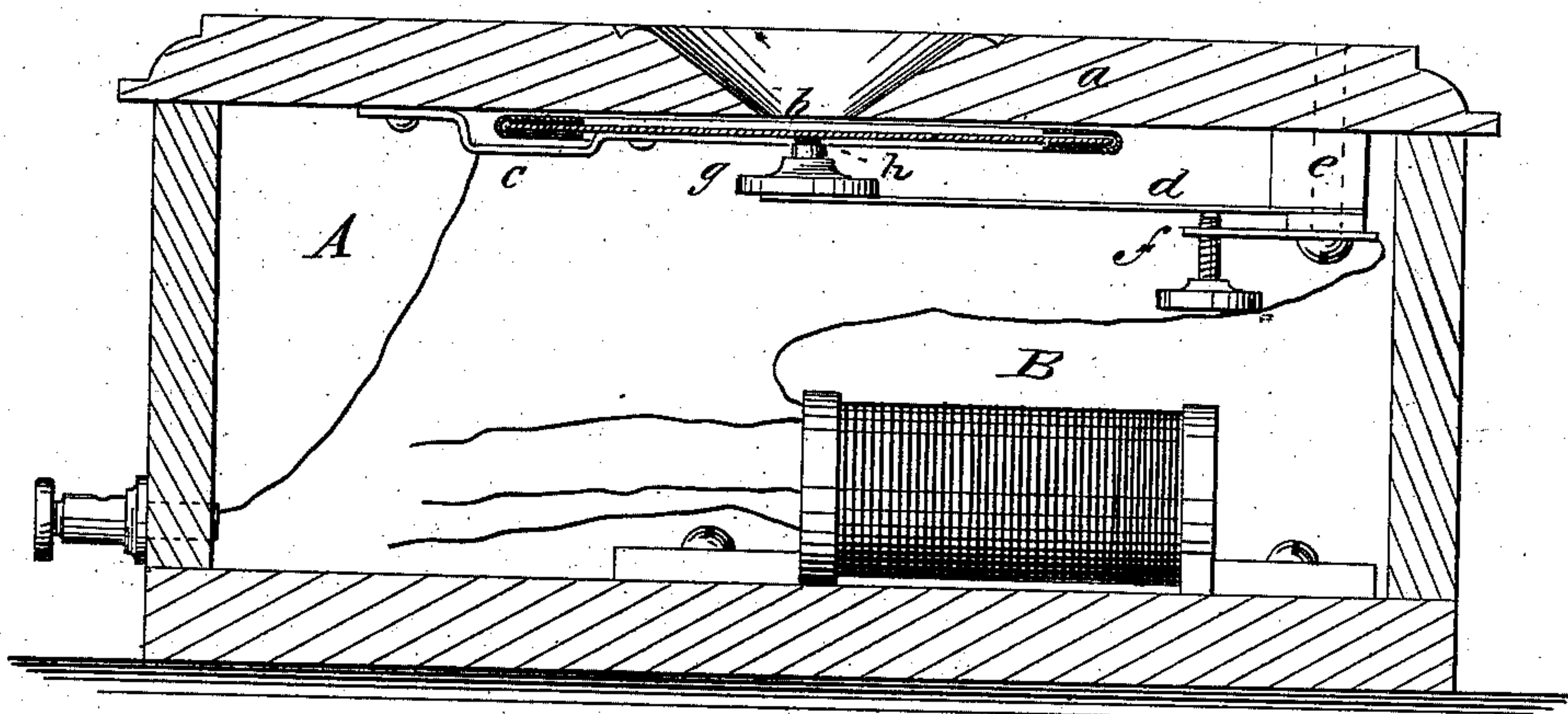


F. A. KLEMM.  
Telephone-Transmitter.

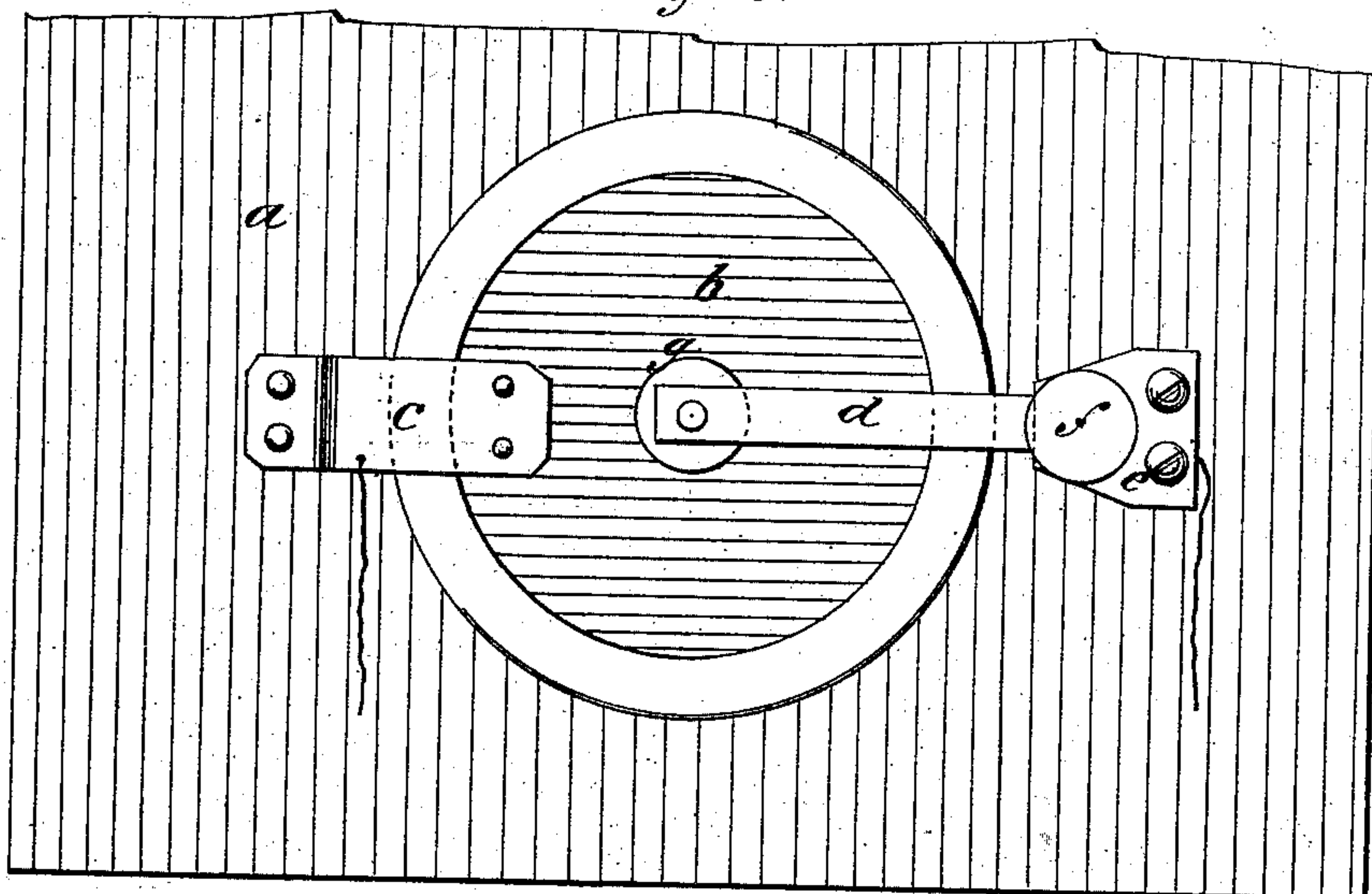
No. 235,635.

Patented Dec. 21, 1880.

*Fig: 1.*



*Fig: 2.*



WITNESSES:

*Chas. Nida.*  
*W. Sedgwick*

INVENTOR:

*F. A. Klemm*  
*Mum & Co*

ATTORNEYS.



