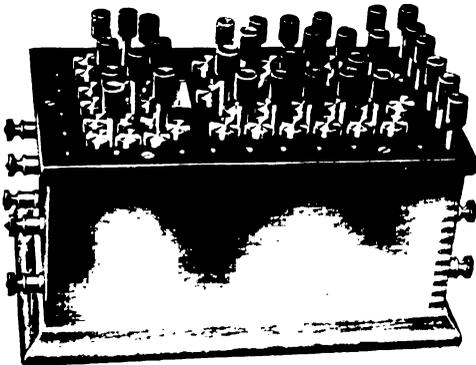


No. 4-A

TRANSMITTERS

Mounted on wooden base with cast iron sub-base.

Code Word	List No.	Code No.	Resistance ohms	Size of Base inches	List Price each
Miccibino	94080	4-A	6	9x5	\$ 12.50

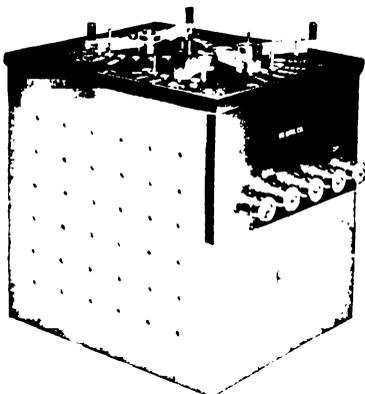


No. 1-A

RHEOSTATS

PLUG TYPE

Code Word	List No.	Code No.	Size of Box, inches			List Price each
			Length	Width	Height	
Maldizedor	25923	1-A	11½	6½	5½	\$ 30.00



No. 4-A

BARCLAY RADIAL ARM

Malecastos	92795	4-A	8½	6½	8½	35.00
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SWITCHES

Mounted on slate base.

Code Word	List No.	Code No.	Number of Points	Number of Levers	Size of Base inches	List Price each
Minnender	25896	1-MA	3	1	2½x2½	\$ 1.00
Minnetijd	25897	2-MA	6	2	2½x4½	1.50
Minnepijn	25898	3-MA	7	3	3x5	2.00



No. 3-MA

WRITE FOR LIBERAL DISCOUNTS

DIFFERENCE BETWEEN WIRE GAUGES IN DECIMAL PARTS OF AN INCH

No. of Wire Gauge	American or Brown & Sharpe	Birmingham or Stubbs	Washburn & Moen Mfg. Co., Worcester, Mass.	Trenton Iron Co., Trenton, N. J.	New British	Old English from Brass Mfrs. List	No. of Wire
000000	.....	....	.46	.....	.....	.....	000000
00000	.....	....	.43	.45	.....	.....	00000
0000	.46	.454	.393	.4	.4	.....	0000
000	.40964	.425	.362	.36	.372	.....	000
00	.3648	.38	.331	.33	.348	.....	00
0	.32495	.34	.307	.305	.324	.....	0
1	.2893	.3	.283	.285	.3	.....	1
2	.25763	.284	.263	.265	.276	.....	2
3	.22942	.259	.244	.245	.252	.....	3
4	.20431	.238	.225	.225	.232	.....	4
5	.18194	.22	.207	.205	.212	.....	5
6	.16202	.203	.192	.19	.192	.....	6
7	.14428	.18	.177	.175	.176	.....	7
8	.12849	.165	.162	.16	.16	.....	8
9	.11443	.148	.148	.145	.144	.....	9
10	.10189	.134	.135	.13	.128	.....	10
11	.090742	.12	.12	.1175	.116	.....	11
12	.080808	.109	.105	.105	.104	.....	12
13	.071961	.095	.092	.0925	.092	.....	13
14	.064084	.083	.08	.08	.08	.083	14
15	.057068	.072	.072	.07	.072	.072	15
16	.05082	.065	.063	.061	.064	.065	16
17	.045257	.058	.054	.0525	.056	.058	17
18	.040303	.049	.047	.045	.048	.049	18
19	.03589	.042	.041	.039	.04	.04	19
20	.031961	.035	.035	.034	.036	.035	20
21	.028462	.032	.032	.03	.032	.0315	21
22	.025347	.028	.028	.027	.028	.0295	22
23	.022574	.025	.025	.024	.024	.027	23
24	.0201	.022	.023	.0215	.022	.025	24
25	.0179	.02	.02	.019	.02	.023	25
26	.01594	.018	.018	.018	.018	.0205	26
27	.014195	.016	.017	.017	.0164	.01875	27
28	.012641	.014	.016	.016	.0148	.0165	28
29	.011257	.013	.015	.015	.0136	.0155	29
30	.010025	.012	.014	.014	.0124	.01375	30
31	.008928	.01	.0135	.013	.0116	.01225	31
32	.00795	.009	.013	.012	.0108	.01125	32
33	.00708	.008	.011	.011	.01	.01025	33
34	.006304	.007	.01	.01	.0092	.0095	34
35	.005614	.005	.0095	.009	.0084	.009	35
36	.005	.004	.009	.008	.0076	.0075	36
37	.004453	....	.0085	.00725	.0068	.0065	37
38	.003965	....	.008	.0065	.006	.00575	38
39	.003531	....	.0075	.00575	.0052	.005	39
40	.003144	....	.007	.005	.0048	.0045	40

EQUIVALENTS OF WIRES

Brown & Sharpe Gauge

0000	2 No. 0	4 No. 3	8 No. 6	16 No. 9	32 No. 12	64 No. 15
000	2 No. 1	4 No. 4	8 No. 7	16 No. 10	32 No. 13	64 No. 16
00	2 No. 2	4 No. 5	8 No. 8	16 No. 11	32 No. 14	64 No. 17
0	2 No. 3	4 No. 6	8 No. 9	16 No. 12	32 No. 15	64 No. 18
1	2 No. 4	4 No. 7	8 No. 10	16 No. 13	32 No. 16	64 No. 19
2	2 No. 5	4 No. 8	8 No. 11	16 No. 14	32 No. 17	64 No. 20
3	2 No. 6	4 No. 9	8 No. 12	16 No. 15	32 No. 18	64 No. 21
4	2 No. 7	4 No. 10	8 No. 13	16 No. 16	32 No. 19	64 No. 22
5	2 No. 8	4 No. 11	8 No. 14	16 No. 17	32 No. 20	64 No. 23
6	2 No. 9	4 No. 12	8 No. 15	16 No. 18	32 No. 21	64 No. 24
7	2 No. 10	4 No. 13	8 No. 16	16 No. 19	32 No. 22	64 No. 25
8	2 No. 11	4 No. 14	8 No. 17	16 No. 20	32 No. 23	64 No. 26
9	2 No. 12	4 No. 15	8 No. 18	16 No. 21	32 No. 24	64 No. 27
10	2 No. 13	4 No. 16	8 No. 19	16 No. 22	32 No. 25	64 No. 28
11	2 No. 14	4 No. 17	8 No. 20	16 No. 23	32 No. 26	64 No. 29
12	2 No. 15	4 No. 18	8 No. 21	16 No. 24	32 No. 27	64 No. 30
13	2 No. 16	4 No. 19	8 No. 22	16 No. 25	32 No. 28	
14	2 No. 17	4 No. 20	8 No. 23	16 No. 26	32 No. 29	
15	2 No. 18	4 No. 21	8 No. 24	16 No. 27	32 No. 30	
16	2 No. 19	4 No. 22	8 No. 25	16 No. 28		
17	2 No. 20	4 No. 23	8 No. 26	16 No. 29		
18	2 No. 21	4 No. 24	8 No. 27	16 No. 30		
19	2 No. 22	4 No. 25	8 No. 28			
20	2 No. 23	4 No. 26	8 No. 29			
21	2 No. 24	4 No. 27	8 No. 30			

