



MAGNETIC THERMOPHONE WITH REFLECTING DIAPHRAGM TRANSMITTER.

THERMOPHONES.

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Fig. 1 and 2 represent magneto-thermophones. In Fig. 1, A is the transmitter, which consists of a highly polished thin mirror, similar to Prof. Bell's photophone transmitter, B is a hollow iron ball, which forms the pole of the magnet, D. This ball should be made very thin and covered with lampblack in order that it may absorb and radiate its acquired heat rapidly. C is an insulated helix of copper wire placed around the pole of

magnet D, and having in its circuit the receiving telephone E. Sound waves of any kind generated before transmitter A, will cause the reflected heat and light waves to undulate in unison with the sound waves; these undulatory heat and light rays will strike the pole B, of magnet D, producing corresponding variations in its strength, thereby generating magneto-electric currents in coil C. These magneto-electric currents will correspond in time and strength with the sound waves made before transmitter A and will reproduce by means of telephone E, any sound made before transmitter A.



MAGNETIC THERMOPHONE WITH MANOMETRIC FLAME TRANSMITTER.

The operation of instruments shown in Fig. 2 is similar to that just described; the difference is mainly in the transmitter, which consists of a manometric flame apparatus, A, of the usual construction, the light and heat of the flame B, being projected by the mirror M to the magnet of the receiver.

In Fig. 3 the receiver is a thermopile connected with a receiving telephone. The heat and light thrown by the reflecting transmitter A, generate an undulating electric current in the thermopile C, which produces audible effects in the telephone E.

by the tube F. Speaking against the chamber A will produce undulations in the inclosed gas corresponding in time and strength with the sound waves generated before it, thereby vibrating the flame B, and its emitted heat and light rays. These modified heat and light rays will generate electric currents in the thermo-electric pile C, against which they strike, and these thermo-electric currents corresponding in time and strength with the sound waves at the transmitter, the magneto-telephone C being in the circuit of the thermopile, C will reproduce any sound made before chamber A of the transmitter.

In Fig. 4. the chamber A of transmitter is supplied with gas



THERMOPHONE WITH THERMO-ELECTRIC RECEIVER AND REFLECTING DIAPHRAGM TRANSMITTER.