

G. D. CLARKE.
Carbon-Telephone.

No. 217,773.

Patented July 22, 1879.

Fig. 1

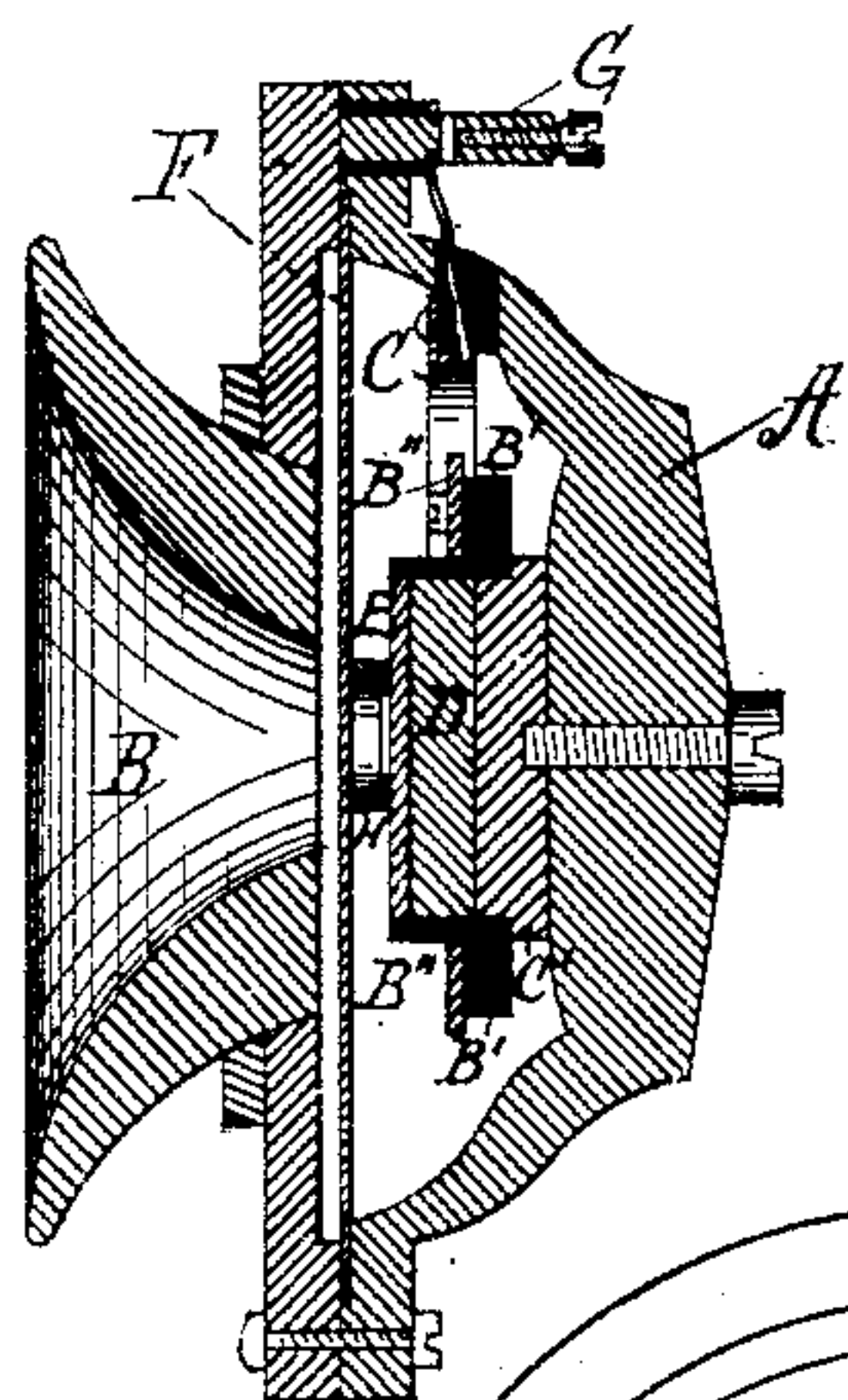
