

A. O. LEONARD.
EAR DRUM.
APPLICATION FILED MAR. 19, 1908.

916,566.

Patented Mar. 30, 1909

Fig. 1.

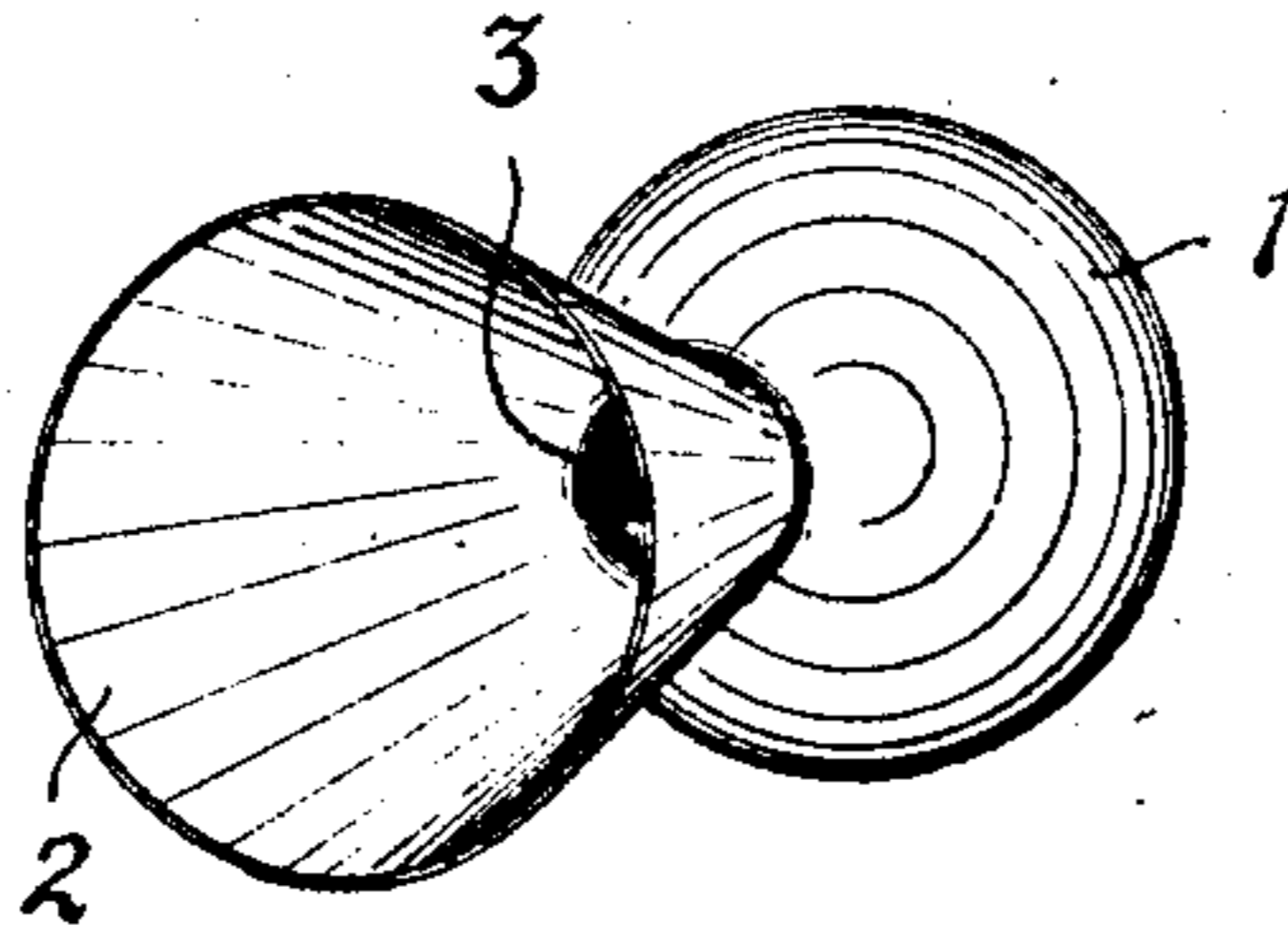
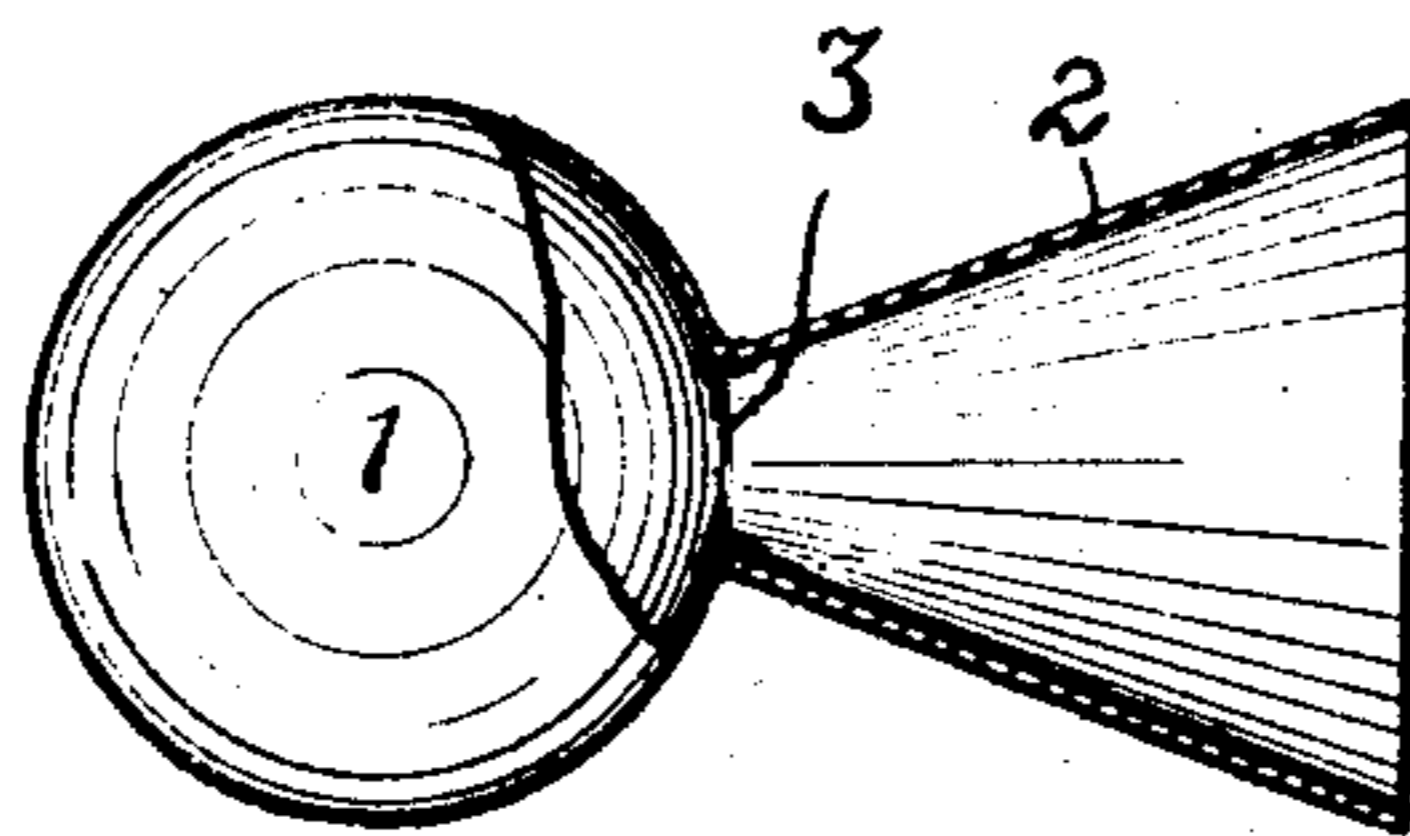


Fig. 2.



WITNESSES:

Mathilda Kuttler.

