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GARDINER G. HUBBARD,
PRESIDENT.
THOMAS SANDERS,
TREASURER.
THEO. N. VAIL,
GENERAL MANAGER.

BELL TELEPHONE COMPANY,

66 & 68 Reade Street,

P. O. BOX 150.

ALEX. GRAHAM BELL,
ELECTRICIAN.

THOS. A. WATSON,
GENERAL SUPERINTENDENT.

New York, Dec. 20, 1878.

We take pleasure in announcing to our agents, customers, and to the public, that we are now ready to furnish a battery-transmitting Telephone, in addition to, and to use in connection with our ordinary Magneto Telephone.

In the Magneto Telephone, the sound waves are thrown against, and vibrate, a diaphragm which acts as the armature of a permanent magnet, and disturbing its magnetic field, produces in the helix, or coil, surrounding the magnet, undulatory currents of electricity, which are conveyed over the line, and corresponds to and reproduces the articulation in the Receiving Telephone. Any Magneto Telephone can be used either as transmitter or receiver.

In the battery-transmitting Telephone, a voltaic current is passed through conductors which are connected to the diaphragm. These conductors offer a certain resistance to the current, and are so arranged that the vibrations of the diaphragm caused by the sound waves vary this resistance with every wave, thus producing undulations in the current which correspond to and reproduce the articulation. This however requires a Magneto Telephone as receiver.

The battery-transmitter acts more powerfully, for the reason that voltaic electricity is a force much stronger than the magneto electric current when ordinarily produced by the Telephone, and on that account the faintest articulation can be transmitted with the utmost distinctness.

It is not probable, however, that the battery-transmitter will take the place of the Magneto Telephone, for the latter is simple in its construction, durable and reliable under all circumstances, can be used for both transmitting and receiving, costs nothing to maintain, is sufficiently loud and distinct, and will probably be the most popular instrument for general use.

The battery Telephone, though possessing the advantage of louder articulation, and not being liable to get out of order under ordinary circumstances, is more delicate and complicated in its construction, requires the maintenance of a battery in connection with it, the attention occasionally of an electrical expert, and can only be used as a transmitter, thus requiring a Magneto Telephone as a receiver. It will be used principally in the large cities where the induced currents from telegraph or other wires interfere materially with the weaker currents of the Magneto Telephone, also in the transmission of messages over long distances, or where, for special reasons greater volume of sound is necessary to be obtained.

Very respectfully,

THEO. N. VAIL, *General Manager.*