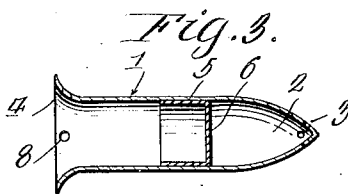
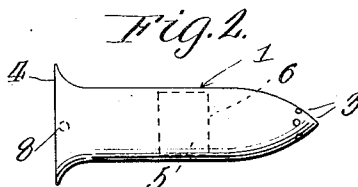
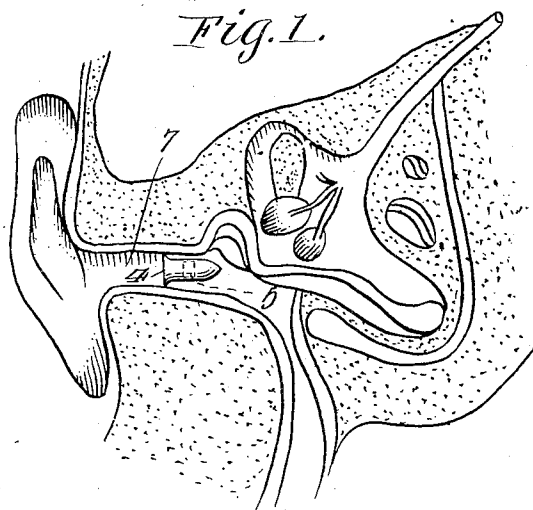


W. L. STEWART.
ARTIFICIAL EAR DRUM.
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1,258,162.

Patented Mar. 5, 1918.



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WITNESSES
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WILLIAM L. STEWART, OF TRENTON, NEW JERSEY.

ARTIFICIAL EAR-DRUM.

1,258,162.

Specification of Letters Patent.

Patented Mar. 5, 1918.

Application filed February 3, 1916. Serial No. 77,056.

To all whom it may concern:

Be it known that I, WILLIAM L. STEWART, a citizen of the United States, residing at Trenton, in the county of Mercer and State of New Jersey, have invented certain new and useful Improvements in Artificial Ear-Drums, of which the following is a specification.

This invention relates to artificial ear drums and one object thereof is to provide a device of this character which, of course, is adapted for insertion in the auditory canal of the outer ear and acts to cooperate with the natural tympanum in cases where the latter is impaired, to transmit sounds to the auditory nerve; or when the tympanum has been totally destroyed this device may serve as an artificial tympanum through the medium of which sound waves are properly concentrated and transmitted.

Another object is to provide a device of this character that may be so located, when in use, that it is absolutely out of sight and affords no discomfort to the user.

With the above and other objects in view I will now proceed to describe a specific embodiment of my invention which I have illustrated in the accompanying drawings, wherein:

Figure 1 is a sectional view through the outer and inner ear and showing the device of my invention in position.

Fig. 2 is a side elevation of the device in an enlarged scale, and

Fig. 3 is a longitudinal central section through the device.

The drum constituting this invention comprises a cylindrical body 1 of uniform diameter throughout terminating at the inner or ear end in a conical closure 2 having outlets 3 to permit the passage of sound waves to the auditory nerve. The outer end of body 1 is open and flared to provide a sound collecting mouth, the lip 4 of which is extended laterally into a plane beyond the side walls of the body to provide a supporting device for snugly engaging the walls of the auditory canal 7 as is shown clearly in Fig. 1 by means of which the remainder of the device is held out of contact with the walls of the auditory canal. It will thus be obvious that this lip 4 performs the double function of a sound collector and as a retainer for holding the drum in operative position.

Intermediate the ends of the body 1 and carried by an annular flange 5 which snugly fits the walls of body 1 is a tissue diaphragm forming an artificial tympanum arranged transversely across the body 1 and shown made integral with the flange 5 in Fig. 3. This diaphragm is subject to vibrations by sounds and transmits sound waves through the closure 2 and outlets 3 to the inner ear, the cone-shaped closure operating to collect and condense the sound waves before they are passed out through the apertures 3.

In use, this device is placed within the auditory canal 7 as shown in Fig. 1 with the lip 4 engaging the side walls thereof and said lip has a hole 8 formed therein by means of which a suitable hook may be engaged with the device for removing it from the ear.

The flange 5 which carries the diaphragm snugly engages the side walls of the body member 1 on its inner face as is shown clearly in Fig. 3 and operates to reliably hold the diaphragm in adjusted position within the body.

While I have herein described a specific embodiment of my invention it is to be understood that I do not limit myself to the details thereof, but may resort to such modifications as fall within the scope of the invention as defined in the appended claim.

I claim:—

An artificial ear drum comprising a hollow cylindrical body member, one end being tapered to form a cone-shaped closure with apertures therein for the passage of sound waves and the other end being open and provided with a flared sound collecting mouth, the lip of which extends laterally into a plane beyond the side walls of the body and substantially at right angles thereto to provide a supporting device to snugly engage the walls of the auditory canal at one end of the drum only and by means of which the remainder of the drum is held out of contact with said canal and the aperture centered with respect to the canal.

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

WILLIAM L. STEWART.

Witnesses:

ALEXANDER TRAPP,
MARTHA TURNER.