

G. N. QUINBY, JR.
 TELEPHONE TRANSMITTER.
 APPLICATION FILED JULY 24, 1909.

955,685.

Patented Apr. 19, 1910.

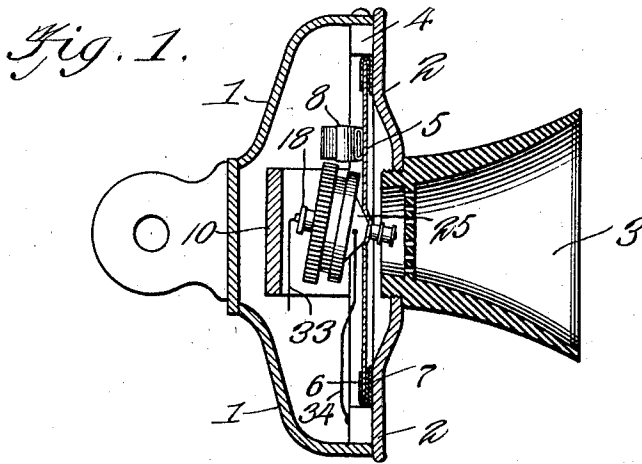


Fig. 2

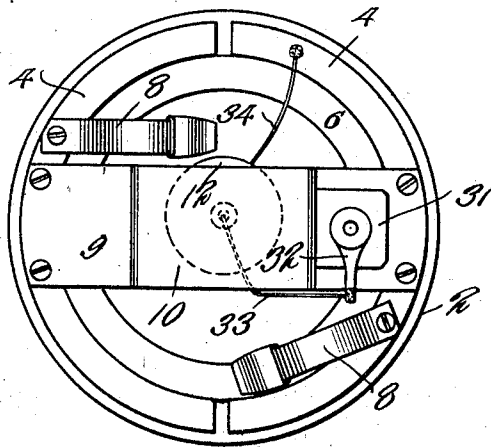
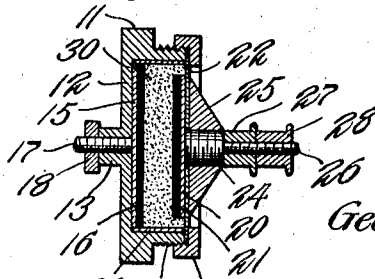


Fig. 3.



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TELEPHONE-TRANSMITTER.

955,685.

Specification of Letters Patent. Patented Apr. 19, 1910

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To all whom it may concern:

Be it known that I, GEORGE N. QUINBY, Jr., a citizen of the United States, residing at North Providence, in the county of Providence and State of Rhode Island, have invented new and useful Improvements in Telephone-Transmitters, of which the following is a specification.

This invention relates to improvements in telephone transmitters, the object of the invention being to provide a construction insuring a clearer tone and freedom from the objectionable noises ordinarily produced by the vibration of the line wires and the contact or movement of parts of connected telephone instruments or other noises in the vicinity of the instrument.

The invention consists of the features of construction, combination and arrangement of parts hereinafter fully described and claimed, reference being had to the accompanying drawing, in which—

Figure 1 is a vertical front to rear section through a telephone transmitter embodying my invention. Fig. 2 is a rear elevation of the front of the transmitter casing and the parts connected therewith. Fig. 3 is a transverse section through the electrode casing.

Referring to the drawing, 1 designates the body of the casing of a transmitter of the adjustable type, and 2 the front of the casing carrying the mouth piece 3. As shown, the front or cover 2 is provided with rearwardly extending flanges 4 which fit within the body 1 and may be secured thereto by screws or other fastenings, in the ordinary way.

The diaphragm 5 is inclosed in the annular space formed by the flanges 4 and is provided around its periphery with the usual elastic dampening ring 6, which bears against a mica washer 7 resting against the inner face of the body of the cover 2. Secured to the flanges 4 are the usual dampening springs 8 which bear against the rear face of the diaphragm to limit the vibratory movements thereof.

Extending transversely within the body 1 and secured at its ends to the flanges 4 of the cover 2 is a bracket plate 9, preferably formed of brass, and which is thus a fixture of and removable with the cover and the diaphragm. The central portion of this bracket plate is provided with a rearwardly extending U-shaped offset 10, which projects some distance rearwardly from the rear

face of the diaphragm. The offset 10 is provided as a partial housing and protector for the electrode casing 11, which consists of a chambered rear or body portion 12, preferably formed of aluminum and having a rearwardly extending central boss 13 provided with a screw threaded bore and a forwardly projecting externally threaded flange 14. The rear electrode 15 is inclosed within the casing and bears against the rear wall thereof and is provided with the usual carbon facing 16 and has projecting from the rear face thereof a threaded stem 17 extending through the threaded bore of the boss 13 and provided with a binding nut 18. The front electrode 20 is of less diameter than the interior of the casing and is provided with the usual carbon facing 21. The outer or front face of this electrode bears against a mica disk 22 clamped peripherally against the front face of the flange 14 by an internally threaded clamping ring 23, preferably formed of brass. From said electrode 20 projects a screw stud 24 extending through the disk 22 and engaged by a washer 25, whereby said electrode is clamped to the disk. The stud 24 is provided with a reduced threaded stem 26, which extends through an opening in the center of the diaphragm 5 and is provided with clamping and jam nuts 27 and 28 to clamp the diaphragm against the front surface of the washer 25, by which the electrode casing is fixed to and supported solely from the diaphragm.