BARE COPPER WIRE

Am. Gauge B. & S. No.	Diam. mils.	Area		Weight and Lg'th Sp. Gr. 8.9			Resistance at 75° F			
		Circular Mils. (d ²)	Square in. (D ² x .7854)	Lbs. per 1000 ft.	Pounds per mile	Sp. Feet per pound	R. Ohms per 1000 feet	Ohms per mile	Feet per ohm	Ohms per pound
0000	460.000	211600.00	166190.	639.33	3375.7	1.56	.04906	.25903	20383.	.000076736
000	409.640	167805.00	131790.	507.01	2677.0	1.97	.06186	.32664	16165.	.00012039
00	364.800	133079.40	104520.	402.09	2123.0	2.49	.07801	.41187	12820.	.00019423
0	324.950	105592.50	82932.	319.04	1684.5	3.13	.09831	.51909	10409.	.00030772
1	289.300	83691.20	65733.	252.88	1335.2	3.95	.12404	.65490	8062.3	.00048994
2	257.080	66373.00	52130.	200.54	1058.8	4.99	.15640	.82582	6393.7	.00078045
3	229.420	52634.00	41399.	159.03	839.68	6.29	.19723	1.0414	5070.2	.0012406
4	204.310	41742.00	32784.	126.12	665.91	7.93	.24869	1.3131	4021.0	.0019721
5	181.940	33102.00	25998.	100.01	528.05	10.00	.31361	1.6558	3188.7	.0031361
6	162.020	26250.50	20617.	79.32	418.81	12.61	.39546	2.0881	2528.7	.0049868
7	144.280	20816.00	16349.	62.90	332.11	15.90	.49871	2.6331	2005.2	.0079294
8	128.490	16509.00	12966.	49.88	263.37	20.05	.62881	3.3201	1590.3	.012608
9	114.430	13094.00	10284.	39.56	208.88	25.28	.79281	4.1860	1261.3	.020042
10	101.890	10381.00	8153.2	31.37	165.63	31.38	1.	5.2800	1000.0	.031380
11	90.742	8234.00	6467.0	24.88	137.37	40.20	1.2607	6.6568	793.18	.050682
12	80.808	6529.90	5128.6	19.73	104.18	50.69	1.5898	8.3940	629.02	.080585
13	71.961	5178.38	4067.0	15.68	82.792	63.78	2.0037	10.5798	499.06	.127788
14	64.084	4106.76	3225.4	12.44	65.658	80.42	2.5266	13.3405	375.79	.2031361
15	57.068	3256.76	2557.8	9.86	52.069	101.40	3.1860	16.8223	313.87	.323079
16	50.820	2582.67	2028.4	7.82	41.292	127.87	4.0176	21.2130	248.90	.513737
17	45.257	2048.20	1608.6	6.20	32.746	161.24	5.0660	26.7485	197.39	.816839
18	40.303	1624.33	1275.7	4.92	25.970	203.31	6.3880	33.7285	156.54	1.298764
19	35.890	1288.09	1011.6	3.90	20.594	256.39	8.0555	42.5329	124.14	2.065312
20	31.961	1021.44	802.2	3.09	16.331	323.32	10.1584	53.6362	98.44	3.284374
21	28.462	810.09	636.2	2.45	12.952	407.67	12.8088	67.6302	78.07	5.221775
22	25.347	642.47	504.6	1.95	10.272	514.03	16.1504	85.2343	61.92	8.301819
23	22.571	509.45	400.1	1.54	8.1450	648.25	20.3674	107.540	49.10	13.20312
24	20.100	404.01	317.3	1.22	6.4593	817.43	25.6830	135.606	38.94	20.99405
25	17.900	320.41	251.6	.97	5.1227	1030.71	32.3833	170.984	30.88	33.37780
26	15.940	254.08	199.5	.77	4.0623	1299.77	40.8377	215.623	24.49	53.07946

PRICES ON REQUEST

THE METRIC SYSTEM

Metric Denominations and Values | Equivalents in Denominations in use

WEIGHTS

Name	No. Grams	Weight of what quantity of water at max. density
Millier or tonneau	= 1,000,000	= 1 cubic meter.
Quintal	= 100,000	= 1 hectoliter.
Myriagram	= 10,000	= 10 liters.
Kilogram or Kilo	= 1,000	= 1 liter.
Hectogram	= 100	= 1 deciliter.
Dekagram	= 10	= 10 cubic centimeters.
Gram	= 1	= 1 cubic centimeter.
Decigram	= .1	= .1 cubic centimeter.
Centigram	= .01	= 10 cubic millimeters.
Milligram	= .001	= 1 cubic millimeter.

Name	No. Grams	Avoirdupois Weight
Millier or tonneau	= 1,000,000	= 2,204.6 pounds.
Quintal	= 100,000	= 220.46 pounds.
Myriagram	= 10,000	= 22.046 pounds.
Kilogram or Kilo	= 1,000	= 2.2046 pounds.
Hectogram	= 100	= 3.5274 ounces.
Dekagram	= 10	= 0.3527 ounce.
Gram	= 1	= 15.432 grains.
Decigram	= .1	= 1.5432 grains.
Centigram	= .01	= 0.1543 grain.
Milligram	= .001	= 0.0154 grain.

MEASURES OF LENGTH

Myriameter	= 10,000 meters	= 6.2137 miles.
Kilometer	= 1,000 meters	= 0.62137 m. or 3,280 ft. 10 in.
Hectometer	= 100 meters	= 328. feet and 1 inch.
Dekameter	= 10 meters	= 39.37 inches.
Meter	= 1 meter	= 39.37 inches.
Decimeter	= .1 meter	= 3.937 inches.
Centimeter	= .01 meter	= 0.3937 inch.
Millimeter	= .001 meter	= 0.0394 inch.

MEASURES OF SURFACE

Hectare	= 10,000 square meters	= 2.471 acres.
Are	= 100 square meters	= 119.6 square yards.
Centare	= 1 square meter	= 1.550 square inches.

MEASURES OF CAPACITY

Name	No. Liters	Cubic Measure	Dry Measure
Kiloliter	= 1,000	= 1 cu. meter	= 1.308 cubic yards.
Hectoliter	= 100	= .1 cu. meter	= 2 bush. 3.35 pks.
Decaliter	= 10	= 10 c. decimet.	= 9.08 quarts.
Liter	= 1	= 1 c. decimet.	= 0.908 quart.
Deciliter	= .1	= .1 c. decimet.	= 6.1022 cubic in.
Centiliter	= .01	= 10 c. centim.	= 0.6102 cubic in.
Milliliter	= .001	= 1 c. centim.	= 0.061 cubic in.

Name	No. Liters	Cubic Measure	Wine Measure
Kiloliter	= 1,000	= 1 cubic meter	= 264.17 galls.
Hectoliter	= 100	= .1 cubic meter	= 26.417 galls.
Decaliter	= 10	= 10 c. decimeters	= 2.6417 galls.
Liter	= 1	= 1 c. decimeter	= 1.0567 qts.
Deciliter	= .1	= .1 c. decimeter	= 0.845 gill.
Centiliter	= .01	= 10 c. centimeter	= 0.388 fluid oz.
Milliliter	= .001	= 1 c. centimeter	= 0.27 fluid oz.

TABLE of DECIMAL EQUIVALENTS

of 8ths, 16ths, 32ds and 64ths
of an Inch

FOR USE IN CONNECTION WITH
THE MICROMETER CALIPERS

8ths.	64ths.
$\frac{1}{8}$ = .125	$\frac{1}{64}$ = .015625
$\frac{1}{4}$ = .250	$\frac{3}{64}$ = .046875
$\frac{3}{8}$ = .375	$\frac{5}{64}$ = .078125
$\frac{1}{2}$ = .500	$\frac{7}{64}$ = .109375
$\frac{5}{8}$ = .625	$\frac{9}{64}$ = .140625
$\frac{3}{4}$ = .750	$\frac{11}{64}$ = .171875
$\frac{7}{8}$ = .875	$\frac{13}{64}$ = .203125
	$\frac{15}{64}$ = .234375
16ths.	$\frac{17}{64}$ = .265625
$\frac{1}{16}$ = .0625	$\frac{19}{64}$ = .296875
$\frac{1}{8}$ = .125	$\frac{21}{64}$ = .328125
$\frac{3}{16}$ = .1875	$\frac{23}{64}$ = .359375
$\frac{1}{4}$ = .250	$\frac{25}{64}$ = .390625
$\frac{5}{16}$ = .3125	$\frac{27}{64}$ = .421875
$\frac{3}{8}$ = .375	$\frac{29}{64}$ = .453125
$\frac{1}{2}$ = .500	$\frac{31}{64}$ = .484375
$\frac{5}{8}$ = .625	$\frac{33}{64}$ = .515625
$\frac{3}{4}$ = .750	$\frac{35}{64}$ = .546875
$\frac{7}{8}$ = .875	$\frac{37}{64}$ = .578125
	$\frac{39}{64}$ = .609375
	$\frac{41}{64}$ = .640625
	$\frac{43}{64}$ = .671875
	$\frac{45}{64}$ = .703125
	$\frac{47}{64}$ = .734375
	$\frac{49}{64}$ = .765625
	$\frac{51}{64}$ = .796875
	$\frac{53}{64}$ = .828125
	$\frac{55}{64}$ = .859375
	$\frac{57}{64}$ = .890625
	$\frac{59}{64}$ = .921875
	$\frac{61}{64}$ = .953125
	$\frac{63}{64}$ = .984375

32ds.

