No. 788,452. PATENTED APR. 25, 1905.

H. P. CLAUSEN.

TELEPHONE TRANSMITTER.

APPLICATION FILED AUG. 20, 1902. RENEWED FEB. 8, 1905.

Fig. 1.

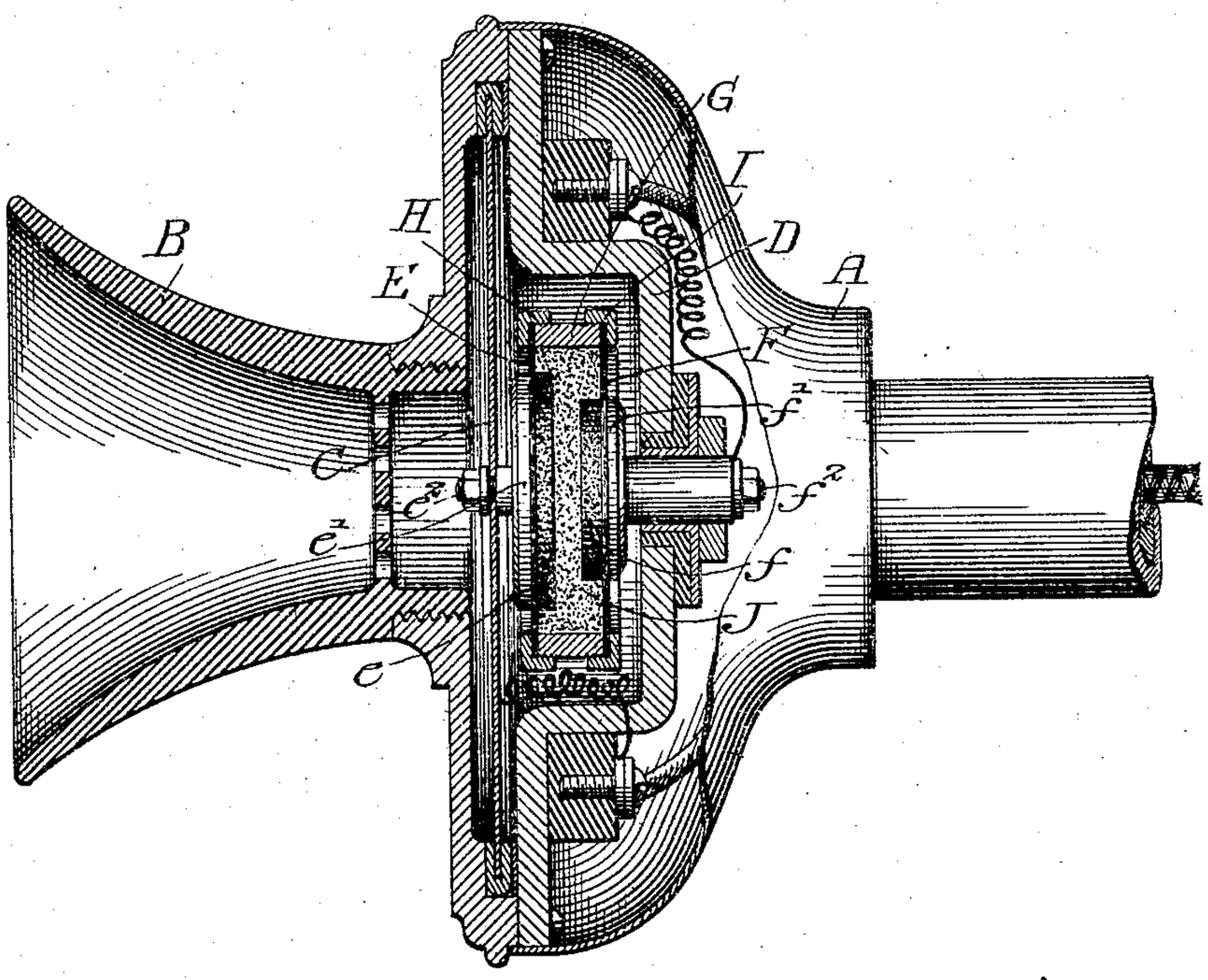
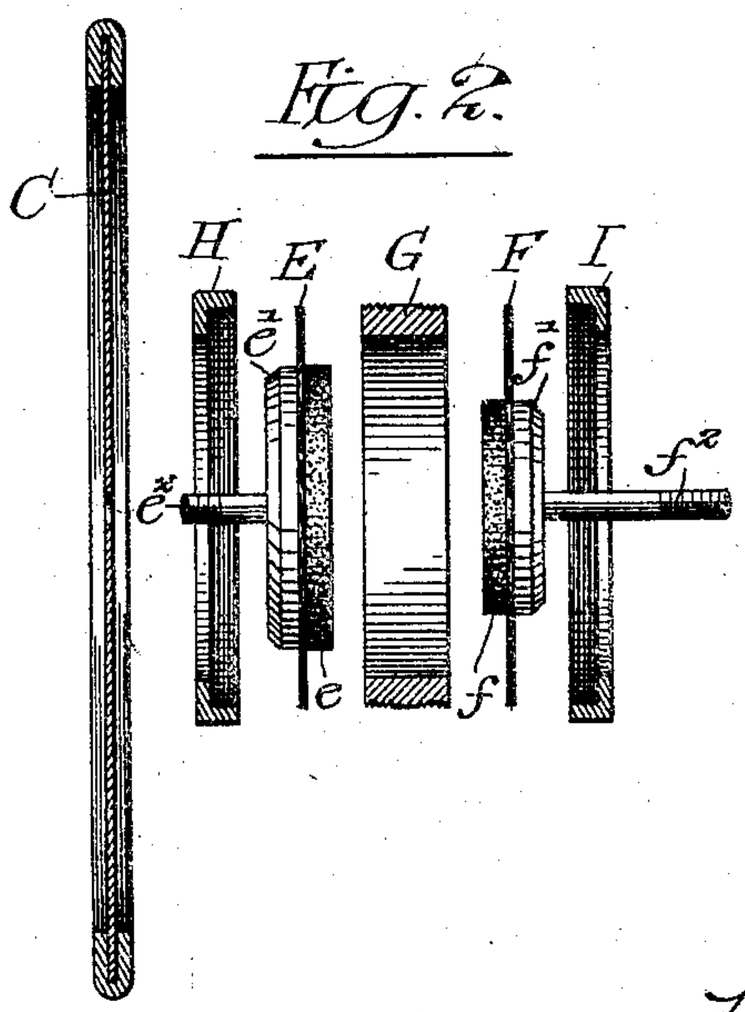


