

J. E. WATSON.
Telephonic-Transmitter.

No. 226,376.

Patented April 6, 1880.

Fig. 1.

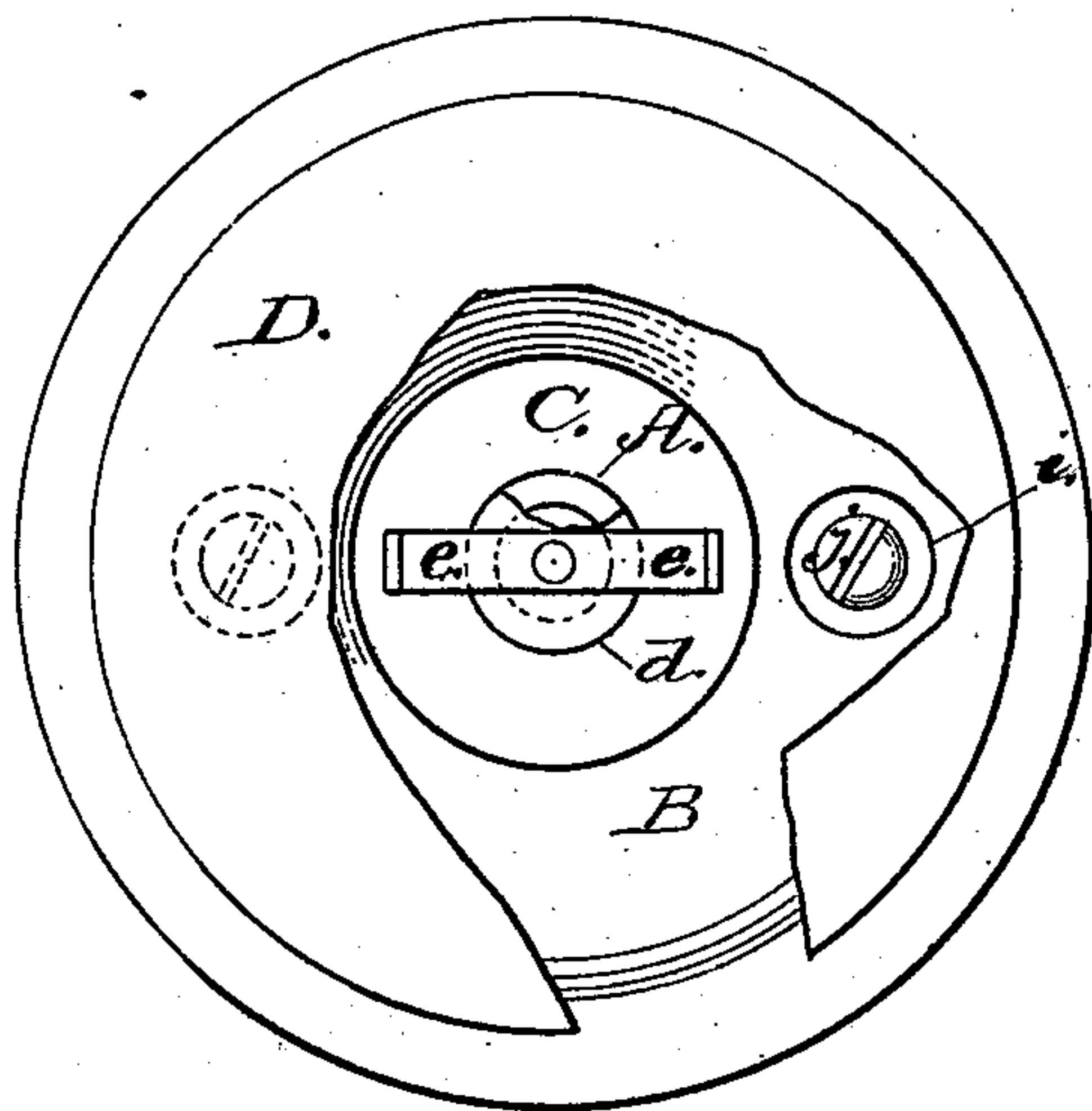
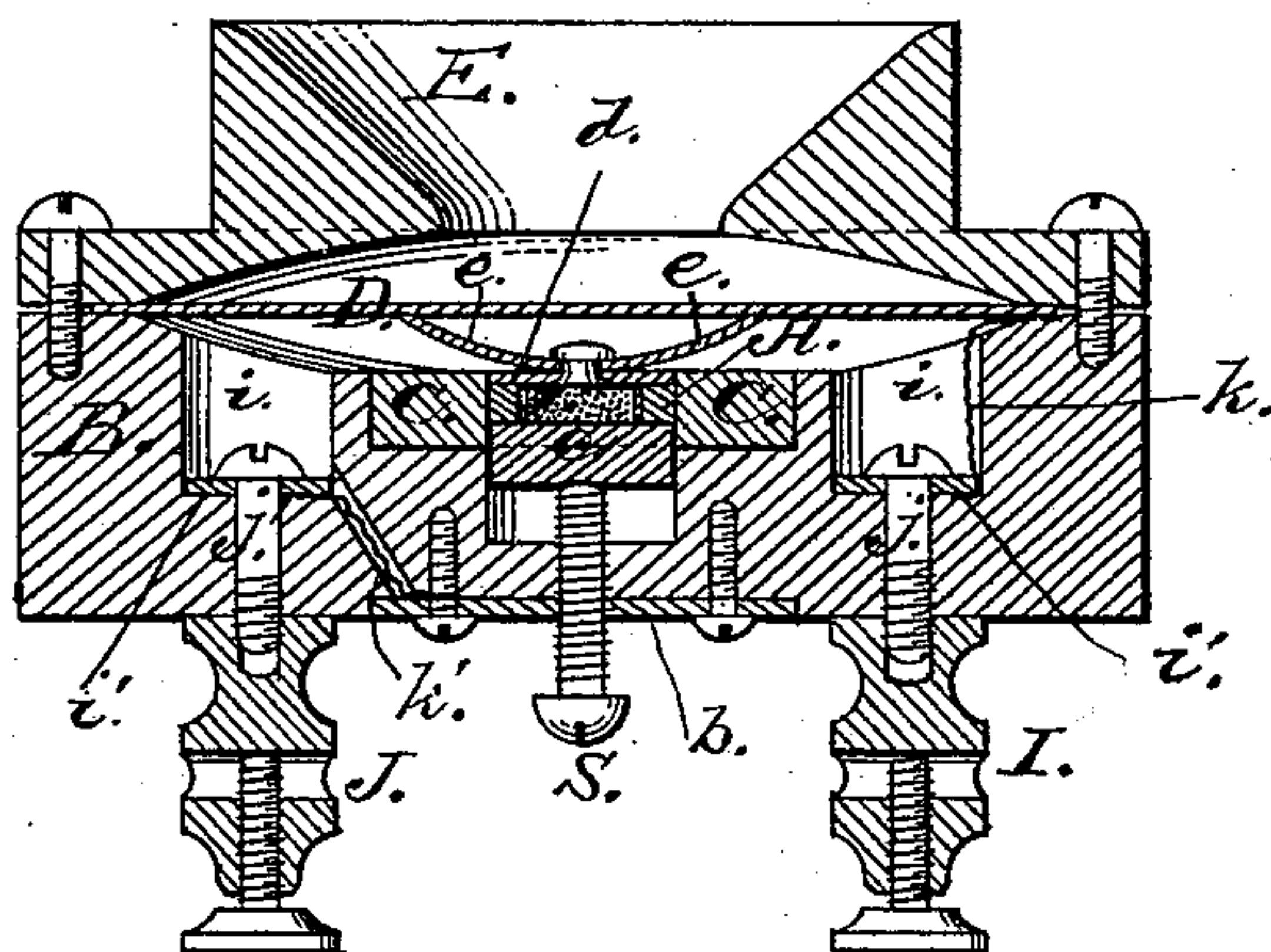


