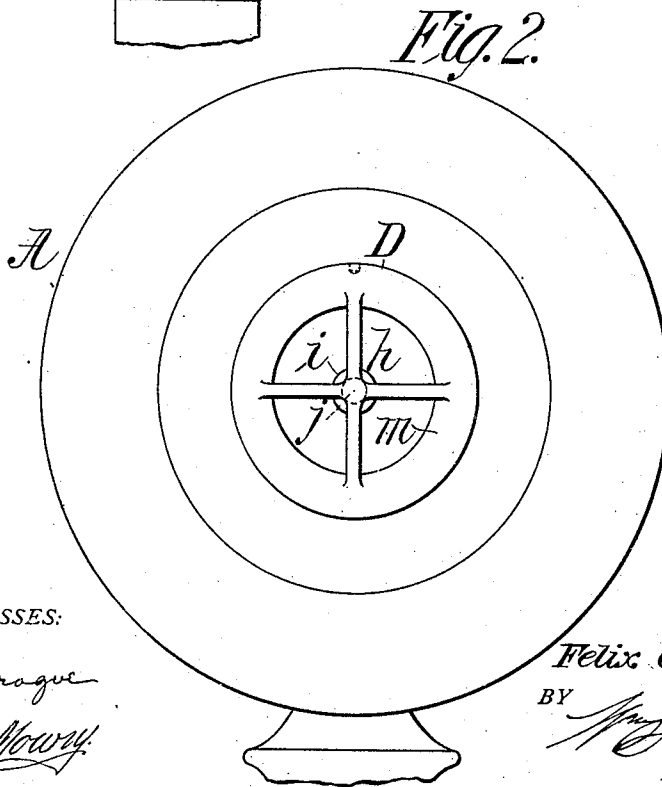
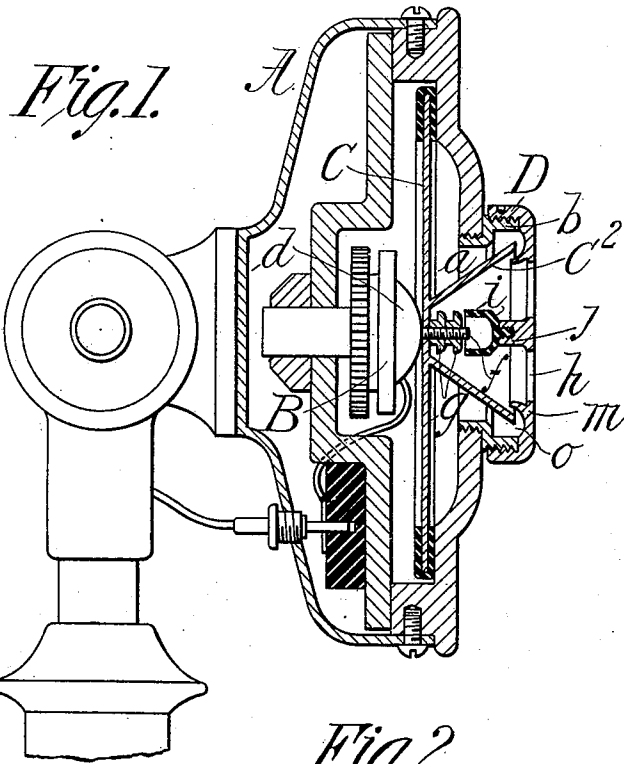


F. GOTTSCHALK.
TELEPHONE TRANSMITTER.
APPLICATION FILED MAR. 24, 1910.

977,623.

Patented Dec. 6, 1910.

2 SHEETS—SHEET 1.



WITNESSES:

H. L. Sprague
R. M. Mowry

INVENTOR,

Felix Gottschalk,

BY

W. H. Bell
ATTORNEY.

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2 SHEETS-SHEET 2.

Fig. 3.