Fig. 2.



Witnesses:-

Louis W. Whitehead.

Arthur L. Durand

Inventor:-

Henry P. Clausen,

By Chas. Burley.

No. 788,452. Patented April 25, 1905.

UNITED STATES PATENT OFFICE.

HENRY P. CLAUSEN, OF CHICAGO, ILLINOIS, ASSIGNOR TO AMERICAN ELECTRIC TELEPHONE COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION.

TELEPHONE-TRANSMITTER.

SPECIFICATION forming part of Letters Patent No. 788,452, dated April 25, 1905.

Application filed August 20, 1902. Renewed February 8, 1905. Serial No. 244,753.

To all whom it may concern:

Be it known that I, HENRY P. CLAUSEN, a citizen of the United States of America, and a resident of Chicago, Cook county, Illinois, have invented a certain new and useful Improvement in Telephone-Transmitters, of which the following is a specification.

My invention relates to telephone-transmitters constructed on the microphone principle and involving a main diaphragm and a pair of supplemental diaphragms with granular carbon interposed between the front and back electrode-surfaces.

Generally stated, it is the object of my invention to provide a simple, compact, and highly efficient transmitter of the foregoing character.

A special object is to provide a simple and comparatively inexpensive and highly satisfactory construction for clamping or holding the two supplemental diaphragms together.

Another object is to provide a simple and efficient construction, whereby the two supplemental diaphragms may be advantageously employed as a springy or resilient connection between the main diaphragm and the bridge or solid backing of the transmitter.

It is also an object to provide certain details and features of improvement tending to increase the general efficiency and serviceability of a telephone instrument of this character.

In the accompanying drawings, Figure 1 is a longitudinal section of a telephone-transmitter embodying the principles of my invention. Fig. 2 is a sectional view of the different diaphragms and clamping-rings, showing the same separated one from the other.