Fig. 2.



WITNESSES

Villette Anderson.
Frank J. Masi.

INVENTOR

John E. Watson,
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UNITED STATES PATENT OFFICE.

JOHN E. WATSON, OF LOUISVILLE, KENTUCKY.

TELEPHONIC TRANSMITTER.

SPECIFICATION forming part of Letters Patent No. 226,376, dated April 6, 1880.

Application filed August 21, 1879.

To all whom it may concern:

Be it known that I, JOHN E. WATSON, of Louisville, in the county of Jefferson and State of Kentucky, have invented a new and valuable Improvement in Telephonic Transmitters or Rheostats; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a plan view of the transmitter with the mouth-piece removed and the diaphragm broken away to show the rings, the disk, and its spring-arms; and Fig. 2 is a central section of the transmitter.

This invention has relation to improvements in telephonic transmitters; and the nature of the invention consists in a soft elastic rubber case or tube, of any suitable compressible non-electric conducting material, for the reception of a filling of carbon-powder, an exterior case-holder receiving said case, also made of an electric non-conductor, and a follower or plug in the end of the case-holder bearing against the case and adjustable to place the filling under compression.

It also consists in the non-electric conductor, elastic case, and its hard exterior non-electric-conductor holder, in combination with an adjustable compressing-plug fitting in the holder and bearing against the case, a carbon filling in finely-divided form in said case, a metallic disk closing the other end of the case, and having spring-arms bearing against the sound-diaphragm, a mouth-piece, binding-posts, and wire connections from the metallic diaphragm to the binding-posts.

It also consists of a soft elastic rubber tube or case, of any suitable con-conducting electric material, combined with a hard-rubber ring or tube, of any non-conductor of electricity, closely encircling and supporting the same, and containing an electric conductor in a finely-divided condition, as will be hereinafter more fully described.

In the annexed drawings, the letter A designates an elastic ring, made of soft rubber or other elastic material not being a conductor of electric currents, inclosed within a second ring, C, made of hard rubber or other hard non-

conductor of electricity, and inserted into a circular block, B. Into the exterior face of this block is recessed a metallic plate, *b*, having extended through it an adjusting-screw, S; the end of which bears against a metallic plug, *c*, fitting loosely in the end of tube C and bearing against the end of the elastic ring A. This plug closes one end of this ring A, the other end whereof is covered with a metallic disk, *d*, having the projecting spring-arms *e*, the free ends of which bear against a thin metallic diaphragm, D, inclosed between the block B and the mouth-piece E. The faces of the block B and mouth-piece E contiguous to the diaphragm D are hollowed out or concaved to form sounding-chambers, and the inner faces of the plug and disk may be covered with platinum to prevent oxidation.

Within the case A, between the plug and disk, is a small chamber, designed to contain an electrical conducting material in a finely-divided condition. I preferably use a composition made of gas-carbon pulverized and a small percentage of brass filings.

i indicates recesses formed in the concave inner face of the block, in which are inserted metallic washers *i'*, through which extend the screws *j j'*, that secure the binding-posts I J to the block. The screw *j* is connected to the diaphragm D by a wire, *k*, and its binding-post I is thus brought into electrical communication with the said diaphragm; and screw *j'* is provided with a wire, *k'*, leading to plate *b*. Thus through this plate, the adjusting-screw S, the plug *c*, the electric conductor in tube A, and the disk *d*, having the arms *e*, the post J is electrically connected to the diaphragm D. By setting up the screw S the composition *l* in case or tube A is placed under more or less compression.

It will be seen that by this method (the elastic case surrounding the carbon and brass filling and the yielding disk *d*) the whole is under very elastic pressure, yet a firm connection between said disk and the brass plug is had, thereby giving very loud articulation without affecting its distinctness, and yet of such delicate sensitiveness as to catch the faintest whisper.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a transmitter, the combination, with

the block B, of a hard-rubber ring, C, recessed into the same, a compressible interior rubber ring, A, inside of ring C, and an adjustable plug fitting in ring C and bearing against ring
5 A, substantially as specified.

2. The soft elastic rubber tube or case, of any suitable non-conducting electric material, combined with a hard-rubber ring or tube, of any non-conductor of electricity, closely encir-
10 cling and supporting the same, and containing an electric conductor in a finely-divided condition, substantially as specified.

3. The elastic case A, being a non-conductor of electricity, and the hard non-electric con-
15 ducting-case C, combined with the adjustable

plug *c*, a carbon filling in case A, a metallic disk, *d*, closing the other end of said case, and having the spring-arms *e*, the metallic diaphragm D, the mouth-piece E, binding-post I, wire *k*, connecting said diaphragm and post, 20 plate *b*, adjusting-screw S, binding-post J, and a wire, *k'*, connecting said post and plate *b*, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence 25 of two witnesses.

JOHN E. WATSON.

Witnesses:

GALEN E. THURMAN,
ARCHIBALD P. COCHRAN.