

(No Model.)

C. E. EGAN.

TELEPHONE TRANSMITTER.

No. 355,686.

Patented Jan. 11, 1887.

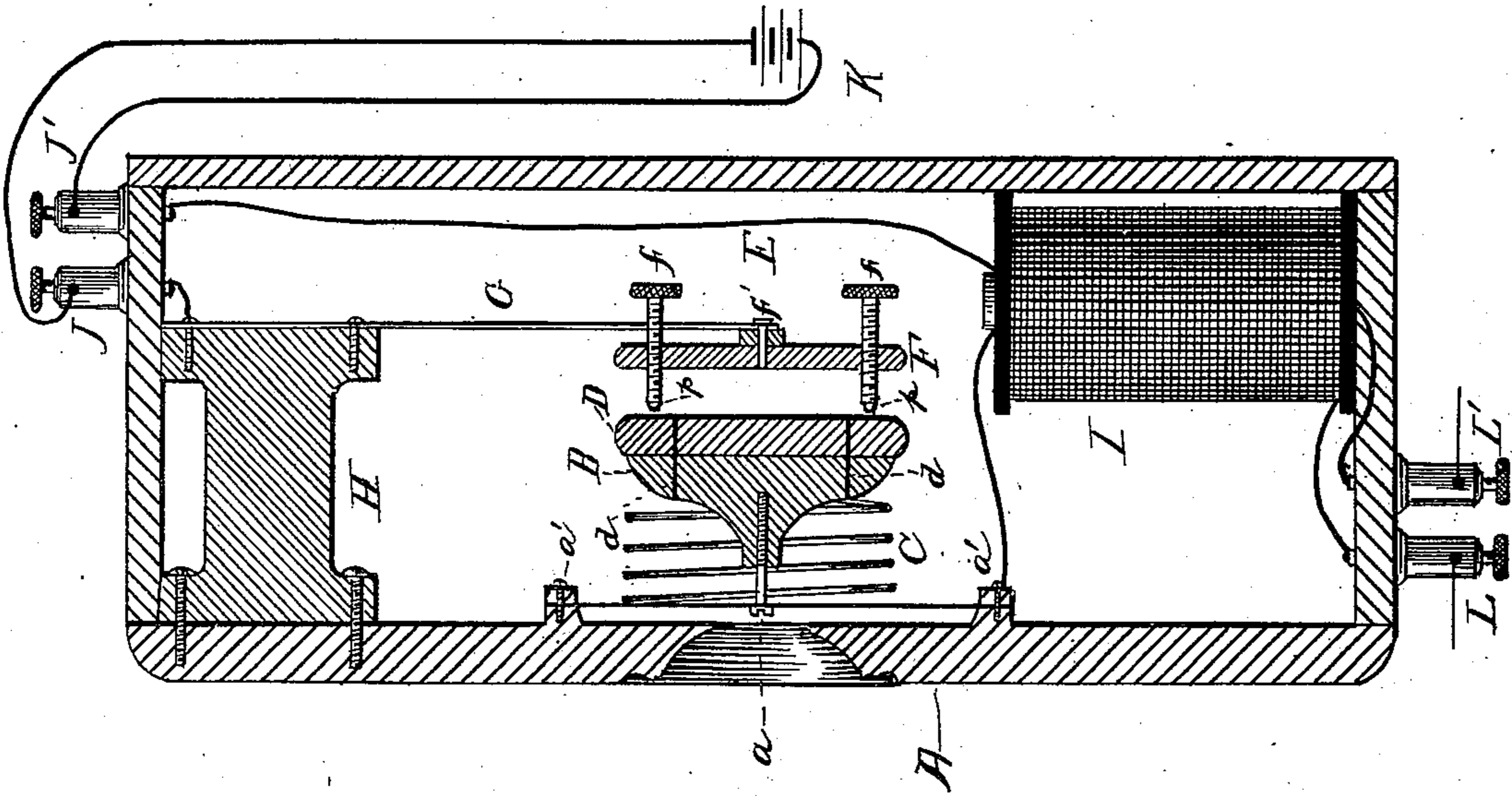


FIG. 1

