

(No Model.)

A. F. BOARDMAN.
TELEPHONE TRANSMITTER.

No. 530,575.

Patented Dec. 11, 1894.

Fig. 1.

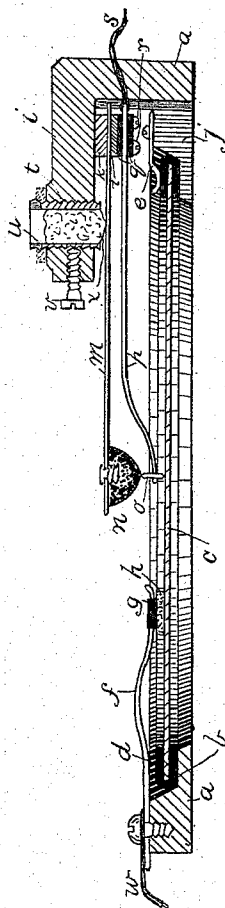


Fig. 2.

Witnesses

Thomas P. Peckham
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Arthur F. Boardman

By his attorney

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UNITED STATES PATENT OFFICE.

ARTHUR F. BOARDMAN, OF SOMERVILLE, ASSIGNOR OF ONE-HALF TO JAMES D. LEATHERBEE, OF BRAINTREE, MASSACHUSETTS.

TELEPHONE-TRANSMITTER.

SPECIFICATION forming part of Letters Patent No. 530,575, dated December 11, 1894.

Application filed August 6, 1894. Serial No. 519,555. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR F. BOARDMAN, residing in Somerville, county of Middlesex, and State of Massachusetts, have invented certain Improvements in Telephone-Transmitters, of which the following is a specification.

My invention consists in an improved construction of a carbon telephone whereby it may be manufactured at a lower cost, and whereby the rattling of the ordinary carbon telephone is eliminated.

In the accompanying drawings which form a part of this application, in which similar letters refer to like parts in both figures—

Figure 1 represents a cross sectional view of the transmitter. Fig. 2 is an under perspective view of the electrode support.

a is a cast iron annular support, having a circular recess *b* in which is supported the diaphragm *c* in its rubber gasket *d* in the usual manner.

e is a spring clip holding the diaphragm in place.

f is the usual damper composed of a leaf spring covered with a cushion *g* of rubber or other dampening material, resting upon a piece of felt *h* thus preventing the rattling of the diaphragm, and giving it some tension.

The offset *i* is cast or molded integral with the annular support *a*. The recess *j* beneath this offset is for convenience in casting. It is too small to interfere with the proper support of the diaphragm.

k l are washers between which are supported the leaf spring *m* carrying the carbon electrode *n* which rests upon the platinum electrode *o* in vibratory relation with the diaphragm *c*. The electrode *o* is mounted upon the leaf spring *p* which is held firmly between the two insulating washers *q*. The washers *k, l*, and *q* are held in place by one or more screws *r*. To the leaf spring *p* is attached one of the circuit wires *s*.

t is a threaded recess or hole in the offset *i* containing a threaded adjusting screw *u* for adjusting the pressure of the electrode *n* and the platinum point *o* against the diaphragm. This screw *u* carries a soft terminal *x*, composed of rubber, felt, cork, or other yielding material. Cork is preferred on account of

its superior dampening qualities. On account of the corrosion of the metallic conducting parts and contacts caused by the presence of rubber, which has been used for the purpose, cork or felt or any other non-corrosive yielding material is an improvement and applicant is the first to use it on a telephone adjusting screw. It is preferably glued or otherwise secured, to the adjusting screw *u*, though it may be threaded itself, and the shell *u* omitted. The adjusting screw *u* may be locked by any suitable means as for example, a locking nut or the screw *v*, whose end impinges against the threads of the screw *u*.

The circuit of this telephone is from the conductor *w*, the support *a*, offset *i*, metal washers *k, l*, leaf spring *m*, carbon electrode *n*, platinum electrode *o*, leaf spring *p*, conductor *s*, &c. The diaphragm is insulated from the support *a*, except through the electrodes. The use of the yielding adjusting point *x* eliminates the rattling which has been found so troublesome in the Blake transmitter. The damper *f* serves to suppress the rattling of the diaphragm, while the yielding material at *x* suppresses the rattling of the ordinary adjusting screw having a metallic point.

By casting the offset *i* and the annular support *a* in one piece the cost of manufacture is reduced, and a single support is afforded for the diaphragm and the co-operating parts of the transmitter. This support is preferably of cast iron, although it is obvious that it may be cast from brass, vulcanized fiber, or other suitable material. If an insulating material is used, the circuit wire *w* will be directly connected to the leaf spring *m*. It is also obvious that any other cushioning material may be used in place of the cork at *x*.

The cork may or may not be held by the screw *u*, the only essential feature being that the yielding material may be adjusted back and forth in the manner shown.

I do not limit myself to the specific form of electrodes, or to some of the other specific details, nor do I claim broadly the use of cork for suppressing rattling, but

What I do claim, and desire to secure Letters Patent for, is

1. In a telephone, an offset an electrode, a support therefor mounted on said offset, an

adjusting screw mounted on said offset for adjusting the pressure of said electrode consisting of a threaded shell, containing a cork stopper for bearing against said electrode.

5 2. In a telephone, an offset, an electrode, a support therefor mounted on said offset, an adjusting screw mounted on said offset for adjusting the pressure of said electrode consisting of a threaded shell, containing a cork
10 stopper for bearing against said electrode, and a locking device for locking said adjusting screw.

3. In a telephone, a support cast or molded comprising an annular ring, and an offset, a recess in said ring under said offset, a diaphragm
15 supported on said ring, and electrodes mounted on said offset.

4. In a telephone, a diaphragm support, and an offset rigidly connected thereto, a recess in said support under said offset, a current
20 varying device mounted on said offset, and an adjustment therefor mounted on said offset.

5. In a telephone, a current varying device,
25 an adjustment therefor comprising a non-

corrosive dampening cushion, and threads connected thereto, an annular ring having a recess, and an offset over said recess carrying said adjustment and current varying device, and a diaphragm mounted on said ring.

6. In a telephone, a current varying device, an adjustment therefor comprising a screw, a cork bearing surface rigidly connected thereto, an annular ring having a recess and an offset over said recess carrying said adjustment and current varying device, and a diaphragm mounted on said ring.

7. In a telephone, a support cast or molded comprising an annular ring, an offset arm, a recess in said ring under said offset, a diaphragm supported upon said ring, and electrodes and an adjustment therefor, both directly mounted upon said offset.

In witness whereof I hereunto subscribe my name this 2d day of July, A. D. 1894.

ARTHUR F. BOARDMAN.

Witnesses:

JAMES D. LEATHERBEE,
MYRON FRANCIS HILL.