$\frac{1}{32}$ = .03125	$\frac{31}{64}$ = .484375
$\frac{3}{32}$ = .09375	$\frac{33}{64}$ = .515625
$\frac{5}{32}$ = .15625	$\frac{35}{64}$ = .546875
$\frac{7}{32}$ = .21875	$\frac{37}{64}$ = .578125
$\frac{9}{32}$ = .28125	$\frac{39}{64}$ = .609375
$\frac{11}{32}$ = .34375	$\frac{41}{64}$ = .640625
$\frac{13}{32}$ = .40625	$\frac{43}{64}$ = .671875
$\frac{15}{32}$ = .46875	$\frac{45}{64}$ = .703125
$\frac{17}{32}$ = .53125	$\frac{47}{64}$ = .734375
$\frac{19}{32}$ = .59375	$\frac{49}{64}$ = .765625
$\frac{21}{32}$ = .65625	$\frac{51}{64}$ = .796875
$\frac{23}{32}$ = .71875	$\frac{53}{64}$ = .828125
$\frac{25}{32}$ = .78125	$\frac{55}{64}$ = .859375
$\frac{27}{32}$ = .84375	$\frac{57}{64}$ = .890625
$\frac{29}{32}$ = .90625	$\frac{59}{64}$ = .921875
$\frac{31}{32}$ = .96875	$\frac{61}{64}$ = .953125
	$\frac{63}{64}$ = .984375

PRICES ON REQUEST

Index—Continued

Telephone and Telegraph Apparatus and Supplies—Continued

MATERIALS	PAGE	MATERIALS	PAGE
Gong Nuts	33	Klein Climbers	145
Gongs	33	Klein Eccentrics	142
Grading Shovels	138	Knives, Draw	143
Gravity Batteries	2	Knife Switches	88-89
Grips, Buffalo	141	Knobs, Glass Break	132
Ground Clamps	141	Knobs, Porcelain	132
Ground Rod, Telephone	133		
Guy Anchors	134	L	
Guy Bolts	133	Ladles, Solder	147
Guy Rods or Anchors	134	Lag Screws (See Drive Screws)	
Guards, Butt and Protector	127	Lag Screw Wrench	141
		Lamp Brackets	44
H		Lamp Caps	44-45
Hammers	143	Lamp Guards	45
Hand Axes	143	Lamp, Resistance	70
Hand Drills	144	Lamp Socket Mountings	46
Hand Generators	32	Lamp Sockets	45
Hand Sets	33-34	Lamps	43
Hand Set Handles	34	Lead Cable	15-16
Hand Wheels	52	Lead Sleeves	116-117
Hangers, Cable	135	Leclanche Batteries	3
Hatchet	143	Leg Keys	153
Haven Clamp	142	Legless Keys	153
Hawthorn Bells	11	Liberty Battery	4
Hawthorn Buzzer	13	Lightning Arresters (See Protectors) (Tele- phone)	
Heat Coils	34	Lightning Arresters (Telegraph)	158
Highland Soldering Paste	147	Line Construction Material	124-137
Hook, Cant	137	Line Construction Tools	137-145
Hook, Carrying	137	Lineman's Axe	143
Hook, Switch	91	Lineman's Pliers	139-140
Hooks	137	Lineman's Set	33-34
Hooks, Cord	25	Lineman's Tool Bag	144
Howler	34	Lineman's Tool, Buffalo	142
Hydrometer, Battery	10	Line Poles	46
Hydrometer, Compensating	10	Line Tape	146
		Locust Pins	129
I		M	
Indian Motorcycle	149	Machine Bolts	127
Indicator, Fuse	30	Machine Covers	51
Indicators, Key	43	Machines	47-51
Induction Coils	34-35	Machine Table	52
Insulating Staples, Blake	148	Magnet Wire	119-120
Inspectors' Tools	145	Magneto Switchboards	83-88
Instrument Switch	89-90	No. 105	84
Insulators	131-132	No. 106	87
Insulators, Anti-Hum	141	No. 1001	87
Insulators, Glass	10, 131	No. 1002	87
Insulators, Porcelain	131-132	No. 1003	87
Interrupters	35-36	No. 1005	85
Interrupters, Warner's Pole Changer	36	No. 1006	85
I-T-E Circuit Breakers	19	No. 1010	86
		No. 1011	86
J		No. 1012	86
Jack Fasteners	38	No. 1101	83-84
Jack Mountings	38-39	No. 1102	83-84
Jack and Signal, Combination	73	Pony	87-88
Jacks	36-37	Combination Jack and Signal	83-84
		Magneto Telephone Sets	95-103
K		Wall Type	95-97
Kent, Automatic Volt-Ammeter	116	Desk Type	97
Key Indicators	43	Material, Line Construction	117-150
Key Levers	43	Messenger Clamps	134
Key Mountings	43	Metric System, Table	164
Keys (Telephone)	39-42	Micas, Protector	62
Keys (Telegraph)	153-154	Milonite Nails	149
Keys, Leg	153		
Keys, Legless	153		

Index—Continued

Telephone and Telegraph Apparatus and Supplies—Continued

MATERIALS	PAGE	MATERIALS	PAGE
Morris Fibre Cleats.....	148	Power Protection Panels.....	52
Motocycle, Indian.....	149	Power Switchboard.....	52
Motors.....	48-50	Primary Batteries.....	2-4
Mountings, Drop.....	29	Private Exchanges.....	81-88
Mountings, Gong.....	33	No. 4.....	81
Mountings, Jack.....	38-39	No. 101.....	82
Mountings, Key.....	43	No. 102.....	82
Mountings, Lamp Socket.....	46	Cordless.....	82
Mounting Plates.....	53	Pony.....	87-88
Mounting Plates, Relay.....	53	Private Line Set (Telegraph).....	158
Mounting Plates, Resistance.....	53	Protection.....	57
Mounting Plates, Service Meter.....	53	Protector Blocks.....	62
Mounting, Protectors.....	62	Protector Micacs.....	62
Mounting, Signals.....	73	Protector Mountings.....	62
Mule Pole Support.....	139	Protectors.....	57-61
N			
Nails, Milonite.....	149	Pulleys, Cord.....	25
Nineteen Hundred Battery.....	5	Punchings, Terminal.....	103
Number Plates.....	53-55	Push Buttons.....	62-63
O			
Oak Brackets.....	130	Quadruplex and Duplex Telegraph Appara- tus.....	160-161
Oak Pins.....	129	Queen Acme Portable Testing Set.....	106
Operators' Chairs.....	19	R	
Overload Circuit Breakers.....	19	Raising Forks.....	139
P			
Panels, Battery.....	52	Receivers.....	63-64
Paper Sleeve.....	117	Reels.....	139
Paraffine.....	117	Relays (Telephone).....	64-66
Paste, Burnley Soldering.....	147	Relays, Polarized.....	66
Paste, Highland Soldering.....	147	Relay Mounting Plates.....	53
Paster, Cable.....	117	Relays (Telegraph).....	154-155-160
Peg Counter.....	26	Relays, Barclay Box.....	155
Peg Switchboards (Telegraph).....	156	Relays, Neutral.....	160
Pike Poles.....	138-139	Relays, Polar.....	160
Pins.....	129-131	Relays, Main Line.....	154
Pins, Locust Unpainted.....	129	Repeating Coils.....	66-68
Pins, Oak Painted.....	129	Resistance Lamps.....	70
Pins, Western Union Steel.....	129	Resistance Mounting Plates.....	53
Pipe Straps.....	124	Resistances.....	69-70
Plates, Double Arming.....	128	Resistance Wire.....	119
Pliers.....	139-140	Resonators (Telegraph).....	157
Plugs (Telegraph).....	158	Retardation Coils.....	70-71
Plugs (Telephone).....	55-56	Rheostats (Telegraph).....	161
Plug Seats.....	57	Rheostats (Telephone).....	52
Pole Balcony.....	136	Ringin Machines.....	49-50
Pole Changer (Telegraph).....	160-161	Ringin System.....	91-92
Pole Changer (Telephone).....	35-36	Ringer Indicators.....	72
Pole Changer, No. 84 Interrupter.....	35	Ringers.....	71-72
Pole Changer, Warner.....	36	Rings, Bridle.....	135
Pole Counter.....	145	Rings, Distributing.....	28, 135
Pole Platform.....	137	Ritter Soldering Copper.....	146
Pole Seat.....	136-137	Rods, Telephone Ground.....	133
Pole Steps.....	129	S	
Pole Support.....	139	Sal-Ammoniac.....	6
Poles, Cedar.....	124	Salts, Soldering.....	147
Polarized Relay.....	66	Saws.....	143
Pony Switchboards.....	87-88	Scissors, Electrician's.....	149
Porcelain Knobs.....	132	Screw Driver.....	144
Porcelain Tubes.....	132	Screws, Drive.....	128
Posts, Binding.....	12	Seat, Western Electric Pole.....	136
Posts, Fuse.....	31	Service Meter.....	72
Portable Charging Set.....	48	Service Meter Motor Generators.....	51
Hot Head Compound.....	117	Service Meter Mounting Plates.....	53
Hot Soldering.....	147		