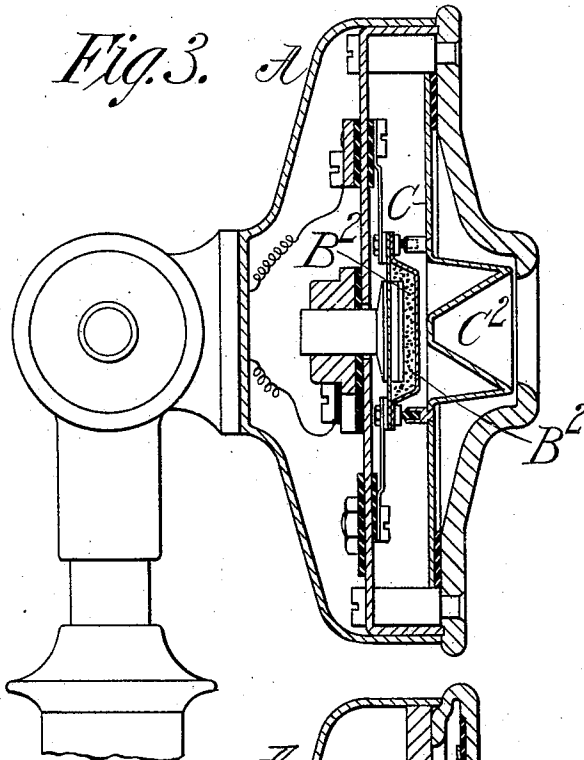
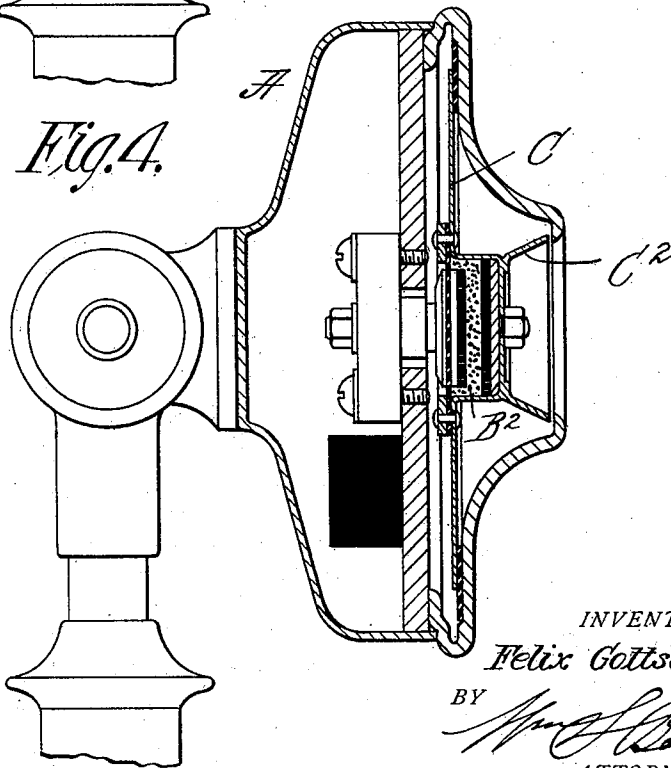


Fig. 4.



WITNESSES:

H. L. Sprague
R. M. Moway

INVENTOR,

Felix Gottschalk,

BY

Wm. H. Collins
ATTORNEY.

UNITED STATES PATENT OFFICE.

FELIX GOTTSCHALK, OF NEW YORK, N. Y.

TELEPHONE-TRANSMITTER.

977,623.

Specification of Letters Patent.

Patented Dec. 6, 1910.

Application filed March 24, 1910. Serial No. 551,325.

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 is a full, clear, and exact description.

This invention for improvements in telephone transmitters, applicable on instruments of the Bell, Mason, Kellogg and other types, pertains in part to an appliance appurtenant to the diaphragm for concentrating the sound waves produced in speaking, to the central portion of the diaphragm, and in part to means whereby the usual forwardly flaring hard rubber mouthpiece may be dispensed with and which will serve as an efficient guard to the delicate parts of the instrument, for preventing the same from being tampered with, or their becoming injured or deranged in any manner.