As thus illustrated, my improved transmitter may comprise a body or casing A of any suitable form of construction. It may also be provided with a mouthpiece B and a main diaphragm C. The said diaphragm can be clamped to the body or casing in any suitable manner—as, for example, by employing the cross-piece or bridge D, which, as will hereinafter more fully appear, serves as a solid backing for the microphone. The front and back supplemental diaphragms E and F are arranged between the main diaphragm and the bridge and are preferably separated by a separating-ring G. The said diaphragms can be of any suitable, known, or approved material—as, for example, mica. The flanged clamping-rings H and I are preferably employed for clamping the marginal portions of the two supplemental diaphragms upon the opposite surfaces of the said separating-ring. This, it will be seen, can be accomplished by providing the two clamping-rings with threaded interior surfaces adapted to screw upon the threaded exterior surface of the said separating-ring. Preferably the front supplemental diaphragm carries an electrode-surface—as, for example, the surface or face of the carbon block *e*. In a similar manner the back supplemental diaphragm is provided with an electrode-surface, consisting of the face of the carbon block *f*. If desired, the two supplemental diaphragms can be clamped or held between these carbon blocks on the inside and the metal blocks *e'* and *f'* on the outside. The front and back connecting-screws e^2 and f^2 can be employed for connecting the front and back supplemental diaphragms, respectively, with the main diaphragm and the said bridge or solid backing. With this arrangement the front diaphragm will not only flex and bend under the action of the main diaphragm, but it will also have a slight bodily back-and-forth movement, while the back supplemental diaphragm will flex or bend without any bodily movement. In other words, the back supplemental diaphragm will move only at its marginal portion, while the front supplemental diaphragm will not only have a relative movement between its center and marginal portions, but will also have a bodily backward and forward movement.

The granular carbon J, interposed between the two front and back electrode-surfaces, will of course be subject to the action of the two electrodes and in conjunction with the latter will serve to vary the resistance of the transmitter-circuit in the usual and well-known manner.

It will be seen that with the provision of the two clamping-rings and the separating-ring the microphone can be readily assembled and taken apart. Furthermore, by employing the two mica supplemental diaphragms the current is varied between the two electrodes without employing special insulating strips or pieces between the different parts of the microphone-box.

I claim as my invention—

1. A telephone-transmitter comprising a main diaphragm, supplemental front and back mica diaphragms, a non-yielding connection between the front supplemental diaphragm and the main diaphragm, a bridge back of all the diaphragms, a non-yielding connection between said bridge and the center of the back supplemental diaphragm, a non-yielding connection between the marginal portion of the two supplemental diaphragms, front and back electrodes in the chamber provided between the two supplemental diaphragms, the front electrode being movable with the main diaphragm, and the back electrode being rigid with the said bridge, and granular carbon interposed between said electrodes.

2. A telephone-transmitter comprising a main diaphragm, supplemental front and back diaphragms, a separating-ring between the marginal portions of the said supplemental diaphragms, threaded clamping-rings screwed onto said separating-ring to hold the supplemental diaphragms together, front and back electrodes in the chamber provided between the supplemental diaphragms, a solid backing connected with the back supplemental diaphragm, a non-yielding connection between the main diaphragm and the front supplemental diaphragm, the front electrode being movable with the main diaphragm, and the back electrode being rigid with said backing, and granular carbon interposed between said electrode-surfaces.

3. A telephone-transmitter comprising a main diaphragm, supplemental front and back mica diaphragms, a separating-ring between the supplemental diaphragms, a couple of flanged and threaded rings screwed onto the separating-ring to hold the two supplemental diaphragms together, a non-yielding connection between the front supplemental diaphragm and the main diaphragm, a solid backing, a non-yielding connection between said backing and the said back supplemental diaphragm, front and back electrodes in the chamber provided between the two supplemental diaphragms, the front electrode being movable with said main diaphragm, and the back electrode being rigid with the said backing, and granular carbon interposed between said surfaces.

Signed by me at Chicago, Cook county, Illinois, this 21st day of July, 1902.

HENRY P. CLAUSEN.

Witnesses:
ARTHUR F. DURAND,
HARRY P. BAUMGARTNER.