Index—Continued

Telephone and Telegraph Apparatus and Supplies—Continued

MATERIALS	PAGE	MATERIALS	PAGE
Sets, Combination (Telegraph).....	158	Switchboards, Magneto.....	83-88
Sets, Hand (Telephone).....	33-34	No. 105.....	84
Sets, Private Line (Telegraph).....	158	No. 106.....	87
Sets, Test (Telephone).....	104-106	No. 1001.....	87
Shields, Expansion.....	136	No. 1002.....	87
Shovels, Long Handle.....	138	No. 1003.....	87
Shovels, Grading.....	138	No. 1005.....	85
Signalling System.....	91-92	No. 1006.....	85
Signal Mountings.....	73	No. 1010.....	86
Signal and Jack Combination.....	73	No. 1011.....	86
Signals.....	72-73	No. 1012.....	86
Sleeving.....	116-117	No. 1101.....	83-84
Solder.....	147	No. 1102.....	83-84
Solder Ladle.....	147	Pony.....	87-88
Soldering Copper.....	146	Combination Jack and Signal.....	83-84
Soldering Coppers, Vulcan.....	146	Switchboard Wire.....	120
Soldering Furnaces.....	147-148	Switchboards (Telegraph).....	156
Soldering Paste, Burnley.....	147	Switchboards, Peg.....	156
Soldering Paste, Highland.....	147	Switchboards, Spring Jack.....	156
Soldering Pots.....	147	Switches (Telegraph).....	161
Soldering Salts, Victor.....	147	Switches (Telephone).....	88-90
Soldering Stick, Allen.....	147	Switch Hook.....	91
Soldering Torch.....	147-148	Syringe, Battery.....	6
Sounders (Telegraph).....	153		
Spark Coil.....	51	T	
Splicing Clamps.....	140	Tables, Wire.....	162-163
Splicing Pliers, Fry's.....	140	Tables, B. & S. Gauge.....	163
Split Wood Handle Digger.....	138	Tacks.....	148
Spoons, Long Handle.....	138	Tally Register.....	145
Spring Jack Switchboards (Telegraph).....	156	Tamping Bars.....	137
Spuds, Electric.....	138	Tape.....	149
Stands, Desk.....	27-28	Tape Line.....	146
Staples, Blake Insulated.....	148	Telegraph Apparatus.....	151-161
Starting Boxes.....	52	Telegraph Code.....	xvi-xvii
Steel Pins, Western Union.....	129	Telephone Booths.....	115
Steel Tape.....	146	Telephone Cords.....	23-24
Steel Tie Wrench.....	141	Telephone Counter.....	26
Steps, Pole.....	129	Telephone Ground Rods.....	133
Stombaugh Guy Anchors.....	134	Telephone Sets.....	93-103
Storage Battery.....	6-8	Central Battery.....	93-95
Strand, Galvanized Steel Wire.....	118	Central Battery with Coin Collector.....	94
Stranded Copper Conductors.....	121	Central Battery, Desk Type.....	94
Strap Keys (Telegraph).....	154	Central Battery, Desk Set Boxes.....	94-95
Straps, Eccentric.....	142	Central Battery, Wall Boxes.....	94-95
Straps, Pipe.....	124	Central Battery Wall Type.....	93-94
Straps, Vises and Eccentrics.....	141-142	Magneto, or Local Battery.....	95-103
Strips, Terminal.....	104	Magneto, Desk Set Boxes.....	98
Stubs, Side Cutting Pliers.....	140	Magneto Desk Type.....	97
Stubs Diagonal Cutting Pliers.....	140	Magneto, Extension.....	99
Supplies.....	115-149	Magneto, Street Railway.....	100
Support, Pole.....	139	Magneto, Railway Composite.....	100-101
Switchboard Cable.....	14	Magneto, Police Sets.....	101
Switchboard Cords.....	22-23	Magneto Wall Type.....	95-97
Switchboard, Power.....	52	Inter-Communicating Sets.....	102-103
Switchboard Tools.....	106-107	For Use in Mines.....	102
Switchboards (Telephone).....	73-87	Private Line Sets.....	103
Switchboards, Central Battery.....	73-82	Loud Ringing Extension Bells.....	99
No. 1.....	73-76	Extension Bell for Mines.....	99
No. 9.....	76-78	Hand Generator Boxes.....	99
No. 10.....	78-80	Cut-in Station Sets for Toll Lines.....	99
No. 4 Private Exchange.....	81	Telephone Supplies.....	113-149
No. 101 Private Exchange.....	82	Terminal Punchings.....	103
No. 102 Private Exchange.....	82	Terminal Strips.....	104
Cordless Private Exchange.....	82	Test Connectors, Copper.....	141
No. 1 and No. 2 Toll.....	82-83	Test Sets.....	104-106
		Testing Sets, Queen Acme.....	106

Index—Continued

LIST NUMBERS

LIST NO.	PAGE	LIST NO.	PAGE	LIST NO.	PAGE	LIST NO.	PAGE	LIST NO.	PAGE
0920.....	130	1715.....	119	2875.....	140	3750.....	140	7943.....	149
01018.....	130	1716.....	120	2877.....	140	3751.....	140	7944.....	117
01019.....	130	1717.....	120	2878.....	140	3752.....	140	8624.....	146
01020.....	130	1718.....	120	2881.....	139	3769.....	140	8625.....	146
01021.....	130	1719.....	120	2882.....	139	3782.....	138	8626.....	146
01024.....	130	1720.....	120	2883.....	139	3783.....	138	8627.....	146
01027.....	130	1725.....	119	2884.....	139	3789.....	140	8633.....	140
01028.....	130	1726.....	119	2885.....	139	3790.....	140	8746.....	149
01029.....	130	1727.....	119	2889.....	63	3791.....	140	9266.....	132
01071.....	130	1728.....	119	2890.....	63	3792.....	140	9275.....	11
02009.....	130	1729.....	119	2894.....	134	3869.....	138	9276.....	11
02017.....	130	1730.....	119	2904.....	134	3870.....	138	9277.....	11
1109.....	130	1731.....	119	2928.....	134	4129.....	5	9279.....	11
1436.....	90	1732.....	119	2943.....	134	4402.....	137	9280.....	11
1437.....	90	1733.....	119	2989.....	134	4407.....	138	9344.....	13
1438.....	90	1734.....	119	2993.....	134	4410.....	138	9641.....	62
1439.....	90	1735.....	119	2994.....	134	4412.....	138	9642.....	62
1454.....	90	1736.....	119	2996.....	134	4413.....	138	9643.....	62
1455.....	90	1737.....	120	2997.....	134	4421.....	138	9644.....	62
1658.....	120	1738.....	120	2917.....	144	4422.....	138	9645.....	62
1659.....	120	1739.....	120	2918.....	144	4423.....	138	9646.....	62
1660.....	120	1740.....	120	3052.....	118	4424.....	138	9650.....	62
1661.....	120	1741.....	120	3054.....	118	4427.....	139	9651.....	62
1662.....	120	1750.....	143	3055.....	118	4428.....	139	9652.....	62
1663.....	120	1751.....	143	3056.....	118	4449.....	5	9653.....	62
1664.....	120	1752.....	143	3059.....	118	4450.....	5	9654.....	62
1665.....	120	1753.....	143	3061.....	118	4485.....	144	9655.....	62
1666.....	120	2261.....	159	3065.....	118	4491.....	144	9680.....	63
1667.....	120	2337.....	132	3092.....	118	4492.....	144	9681.....	63
1668.....	120	2351.....	131	3093.....	118	4519.....	139	9682.....	63
1669.....	120	2354.....	131	3205.....	147	4520.....	139	9703.....	63
1670.....	120	2460.....	11	3338.....	147	4521.....	139	9704.....	63
1671.....	120	2519.....	141	3339.....	147	4522.....	139	9705.....	63
1672.....	120	2520.....	143	3340.....	147	4523.....	139	9706.....	63
1673.....	120	2521.....	143	3494.....	142	4532.....	146	9707.....	63
1674.....	120	2523.....	140	3495.....	142	4534.....	147	10000.....	3
1683.....	120	2538.....	142	3496.....	142	4711.....	146	10002.....	3
1684.....	120	2544.....	139	3497.....	142	4712.....	146	10003.....	3
1685.....	120	2545.....	139	3498.....	142	4713.....	146	10004.....	3, 5
1686.....	120	2546.....	139	3499.....	142	4765.....	131	10005.....	3
1687.....	120	2547.....	142	3500.....	142	4780.....	131	10126.....	2
1688.....	120	2548.....	142	3501.....	142	4781.....	131	10130.....	2
1689.....	120	2549.....	142	3507.....	147	4786.....	132	10132.....	2
1690.....	120	2550.....	147	3509.....	147	5031.....	144	10133.....	2
1691.....	120	2551.....	147	3513.....	146	5033.....	144	10134.....	2
1692.....	120	2552.....	147	3533.....	129	5034.....	144	10135.....	2, 5
1693.....	120	2553.....	147	3539.....	129	5090.....	140	10250.....	2
1694.....	120	2565.....	141	3638.....	149	5109.....	140	10251.....	2
1695.....	120	2632.....	13	3639.....	149	5166.....	144	10252.....	2, 5
1696.....	120	2633.....	13	3642.....	149	5167.....	144	10253.....	2, 6
1697.....	120	2634.....	13	3643.....	149	5168.....	144	10255.....	2
1698.....	120	2635.....	13	3644.....	149	5169.....	144	10256.....	2
1699.....	120	2663.....	141	3663.....	140	5170.....	144	10257.....	2, 6
1704.....	119	2664.....	141	3664.....	140	5171.....	144	10258.....	2, 6
1705.....	119	2667.....	142	3665.....	140	5172.....	144	10453.....	5
1706.....	119	2677.....	142	3667.....	140	5173.....	144	10490.....	6
1707.....	119	2688.....	140	3668.....	140	5177.....	143	10497.....	6
1708.....	119	2689.....	140	3669.....	140	5924.....	138	10498.....	6
1709.....	119	2690.....	140	3705.....	142	5925.....	138	10500.....	6
1710.....	119	2691.....	140	3706.....	142	5927.....	140	10502.....	6
1711.....	119	2871.....	140	3746.....	140	6187.....	142	11250.....	90
1712.....	119	2872.....	140	3747.....	140	6216.....	144	11251.....	90
1713.....	119	2873.....	140	3748.....	140	6227.....	144	11252.....	90
1714.....	119	2874.....	140	3749.....	140	7153.....	157	11253.....	90