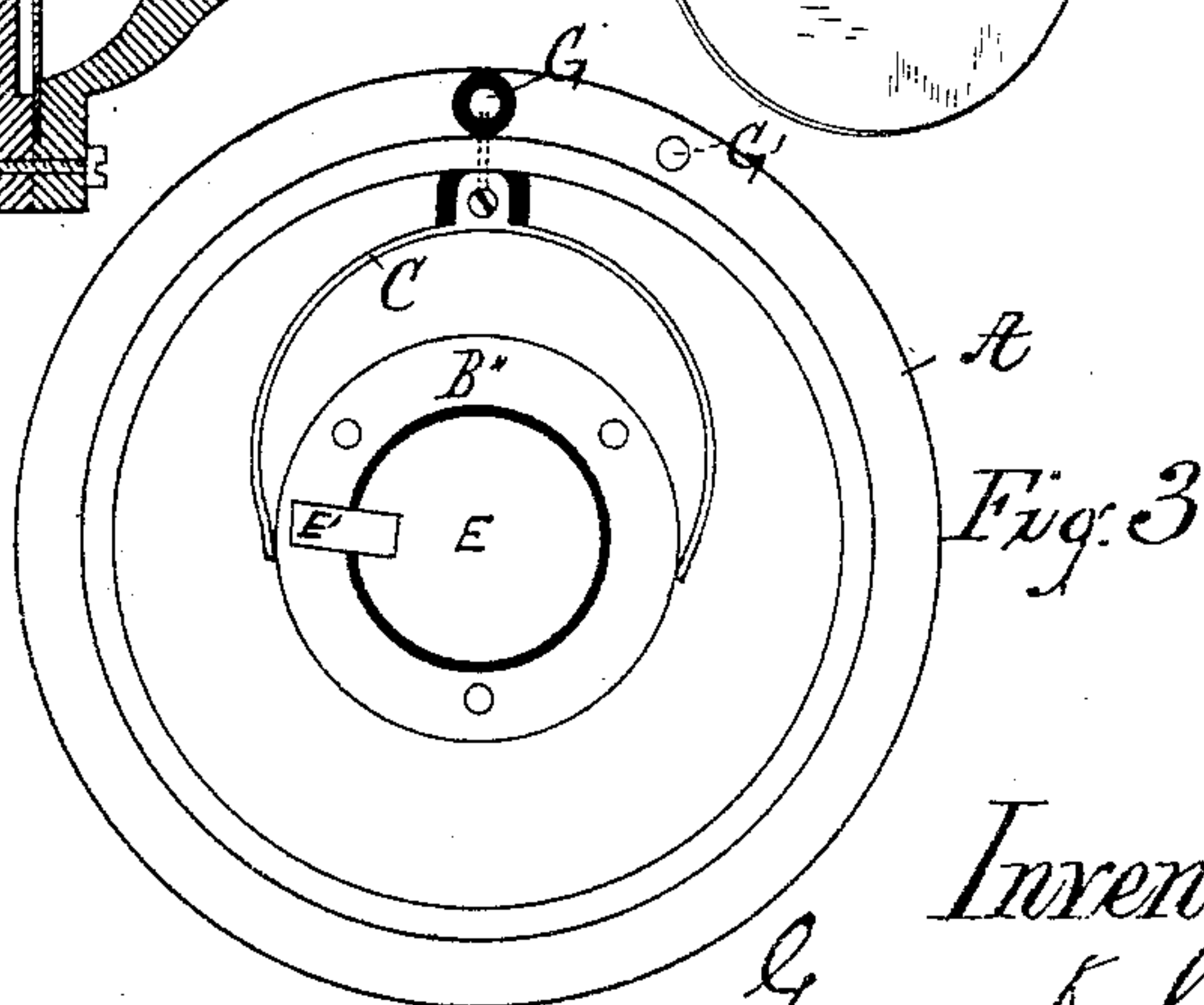
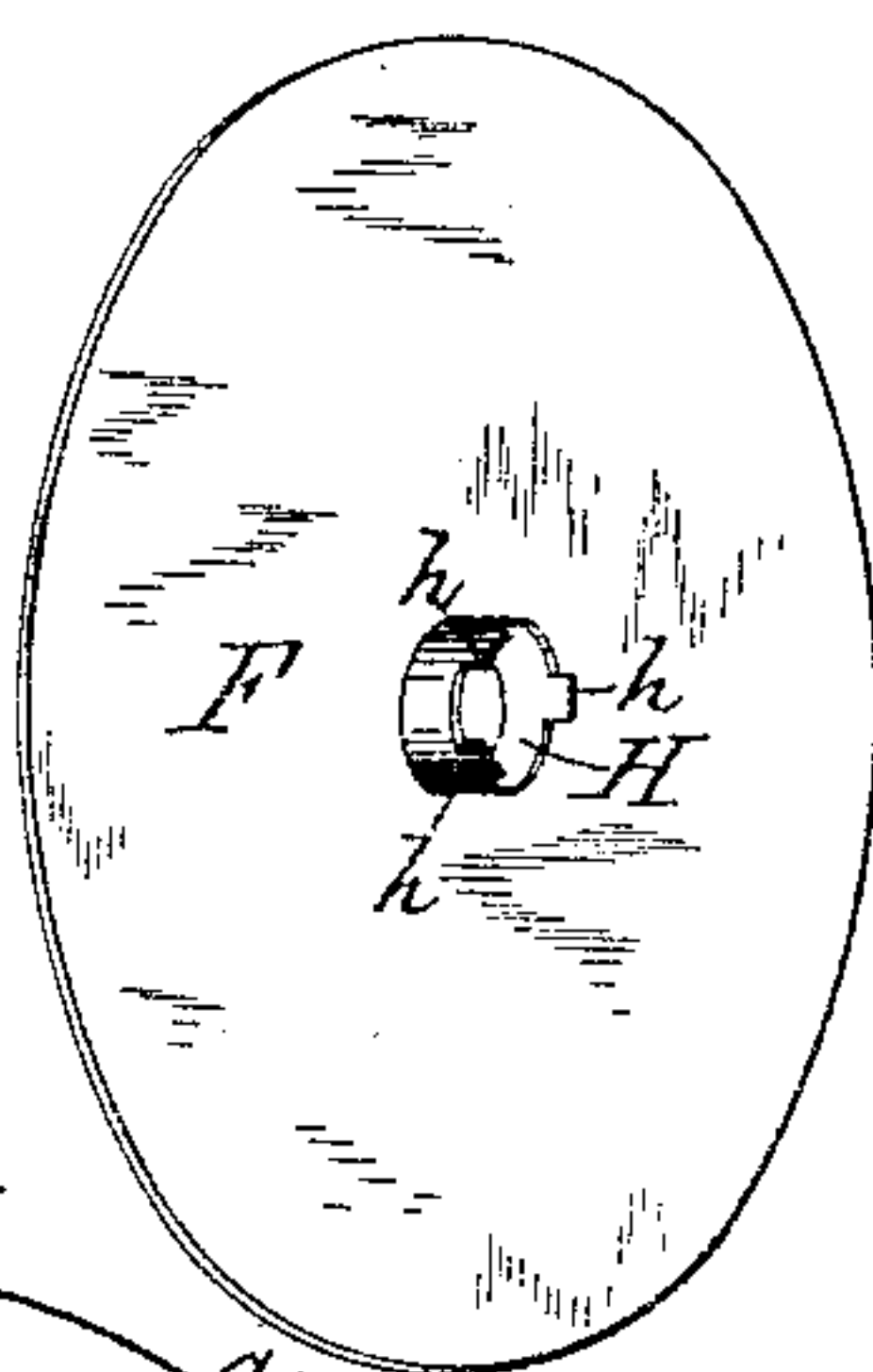