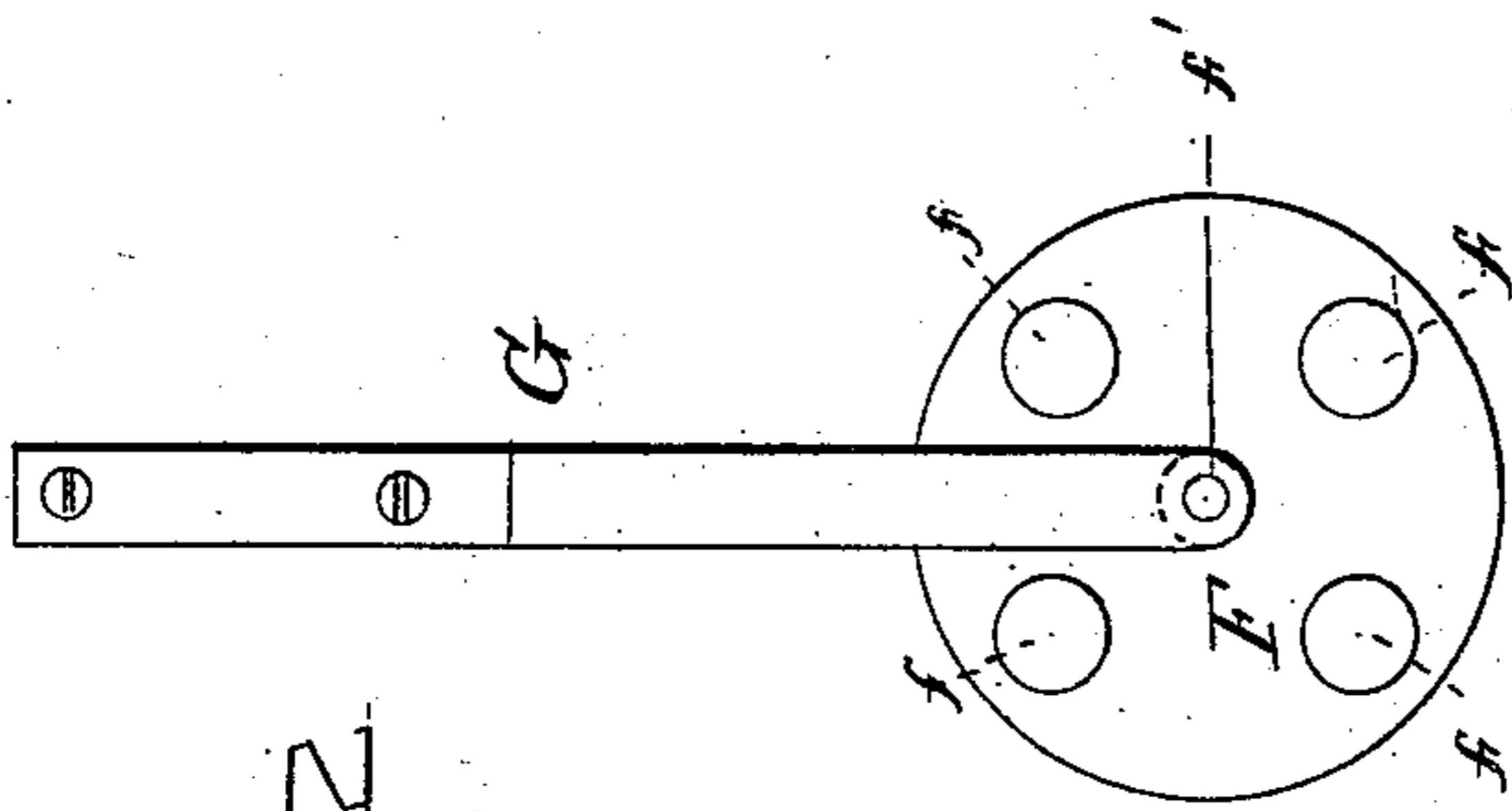


FIG. 2

Witnesses  
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# UNITED STATES PATENT OFFICE.

