

# UNITED STATES PATENT OFFICE.

HENRY L. BALDWIN, OF CHICAGO, ILLINOIS.

## TELEPHONE-TRANSMITTER.

SPECIFICATION forming part of Letters Patent No. 526,139, dated September 18, 1894.

Application filed January 30, 1892. Serial No. 419,730. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY L. BALDWIN, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and Improved Telephone-Transmitter, of which the following is a specification.

Referring to the accompanying drawings, wherein like reference-letters indicate like parts, Figure 1 is a vertical section of the box and its contents; Fig. 2, a horizontal section, and Fig. 3 a detached detail view.

My invention consists in an improved means for effecting, adjusting and maintaining working-contact between the electrodes. To this end, in any suitable transmitter-box A, provided with a suitable diaphragm B, I mount upon the diaphragm, preferably by a holder *c*, a horizontal bar C, of compacted carbon or other material adapted to act as an electrode. Above the diaphragm I attach to the box A two parallel brackets D, D, each provided with a slot *d*, curved in a circle, whose center is approximately at the contact-points of the electrodes. These two brackets support a horizontal rod E, whose extremities extend through the slots *d*, and are provided with clamping nuts *f*, *f'*, so that the rod can be adjusted to and clamped in any desired position in said slots. From the rod E, by means of swinging dependent arms G, I suspend a series (preferably four or five) of carbons M. in such a way that all of them will lie against the side of the electrode C, and in light contact therewith, but not in contact with each other, and so that their contact pressure can, within suitable limits, be varied and adjusted by moving the rod E. to different points in the slots *d*. The hanging arms G are articulated loosely on the rod, and kept apart by rubber sleeves or washers *g*, arranged between them. The current traverses the wire *w*, diaphragm, carbon-holder, electrodes, arms G, rod E, and wire *w'*, all of which are of suitable conducting material. The multiplicity of contact points between the two electrodes, and of suspending arms G, insures constant contact and enables small and light carbons *m*. to be used, and at the same time a large extent of contact surface to be secured, while the force of contact is readily adjusted to the utmost

nicety by the simplest of means. I generally make the arms G. of brass, about two inches long by one-eighth inch thick, spacing them about one-half inch apart; and attach the carbons *m*. by clips *n*. on the ends of the arms. So constructed, the transmitter gives loud and distinct articulation, responds to tones varying between great extremes of loudness, and when once properly adjusted, requires no further care. The bar-electrode C, instead of being made in a continuous piece of carbon, may be made up of separate carbon blocks held in a metal holder—the essential requisite being that the current, in passing from bar C. to rod E., or line, shall proceed in multiple arc, or, in other words, through several independent channels, simultaneously, each having its own electrode.

For extreme delicacy of adjustment of contact-pressure, it is material that the arms G. be so formed that, when hanging free, they will not extend in a vertical, but in an inclined, direction, the bottoms inclining toward the diaphragm. This is accomplished, in the form here shown, by making them curved outwardly, as illustrated in Fig. 1, or in other words, by so disposing their material that their center of gravity will not come in a line drawn from their pivots to their free ends. The result is, that they are pressed to contact, by only a small fraction of their weight, to wit: a fraction proportionate to the distance of their center of gravity from said imaginary line, and hence their inclination can be varied very considerably without any great variation of such pressure.

Having thus described my invention, I claim as new—

1. In a telephone-transmitter, the combination, in the circuit, of a horizontal bar-electrode C, with a series of electrodes *m*., suspended by separate pendent arms G. from a horizontal rod E., adjustable in position by means of slots *d*., and clamping nuts *f*, *f'*.; substantially as described.