Fig. 2



Witnesses
G. R. Hoffman

George P. Bartlett

Inventor

George A. Clarke

By Gridley & Co
Attys

UNITED STATES PATENT OFFICE.

GEORGE D. CLARKE, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE WESTERN ELECTRIC MANUFACTURING COMPANY, OF SAME PLACE.

IMPROVEMENT IN CARBON TELEPHONES.

Specification forming part of Letters Patent No. **217,773**, dated July 22, 1879; application filed September 16, 1878.

To all whom it may concern:

Be it known that I, GEORGE D. CLARKE, of Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Speaking-Telephones; and I hereby declare the following to be a full, clear, and exact description of the invention, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawings, in which—

Figure 1 represents a longitudinal central section of a speaking-telephone embodying my invention. Fig. 2 represents a perspective view of the vibrating diaphragm and tripod-ring. Fig. 3 is an interior view, showing electric connections.

My invention relates to that class of telephones known as "carbon transmitters;" and consists in the method of insulating the vibrating diaphragm from the carbon button, and in forming a more uniform and perfect bearing between them, and also in the construction and combination of the several parts, as hereinafter described and claimed.

The method heretofore employed of connecting the vibrating diaphragm with and insulating it from the carbon button consists—

First, in attaching to the diaphragm a ring or cylinder of glass, having its bottom surface ground smooth. The smooth surface bears upon the metal disk covering the carbon button. This method is objectionable, because it is difficult to secure an even bearing on all parts of the circumference of a ring, and because it is very difficult to work glass.

Second, in making the upper disk, covering the carbon button, of glass, to the under surface of which is attached a very thin sheet of platinum, and to its upper surface is attached a small hemispherical metal projection, upon the upper and convex surface of which the center of the vibrating diaphragm rests. This latter method is objectionable on account of the difficulty of securely fastening the platinum sheet to the glass in such manner as to leave the surface which rests upon the carbon button perfectly smooth, and also on account of the bearing being only at one point; hence the pressure

upon the carbon button is one-sided unless a perfect adjustment be obtained.

In the drawings, A represents the case, which is provided with the usual mouth-piece, B. B' represents the insulating-ring, of hard rubber; B'', the metal ring, resting upon and attached to hard-rubber ring B'; C, the metal clamp, connecting the metal ring B'' with the binding-post G, which is insulated from the case A by hard rubber, as shown; C', the lower metal disk or plate, having its upper surface of platinum, and resting against the inner side of case A; D, the carbon button; E, the upper metal disk or plate, having its lower surface of platinum, and provided with a tail or projection, E', of platinum or any suitable conductor, and is for the purpose of connecting the circuit between plate E, metal ring B'', and clamp C; and F, the vibrating diaphragm. G is a binding-post in circuit with case A.

No claim is made for any of the parts connecting plate E with clamp C, and from thence to post G; neither do I make any claim for the parts connecting the under side of the carbon disk to the line or battery. These parts are all old, and constructed in the usual manner.

For the purpose of producing the bearing between the vibrating diaphragm F and the carbon button D, I attach to the under and japanned surface of the diaphragm a metal ring, H, by means of any suitable cement, preferably a cement composed of a mixture of resin and bees-wax. The japanned surface of the diaphragm insulates the diaphragm from the metal ring.

I find it of advantage to cut away the lower portion of the metal ring H, so as to leave three projections or feet, *h*, equidistant, and of uniform size. These feet bear upon the upper plate, E, covering the carbon button D. By means of this ring, provided with three projections, *h*, greater facility of adjustment and a more uniform and even bearing are obtained, resulting in more perfect unison between the vibrations of the diaphragm, the compression of the carbon button, and the variations in the strength of the battery-current; and hence vocal sounds are more perfectly reproduced.

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

1. The combination of the diaphragm F, the tripod or metal ring H, and the metal disk or plate E, substantially as and for the purpose specified.

2. The metal ring H, provided with projections or feet *h*, substantially as and for the purpose specified.

3. The combination, with the diaphragm F,

of the metal ring H, provided with the projections or feet *h*, substantially as and for the purpose specified.

4. The combination, with the diaphragm F, of the tripod or metal ring H, attached to and insulated from the diaphragm, substantially as specified.

GEORGE D. CLARKE.

Witnesses:

GEORGE P. BARTON,
G. R. HOFFMAN.