(No Model.)

E. L. WILSON.

TELEPHONE TRANSMITTER.

No. 287,490. Patented Oct. 30, 1883.

Fig. 1.

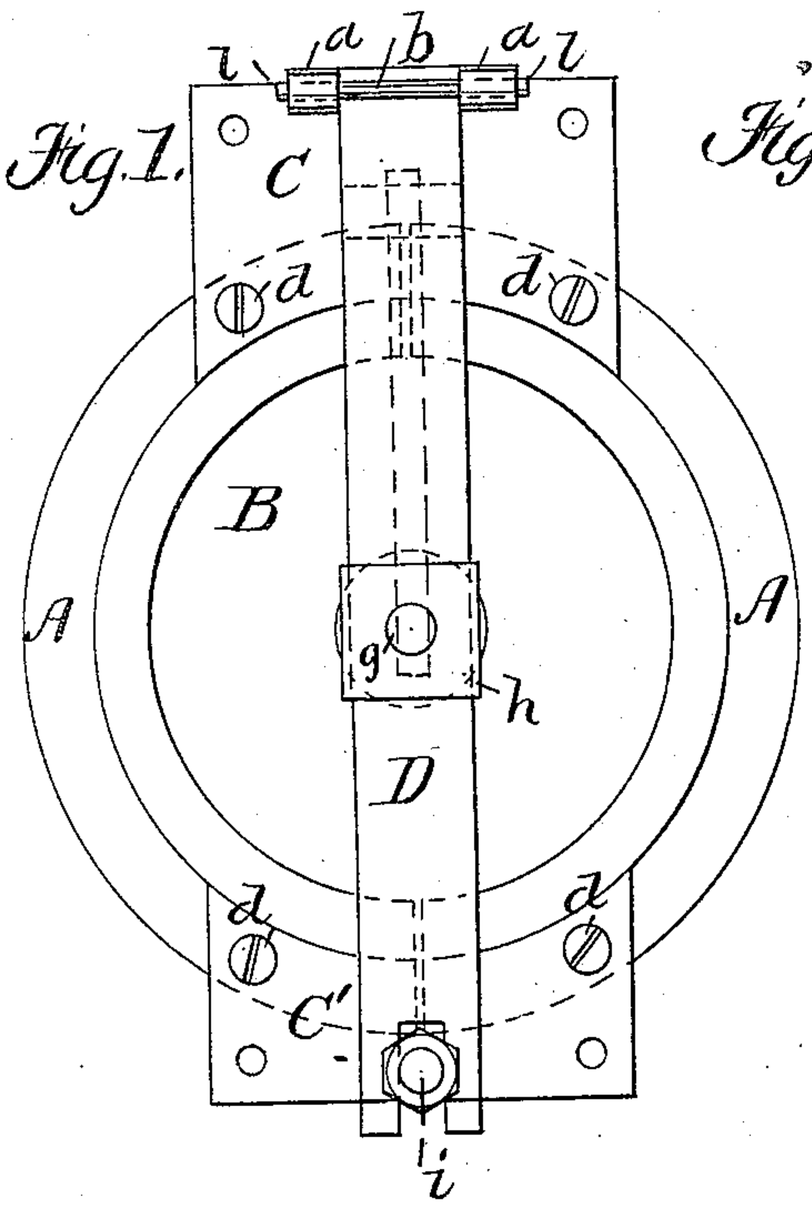


Fig. 2.

