A. RECTOR.

TELEPHONE RECEIVER.

APPLICATION FILED MAR. 13, 1908.

915,625.

Patented Mar. 16, 1909.

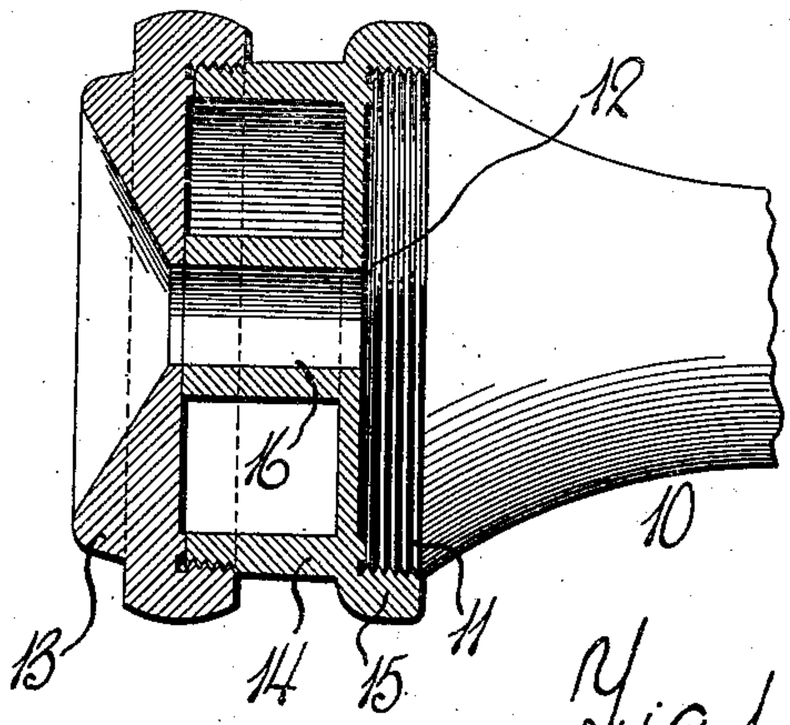

Fig. 1.

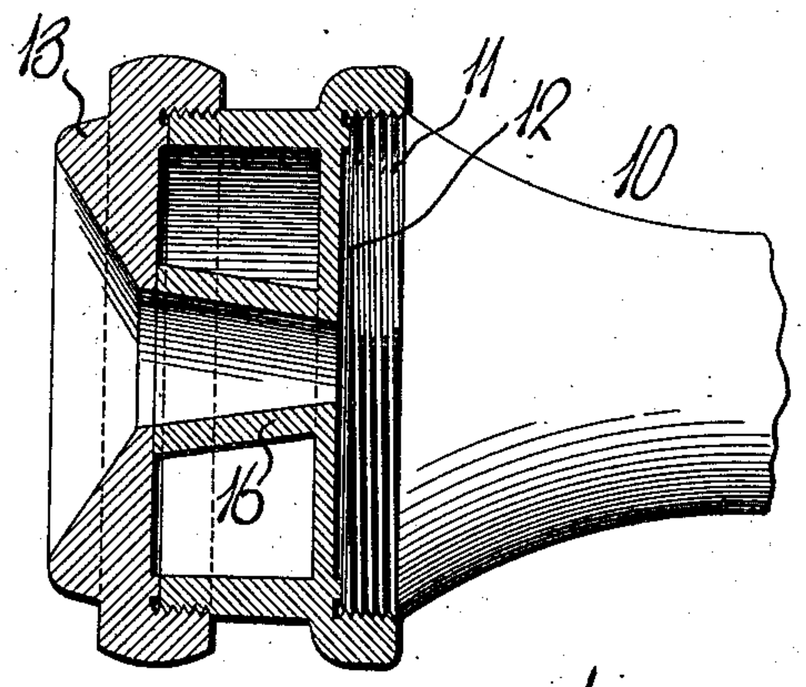

Fig. 2.

Witnesses:
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UNITED STATES PATENT OFFICE.

ALCORN RECTOR, OF NEW YORK, N. Y., ASSIGNOR TO RECTOR HELP-A-PHONE COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

TELEPHONE-RECEIVER.

No. 915,625. Specification of Letters Patent. Patented March 16, 1909.

Application filed March 13, 1908. Serial No. 420,855.

