(Model.)

# S. H. BARTLETT & H. E. WAITE.

## TELEPHONE RECEIVER.

No. 287,896. Patented Nov. 6, 1883.

Fig. 1.

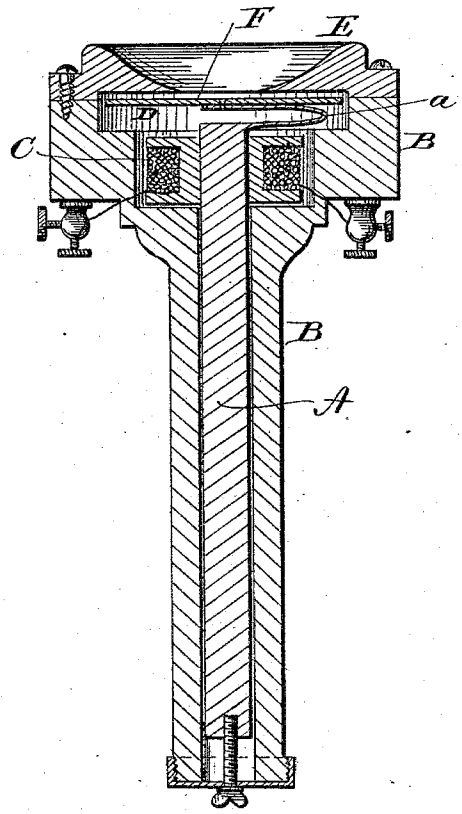
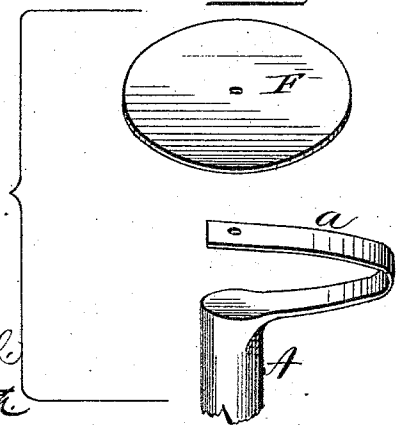



Fig. 2.




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# UNITED STATES PATENT OFFICE.

SAMUEL H. BARTLETT AND HENRY E. WAITE, OF NEW YORK, N. Y., ASSIGNORS TO THE MOLECULAR TELEPHONE COMPANY, OF SAME PLACE.

## TELEPHONE-RECEIVER.

SPECIFICATION forming part of Letters Patent No. 287,896, dated November 6, 1883.

Application filed July 24, 1882. (Model.)

*To all whom it may concern:*

Be it known that we, SAMUEL H. BARTLETT and HENRY E. WAITE, both of New York, county of New York, and State of New York, have invented new and useful Improvements in Receivers for Telephones, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

Our invention relates to a novel manner of combining the disk of a telephone-receiver with the magnet, whereby it is allowed to vibrate bodily in responding to the disturbances or variations in degree of polarity, or to molecular elongations of the magnet, by being centrally secured to a spring-arm and left unbound and unsupported at its edges or periphery, as hereinafter explained.

Figure 1 represents a longitudinal section through our improved receiver, and Fig. 2 a perspective view of the diaphragm and recurved spring-arm.

In the accompanying drawings, A represents the magnet of the receiver; B, the cylindrical handle inclosing said magnet; B′, the enlarged chambered head thereof surrounding the coil C, and to the open end of which head the ear-piece E is secured, said parts being of any usual or preferred form or construction. The end of the magnet A adjacent to the ear-piece is shown provided with a recurved spring-arm, *a*, similar to that described in Letters Patent granted to Lockwood and Bartlett, June 15, 1880, No. 228,825, said arm forming a reduced extension of the pole of the magnet with which it is connected, its extreme end overhanging the end of the body of the magnet, and being brought into near proximity to, but arranged out of actual contact with, said end, as shown. To the end of this arm *a* is secured a disk, F, which may be of any suitable material, either magnetic or non-magnetic, as preferred. The spring has its unsupported end attached to the disk, centrally of the latter, by a rivet, screw, or other suitable fastening. The disk is made of a diameter slightly less than the diameter of the chamber D in the head of the receiver-handle, and, being supported by the spring only, is free to vibrate bodily, piston-like, in said chamber, influenced by the variations of the degree of polarity in the magnet and the retracting power of its supporting-spring, and, where the spring is attached to and forms an extension of the pole of the magnet, as described and shown, by the molecular changes or elongations of said magnet, produced by variations in degree of polarity therein.

By the construction described it will be seen that the disk of the receiver is left unsupported at its edges or periphery, and is upheld only by the spring attached to it centrally, and that, as the unsupported end of the spring to which it is attached is vibrated, the disk moves back and forth bodily in the chamber D with the vibrating end of said spring. Parts of the receiver and its connections not described may be made in any usual manner.

Having now described our invention, we claim as new—

1. In a telephone-receiver, the combination of a magnet, a disk having a central support only, and the spring-armature forming a yielding support for said disk and permitting its movement bodily, substantially as described.

2. The combination, in a receiver, of a magnet, a chambered handle or head therefor, and a disk arranged within a chamber in said head, and supported therein upon a spring-extension of the magnet, substantially as described, whereby it is adapted to move bodily in said chamber.

3. The combination of the magnet A, the coil C, the chambered handle surrounding said magnet and coil, the disk F, moving bodily in a chamber in said handle, and the supporting-spring upholding said disk and forming the armature to the magnet, substantially as described.

In testimony whereof we have hereunto set our hands this 18th day of July, A. D. 1882.

SAMUEL H. BARTLETT.
HENRY E. WAITE.

Witnesses:
THS. W. HARTFIELD,
C. H. HANKINSON.