No. 789,876. PATENTED MAY 16, 1905.

H. G. PAPE.

SOUND DISSIPATING EARPIECE.

APPLICATION FILED MAY 17, 1904.

Fig. 1.

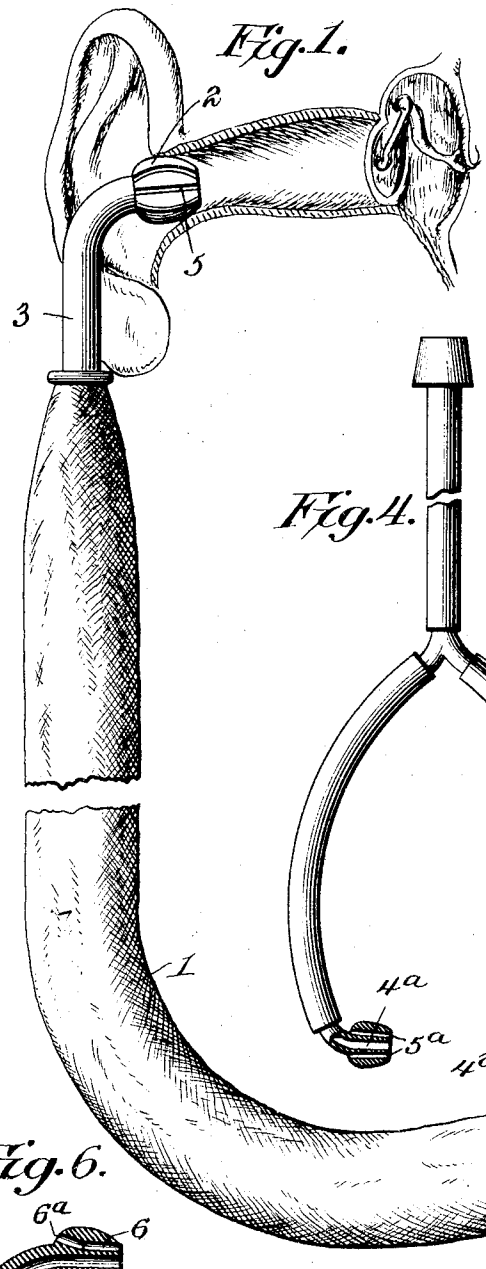


Fig. 2.

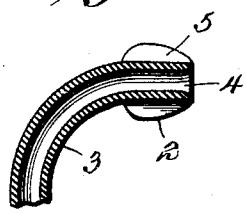


Fig. 3.

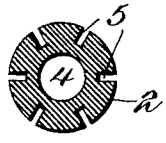


Fig. 4.

Fig. 5.

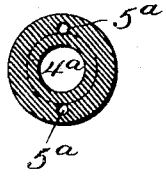
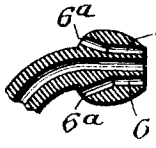


Fig. 6.



Witnesses
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No. 789,876. Patented May 16, 1905.

UNITED STATES PATENT OFFICE.

HERMANN G. PAPE, OF NEW YORK, N. Y.

SOUND-DISSIPATING EARPIECE.

SPECIFICATION forming part of Letters Patent No. 789,876, dated May 16, 1905.

Application filed May 17, 1904. Serial No. 208,466.

To all whom it may concern:

Be it known that I, HERMANN G. PAPE, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented a new and useful Sound-Dissipating Earpiece, of which the following is a specification.

This invention relates to a sound-dissipating earpiece for sound-conveyers, and has for its object to produce an earpiece insertible in the ear to convey sound-waves thereto and provided with passages through which the reflected sound-waves may be dissipated to prevent reverberation and the consequent confusion of sounds.

To the accomplishment of this object and others subordinate thereto the invention resides in the several constructions to be hereinafter described, illustrated in the accompanying drawings, and succinctly defined in the appended claims.

In said drawings, Figure 1 is a side elevation of a speaking tube or trumpet equipped with my earpiece shown introduced in an ear. Fig. 2 is a longitudinal section of the earpiece. Fig. 3 is a transverse section of the same. Fig. 4 is an elevation of a double phonograph ear-tube equipped with slightly-modified forms of earpieces shown in section. Fig. 5 is a transverse section of one of the earpieces shown in Fig. 4, and Fig. 6 is a sectional view of a further variation of the invention.

Like numerals of reference are employed to designate corresponding parts throughout the drawings.

It is of course understood that all sound-conveying tubes of whatever nature are provided with earpieces insertible in the ear to insure the proper conveyance of sound to the ear-drum. Such tubes and earpieces are employed in a large variety of connections and are material parts of phonographs, stethoscopes, ear-trumpets, speaking-tubes, &c. My invention is therefore to be understood as being applicable in any relation requiring or permitting the use of an earpiece in connection with a sound-conveying passage or tube.

For the purpose of illustrating one application of the invention I have shown in Fig. 1 of the accompanying drawings a speaking tube or trumpet 1, equipped with an earpiece 2, ordinarily constituting an enlargement at the extremity of a hard-rubber neck or tube-section 3, the opening or passage in which is continued through the earpiece 2. The earpiece is designed, as usual, to fit more or less closely within the outer passage of the ear and is preferably curved longitudinally to facilitate its introduction without injury to the user. As a result of considerable experiment I have discovered that by reason of the close fitting of the earpiece within the ear more or less reverberation is caused by the sound-waves reflected from the ear-drum, which meet the inflowing waves and create more or less confusion of sound inimical to distinct hearing. As stated, the object of my invention is to prevent this reverberation, and this object is attained by providing the earpiece with sound-dissipating openings or passages 5, through which the reflected sound-waves may dissipate. In the preferred embodiment of the invention (illustrated in the first three figures of the drawings) these sound-dissipating openings 5 are in the form of kerfs disposed longitudinally of the earpiece and formed at equidistant points in the periphery or outer surface of the latter. Instead, however, of constructing the earpiece as shown in these first three figures it may be formed with a plurality of longitudinal sound-dissipating openings 5^a, surrounding the primary passage or bore 4^a, as shown in Figs. 4 and 5, and while these openings are preferably straight they may be angular, as shown in Fig. 6, the rear ends 6^a of the openings 6 being outwardly deflected. These several illustrated forms of the invention are all effective and embrace the generic idea of an earpiece provided with sound-dissipating openings out of communication with each other and with the central opening or passage and arranged to permit the escape or dissipation of reflected sound-waves at that point of the earpiece which is located outside of or beyond the ear-passage when in use.

It is thought that from the foregoing the construction and utility of my sound-dissipating earpiece will be fully comprehended;

but while the illustrated embodiments of the invention are believed at this time to be preferable I wish to be distinctly understood as reserving the right to effect such changes, modifications, or variations thereof as may be within the scope of the protection prayed.

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

1. The combination with a tubular sound-conveyer, of an earpiece insertible in the ear and having a central opening and an annular series of sound-dissipating openings out of communication with each other and with the central opening and all terminating in the same plane at each end of the earpiece.

2. The combination with a sound-conveyer, of an earpiece of bulbous form insertible in the ear and having a central opening and an annular series of sound-dissipating openings out of communication with each other and with the central opening and terminating at the opposite ends of the earpiece, the outer surface of the earpiece being smooth and unbroken.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

HERMANN G. PAPE.

Witnesses:

JOHN H. SIGGERS,

SULLIVAN V. JOHNSON.