2. In a telephone transmitter, a horizontal bar electrode mounted upon a diaphragm, in combination with a series of depending arms suspended from a horizontally adjustable rod, terminating in electrical contact points, said arms being constructed heavier upon the side opposite to the electrode, so as to

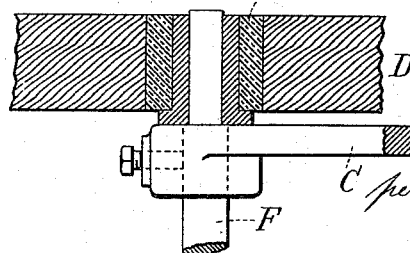
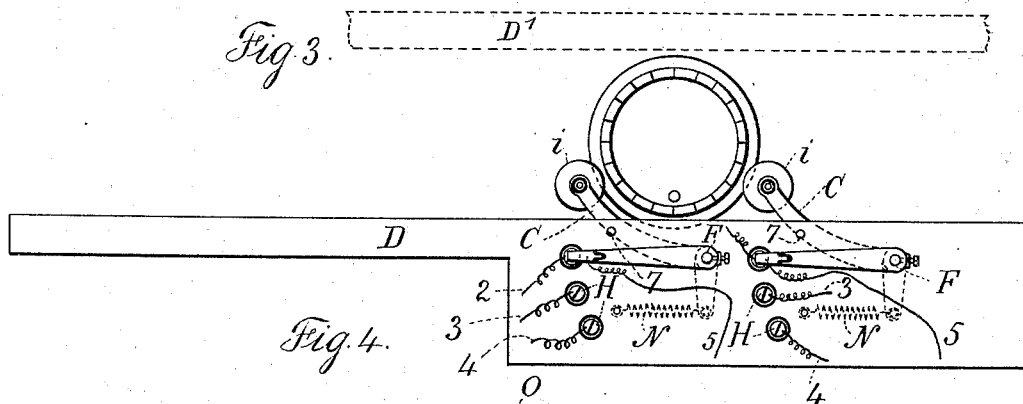
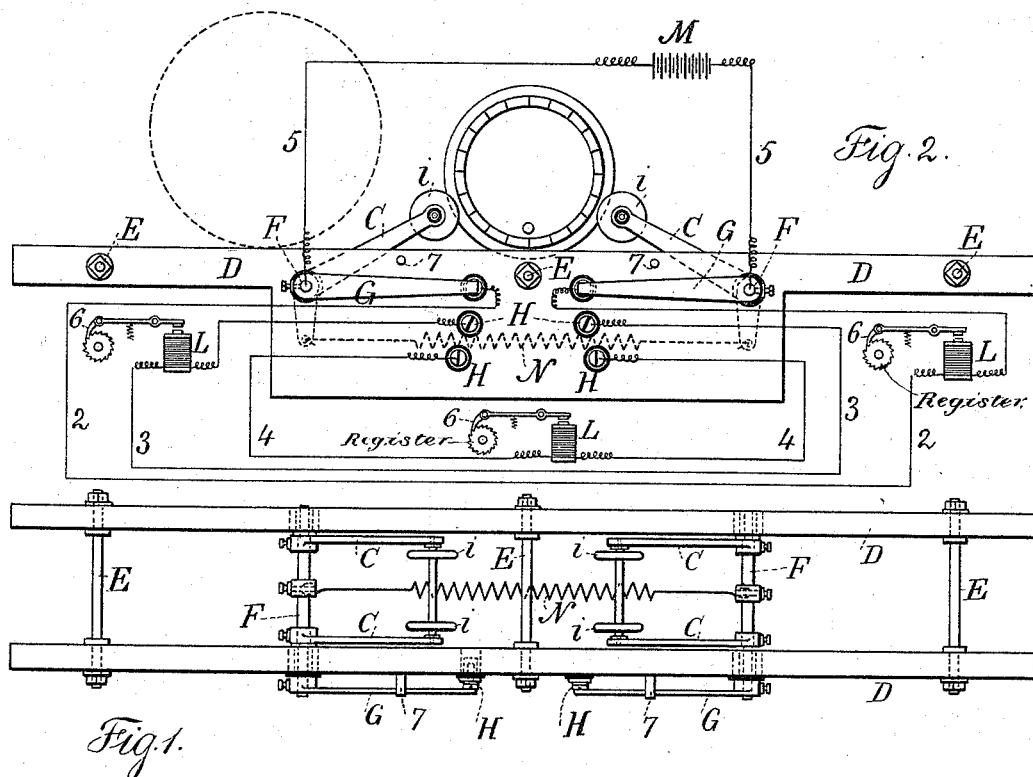
(No Model.)

H. J. BANG.

ELECTRICALLY OPERATED REGISTER FOR BARRELS, &c.

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