(No Model.)

J. H. ROGERS.

TELEPHONE.

No. 297,168. Patented Apr. 22, 1884.

Fig. 1.

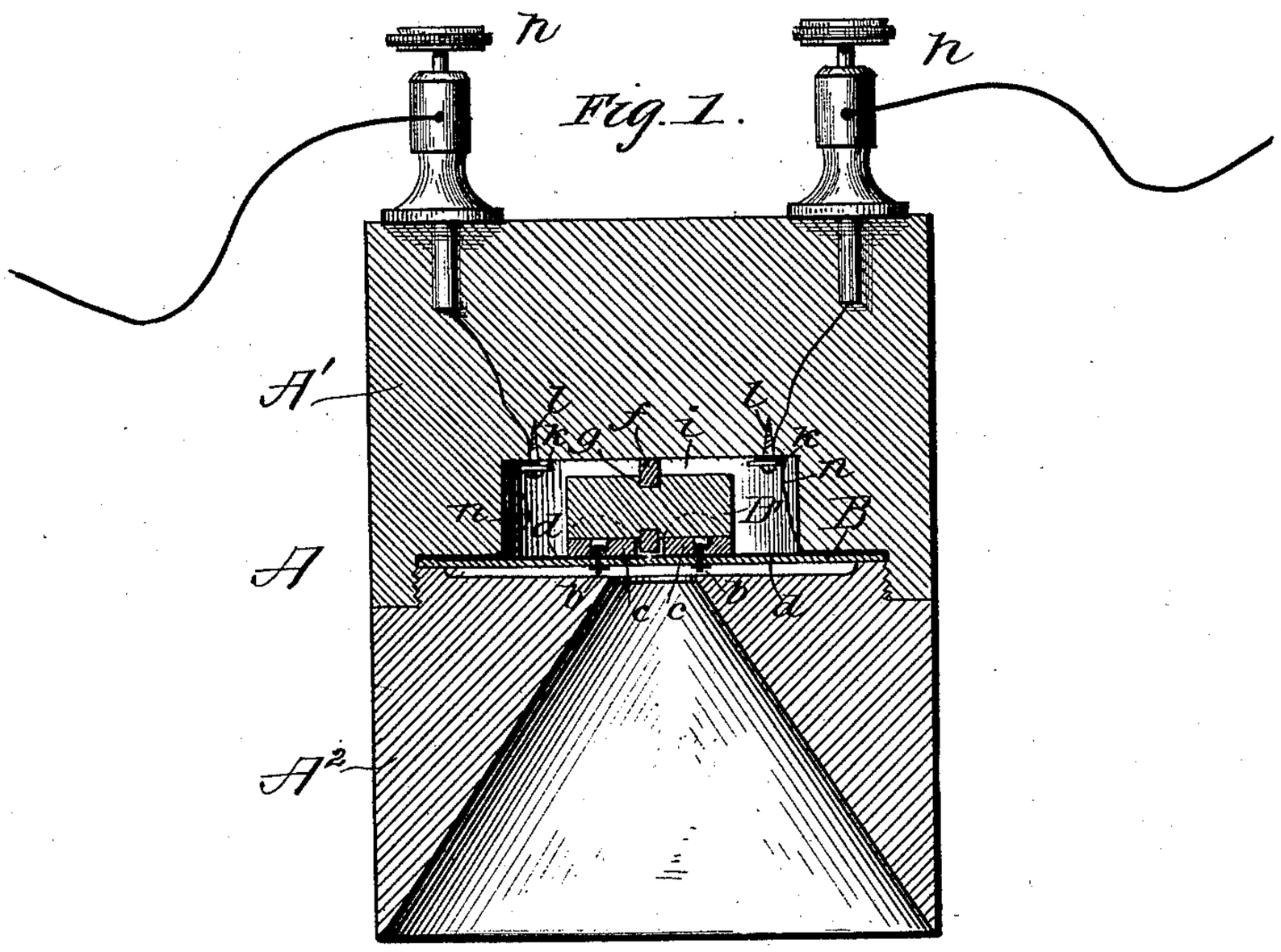

Fig. 2.

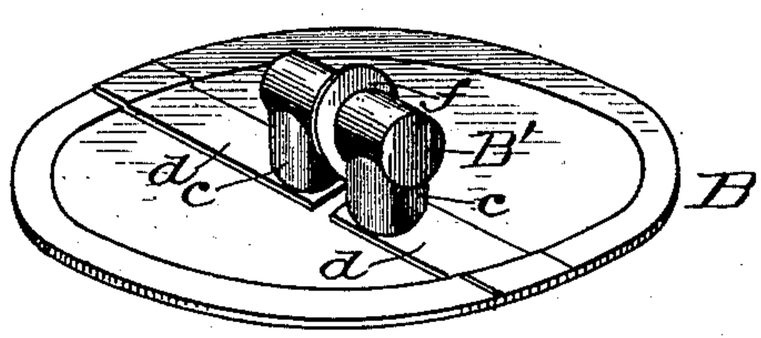

Fig. 3.