# UNITED STATES PATENT OFFICE.

FRANK A. KLEMM, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE PEOPLE'S TELEPHONE COMPANY, OF SAME PLACE.

## TELEPHONE-TRANSMITTER.

SPECIFICATION forming part of Letters Patent No. 235,635, dated December 21, 1880.

Application filed November 18, 1879.

*To all whom it may concern:*

Be it known that I, FRANK A. KLEMM, of the city, county, and State of New York, have invented a new and useful Improvement in Telephone-Transmitters, of which the following is a specification.

The object of my invention is to simplify the construction and connections of transmitting-instruments for telephone-lines, and to obtain a more perfect operation than heretofore; and the invention consists in a diaphragm suspended upon an arm, or as a spring-tongue, and an adjustable spring-arm carrying the carbon contact-point, combined together. These features will be particularly described with reference to the accompanying drawings, wherein—

Figure 1 is a sectional elevation of the transmitter. Fig. 2 is a back view of the mouth-piece and diaphragm.

Similar letters of reference indicate corresponding parts.

A is the box of the instrument, which may be of any desired form, and is fitted at the top with the mouth-piece *a*. B is the induction-coil. *b* is the diaphragm, attached to the under side of piece *a* by the metal arm *c*. *d* is a spring-arm fixed upon a post, *e*, that is attached to the under side of piece *a*. *f* is the adjusting-screw, sustained in an extension from post *e* and bearing on the spring *d*. *g* is the carbon-holder attached upon the outer end of spring *d*.

The connections to the local circuit with battery are from the arm *c* to a binding-post at the side of the box A, and from the post *e* to the primary of coil B, and from thence to a second binding-post. The secondary of coil B is connected to the main line.

The arm *c*, sustaining the diaphragm *b*, is constructed of spring metal, and tends to press the diaphragm in contact with the piece *a*. The diaphragm is damped by a ring of rubber or other material attached upon its edges, and is fitted at its center with a point of platinum.

The spring-arm *d*, carrying the carbon-holder, tends to separate the contact-points, and its position is regulated by screw *f*.

It will be seen that this construction is very simple. The diaphragm is substantially a spring-tongue, its vibrations being upon

its support *e*, and its movement vibrates the arm *d*. The movements of *b* would be naturally more sluggish than the movements of *d*, and the change of resistance is due to that difference, regulated by the pressure given by screw *f*.

It will be observed that, the diaphragm *b* having a platinum point arranged in its center, as shown at *h*, Fig. 1, and connected by a metallic spring-arm, *c*, to the mouth-piece, and said arm having connection in the manner described with the local circuit, the diaphragm becomes in itself one of the electrodes, and that the spring-arm *c* permits the diaphragm to vibrate freely, even though it is in constant contact with the carbon point secured to the end of the spring-electrode *d*.

I disclaim a spring forming or carrying one electrode of the circuit of a telephone and constantly pressing against the other electrode, to maintain the required initial pressure between the electrodes and yield to the movements of the diaphragm.

I also disclaim a yielding weight carried by a spring connected with the movable electrode, to resist the movements of the diaphragm and modify by its inertia the variations of pressure between the electrodes; and I further disclaim the application of a band of rubber or other similar plastic material to the disk of a telephone to cover the edge and lap over upon both faces.

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

1. The diaphragm *b*, connected with the mouth-piece by a spring-arm, *c*, substantially as and for the purpose set forth.

2. In telephone-transmitters, the diaphragm *b*, attached to the mouth-piece by the spring-arm *c*, and the adjustable spring-arm *d*, carrying the carbon-holder, combined and operating substantially as shown and described.

3. In telephone-transmitters, the spring carbon-holder *d* and adjusting-screw, combined with the diaphragm *b*, hung as a spring-tongue, substantially as described and shown.

FRANK A. KLEMM.

Witnesses:

GEO. D. WALKER,  
C. SEDGWICK.