The inner wall of the electrode casing is provided with the usual lining 29, and the arrangement of the electrodes therein is such as to provide an intervening space or chamber for a body of carbon or other similar granular resistance material 30, which is influenced to transmit the electrical impulses from one electrode to the other in the vibrations of the diaphragm 5.

The opening in the diaphragm through which the stem 26 projects extends at an outward and downward angle, so that the electrode casing will be supported in an upwardly and forwardly inclined position when the transmitter is horizontally disposed, the outer face of the washer 25 being of tapered or conical form to secure a firm clamping engagement between the parts and to permit the electrode casing to assume the described position.

It will be apparent from the foregoing de-

scription that both the electrode casing and the rear electrode are free from either mechanical or electrical connection with the bracket 9, the offset portion 10 of which simply serves as a partial housing or enclosure for said electrode casing to prevent possible injury thereto in the handling or movements of the transmitter. The purpose of arranging the electrode casing in a forwardly tilted position is to cause the particles of the body of carbon 30 to rest by gravity at all times in full contact with the front electrode, so as to secure a sensitive and perfect transmission of the vibrations of the diaphragm to the rear electrode, as well as to prevent the carbon from settling and compacting in a solid mass toward the bottom of the electrode casing and becoming partially withdrawn from contact with the front electrode, as is liable to happen when the electrode casing is normally arranged in a horizontal position. In the ordinary construction of telephone transmitter in which the electrode casing is supported in a normally horizontal position parallel with the diaphragm, the settling of the carbon particles and their partial withdrawal from contact with the front electrode causes the free particles, when the transmitter is swung up or down, to scrape against the surface of said electrode, causing an objectionable sound which interferes with the clear transmission of the vocal impulses. This objection my construction avoids, and it will be apparent that in any and all of the positions of the transmitter the carbon will be maintained in contact with the front electrode and prevented from packing, with better results in the transmission of the vibrations.

Secured to the rear face of one of the ends of the bracket is a block 31 of suitable insulating material which carries a conducting terminal 32 to which the transmitter cord is in practice connected. To this terminal is also soldered or otherwise secured an insulated conducting wire 33 which is clamped by the nut 18 in engagement with the electrode casing and rear electrode stem 17. A second insulated conducting wire 34 is soldered or otherwise secured at its ends to the washer 25 of the front electrode and to one of the flanges 4 or some other suitable portion of the cover 2 of the transmitter casing.

In the ordinary construction of transmitter of this type the terminal wires are ordinarily connected with the terminal 32 and the respective electrodes, and the electrode casing is either supported by the bracket 9 or the rear electrode stem 17 is connected therewith. As a result, any sound vibrations of loud volume or high intensity are increased in volume or intensity by the vibrations of the bracket plate and associated

metallic parts of the transmitter. Any sounds, therefore, produced by the contact or movement of parts of connected instruments, or from the vibrations of the line wires, are intensified by the transmission of amplified vibrations to the diaphragms, thus obscuring the vocal impulses and vibrations which are frequently rendered inaudible. My construction overcomes this objection, as; the electrodes are wholly disconnected from the metallic bracket and are electrically connected with the transmitter casing through the single wire 34, which is secured to the cover 2; the vibratory action of which is comparatively slight and is reduced or rendered *nil* by the dampening ring 6, allowing the vocal impulses to be distinctly and clearly transmitted. Furthermore, as all of the operating parts are supported by the cover 2, greater convenience in applying and removing the same is secured.

I claim:—

1. In a telephone transmitter, a casing, a diaphragm mounted therein, an electrode casing having a stem projecting through the diaphragm and a conical portion bearing against the same to support said casing in an inclined position solely from said diaphragm, and a binding nut upon the stem to clamp the diaphragm against said conical portion.

2. In a telephone transmitter, the combination of a casing, a cover therefor provided with a mouth piece, a diaphragm supported by the cover, a bracket secured to the rear of the cover and having a rearwardly projecting offset, an electrode casing partially inclosed by said offset, said casing being provided with spaced electrodes and an interposed body of granular material and being secured at a downwardly, upwardly and forwardly inclined position to the diaphragm, a terminal connected with and insulated from the bracket, a conductor connecting said terminal with the rear electrode, and a conductor connecting the front electrode with the cover.

3. In a telephone transmitter, a transmitter casing, a removable cover therefor, a diaphragm mounted on said cover; a bracket secured to the cover and having a rearwardly offset central portion, an electrode casing mounted solely in an inclined position upon the diaphragm and partially projecting into said offset portion, a terminal upon and insulated from the bracket connected with one of the electrodes, and a connection between the cover and the other electrode.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE N. QUINBY, Jr.

Witnesses:

GEORGE N. QUINBY,
THOMAS H. ANGELL.