Attest
J. M. Reynolds.
L. W. Seig

Inventor:
J. Harris Rogers
by Emmarble
Attorney

UNITED STATES PATENT OFFICE.

JAMES HARRIS ROGERS, OF NEW YORK, N. Y.

TELEPHONE.

SPECIFICATION forming part of Letters Patent No. 297,168, dated April 22, 1884.

Application filed December 26, 1883. (No model.)

To all whom it may concern:

Be it known that I, JAMES HARRIS ROGERS, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Telephones, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in electric telephones of the class wherein the electrical waves or undulations which convey articulate speech are caused by the varying resistance of an imperfectly conducting medium under pressure, and having proper electrical connections.

My invention consists in combining with the diaphragm of a telephone two carbon standards, a loose electrode mounted upon them, and electrical connections; in combining with the diaphragm two carbon standards laterally grooved and an electrode resting thereon by gravity, and having a frictional holding-ring to keep it in position; in a cylindrical electrode having a removable frictional ring attached to it; in a cylindrical electrode combined with a rubber ring, and the peculiar electrical connections, more fully hereinafter explained.

In the accompanying drawings, Figure 1 is a vertical section of a telephone; Fig. 2, a perspective view of the diaphragm and electrodes. Fig. 3 is an end view of one of the electrodes and of the diaphragm.

A represents the body of a telephone, made in two parts, $A' A^2$, screwed together as shown, the part A^2 forming the mouth-piece, and the part A′ being recessed, as shown at *i*.

B represents the diaphragm, composed of any suitable material—such as hard rubber or thin metal—properly clamped between parts A′ and A^2. To this diaphragm are secured, by means of small screw-bolts *b b*, Fig. 1, or in any other way, two standards, *c c*, preferably of carbons. Strips of metal foil *d d* are interposed between the standards and diaphragm, and extend in opposite directions to the edges of the diaphragm. The carbon standards are placed in close proximity to each other—one on each side of the center of the diaphragm—and the tops of said standards are laterally grooved or hollowed out, as shown in Fig. 3, the grooves in both standards being in line. In these grooves rests loosely the electrode B′, in the manner shown in Fig. 2. This electrode is a stick of carbon of a length equal to that of the combined grooves in the standards. In order to hold it in place against either lateral or vertical movements, caused by changes in the position of the instrument, it is provided with a ring or flange, *f*, preferably of soft rubber. This disk or flange is of such thickness that it nearly fills the space between the standards, and thus prevents lateral motion of the electrodes in the grooves. The upper edge of the ring bears on the bottom of the recess in the telephone-body when in position, and thus prevents it from leaving the grooves. The ring is held in place by a groove, *g*, in the electrode. The effect is to permit the electrode to lie loosely in the standards, and yet retain it in its proper position. Electrical connection is formed with the binding-posts *h h* by strips of metal foil *n n*, the upper ends of which are clamped in contact with the pieces of foil *d d*, while the other ends extend down to the bottom of the recess *i*, where they are secured by plates *k k* and screws *l l* in contact with wires *m m*.

The operation of the telephone is not different from that of others of this class, and will be readily understood by those skilled in the art.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a telephone, the combination of the diaphragm, the electrode-standards mounted thereon, a single electrode having a retaining-flange resting loosely on said standards, and electrical connections, substantially as described.

2. In a telephone, the combination of the diaphragm, the grooved electrode-standards mounted thereon in close proximity, a loose electrode resting upon the standards having a retaining-flange, and electrical connections, substantially as described.

3. In a telephone, the combination of the diaphragm, the grooved electrode-standards mounted thereon, the loose electrode resting upon the standards, and a removable retaining-ring upon the loose electrode, substantially as described.

4. In a telephone, the combination of the diaphragm, the grooved electrode-standards mounted thereon, and the loose electrode resting upon the standards, having a ring of soft rubber, substantially as described.

5. In a telephone, the combination of the recessed body of the telephone, the diaphragm, the grooved electrode-standards upon the diaphragm, a loose electrode resting upon the standards, and a ring upon said electrode, constructed to fill the space between the standards, and also to bear upon the bottom of the recess in the telephone, substantially as described.

6. As a new article of manufacture, an electrode of cylindrical form, and having a central circular flange or ring, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES HARRIS ROGERS.

Witnesses:
E. M. MARBLE,
W. J. NEWTON.