Under the exercise of the present invention the instrument is of a simple and cheaply produced construction, entirely sanitary, and of slightly and attractive appearance.

The invention is described in conjunction with the accompanying drawings and set forth in the claims.

In the drawings:—Figure 1 is a central vertical sectional view, on an enlarged scale, from front to rear through a telephone transmitter of the Bell type having an exemplification of the present improvements embodied therein. Fig. 2 is a front elevation of the transmitter. Fig. 3 is a sectional view similar to Fig. 1 but representing a transmitter of the Mason type and showing certain features comprised in the present improvements as of somewhat modified form; Fig. 4 is a similar sectional view but representing the improvements as embodied in a Kellogg transmitter.

In the drawings, and firstly with especial reference to Figs. 1 and 2, A represents the hollow casing of the transmitter having an aperture in its front and provided with a forwardly extending annular screw threaded flange *b*. B represents the resistance cup comprising the front electrode a portion of which is seen at *d* and which has a forwardly extending stud *f*. C represents the diaphragm, the same having as a unitary part thereof a forwardly extending cup *C*², the forward edge or outer boundary of

which projects forwardly into proximity with the boundary of said aperture. This cup may be of metal and integrally formed with the disk which constitutes the diaphragm, or it may be formed as a separate piece and soldered or otherwise connected to the diaphragm,—it, however, being understood as a component, immovable relatively to, and inseparable from the diaphragm, so that the latter, as an elemental part is one having the cup as an adjunct. The center of the diaphragm, which has the cup as a unitary portion thereof, is made with a small perforation through and forwardly beyond which the aforementioned stud *f* protrudes; and a nut or nuts *g* have screw engagements on the stud in front of the diaphragm, serving as confining and jam nuts. D represents an annular member screw engaging the forwardly extending flange *b* at the casing front, and it has a portion, here represented in the form of centrally uniting crossing bars *h*, which while leaving this member of a sufficient open character to avoid impediment of the entrance of the sound waves into the diaphragm carried cup, serves as a guard for the front of the instrument; and this spider-like portion of the annular member D carries a centralized part *i* which extends into proximity to, covers and serves as a guard for, the stud and nut or nuts which form the means of securing the engagement between the diaphragm and the resistance cup. The said part *i* is here indicated as of an insulating material, understood to be hard rubber, celluloid, glass, or the like, and it is made of a chambered formation so that if the stud *f* protrudes considerably beyond the nut or nuts, such forwardly extending portion of the stud may be accommodated within, but without being in contact with, the said part *i*; and, moreover, this part may more or less inclose the nuts if desired.

In the manufacture of the guard device which has just above been referred to, the screw threaded ring *d* with the spider-like front is made integrally of metal with a boss or projection *j* at its rear side which is constructed with a socket to receive the engagement therewith of a necked down stem of the chambered part *i* which, as already stated, is preferably of insulating material.

The aforementioned annular part D in the preferred construction thereof is formed with a continuous internal flange *m* having within the rear face thereof an annular

groove *o* into which the forward edge of the cup C^2 has its location in a manner to be protected and guarded by the so formed annular part whereby it is a practical impossibility for a malicious or inconsiderate person by any sharp or thin instrument to reach the edge portion of the cup so as to distort or injure it.

Of course, it is apparent that the guard is valuable and serviceable for protecting the means of securing the engagement between the diaphragm and resistance cup whether the diaphragm is one having a cup or not.

In Fig. 3, in which the diaphragm C is represented forward of and in close relation to the portion of the instrument (here one of the Mason type) containing the conductor of variable resistance indicated at B^2 , such diaphragm having the cup C^2 is understood as produced from a single blank or disk of thin metal so spun up as to form a cup: that is the middle portion of the blank or disk is outwardly disposed and the re-entrant portion is the one which constitutes the cup; and in this figure it is an integral, inwardly extending flange of the apertured front wall of the casing which overlies and forms the guard to the forward edge of the cup; and in Fig. 4 a diaphragm having the cup as a unitary part thereof is represented as embodied in a transmitter of the Kellogg type.