Index—Continued

List Numbers—Continued

LIST NO.	PAGE	LIST NO.	PAGE	LIST NO.	PAGE	LIST NO.	PAGE	LIST NO.	PAGE
11254.....	90	14926.....	139	15480.....	129	25753.....	145	26069.....	126
11255.....	90	14927.....	139	15481.....	129	25754.....	145	26070.....	126
11443.....	154	14928.....	138	15482.....	129	25755.....	145	26071.....	126
11444.....	154	14929.....	138	15483.....	129	25756.....	145	26072.....	126
11485.....	124	14930.....	138	15484.....	133	25757.....	142	26073.....	126
11950.....	148	14931.....	138	15485.....	133	25758.....	144	26074.....	126
11951.....	148	14932.....	139	15486.....	133	25759.....	144	26075.....	126
11952.....	148	14933.....	139	15487.....	133	25762.....	142	26076.....	126
12500.....	154	14945.....	141	15488.....	133	25768.....	138	26077.....	126
12501.....	154	14946.....	141	15489.....	133	25769.....	139	26078.....	126
12502.....	154	15007.....	137	15490.....	133	25771.....	138	26080.....	121
12503.....	154	15010.....	137	15491.....	133	25772.....	138	26081.....	121
12504.....	154	15011.....	137	15492.....	133	25773.....	138	26082.....	121
12505.....	154	15012.....	137	15493.....	133	25776.....	138	26083.....	121
12506.....	155	15015.....	139	16040.....	90	25777.....	138	26084.....	121
12507.....	155	15076.....	141	16041.....	90	25778.....	138	26085.....	121
12508.....	155	15077.....	141	18880.....	26	25799.....	147	26086.....	121
12509.....	155	15078.....	141	19310.....	129	25896.....	161	26087.....	121
12518.....	153	15080.....	143	19311.....	129	25897.....	161	26088.....	121
12519.....	153	15085.....	143	23563.....	125	25898.....	161	26089.....	121
12520.....	153	15086.....	143	23564.....	125	25916.....	160	26090.....	121
12521.....	153	15116.....	143	23565.....	125	25917.....	160	26091.....	121
12526.....	153	15117.....	143	23566.....	125	25919.....	153	26092.....	121
12527.....	153	15118.....	143	23567.....	125	25921.....	153	26093.....	121
12531.....	153	15122.....	143	23568.....	125	25923.....	161	26094.....	121
12532.....	153	15123.....	143	23569.....	125	25925.....	154	26095.....	121
12533.....	153	15124.....	143	23572.....	125	25926.....	161	27012.....	121
12534.....	153	15125.....	143	23573.....	125	25927.....	154	27013.....	121
12535.....	158	15126.....	143	23596.....	11	25928.....	160	27014.....	121
12536.....	158	15127.....	143	23597.....	11	25944.....	117	27015.....	121
12537.....	158	15130.....	143	23598.....	11	25945.....	117	27016.....	121
12538.....	158	15150.....	149	23695.....	63	25946.....	117	27017.....	121
12539.....	158	15152.....	143	24064.....	137	25947.....	117	27018.....	121
12540.....	158	15153.....	143	24075.....	137	25948.....	117	27019.....	121
12544.....	158	15154.....	143	24079.....	139	25949.....	117	27020.....	121
12560.....	158	15155.....	143	24080.....	139	25976.....	117	27021.....	121
12561.....	158	15156.....	143	24091.....	145	25977.....	117	27022.....	121
12562.....	158	15157.....	143	24092.....	145	25978.....	117	27023.....	121
12563.....	156	15158.....	143	24093.....	145	25979.....	117	27024.....	121
12570.....	156	15159.....	143	24094.....	145	26019.....	147	27025.....	121
12571.....	156	15160.....	143	24099.....	142	26020.....	147	27026.....	121
12572.....	156	15165.....	145	24459.....	147	26021.....	147	27027.....	121
12573.....	156	15166.....	145	24578.....	141	26022.....	133	27028.....	121
12574.....	156	15180.....	142	24605.....	132	26023.....	133	27029.....	121
12575.....	156	15181.....	142	24606.....	132	26024.....	133	27030.....	122
12576.....	156	15182.....	142	24876.....	146	26025.....	133	27031.....	122
12577.....	156	15183.....	142	24877.....	146	26026.....	133	27032.....	122
12578.....	156	15185.....	144	24889.....	146	26027.....	133	27033.....	122
12579.....	156	15186.....	144	24890.....	137	26052.....	126	27034.....	122
12580.....	156	15187.....	144	24891.....	149	26053.....	126	27035.....	122
12581.....	156	15200.....	144	24892.....	149	26054.....	126	27036.....	122
12582.....	156	15201.....	144	25093.....	138	26055.....	126	27040.....	121
12583.....	156	15205.....	146	25443.....	132	26056.....	126	27041.....	121
12584.....	156	15206.....	146	25444.....	132	26057.....	126	27042.....	121
12585.....	156	15207.....	146	25594.....	141	26058.....	126	27043.....	121
12590.....	158	15225.....	148	25709.....	135	26059.....	126	27044.....	121
12590½.....	158	15460.....	125	25711.....	141	26060.....	126	27045.....	121
12591.....	158	15461.....	125	25718.....	145	26061.....	126	27046.....	121
13115.....	90	15462.....	125	25719.....	145	26062.....	126	27047.....	121
13116.....	90	15463.....	125	25720.....	146	26063.....	126	27048.....	121
13117.....	90	15464.....	125	25725.....	146	26064.....	126	27049.....	121
14912.....	138	15465.....	125	25726.....	146	26066.....	126	27050.....	121
14913.....	138	15466.....	125	25727.....	146	26067.....	126	27051.....	121
14925.....	139	15467.....	125	25728.....	146	26068.....	126	27052.....	121