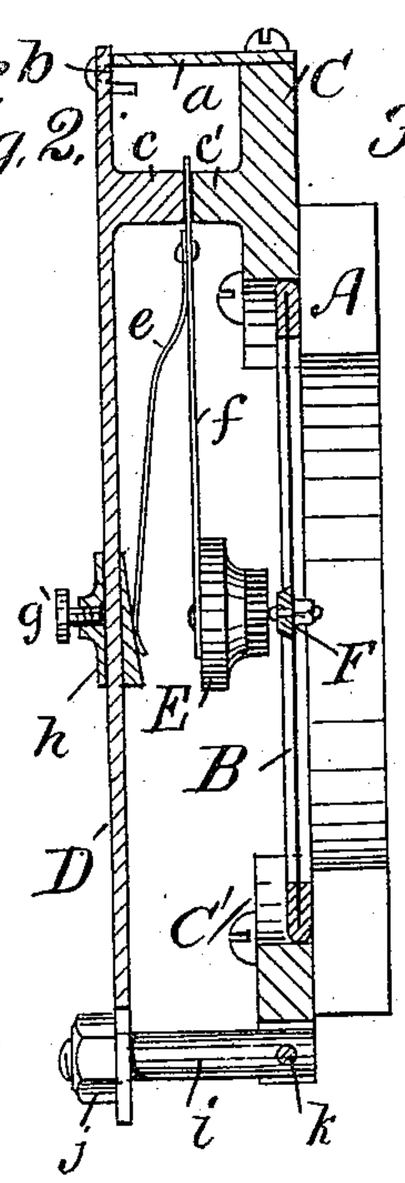


Fig. 3.

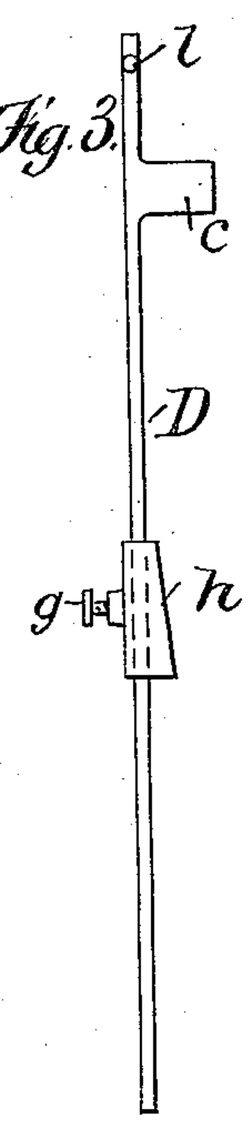


Fig. 4.

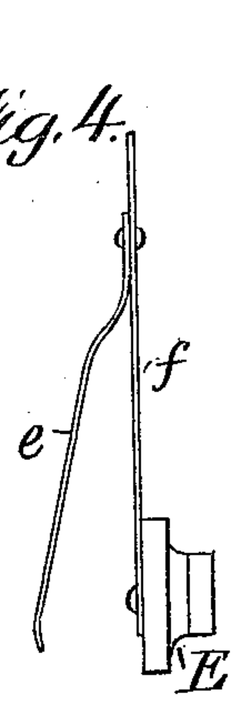


Fig. 5.

