

H. P. CLAUSEN.
TELEPHONE TRANSMITTER.
APPLICATION FILED AUG. 20, 1902.

1,010,590.

Patented Dec. 5, 1911.

Fig. 1.

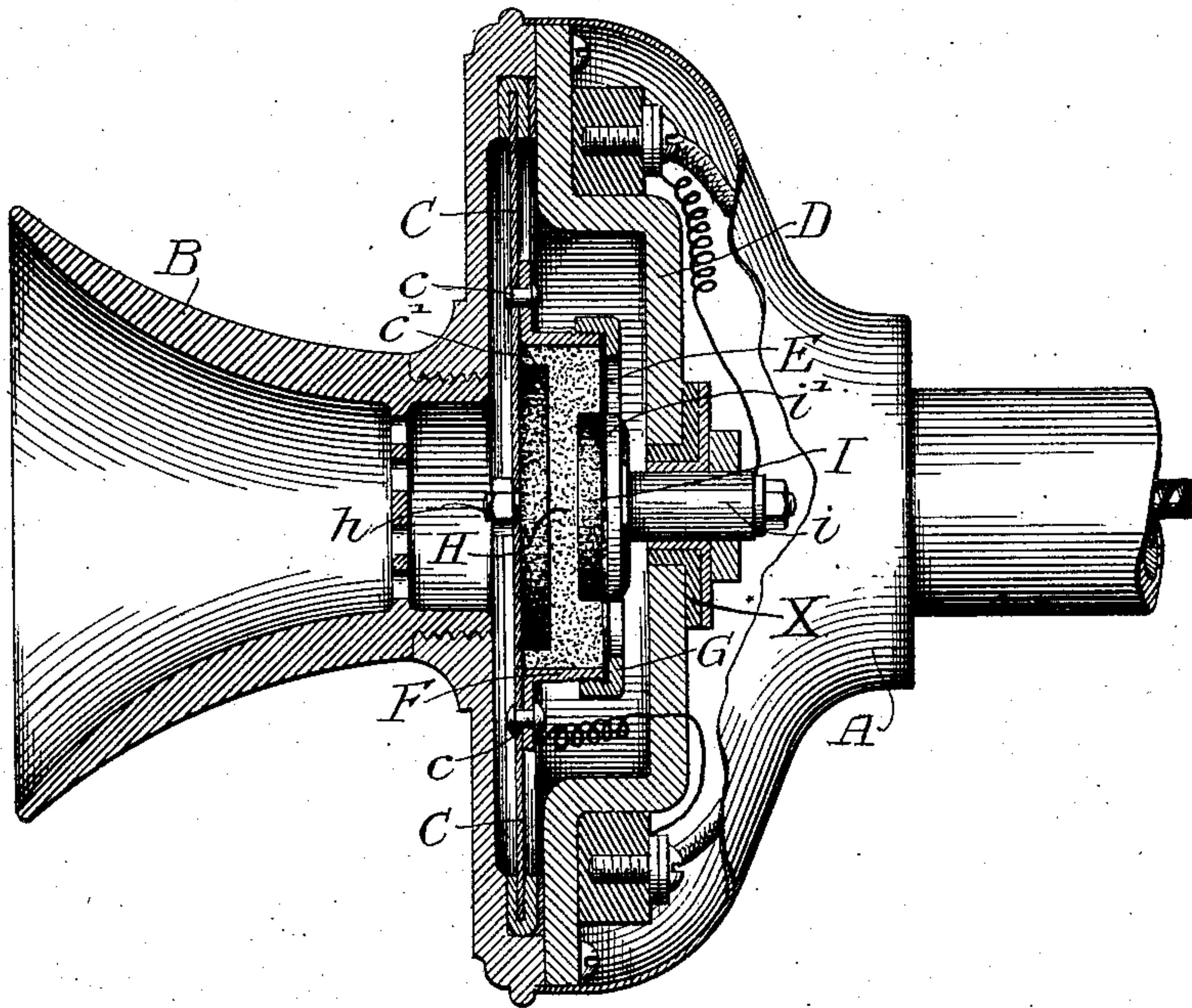
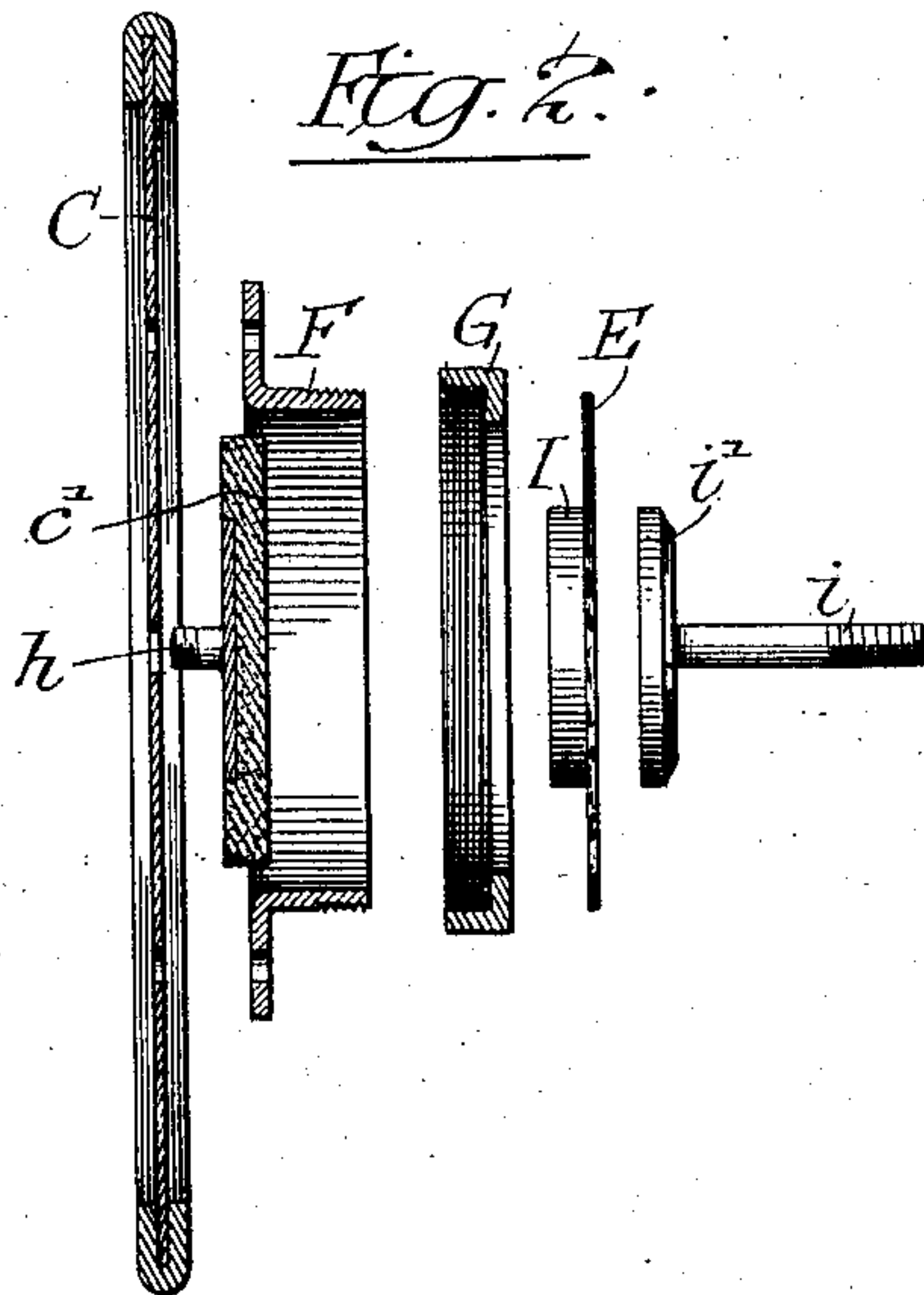