To all whom it may concern:

Be it known that I, ALCORN RECTOR, of the city, county, and State of New York, have invented a new and useful Improvement in Telephone-Receivers, of which the following is a full, clear, and exact description.

My invention relates to improvements in telephone receivers, and the object of my invention is to produce a receiver which will transmit received sounds better, softer, and yet clearer than the ordinary telephone receivers, and further to produce an improvement in the form of a hollow or tubular extension of the end of the receiver which comes next the ear so that the novel feature can be readily applied to existing receivers, if desired.

In Letters Patent of the United States #847,691, dated March 19th, 1907, I have shown a ring interposed between the end of a receiver and the ear piece, and with a tube extending from the central hollow part of the receiver to a second ear piece, so that the two ear pieces may be applied to the two ears of the hearer and the sound transmitted to both ears. In experimenting with this form of receiver or receiver attachment, I have discovered that I get much better clearer, softer, and pleasanter tones from the receiver where the hollow or tubular extension is used through which the sound is transmitted from the diaphragm to the ear, even though there is no connection between the said extension and the second ear piece. I am not sure as to the exact reason why the sound is so much better, but exhaustive experiments have shown that there is no question whatever but that by extending the sound transmitting or hollow portion of the receiver, preferably in the form of a tube, to some little distance from the diaphragm before it reaches the ear, the above noted effect is had. Obviously the mechanical means for carrying this idea into effect can be varied somewhat, but one thing is essential, and that is to have an essentially tubular portion in close contact with the diaphragm and extending to a considerable distance from the diaphragm to the ear piece. This extension and the ear piece may be integral, but I prefer to have the extension in ring form so that it can be screwed to the end of the ordinary telephone receiver and have it adapted at its outer end to receive the customary ear piece.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar reference characters indicate corresponding parts in all the views.

Figure 1 is a broken sectional view of a telephone receiver showing my improvements, and Fig. 2 is a similar view to Fig. 1 but shows the hollow extension of the sound tube in the form of a horn or hollow cone so as to get a megaphone effect.

The receiver 10 is the customary telephone receiver and may be of any usual kind, having the threaded outer end 11 and the usual diaphragm 12. In ordinary receivers the ear piece 13 is screwed directly to the end of the receiver body, so that the sound orifice of the ear piece is close up against the diaphragm. I have found, however, that by interposing a ring 14 between the ear piece and the body of the receiver, and providing a hollow extension or sound tube 16 between the diaphragm and the orifice of the ear piece, the sounds coming through the receiver are much pleasanter to the ear, are more distinct, and that the disagreeable snapping and buzzing often noticeable in telephone receivers, is in a great measure done away with.

The essential feature of this discovery or invention lies in the part 16, but this can be most conveniently applied by having it formed on a ring 14 which has a threaded flange 15 adapted to screw to the part 11 of the receiver. In Fig. 2 I have shown this central portion 16 slightly expanded at its outer end so as to get a little augmentation of sound. Obviously the ring 14 with its tube 16 and the ear piece 13 can be made all in one piece where new receivers are being made, but there is no special advantage in this, as the parts are rather more easily made separately, and for application to old receivers or receivers already made, it is much better to have the interposed ring.

The drawing shows a chamber surrounding the hollow extension 16 but this does not seem to affect the result. In my former invention above referred to, I had a branch tube connecting with the part 16 and leading through the medium of a flexible tube to a second ear piece, but in this case I have no outlet for sound except through the part 16. This arrangement has been tried on many different instruments, and there is no question whatever but that the better effect is had by its use, and apparently this is

caused by getting the ear piece farther from the diaphragm and providing a tubular or hollow portion in which the sound waves are modulated or modified before striking against the ear.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent:—

1. The combination with a telephone receiver of the usual type, of a ring interposed between the end of the receiver and its ordinary ear piece, the said ring being adapted to fasten to the receiver over the diaphragm, having its outer end screw threaded to receive the usual ear piece, and having a central sound bore corresponding with the bore of the ear piece.

2. The combination with the usual telephone having the customary ear piece, of a detachable ring secured to the end of the telephone receiver and having its outer end adapted to receive the customary ear piece of the receiver, said ring having a sound bore extending centrally through it from the receiver diaphragm and registering with the sound bore of the ear piece.

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