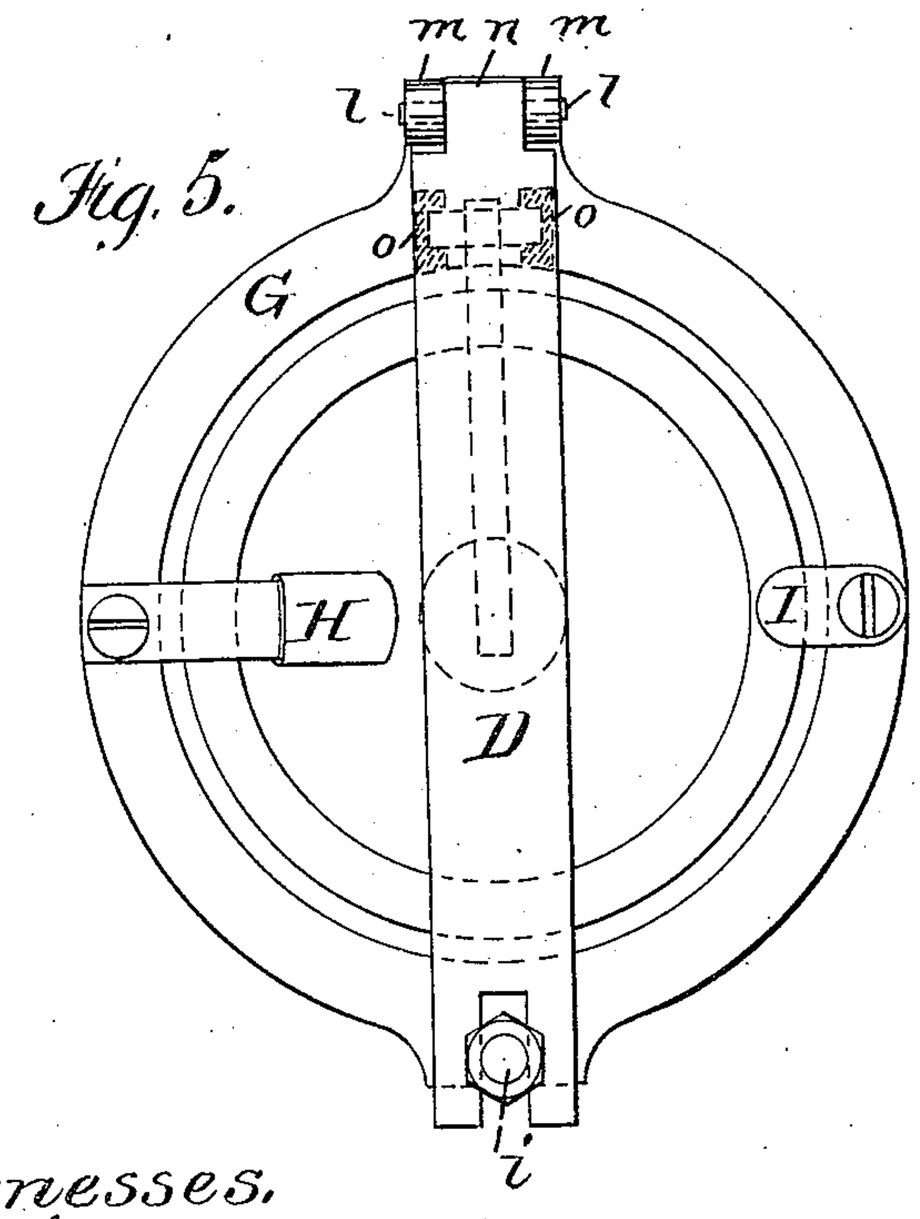
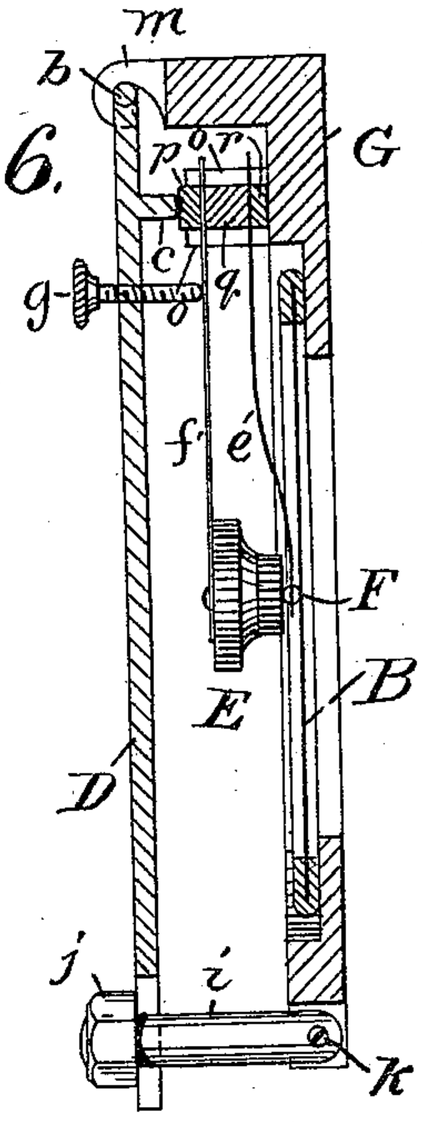


Fig. 6.