Fig. 2.



Witnesses:-

Wm. H. V. Whitehead.

Arthur F. Luand

Inventor:-

Henry P. Clausen,
By Chas. Buckley
att.

UNITED STATES PATENT OFFICE.

HENRY P. CLAUSEN, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO STROMBERG-CARLSON TELEPHONE MANUFACTURING COMPANY, OF ROCHESTER, NEW YORK, A CORPORATION OF NEW YORK.

TELEPHONE-TRANSMITTER.

1,010,590.

Specification of Letters Patent.

Patented Dec. 5, 1911.

Application filed August 20, 1902. Serial No. 120,282.

To all whom it may concern:

Be it known that I, HENRY P. CLAUSEN, a citizen of the United States of America, and 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 one or more 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, comparatively inexpensive, highly sensitive, and efficient telephone transmitter of the foregoing character.

A special object is to provide a construction tending to insure a beneficial coöperation between the main diaphragm and one or more supplemental diaphragms.

Another object is to provide improved means for connecting the supplemental diaphragm with the main diaphragm, and for permitting the central portion of the main diaphragm to have a more or less independent action as a supplemental diaphragm.

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 constructed in accordance with my invention. Fig. 2 is a sectional view of the main diaphragm, supplemental diaphragm, and the supporting or clamping rings, showing the same separated one from the other.

As thus illustrated, my improved transmitter may comprise a suitable body or casing A, of any known or approved construction. It may also comprise a mouth-piece B, and a main diaphragm C. The said diaphragm can be clamped or held upon the casing in any suitable manner, as, for example, by employing the bridge D, which will also serve as the solid backing for the microphone. The supplemental diaphragm E is arranged back of the main diaphragm and in front of the bridge, as shown in the draw-

ings, and is separated from the main diaphragm by a flanged threaded separating ring F. This supplemental diaphragm can be of any known or approved material, as, for example, mica. The supplemental diaphragm can be clamped upon the back of the separating ring by means of a flanged and threaded clamping ring G. The said separating ring can be secured to the main diaphragm in any suitable manner, as, for example, by means of rivets *c*. The main diaphragm preferably carries a front electrode surface, as, for example, the face of the carbon block *c*¹. The supplemental diaphragm also preferably carries a back electrode surface, which can also be the face of the carbon block I. A screw or bolt-like device *h* can be employed for clamping or securing the block of carbon *c*¹ to the main diaphragm, while a bolt or stem *i* can be employed for connecting the supplemental diaphragm and the carbon block I with the bridge. If desired, the supplemental diaphragm can be clamped between the carbon block I on the inside, and a metal block *i*¹ on the outside.

It will be understood that the connection between the stem or bolt *i* and the bridge can be of any suitable character. With this arrangement it will be seen that the main diaphragm will not only have a bodily vibratory movement, thereby carrying the front electrode away from the back electrode, which latter is stationary, but also that the central portion of the main diaphragm will have a certain amount of independent movement, inasmuch as it is connected along the line of a circle with the separating ring F. Thus the main diaphragm is capable of vibrating as a whole, so as to cause the front electrode to move toward and away from the back electrode, and, in addition, the central portion of the diaphragm can have more or less, or at least a slight, independent vibration, the supplemental diaphragm, it will be seen, moves only at its marginal portions, it serving practically as a medium of yielding connection between the front diaphragm and the solid back. By thus yieldingly opposing the thrusts of the main diaphragm, the said supplemental diaphragm insures a wider scope of relative movement between the two electrodes, and a consequent wider varia-

tion of the resistance of the transmitter circuit. With the provision of the clamping ring G, the parts of the microphone can be readily assembled and taken apart, and at
5 the same time the ring can be screwed down so tightly as to practically insure an airtight joint.

By making the back electrode of less diameter than the front electrode, the said
10 back electrode can be disposed flat-wise upon the rear or auxiliary diaphragm to prevent carbon granules from entering between the said electrode and diaphragm.

Both electrodes, it will be seen, are insulated from the transmitter casing, as well
15 as from the transmitter bridge, the insulation X serving to insulate the back electrode from the said bridge, whereby only the electrodes and the cup and the main diaphragm
20 are in circuit.

I claim as my invention:

In a telephone transmitter, the combination of a body or casing, a flat main diaphragm, a threaded metal ring secured to

the back of said main diaphragm, a non- 25
metallic supplemental diaphragm, a threaded clamping ring for securing said supplemental diaphragm to the back of said ring, the said rings constituting a medium of
30 non-yielding connection between the two diaphragms, front and back carbon blocks secured respectively to the main and supplemental diaphragms, granular carbon interposed between said carbon blocks, a
35 bridge back of all said diaphragms, and non-yielding insulating connection between said bridge and said supplemental diaphragm, the front carbon block being movable or vibratory with the main diaphragm, and the said back carbon block being stationary or rigid with the said bridge. 40

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

HENRY P. CLAUSEN.

Witnesses:

ARTHUR F. DURAND,
HARRY P. BAUMGARTNER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."