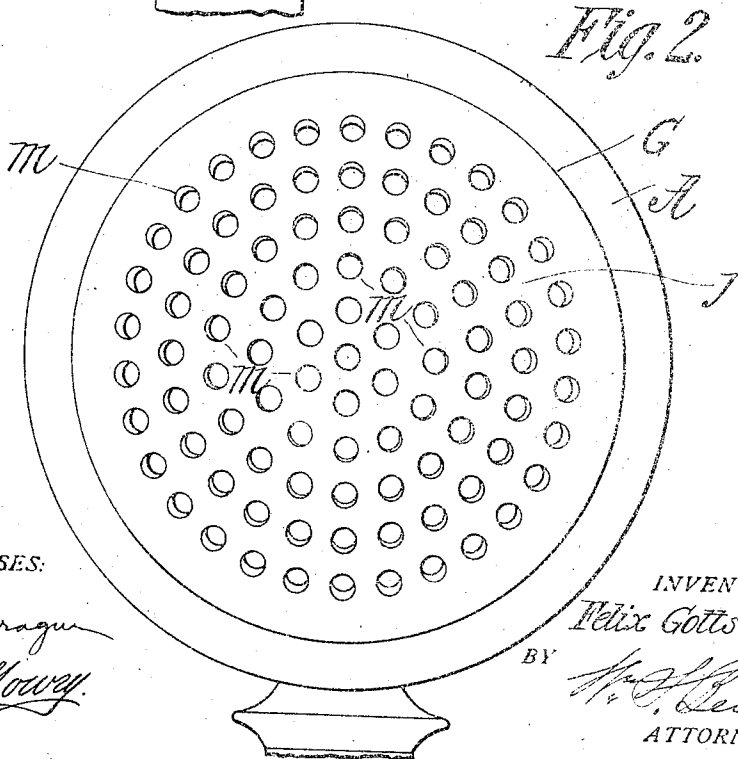
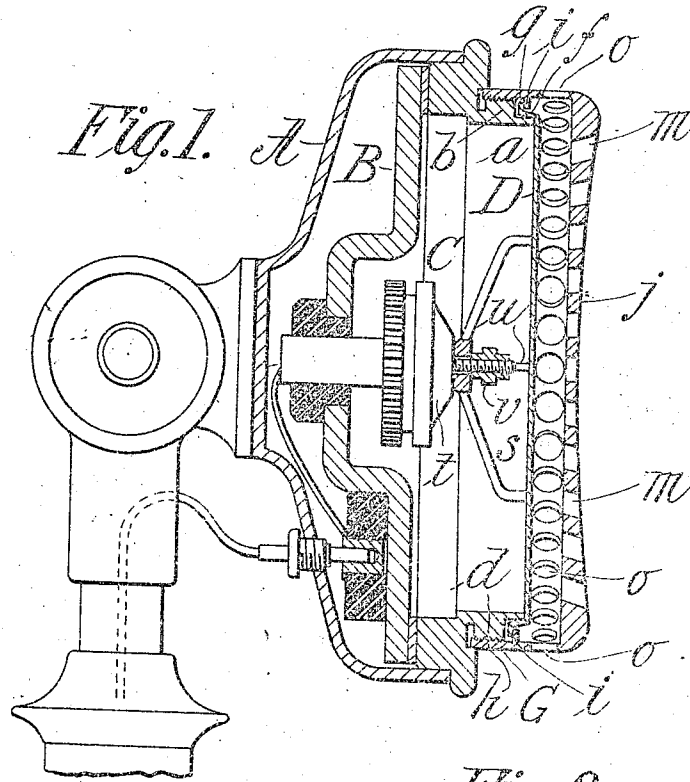


977,617.

F. GOTTSCHALK.
TELEPHONE TRANSMITTER.
APPLICATION FILED FEB. 24, 1910.

Patented Dec. 6, 1910.

3 SHEETS-SHEET 1.



WITNESSES:

H. L. Sprague
R. M. Mooney

INVENTOR,

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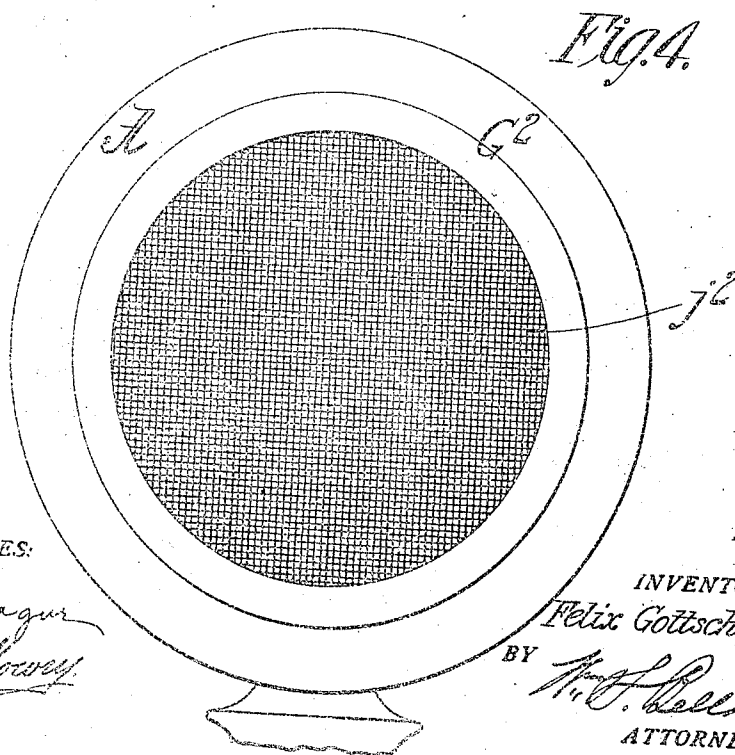
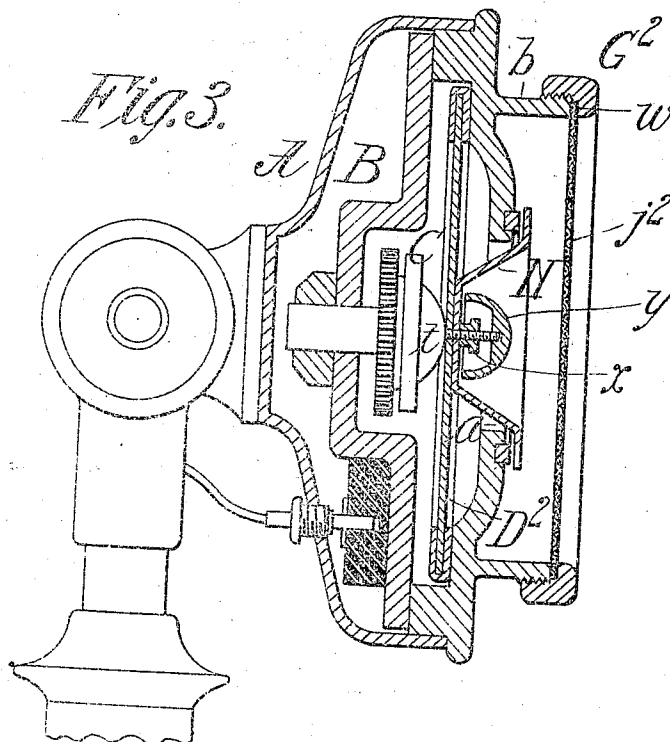
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2 SHEETS-SHEET 2.



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FELIX GOTTSCHALK, OF NEW YORK, N. Y.

TELEPHONE-TRANSMITTER.

977,617.

Specification of Letters Patent.

Patented Dec. 6, 1910.

Application filed February 24, 1910. Serial No. 545,670.

To all whom it may concern:

Be it known that I, FELIX GOTTSCHALK, a citizen of the United States of America, and resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Telephone-Transmitters, of which the following in a full, clear, and exact description.

The present improvement in telephones is one which relates to the transmitter of the Bell or analogous type in which there is in the front of the casing an opening at or near which is the diaphragm.

An object of the invention is to provide an improved and simplified transmitter, and one in which the heretofore almost universally employed forwardly flaring mouthpiece is dispensed with,—one which is entirely sanitary, one which is slightly in appearance and affords to the front of the instrument an attractively plain aspect, and one in which, especially, the diaphragm and other internal portions of the instrument are safeguarded against the entrance of moisture, dirt and foreign matter thereinto, and against being tampered with by malicious or careless persons.

The improved transmitter is fully and clearly described in conjunction with the accompanying drawings and set forth in the claims.

In the drawings:—Figure 1 is a central sectional view from front to rear, on an enlarged scale, of a telephone transmitter of a modified Bell type having my improvements thereon; Fig. 2 is a front view of the transmitter; Figs. 3 and 4 are views respectively similar to Figs. 1 and 2 but showing certain modifications hereinafter pointed out. Similar characters of reference indicate corresponding parts in all of the views.

In the drawings, A represents the casing of the transmitter having as usual therein the forwardly opening aperture *a* back of which is the bridge B supporting the resistance cup C which comprises the front and rear electrodes and interposed granular carbon as usual.

In this instrument, as represented in the drawings, I especially construct the front wall of the casing with an annular forwardly extending flange *b* surrounding the opening *a* and as particularly represented in Fig. 1 this flange is made with a rearwardly located screw threaded portion *d*

forward of which it is rabbeted or made of reduced diameter.

The diaphragm D of very thin light metal has its position in front of and by its marginal portion extends across the thin edge of the forwardly extending flange *b*, has a rearwardly extending portion *f* which is located about the periphery of the flange at its reduced portion and has an out-turned edge portion *g* which is accommodated in the space left by the rabbeting of the flange.