Index—Continued

List Numbers—Continued

LIST NO.	PAGE	LIST NO.	PAGE	LIST NO.	PAGE	LIST NO.	PAGE	LIST NO.	PAGE
27053.....	121	28043.....	121	52088.....	129	52188.....	119	94031.....	118
27054.....	121	28044.....	122	52089.....	129	52189.....	119	94032.....	124
27055.....	121	28045.....	122	52093.....	129	52190.....	119	94033.....	133
27072.....	121	28046.....	122	52094.....	129	52191.....	119	94034.....	133
27073.....	121	28047.....	122	52108.....	133	52192.....	119	94039.....	133
27074.....	121	28048.....	122	52109.....	133	52193.....	119	94040.....	133
27075.....	121	28049.....	122	52111.....	134	52194.....	119	94045.....	136
27076.....	121	28050.....	122	52126.....	135	52195.....	119	94046.....	135
27077.....	121	28051.....	122	52127.....	135	52196.....	119	94047.....	135
27078.....	121	28052.....	122	52128.....	135	52197.....	119	94048.....	135
27079.....	121	28053.....	122	52129.....	135	52198.....	119	94049.....	135
27080.....	121	28054.....	122	52130.....	141	53004.....	153	94050.....	135
27081.....	121	28055.....	122	52132.....	137	53008.....	157	94051.....	135
27082.....	121	28056.....	122	52133.....	137	54000.....	157	94056.....	120
27083.....	121	31714.....	124	52134.....	126	54002.....	157	94057.....	149
27084.....	121	31715.....	124	52135.....	126	54006.....	157	94058.....	149
27085.....	121	31716.....	124	52136.....	137	54008.....	157	94059.....	149
27086.....	121	31717.....	124	52137.....	137	54013.....	157	94060.....	148
27087.....	121	31718.....	124	52138.....	127	54014.....	157	94061.....	148
27088.....	121	31719.....	124	52139.....	127	54018.....	157	94062.....	148
27089.....	121	31720.....	124	52140.....	126	54020.....	157	94063.....	148
28000.....	121	31721.....	124	52141.....	126	54025.....	157	94064.....	135
28001.....	121	31722.....	124	52146.....	118	54026.....	156	94065.....	135
28002.....	121	31723.....	124	52147.....	118	54027.....	157	94066.....	135
28003.....	121	31724.....	124	52148.....	118	54028.....	157	94067.....	135
28004.....	121	31725.....	124	52149.....	118	54029.....	156	94068.....	135
28005.....	121	31726.....	124	52150.....	118	54030.....	160	94069.....	135
28006.....	121	31727.....	124	52151.....	118	62840.....	154	94070.....	135
28007.....	121	31729.....	124	52152.....	117	62842.....	155	94071.....	135
28008.....	121	31730.....	124	52153.....	117	62843.....	155	94072.....	135
28009.....	121	31733.....	124	52154.....	117	62844.....	155	94073.....	135
28010.....	121	31734.....	124	52155.....	117	62845.....	155	94074.....	135
28011.....	121	31735.....	124	52156.....	118	62846.....	158	94075.....	135
28012.....	122	38250.....	157	52157.....	118	90510.....	105	94076.....	120
28013.....	122	52002.....	117	52158.....	118	90511.....	105	94077.....	120
28014.....	122	52003.....	117	52159.....	118	90512.....	105	94078.....	120
28015.....	122	52031.....	116	52160.....	118	90530.....	105	94080.....	161
28016.....	122	52032.....	19	52161.....	118	92795.....	161	94081.....	13
28017.....	122	52033.....	19	52162.....	118	93079.....	130	94082.....	130
28018.....	122	52034.....	19	52163.....	119	93080.....	130	94083.....	153
28019.....	122	52039.....	36	52164.....	119	93081.....	130	94084.....	153
28020.....	122	52040.....	36	52165.....	119	93082.....	130	94085.....	154
28021.....	122	52041.....	18	52166.....	119	93461.....	159	94086.....	154
28022.....	122	52067.....	128	52167.....	119	93462.....	159	94087.....	155
28023.....	122	52068.....	128	52168.....	119	93463.....	159	94088.....	155
28024.....	122	52069.....	128	52169.....	119	93464.....	159	94089.....	155
28025.....	122	52070.....	128	52170.....	119	93465.....	159	94090.....	155
28026.....	122	52071.....	128	52171.....	119	94012.....	133	94091.....	155
28027.....	122	52072.....	128	52172.....	119	94013.....	31	94092.....	155
28028.....	122	52073.....	128	52173.....	119	94015.....	31	94093.....	155
28029.....	122	52074.....	128	52174.....	119	94016.....	31	94213.....	155
28030.....	122	52075.....	128	52175.....	119	94018.....	31	94214.....	155
28031.....	122	52076.....	128	52176.....	119	94019.....	31	94215.....	155
28032.....	121	52077.....	129	52177.....	119	94020.....	31	94216.....	155
28033.....	121	52078.....	129	52178.....	119	94021.....	31	94217.....	155
28034.....	121	52079.....	129	52179.....	119	94022.....	31	94218.....	156
28035.....	121	52080.....	129	52180.....	119	94023.....	31	94219.....	156
28036.....	121	52081.....	129	52181.....	119	94024.....	31	94220.....	160
28037.....	121	52082.....	129	52182.....	119	94025.....	31	94221.....	149
28038.....	121	52083.....	129	52183.....	119	94026.....	31	96245.....	129
28039.....	121	52084.....	129	52184.....	119	94027.....	31	96305.....	116
28040.....	121	52085.....	129	52185.....	119	94028.....	31	96335.....	147
28041.....	121	52086.....	129	52186.....	119	94029.....	116	96354.....	147
28042.....	121	52087.....	129	52187.....	119	94030.....	118	96417.....	13

Index—Continued

List Numbers—Continued

LIST NO.	PAGE	LIST NO.	PAGE	LIST NO.	PAGE	LIST NO.	PAGE	LIST NO.	PAGE
96546.....	148	97803.....	147	100011.....	125	C-15.....	15	E-180.....	16
96552.....	11	97804.....	147	100012.....	125	C-20.....	15	E-200.....	16
96553.....	11	97924.....	148	100013.....	125	C-25.....	15	E-225.....	16
96554.....	11	97925.....	148	100014.....	126	C-30.....	15	E-240.....	16
96581.....	122	97926.....	148	100015.....	126	C-50.....	15	E-250.....	16
96582.....	122	97927.....	148	100016.....	126	C-60.....	15	E-300.....	16
96583.....	122	97965.....	4	100017.....	126	C-75.....	15	E-325.....	16
96584.....	122	98349.....	131	100019.....	126	C-100.....	15	E-3200.....	106
96585.....	122	98351.....	131	100021.....	126	C-120.....	15		
96586.....	122	98352.....	131	100023.....	126	C-150.....	15	F-5.....	16
96587.....	122	98353.....	131	100024.....	126	C-180.....	15	F-10.....	16
96588.....	122	98354.....	131	100028.....	4	C-200.....	15	F-15.....	16
96589.....	122	98355.....	131	100029.....	5	C-240.....	15	F-20.....	16
96590.....	122	98358.....	122			C-300.....	15	F-25.....	16
96591.....	134	98359.....	122	A-5.....	15			F-30.....	16
96592.....	124	98360.....	122	A-10.....	15	D-5.....	16	F-40.....	16
96594.....	133	98361.....	122	A-15.....	15	D-10.....	16	F-50.....	16
96595.....	133	98362.....	122	A-20.....	15	D-15.....	16	F-60.....	16
96596.....	133	98363.....	122	A-25.....	15	D-20.....	16	F-75.....	16
96597.....	133	98364.....	122	A-30.....	15	D-25.....	16	F-100.....	16
96598.....	134	98365.....	122	A-40.....	15	D-30.....	16	F-120.....	16
96599.....	135	98366.....	122	A-50.....	15	D-50.....	16	F-150.....	16
96605.....	134	98367.....	122	A-60.....	15	D-60.....	16	F-200.....	16
96606.....	134	98368.....	123	A-75.....	15	D-75.....	16	F-240.....	16
96607.....	134	98369.....	123	A-90.....	15	D-100.....	16		
96608.....	134	98370.....	123	A-100.....	15	D-110.....	16	G-10.....	3
96609.....	134	98371.....	123	A-120.....	15	D-120.....	16	G-11.....	3
96729.....	123	98372.....	123	A-125.....	15	D-125.....	16	G-12.....	3
96730.....	123	98373.....	123	A-150.....	15	D-140.....	16	G-13.....	3
96731.....	123	98374.....	123	A-175.....	15	D-150.....	16	G-14.....	3
96732.....	123	98375.....	123	A-180.....	15	D-180.....	16	G-15.....	3
96733.....	123	98376.....	123	A-200.....	15	D-200.....	16	G-20.....	3
96734.....	123	98377.....	123	A-225.....	15	D-220.....	16	G-21.....	3
96735.....	123	98877.....	129	A-240.....	15	D-225.....	16	G-22.....	3
96736.....	123	98878.....	129	A-250.....	15	D-240.....	16	G-23.....	3
96826.....	135	98889.....	146	A-275.....	15	D-250.....	16	G-24.....	3
96828.....	135	98892.....	146	A-300.....	15	D-300.....	16	G-25.....	3
96831.....	135	98904.....	146	A-350.....	15	D-360.....	16	G-50.....	4
96832.....	135	98978.....	11	A-375.....	15	D-400.....	16	G-51.....	4
96833.....	135	98979.....	11	A-400.....	15	D-480.....	16	G-52.....	4
97294.....	124	98980.....	11					G-53.....	4
97295.....	124	98981.....	11	B-5.....	15			G-54.....	4
97297.....	124	98982.....	11	B-10.....	15	E-10.....	16	G-55.....	4
97298.....	124	98983.....	11	B-15.....	15	E-15.....	16	G-110.....	4
97759.....	123	98984.....	11	B-20.....	15	E-20.....	16	G-111.....	4
97760.....	123	98985.....	11	B-25.....	15	E-25.....	16	G-112.....	4
97761.....	123	98986.....	11	B-30.....	15	E-30.....	16	G-113.....	4
97762.....	123	98987.....	11	B-40.....	15	E-40.....	16	G-120.....	4
97763.....	123	100000.....	117	B-50.....	15	E-50.....	16	G-121.....	4
97764.....	123	100002.....	137	B-60.....	15	E-60.....	16	G-122.....	4
97765.....	123	100003.....	137	B-75.....	15	E-70.....	16	G-123.....	4
97766.....	123	100005.....	125	B-100.....	15	E-75.....	16	G-150.....	4
97767.....	123	100006.....	125	B-120.....	15	E-100.....	16	G-151.....	4
97768.....	123	100007.....	125	B-150.....	15	E-120.....	16	G-152.....	4
97769.....	123	100008.....	125			E-125.....	16	G-153.....	4
97770.....	123	100009.....	125	C-5.....	15	E-150.....	16	G-154.....	4
97771.....	123	100010.....	125	C-10.....	15	E-160.....	16	G-155.....	4