Wm. N. Brinsman

Asbury O. Leonard

INVENTOR

BY *D. G. Burns*

ATTORNEY

UNITED STATES PATENT OFFICE.

ASBURY O. LEONARD, OF NEW YORK, N. Y.

EAR-DRUM.

No. 918,588.

Specification of Letters Patent.

Patented March 30, 1909.

Application filed March 19, 1908. Serial No. 422,120.

To all whom it may concern:

Be it known that I, ASBURY O. LEONARD, a citizen of the United States of America, and resident of New York, in the county of Kings and State of New York, have invented certain new and useful Improvements in Ear-Drums, of which the following is a specification.

This invention relates to improvements in artificial ear-drums, and the object thereof is to afford a device for the restoration to hearing for those afflicted with deafness, by supplying an effective support and protection for certain members of the ear which have become displaced or diseased to such an extent as to affect hearing, without materially obstructing the entrance of sound. This object is accomplished by the construction illustrated in the accompanying drawings in which—

Figure 1 is a perspective view upon an enlarged scale showing the invention; and Fig. 2 is a side elevation, also upon an enlarged scale, and showing a partial view in section.

The numerals of reference in both views indicate corresponding parts, and referring now to the same; 1 is a hollow sphere and composes the supporting member, and 2 is a funnel which intersects the sphere at its smaller end constituting an integral part thereof. Coincident with the intersection of the funnel with the sphere is an opening leading from the funnel into the sphere and affording open communication from one to the other. This opening, designated by reference numeral 3, is of a size corresponding with the inner diameter of the funnel at its juncture with the sphere.

The material of which this device is made is preferably rubber, which, when in its normal state, is somewhat pliable. The device is made of a size which will admit of its insertion into the ear without becoming materially compressed, and the walls of the funnel and sphere are of a uniform thickness throughout. This material of which the device is made and the thickness of its walls are such that the device readily yields to slight pressure, and in fact it may be completely collapsed and rolled between the fingers under slight pressure, without noticeable deterioration.

In using this invention, the sphere is placed against the tympanum and the fun-

nel extends outwardly in the auditory canal. When the device is thus in position the ossicles of the ear rest upon and are supported by the sphere resting upon the natural drum, and thus they are held more nearly in their natural positions.

The members of the ear naturally are of a delicate nature, and an expedient of the class to which this invention belongs is necessarily frail, for otherwise its use would be liable to result in injury. It is the purpose of this invention to afford a substantial support for the ossicles and tympanum by means sufficiently delicate to insure against injury, and I have found that by making the supporting member spherical in form a greater supporting effect is obtained, consistent with the delicacy of the structure, than if made of the forms in common use. If made spherical, the walls of the supporting member may be thinner than those of other forms and still afford the necessary support, because, being spherical it affords the greatest possible sustaining power. The thinner the wall of the supporting member is, the greater the delicacy and effectiveness of the device providing of course the necessary support is maintained.

The funnel, extending in the auditory canal prevents the supporting member from turning and insures free communication through the opening 3 from the outer ear to the interior of the supporting member.

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

1. An artificial ear-drum of the class described, having at one end a supporting member of the form of a sphere, and at the other end a funnel which unites at its smaller end with said sphere, there being an opening at the juncture of the funnel and sphere which affords open communication from the funnel to the interior of the supporting member.

2. An artificial ear-drum of the class described, comprising a hollow spherical supporting member, and a funnel integral therewith, there being an opening at the juncture of the funnel and sphere which affords open communication from the funnel to the interior of the supporting member.

3. In an artificial ear-drum of the class described, a hollow spherical supporting member having means of open communica-

tion thereinto, and means in connection with the supporting member adapted to extend within the auditory canal of the ear and maintain the supporting member in normal
5 position.

4. An artificial ear drum of the class described, comprising a thin pliable hollow sphere having an aperture affording means

of open communication through its wall to the interior thereof.

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

10

ASBURY O. LEONARD.

Witnesses:

FLOYCE L. DILLINGHAM,
WALTER G. BURNS.