G represents a ring having a rearwardly located threaded portion *h* which screw engages the threaded portion *d* of the flange and having forward of its threaded portion an internal flange *i* which engages the out-turned edge portion of the diaphragm so that when the ring G is screwed rearwardly on the threaded forwardly extending flange like extension of the front wall of the casing, it both causes the diaphragm to be drawn taut, and stretched in the manner of a drum head, for entirely closing the aperture through the front of the transmitter casing, and confines the diaphragm in its stated condition and position. The said ring G carries a foraminous wall *j* having its location forward of and across the diaphragm, the ring and its wall constituting a guard which without in any manner obstructing the action of the sound waves produced by speaking on the diaphragm, is efficient for protecting the diaphragm from injury which might result from accidental causes, as by the overturning or dropping of the telephone stand, and also prevents the instrument being tampered with as might be done for instance by a person tapping the diaphragm with a pencil or other object.

The wall *j* is understood in accordance with the representation of the guard device in Figs. 1 and 2, as made integral with the ring which screw engages the flange, and it is rendered foraminous by having a multiplicity of holes *m* drilled therethrough, and these holes have their lengths convergent toward the axis of the diaphragm. The guard is also provided with holes *o* in the ring or rim portion thereof between the part which is screw threaded and its forward part adjoining which is the front foraminated wall; and by the provision of these rim holes the guard is prevented from causing reverberation therewithin, and also thereby it becomes possible to direct speech

against the diaphragm of the transmitter even at a very slight angle to the diaphragm, and, moreover, in case, as rarely might happen, the instrument became deluged with water, there would be a self clearing of the latter from the front of the diaphragm, and with no liability that the moisture would find its way into the interior of the instrument.

As represented in Fig. 1, the diaphragm has as an integral rear appliance thereof the spider frame s which extends to the front electrode t ,—the hub-like rear central part of this spider frame having an embracing engagement about a forwardly screw threaded stud u which is supported by and projects forwardly from the front electrode and the contact adjustment of the spider frame with the front electrode is regulated by the nut v .

In Figs. 3 and 4 the ring G^2 , screw engaging the externally threaded forwardly extending flange B of the transmitter casing which somewhat widely encircles the speech entrance opening is employed as a clamping member for confining the separately formed disk shaped member of foraminous material, such as wire gauze, f^2 , at its edge which marginally overlaps the circular front edge of the flange, against the latter,—the said ring having an internal flange constituting a shoulder for its binding connection in relation to the front edge of the flange v .

In the representation of the transmitter shown in Fig. 3, the diaphragm D^2 has its location inside of the front wall of the instrument and removed by a considerable distance from the location of the gauze or other perforated wall which in conjunction with the ring which carries it constitutes the guard; and for the instrument,—having specific appurtenances for the diaphragm comprising the cup shaped shell N , the nut a therefor and the approximately conical member y which forms an inclosure for, and conceals, the nut and the screw stud extending from the front electrode,—the form of guard shown in Fig. 1 may be employed in place of the one shown in Fig. 3, although the guard of Fig. 1 serves the double duty of guard and diaphragm tautener and retainer while that of Fig. 3 serves as a guard only.

I claim:—

1. A telephone transmitter having in the casing thereof a front opening with a forwardly extending surrounding flange, and having the diaphragm adjacent said opening, and a ring, having at a rear portion thereof a screw engagement with said forwardly extending flange and carrying a foraminous guard wall the location of which is forward of, and across, said opening, and said ring being provided with apertures between its screw engaging portion and said guard wall.

2. A telephone transmitter having in the casing thereof a front opening with a forwardly extending surrounding flange, and having the diaphragm adjacent said opening, and a ring, screw-engaging said forwardly extending flange and carrying a wall, the location of which is forward of, and across, said opening, which has perforations therethrough the lengths of which are in lines convergent toward the axis of the diaphragm.

3. A telephone transmitter having in the casing thereof a front opening with a forwardly extending surrounding flange, and having a diaphragm in front of and marginally extending across the edge of the latter, extended rearwardly about the periphery of the flange, and having an out-turned edge portion, and a ring, having a rearwardly located threaded portion screw engaging the flange and having forward of its threaded portion an internal flange which engages the out-turned edge portion of the diaphragm, and said ring carrying a foraminous wall, having its location forward of and across the diaphragm.

4. A telephone transmitter having in the casing thereof a front opening with a forwardly extending surrounding flange, and having a diaphragm across and adjacent said opening, a ring, screw engaging the flange and having an inwardly extending annular shoulder, and a circular foraminous member marginally overlapping the circular edge of the flange, and confined by said annular shoulder between the latter and the flange edge.

Signed by me at Springfield, Mass., in presence of two subscribing witnesses.

FELIX GOTTSCHALK.

Witnesses:

WM. S. BELLOWES,

G. R. DRISCOLL.