Index—Continued

CODE WORD INDEX

CODE WORD	PAGE	CODE WORD	PAGE	CODE WORD	PAGE	CODE WORD	PAGE
A							
Aboriginal.....	118	Bluntly.....	142	Delano.....	2	Fibrillous.....	146
Aborsement.....	118	Blur.....	142	Delaware.....	2	Fluidify.....	90
Abounding.....	118	Blurred.....	142	Delevan.....	2, 6	Fluidism.....	90
Abrade.....	118	Blurring.....	142	Delhi.....	2, 6	Fluidist.....	90
Abraham.....	118	Blushfully.....	147	Devereux.....	5	Fluidize.....	90
Abreast.....	118	Blushless.....	147	Dumont.....	6	Flying.....	90
Abridge.....	118	Blustrous.....	146	Duncan.....	6	Flysch.....	90
Accipenser.....	132	Boca.....	63	Duncannon.....	6	Foolish.....	5
Accipient.....	132	Bodan.....	63	Dundee.....	6	Foolocracy.....	5
Acosmism.....	141	Boise.....	63	Dunellen.....	6	Forborn.....	141
Anarchist.....	140	Boom.....	129			Forby.....	141
Anarchy.....	140	Bootless.....	129	E			
Anatomist.....	140			Economicas.....	144	Force.....	141
Anatomy.....	140	C				Economique.....	144
Anatron.....	140	Carabine.....	147	Economist.....	144	Forcedly.....	142
Ancestor.....	140	Caravan.....	147	Economizar.....	144	Forcedness.....	142
Annawan.....	11	Cardine.....	147	Eclairage.....	140	Forcible.....	134
Anniston.....	11	Careen.....	147	Ejerzo.....	138	Forcibly.....	134
Annville.....	11	Ceredo.....	3	Ejointage.....	138	Forcing.....	134
Anserated.....	11	Ceretto.....	3	Ejulatuum.....	140	Forearm.....	134
Anserine.....	11	Certified.....	130	Elfjarig.....	142	Forebear.....	134
Arbitrate.....	147	Certify.....	130	Eloquence.....	131	Fordo.....	134
Ashcraft.....	13	Ceylon.....	3	Elsewhere.....	131	Fordrive.....	134
		Chase.....	3, 5	Empress.....	132	Fordless.....	134
		Colville.....	2	Empty.....	132	Fordede.....	134
		Comanche.....	2	Escatimado.....	149	Forefend.....	140
		Comillah.....	2	Escatimeis.....	117	Forefinger.....	140
		Comines.....	2	Essandole.....	129	Forefoot.....	140
		Como.....	2	Essayames.....	129	Forefront.....	140
		Compton.....	2, 5			Foregaff.....	140
		Concolor.....	147	F			
		Concord.....	147	Factive.....	11	Foreganger.....	140
		Conjunctly.....	144	Falcon.....	13	Foregather.....	140
		Connive.....	143	Falconer.....	13	Forelay.....	140
		Connivency.....	143	Falcones.....	13	Forestry.....	132
		Connivent.....	143	Falconette.....	13	Foreseer.....	131
		Conniver.....	143	Famelict.....	63	Foreseen.....	131
		Constrain.....	146	Fames.....	63	Foresty.....	131
		Consummate.....	140	Farragut.....	90	Forestless.....	131
		Contact.....	140	Farrington.....	90		
		Contagious.....	140	Farwell.....	90	G	
		Cord.....	140	Faucett.....	90	Garcia.....	124
		Cordage.....	140	Faukland.....	90	Grafton.....	148
		Cordate.....	140	Fayette.....	90	Grayson.....	148
		Corded.....	140	Feign.....	137		
		Cordelia.....	140	Feisty.....	138	H	
		Cordially.....	140	Felanders.....	138	Haldiman.....	154
		Cordon.....	140	Felbovinum.....	138	Haldimond.....	154
		Cordwain.....	139	Feld.....	138	Haleak.....	154
		Corelation.....	139	Felician.....	138	Halla.....	154
		Corinne.....	139	Felicity.....	138	Halligen.....	154
		Corinthian.....	139	Felicitate.....	138	Hallingdale.....	154
		Cork.....	139	Felicitous.....	138	Halliwell.....	155
		Coupling.....	118	Felinal.....	139	Hallowell.....	154
		Coupe.....	118	Feliform.....	139	Hallton.....	154
		Creased.....	149	Feminate.....	144	Haltown.....	154
		Cuajo.....	157	Fensome.....	139	Hallwil.....	155
				Fensucked.....	139	Halsey.....	155
		D				Fensure.....	139
		Deerfield.....	2	Fent.....	139	Hamden.....	155
		Defiance.....	2	Fenugreck.....	139	Hamley.....	155
		Delanco.....	2, 5	Feral.....	146	Hankinson.....	153
		Deland.....	2, 6	Ferant.....	147	Hannibal.....	153
				Fiberd.....	146	Hanse.....	153
				Fibration.....	146	Hants.....	153
						Hantsport.....	153

Index—Continued

Code Word—Continued

CODE WORD	PAGE	CODE WORD	PAGE	CODE WORD	PAGE	CODE WORD	PAGE
Kokapillen	134	Laetiscunt	123	Lawfulness	xvii	Legalize	xvi
Kokendheet	134	Laetitatem	123	Lawgiver	xvii	Legally	xvi
Kokermaker	134	Laetorio	123	Lawgiving	xvii	Legate	xvi
Kokermof	134	Laetorius	123	Lawless	xvii	Legatee	xvii
Kontow	130	Laetzlein	123	Lawn	xvii	Legation	xvii
Koorzanger	148	Laeusebaum	123	Lawrence	xvii	Legend	xvii
Koperasch	11	Laeutete	123	Lax	xvii	Legendary	xvii
Koperblod	11	Laissions	148	Laxative	xvii	Legging	xvii
Koperbloem	11	Lakennaald	148	Laxity	xvii	Legible	xvii
Koppelhaak	123	Lakenmaker	148	Laxness	xvii	Legibly	xvii
Koppelhout	123	Lakenraam	148	Laymen	xvii	Legion	xvii
Koppeljagd	123	Landschatz	4	Lazily	xvii	Legislate	xvii
Koppelriem	123	Lapwing	xvii	Laziness	xvii	Legislated	xvii
Koppelseil	123	Larboard	xvii	Lazy	xvii	Legislating	xvii
Koppelstuk	123	Larceny	xvii	Leach	xvii	Legislative	xvii
Koppeltjis	123	Larch	xvii	Leaden	xvii	Legislator	xvii
Koppeltouw	123	Largeness	xvii	Leader	xvii	Legislature	xvi
Kopperzig	135	Largess	xvii	Leading	xvii	Legitimate	xvi
Koslarniza	135	Lariat	xvii	Leafage	xvii	Legitimately	xvi
Kossynier	135	Lark	xvii	Leafing	xvii	Legitunist	xvi
Kosterijen	135	Larva	xvii	Leafless	xvii	Legless	xvi
Kosters	135	Larynx	xvii	Leafy	xvii	Legniperda	131
Kruitvaten	124	Lascar	xvii	League	xvii	Legracasco	131
Kruitwagen	124	Lash	xvii	Leagued	xvii	Legranzi	131
Kruitzak	124	Lashed	xvii	Leak	xvii	Legstonlen	131
Kruitzakje	124	Lashing	xvii	Leakage	xvii	Leguario	131
Kustoden	124	Lass	xvii	Leaking	xvi	Legueriez	131
Kustvaart	124	Lasting	xvii	Leaky	xvi	Legumaio	122
Kuteiba	124	Latch	xvii	Lean	xvi	Leguminoso	122
Kuthan	124	Lateen	xvii	Leaned	xvi	Leguminous	122
Kwaststok	124	Lateness	xvii	Leaning	xvi	Leguminum	122
Kwellage	124	Latent	xvii	Leanness	xvi	Lehenrecht	122
Kwellen	124	Latently	xvii	Leaped	xvi	Lehensherr	122
Kwelsters	124	Lateral	xvii	Leaping	xvi	Lehensstab	122
Kwendel	124	Lather	xvii	Learn	xvi	Lehenstaxe	122
Kwibus	124	Lathered	xvii	Learned	xvi	Lehmmuehle	122
Kwidams	124	Lathering	xvii	Learning	xvi	Lehmmergel	122
Kwikhad	124	Latin	xvii	Lease	xvi	Lehmsandes	123
Kwikhaag	124	Latinize	xvii	Leased	xvi	Lehmziegel	123
Kwikjes	124	Latitude	xvii	Leasehold	xvi	Lehnbauer	123
Kwikkebil	124	Latterally	xvii	Leaseholder	xvi	Lehngueter	123
Kwikmelk	124	Latterly	xvii	Leash	xvi	Lehnhofen	123
Kwikolie	124	Lattice	xvii	Leaven	xvi	Lehnsessel	123
Kwikovens	124	Laud	xvii	Leavened	xvi	Lehnstreue	123
Kwikpil	124	Laudable	xvii	Leavening	xvi	Lehnstueck	123
Kwumtad	130	Laudably	xvii	Lecitidee	132	Lehnzins	123
L							
Ladeirinha	124	Laudation	xvii	Leckereien	132	Lehrbild	123
Ladenzeug	124	Laudative	xvii	Leckwasser	132	Leisure	xvi
Ladezeiten	124	Laugh	xvii	Lectaremus	132	Leisurely	xvi
Ladhoelzer	124	Laughable	xvii	Lecture	xvi	Leming	xvi
Ladholz	124	Laughed	xvii	Lectured	xvi	Lemon	xvi
Ladislaio	124	Laughter	xvii	Lecturing	xvi	Lemonade	xvi
Ladogasee	124	Laughing	xvii	Lederprope	132	Lender	xvi
Ladrao	124	Launch	xvii	Ledersteg	132	Lending	xvi
Ladrasemos	124	Launched	xvii	Lederstof	132	Lengthen	xvi
Ladrillazo	124	Laundress	xvii	Lederwaare	132	Lengthened	xvi
Ladroasso	124	Laundry	xvii	Lederzeug	132	Lengthening	xvi
Laetaverit	124	Laura	xvii	Ledge	xvi	Lengthily	xvi
Laetice	123	Laurate	xvii	Ledocarpon	132	Leniency	xvi
Laeticorum	123	Laurel	xvii	Leedwezen	132	Lenient	xvi
Laeticos	123	Lava	xvii	Leefregels	132	Lent	xvi
Laeticifet	123	Lavation	xvii	Leeward	xvi	Leonard	xvi
Laetiscet	123	Lavatory	xvii	Leeway	xvi	Leonine	xvi
		Lavender	xvii	Legacy	xvi	Leonora	xvi
		Lawfully	xvii	Legal	xvi	Leopard	xvi