I claim:—

1. A telephone transmitter, having a diaphragm,—between the portion containing the conductor of variable resistance and the apertured front wall of its casing,—which has, as a unitary part thereof, a forwardly extending cup the forward or outer boundary of which projects into proximity with the boundary of said aperture, and comprising portions having spaces between them which extend across the opening at the front of the instrument which leads to the said cup.

2. In a telephone transmitter, the combination with the casing having an apertured front, and the resistance cup, and a diaphragm, and means for securing an engagement between the diaphragm and the resistance cup, of means supported at the front of the casing and extending within the aperture thereof into proximity to, and for covering, the said securing means.

3. In a telephone transmitter, the combination with the casing having an apertured front, and the resistance cup, and a diaphragm having a forwardly extending cup, and means for securing an engagement between the cup provided diaphragm and the resistance cup, of means on the front of the casing for covering and protecting the outer edge portion of said cup and comprising a part which extends into proximity to and for covering the said securing means.

4. In a telephone transmitter, the combination with the casing having an apertured front, and the resistance cup including the front electrode provided with a forwardly extending screw stud and the diaphragm, through and forwardly beyond the central portion of which said stud protrudes, a nut engaging on said stud in front of the diaphragm, and an annular member detachably connected to the front of the casing provided with a part extending from side to side thereof having a member extending rearwardly into proximity to, and for serving as a covering and guard for, the stud and its engaging nut.

5. In a telephone transmitter, in combination, a casing having an aperture in its front, a resistance cup comprising the front electrode having a forwardly projecting screw-stud, the diaphragm through the central portion of which said stud projects and a nut engaged on said stud in front of the diaphragm, and a member detachably connected on the front of the casing and comprising a portion extending across the aperture in the latter having a rearwardly extending chambered part in proximity to said stud and nut.

6. In a telephone transmitter, the combination with the casing having an apertured front, and the resistance cup, and a diaphragm and means for securing an engagement between the diaphragm and the resistance cup, and a member, supported at the front of the casing having a part, composed of insulating material, extending within the aperture in the casing, into proximity to, and for covering, the said securing means.

7. In a telephone transmitter, in combination, a casing having an aperture through its front and provided with a forwardly extending annular screw threaded flange, a resistance cup comprising the front electrode having a forwardly extending stud and the diaphragm through the central portion of which said stud protrudes, and a nut screwing on the stud in front of the diaphragm, an annular member screw-engaging said flange having a portion,—extending from side to side thereof across the opening in the casing,—which carries a centralized part which rearwardly extends into proximity to, and covers and serves as a guard for, said stud and nut.

8. A telephone transmitter comprising a diaphragm which has as a unitary part thereof a forwardly extending cup the outer boundary of which projects into proximity with the boundary of said aperture, and a flange like part carried on the front of the casing and projecting into and covering, and serving as a guard for, the outer edge portion of said unitary cup of the diaphragm.

9. In a telephone transmitter, a casing having an apertured front and comprising a diaphragm provided with a forwardly

extending cup and an annular member detachably connected on the front of the casing having a flange-like portion which extends inwardly relatively to the aperture
5 and which has in its rear or inner side an annular groove into which the edge portion of said cup is located.

10 In a telephone transmitter, a casing having an apertured front, a resistance cup comprising the front electrode having a forwardly extending screw stud, a diaphragm having a forwardly extending, and forwardly opening cup and through the center of which cup provided diaphragm said stud
15 protrudes, a nut engaging the stud in front

of the diaphragm and an annular member screw engaging on the apertured front of the casing having a portion extending from side to side thereof provided with a rearwardly extending chambered part composed
20 of insulating material having its location in proximity to, and for covering and serving as a guard for, said stud and nut.

Signed by me at New York city in presence of two subscribing witnesses.

FELIX GOTTSCHALK.

Witnesses:

C. H. BUSH,
V. H. TURNER.