Witnesses.
J. H. Cheever.
Geo. Willis Pierce

Inventor.
Edward L. Wilson

UNITED STATES PATENT OFFICE.

EDWARD L. WILSON, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE AMERICAN BELL TELEPHONE COMPANY, OF MASSACHUSETTS.

TELEPHONE-TRANSMITTER.

SPECIFICATION forming part of Letters Patent No. 287,490, dated October 30, 1883.

Application filed June 4, 1883. (No model.)

To all whom it may concern:

Be it known that I, EDWARD L. WILSON, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Telephone-Transmitters, of which the following is a specification.

My invention is an improvement in the construction of battery-telephones such as are in common use as transmitters.

It is well known that owing to the delicacy of many of the instruments which are used in the transmission and reproduction of articulate speech they require careful attention and supervision, and in carrying this out it is frequently essential that the respective parts have to be taken from one another and cleaned or repaired severally.

The object of this invention is to so construct such instruments that by a very simple operation they may be taken apart for inspection and repairs, and upon the completion of such inspection be put together again, by persons unskilled in electro-mechanical science, and without the intermediation of special tools.

To this end it consists in certain specific details of construction, which co-operate with one another, so that when all the parts are in place they are mutually held together, and whereby if one of the said parts be severed the entire combination is disintegrated.

In the drawings which illustrate and form a part of this specification I show a Blake transmitter and a modification thereof constructed in accordance with my invention. Figure 1 is a rear view of the said modification; Fig. 2, a side elevation, and Figs. 3 and 4 details thereof. Fig. 5 is a rear view of the working parts of a Blake transmitter provided with my invention, and Fig. 6 a sectional elevation of the same.

In Figs. 1 and 2, A is a metal bed-plate or ring-seat, in which lies loosely a vibratory diaphragm, B. Fastened by screws *d* to the top and bottom part of the bed-plate are metal standards C and C′. A bracket, *a*, projects from the upper standard, C, and at its outer end is forked, as shown in Fig. 1, the forked end being bent under and inwardly. The upper standard also has a projecting lug, *c*′, for a purpose which will hereinafter appear. A metal bar, an edge view of which is shown in Fig. 3, is provided at its upper end with an axis, *l*, adapted to fit into the bend of the light metallic bracket *a*, whereby the bar may be suspended therefrom. A little below this axis the bar is also provided with an inwardly-projecting lug, *c*, which, when the said bar is suspended by its axis, presses against the standard-lug *c*′. The lower standard, C′, is slotted, and a bolt, *i*, is pivoted in the slot by a pivot-pin, *k*. This bolt may consequently be maintained in an upright position at right angles to the diaphragm; or it may be turned on its pivot away from an upright position. The bar D is forked at its lower end, so that it grasps the bolt *i*, which may then be fitted with a nut, *j*. The bar D is also fitted with a sliding abutment, *h*, made of any non-conducting material, which may be moved up or down the bar, and fixed at any point by the screw *g*. The diaphragm B carries one of the contact-electrodes, F, at its center, and the other or complementary electrode, E, is attached to a spring, *f*, the free end of which is clamped by the lugs *c* and *c*′. The spring is thus held in place with the center of the electrode E in contact with the diaphragm-electrode F. The initial pressure between the two electrodes is regulated or adjusted by an auxiliary spring, *e*, which is riveted or soldered to the suspending-spring *f*. This is bent down, as shown in Figs. 4 and 2, and treads backwardly. If unbiased, it would extend backward so far as to strike the bar D; but it is capable of being compressed by sliding the abutment *h* between it and the said bar, the proper adjustment of the initial pressure being reached when the end of the spring rests about the middle of the abutment, as shown in Fig. 2.