Index—Continued

Code Word—Continued

CODE WORD	PAGE	CODE WORD	PAGE	CODE WORD	PAGE	CODE WORD	PAGE
Leopols.....	xvi	Mederapfel.....	159	Micciebant.....	120	Mishawaka.....	143
Leper.....	xvi	Medereizen.....	159	Miccinino.....	161	Misoula.....	143
Leprosy.....	xvi	Mederiacum.....	159	Micciremus.....	13	Missoura.....	143
Leprous.....	xvi	Medeslaan.....	159	Micciverat.....	130	Modena.....	145
Lessen.....	xvi	Medespeler.....	159	Miccivisti.....	153	Modesta.....	145
Lessened.....	xvi	Medora.....	141	Miccotrogo.....	153	Momence.....	142
Lessening.....	xvi	Medway.....	141	Micetomisa.....	154	Mona.....	142
Lethargy.....	xvi	Meelbrij.....	18	Michelozzo.....	154	Monclova.....	142
Lettuce.....	xvi	Meerdistel.....	145	Michuacane.....	155	Moncure.....	142
Levant.....	xvi	Meerelster.....	145	Micraniche.....	155	Mondamin.....	144
Levelness.....	xvi	Melborn.....	143	Micranico.....	155	Mondola.....	144
Ligazones.....	129	Melton.....	143	Micranthe.....	155	Monongah.....	144
Ligeirice.....	129	Melvin.....	143	Microchloe.....	155	Monrovia.....	146
Lignidion.....	146	Mekers.....	141	Microcyte.....	155	Monsin.....	146
Ligniperde.....	146	Menlo.....	143	Microfarad.....	155	Monster.....	144
Lijboelijn.....	146	Mento.....	143	Midst.....	159	Montague.....	146
Lippenrand.....	11	Merian.....	143	Milbrook.....	140	Montcell.....	148
Lippenroth.....	11	Meridan.....	143	Milesburg.....	141		
Lippenzalf.....	11	Meridia.....	143	Milipitus.....	141	N	
Lippiyerat.....	11	Merigold.....	143	Millanfield.....	139	Newburn.....	125
Lipyrrien.....	11	Merillian.....	143	Millanvill.....	139	Newburg.....	125
Lipzoden.....	11	Merom.....	143	Millar.....	138	Newton.....	125
Liquazione.....	11	Merricourt.....	143	Millenburg.....	138	Niagara.....	125
Liquefacio.....	11	Mertertjes.....	116	Millerburg.....	138	Niantic.....	125
Liquerimus.....	11	Merwin.....	137	Millercan.....	139	Nichols.....	125
Liquidlert.....	155	Metcalf.....	138	Millerton.....	138	Nicolleti.....	125
		Meterschap.....	133	Millervill.....	139	Niles.....	125
M		Methionate.....	118	Milroy.....	142	Norton.....	129
Maienkranz.....	155	Methocampe.....	118	Milville.....	142	Norwolk.....	129
Malbroeken.....	160	Methodical.....	124	Minburne.....	143	Norway.....	129
Maldizedor.....	161	Methymnaeo.....	133	Minden.....	143	Norwich.....	129
Malecastos.....	161	Meticuloso.....	133	Minedosa.....	143		
Maleficio.....	160	Metitionis.....	133	Mineota.....	143	O	
Malheridas.....	155	Metochite.....	133	Minewakan.....	143	Oakdale.....	133
Manticione.....	130	Metropolitan.....	138	Mingo.....	149	Oakfield.....	133
Mantieiro.....	130	Meubleriez.....	136	Minionship.....	155	Oakford.....	133
Manuaberis.....	130	Meubleront.....	135	Miniscibar.....	155	Oakland.....	133
Manubriolo.....	130	Meurtrier.....	135	Miniver.....	155	Oaklawn.....	133
Mardradores.....	18	Meurtriras.....	135	Minnares.....	155	Oakville.....	133
Maro.....	137	Mevaniensi.....	135	Minnarijen.....	155	Oakwood.....	133
Marquan.....	137	Mevaniola.....	135	Minnegloed.....	156	Obeida.....	133
Marquette.....	137	Mevrouw.....	135	Minnegodje.....	156	Ocean.....	133
Martel.....	139	Mewdota.....	143	Minnender.....	161	Oconto.....	133
Masseteric.....	117	Mezclabais.....	120	Minnetijd.....	161	Orbitatem.....	11
Massiccio.....	137	Mezclarian.....	149	Minnepijn.....	161	Orbitatis.....	11
Massicoter.....	137	Mezeillade.....	149	Minnepraat.....	160	Orbitele.....	11
Massstaves.....	125	Mezereine.....	149	Minneschuw.....	160	Organiscos.....	63
Massvoller.....	125	Mezereum.....	148	Minneselig.....	154	Orsippas.....	4
Massylorum.....	125	Mezinheira.....	148	Minnetocht.....	161	Orsodagna.....	4
Masteiche.....	125	Meziriac.....	148	Minnevlaag.....	154	Ortalidi.....	4
Mastehoch.....	125	Mezabout.....	148	Minnevuur.....	157	Orthodoxal.....	4
Masterhood.....	125	Mezzaiole.....	135	Minnezorg.....	159	Orthodoxe.....	4
Mastfutter.....	125	Mezzananza.....	135	Minnezucht.....	156	Orthoganry.....	4
Mastgelder.....	125	Mezzanetto.....	135	Minnock.....	143	Orthogonos.....	4
Masthafer.....	125	Mezzina.....	135	Minorammo.....	157	Orthogonun.....	4
Masticine.....	126	Mezzissimo.....	135	Minster.....	143	Orthonyx.....	4
Masticinos.....	126	Mezzotint.....	135	Mintriendo.....	157	Orthosias.....	4
Masticinum.....	126	Miagolando.....	135	Minrietis.....	156	Orthostade.....	4
Masticorum.....	126	Miargyrite.....	135	Minuciosas.....	154	Orthostyle.....	4
Mastixoel.....	126	Miaveritis.....	135	Minuiscis.....	158	Orthotone.....	4
Mastkorf.....	126	Micaceous.....	135	Minuka.....	143	Ortigaban.....	4
Mastochsen.....	126	Micaiah.....	135	Minuribat.....	158	Ossiculo.....	148
Mastoideal.....	126	Mication.....	135	Minurrias.....	157	Ossiforme.....	5
Maststueck.....	4	Miccianza.....	120	Minurriunt.....	160	Ossifragum.....	63
Mastuerzo.....	5	Miccichino.....	120	Minusseite.....	149	Ossiopia.....	141



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