CHARLES E. EGAN, OF COLUMBUS, OHIO, ASSIGNOR OF ONE-HALF TO  
W. Y. MILES, OF SAME PLACE.

## TELEPHONE-TRANSMITTER.

SPECIFICATION forming part of Letters Patent No. 355,686, dated January 11, 1887.

Application filed April 6, 1886. Serial No. 197,965. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES E. EGAN, of Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Telephone-Transmitters; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

My invention relates to telephonic transmitters which operate by varying the resistance in an electric current; and it consists more especially in new and improved means of mounting the carbon electrode, whereby a more delicate contact is possible than has heretofore been attained.

It also consists in improvements in other details, which will be fully described hereinafter, and more particularly pointed out in the claims.

Referring to the drawings accompanying this specification, Figure 1 is a section of my transmitter-box and portions of the apparatus. Fig. 2 is a detail view showing one of the electrodes.

The same letters indicate like parts in both figures.

A is the diaphragm, which is secured by screws or pins *a' a'* to the inner side of the door of the transmitter-box, as usual. Through an opening in the center of the diaphragm passes a screw, *a*, which is tapped into a brass block, B, behind the diaphragm. Between the diaphragm and the block B is a cushion consisting of a spiral spring, C, one end of which is soldered to the diaphragm and the other to the block. By means of the screw *a* the tension of spring C may be adjusted. The block B enters the spring or is partly surrounded by the same, and it has a screw-socket of the proper length.

The carbon electrode D is secured to the block B by means of pins *d d*. This electrode has considerable surface, and makes contact at several points with the opposite electrode, E, which consists of a metallic plate, F, car-

rying the thumb-screws *fff*. Four of these thumb-screws are shown in the drawings; but the number may be varied as desired. Each thumb-screw is provided with a platinum tip, *p*, which makes contact with the carbon electrode D. The plate F is fastened at *f'* to a metallic spring, G, which is secured to a post, H, projecting from the upper part of the door of the transmitter-box.

The remaining parts of my transmitter are those already well known and in common use—viz., an induction-coil, I, the primary of which is connected through the binding-posts J J' with the battery K, and the secondary with the line binding-posts L L'.

The circuit from battery K is by way of the binding-post J, to spring G, to electrode E and its contact-points *p p*, to carbon electrode D, block B, spring C, diaphragm A, to primary of coil I, binding-post J', to battery.

I find that with the above-described construction the normal contact between the electrodes is firm and complete, while the variations of contact produced by the vibrations of the diaphragm when the instrument is used correspond perfectly with said vibrations, without so much danger of breaking the circuit as in transmitters which lack my cushioning support for the carbon electrode.

The contact between the electrodes is capable of ready and delicate adjustment by means of the screw *a* and the thumb-screws *fff*, while the place of contact can be varied by turning the plate F on the pivot *f'*, so as to bring the platinum points *p* opposite a fresh surface of carbon.

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

1. In a telephone-transmitter, the combination of the diaphragm having a helical spring-cushion and a screw-stem secured thereto, and an electrode connected with said spring-cushion and adjustably fitted on the screw-stem carried by the electrode, with a tension-regulator or device or movable electrode bearing upon the diaphragm-electrode, and suitable circuit and battery connections, substantially as herein set forth.

2. In a telephone-transmitter, the combination of the diaphragm carrying a helical

spring and projecting screw-stem, a metal block mounted on said stem and entering the helical spring, and a carbon electrode secured to the face of the metal block, with a movable electrode co-operating with the diaphragm-electrode, and suitable circuit and battery connections, substantially as set forth.

3. The combination, with diaphragm A, of carbon electrode D, spring C, plate F, carrying thumb-screws *ff*, and supporting-spring G.

4. The combination, with diaphragm A, of carbon electrode D, block B, spring C, screw *a*, and electrode E.

5. The combination, with the diaphragm A and carbon electrode D, of plate F, carrying contact-screws *ff*, and pivoted at *f'* to supporting-spring G, whereby the plate can be turned to vary the position of the contact-points.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

CHARLES E. EGAN.

Witnesses:

O. E. DUFFY,  
S. BRASHEARS.