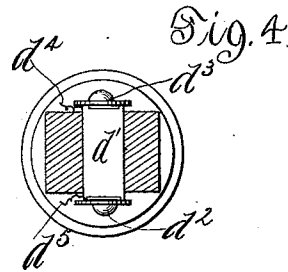
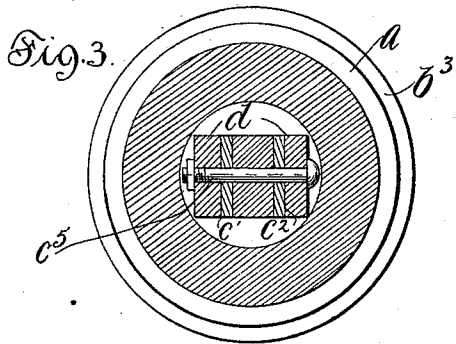
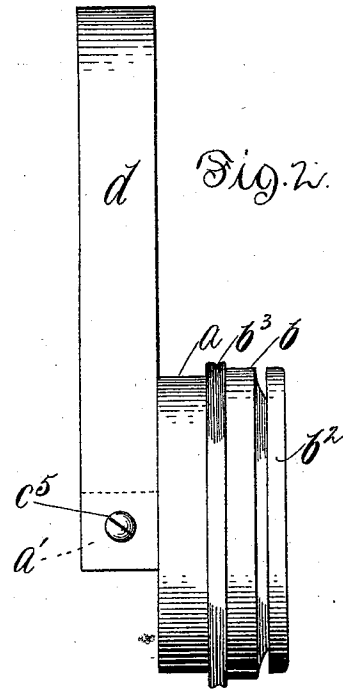
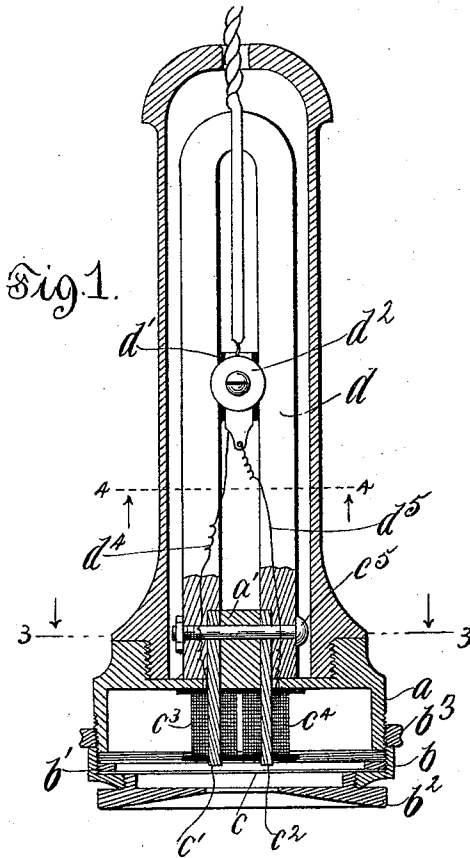


(No Model.)

A. STROMBERG & A. CARLSON.
TELEPHONE.

No. 529,818.

Patented Nov. 27, 1894.



Witnesses:

George L. Cragg.
W. Clyde Jones.

Inventors:
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Attorneys.

UNITED STATES PATENT OFFICE.

ALFRED STROMBERG AND ANDROV CARLSON, OF CHICAGO, ILLINOIS.

TELEPHONE.

SPECIFICATION forming part of Letters Patent No. 529,818, dated November 27, 1894.

Application filed October 9, 1894. Serial No. 525,389. (No model.)

To all whom it may concern:

Be it known that we, ALFRED STROMBERG and ANDROV CARLSON, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Telephones, (Case No. 18,) of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

Our invention relates to telephones, and more particularly to telephone receivers, its object being to provide a hand telephone that may be cheaply manufactured, and one in which the diaphragm may be readily adjusted toward and from the magnet poles.

In the preferred form our invention comprises a casing upon which the diaphragm is adjustably mounted, the permanent magnet being rigidly secured to the rear of the casing. The magnet is inclosed in a tubular casing which is detachably mounted upon the rear of the main casing, the tubular casing being provided with an opening in its end through which the inleading wires may pass, the binding posts being provided within the tubular casing, access thereto being secured by the removal of the tubular casing.

We will describe our invention in connection with the accompanying drawings, in which—

Figure 1 is a longitudinal sectional view of a telephone embodying our invention. Fig. 2 is a view of a modification. Fig. 3 is a sectional view on line 3—3 Fig. 1. Fig. 4 is a sectional view on line 4—4 Fig. 1.

Like letters refer to like parts in the several figures.

A casing a , preferably of non-magnetic metallic material, is provided upon its exterior with threads with which threads upon cap b are adapted to engage, the diaphragm c being secured to the under side of cap b by a threaded ring b' screwing within the cap b . Upon the cap b is screwed a mouth piece b^2 . A locking ring b^3 is adapted to be screwed against the cap b to lock the same in any adjusted position. Upon the rear of the casing is provided a projection a' against the faces of which rest the soft iron polar extensions

or cores $c^2 c^3$ which extend through the bottom of the casing and carry upon their ends the telephone coils $c^3 c^4$. The ends of the permanent magnet d rest upon the cores $c^2 c^3$, and a screw or bolt c^5 passes through the ends of the magnet, the cores and the projection to maintain the same in position. The ends of the magnet d are preferably cut away as shown to permit the cores to be set into the inner faces of the limbs of the magnet.

Between the limbs of the magnet d is provided a block d' of insulating material upon which are mounted binding posts $d^2 d^3$, the binding posts being connected through the coils $c^3 c^4$. To the binding posts $d^2 d^3$ are also attached the insulating circuit wires $d^4 d^5$. Upon the rear of the casing is provided a threaded flange e upon which the casing f is adapted to be screwed, the casing being provided with an opening f' at the end through which the insulating wires $d^4 d^5$ may pass.

It will be observed that the magnet d is mounted rigidly upon the casing a , the casing f being entirely independent of the magnet so that it may be removed at will by unscrewing the same from the casing a . The diaphragm support or cap b may be raised or lowered to adjust the diaphragm relatively to the magnet cores $c^2 c^3$, the ring b^3 serving to maintain the diaphragm in its adjusted position.

Instead of mounting the permanent magnet perpendicularly to the diaphragm, it may be mounted to lie parallel thereto as shown in Fig. 2.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a hand telephone, the combination with a casing inclosing the telephone coils, of a diaphragm support adjustably mounted upon said casing, a permanent magnet, rigidly mounted upon the rear of said casing, and a casing inclosing said magnet, but independent thereof, removably secured to the rear of said first mentioned casing, substantially as described.

2. In a hand telephone, the combination with a casing a , of a diaphragm support b adapted to be adjustably screwed upon said

casing, the casing *a* being provided upon the rear with a projection *a'*, the cores *c'* *c*² and the permanent magnet *d* secured to said projection, said cores *c'* *c*² extending through the
5 bottom of said casing and carrying upon their ends the telephone coils *c*³ *c*⁴, substantially as described.

In witness whereof we hereunto subscribe our names this 3d day of October, A. D. 1894.
ALFRED STROMBERG.
ANDROV CARLSON.

Witnesses:

W. CLYDE JONES,
HARRIET G. TEMPLETON.