To put the several parts together it is only necessary to hold the electrode-spring *f* in place, to hook the axis *l* in the bend *b*, to hold down the lower forked end of the bar D, and then to turn the bolt *i* up on its pivot into the said forked end, screwing the nut *j* down thereon, as shown. *Per contra*, to dismember the instrument, the nut *j* is to be unscrewed and the bolt *i* bent down, thus disengaging the bar D, which may then be unhooked and severed from the bent arm *a;* the spring *f* and electrode E may now be released and drop out; it may then be repaired or be repolished; and the other

electrode which is fixed upon the diaphragm is also thus made accessible.

The features which I have described may readily be applied to the standard Blake transmitter, as I show in Figs. 5 and 6. In those figures, B is the diaphragm, and G the ring seat or frame in which it is placed. It is maintained in place by the clamp I and the damping-spring H. The upper part of the ring-seat G projects backwardly from the diaphragm, terminating in the hook *m*. In this hook, which is also forked, as shown more clearly in Fig. 5, the axis *b* of the bar D is suspended. The lower part of the bar D is forked, as in the foregoing description, and embraces the bolt *i*, which is pivoted to the lower part of the ring-seat. As in the ordinary Blake transmitter, a platinum electrode, F, is carried on the end of a light spring, *e*, and a carbon-button electrode, E, in contact with the said platinum, is suspended by a heavier spring, *f*. The light spring *e* is insulated from the ring-seat G by the non-conducting block *r*. The two springs are insulated from one another by the non-conducting mass *q*, while between the lug *c* of the bar D and the spring *f* the third non-conducting block, *p*, is interposed. All of these non-conducting blocks are supported in a frame, *o*. The lug *c* presses upon these blocks and holds them firmly together, with the ends of the springs between them. The normal pressure of the electrodes is regulated by the screw *g*. In both of these cases which I have described the two electrodes are of course suitably connected with the circuit-wires leading to and from a battery, and in some cases through the primary circuit of an induction-coil; but as the electrical connections have no bearing upon my invention, I have not thought it necessary to show and describe them.

What I claim as my invention is—

1. The combination, in a battery-telephone, with a diaphragm, a ring-seat therefor, and standards fixed upon the said ring-seat at circumferentially-opposite points thereof, of a hooked bracket projecting from the upper standard, a pivoted bolt attached to the lower standard, a lever adapted to engage with the said hook, and to be engaged and maintained in place by a nut, the said lever being adapted to compress and hold one or more spring-electrodes, and an adjusting device attached to the lever, substantially as and for the purposes described.

2. The combination, in a battery-telephone, of the hereinbefore-described mechanism, consisting of the hooked bracket *m*, the lever D, having an axis, *b*, adapted to be suspended in the said hook-bracket, and furnished with the compressing-lug *c* and the adjusting-screw *g*, the pivoted bolt *i* and nut therefor, and the electrode-springs *f* and *e*, insulated one from another, and having their upper ends compressed between the lever-lug and the ring-seat, whereby when the said lever is engaged by the pivoted bolt and nut the mechanism is maintained in working order, and when the lever is released from the said bolt the parts may be at once taken apart, substantially as specified.

3. The combination, with the diaphragm and its supporting-frame, of the hinged bar or lever, the electrode spring or springs held in place by being clamped between said bar or lever and a stationary part of the frame, and means for detachably securing the free end of said bar or lever to said frame, substantially as described.

4. The combination, with the diaphragm, electrode, and spring supporting the same, of a sliding wedge-shaped adjusting-piece for regulating the pressure of said spring, substantially as described.

5. The combination of the frame, diaphragm, bar or lever hinged at the back of said frame, electrode spring, adjusting-piece on said bar or lever, and means for locking the free end of said lever to said frame, whereby when said lever is locked the working parts of the instrument are held in place, and when the same is released the said parts may at once be removed, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 1st day of June, 1883.

EDWARD L. WILSON.

Witnesses:

GEO. WILLIS PIERCE,

J. H. CHEEVER.