

No. 888,144.

PATENTED MAY 19, 1908.

G. W. CLINE.
EAR TRUMPET.

APPLICATION FILED FEB. 19, 1907.

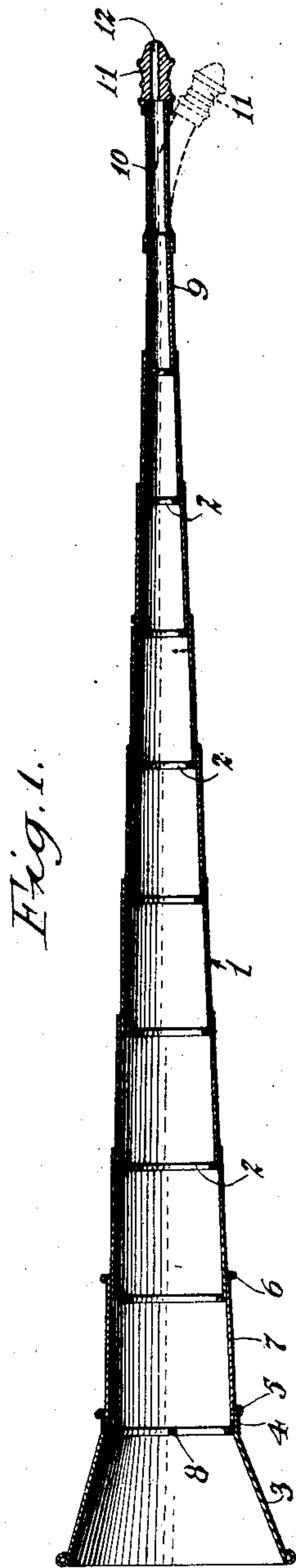


Fig. 1.

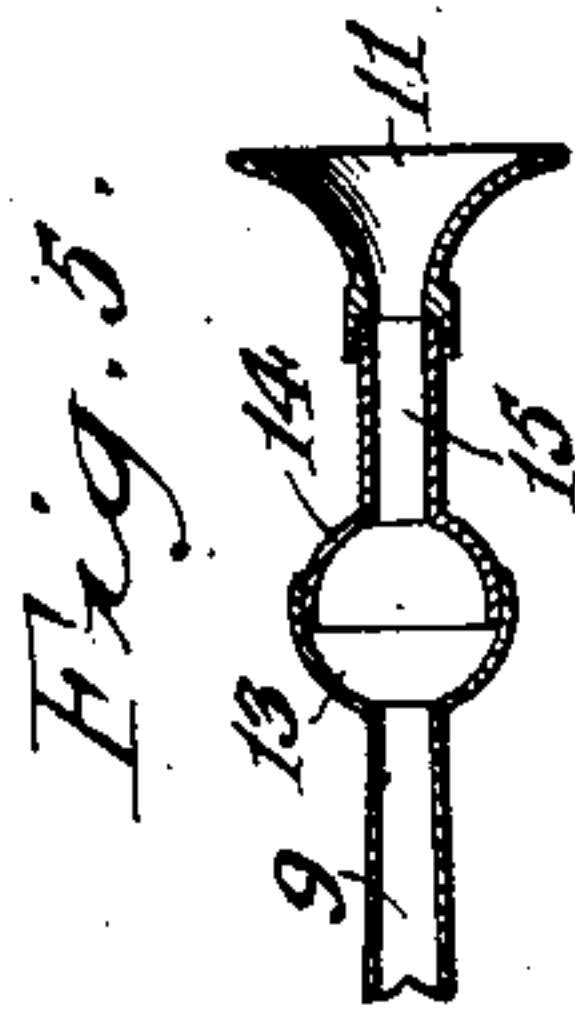


Fig. 3.

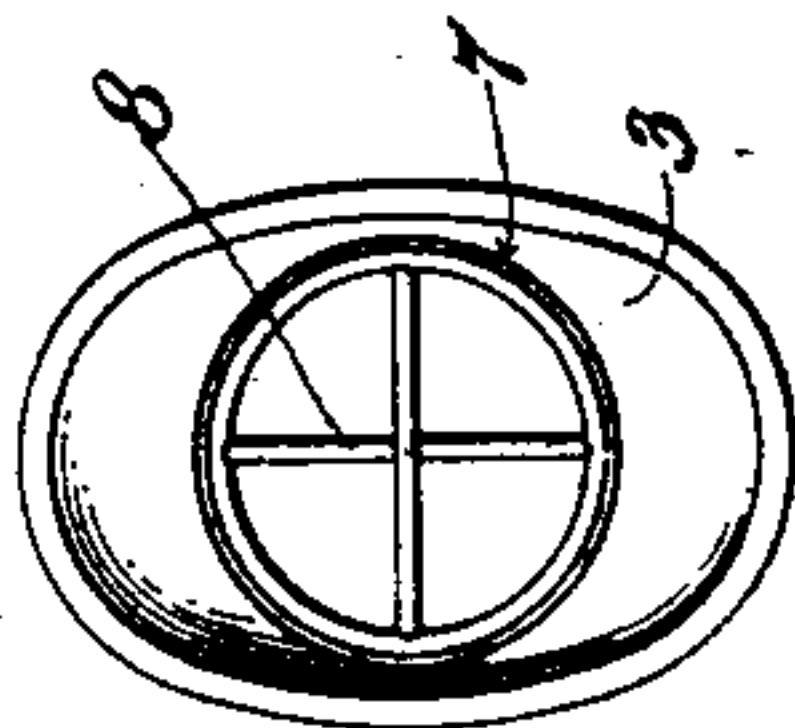


Fig. 2.

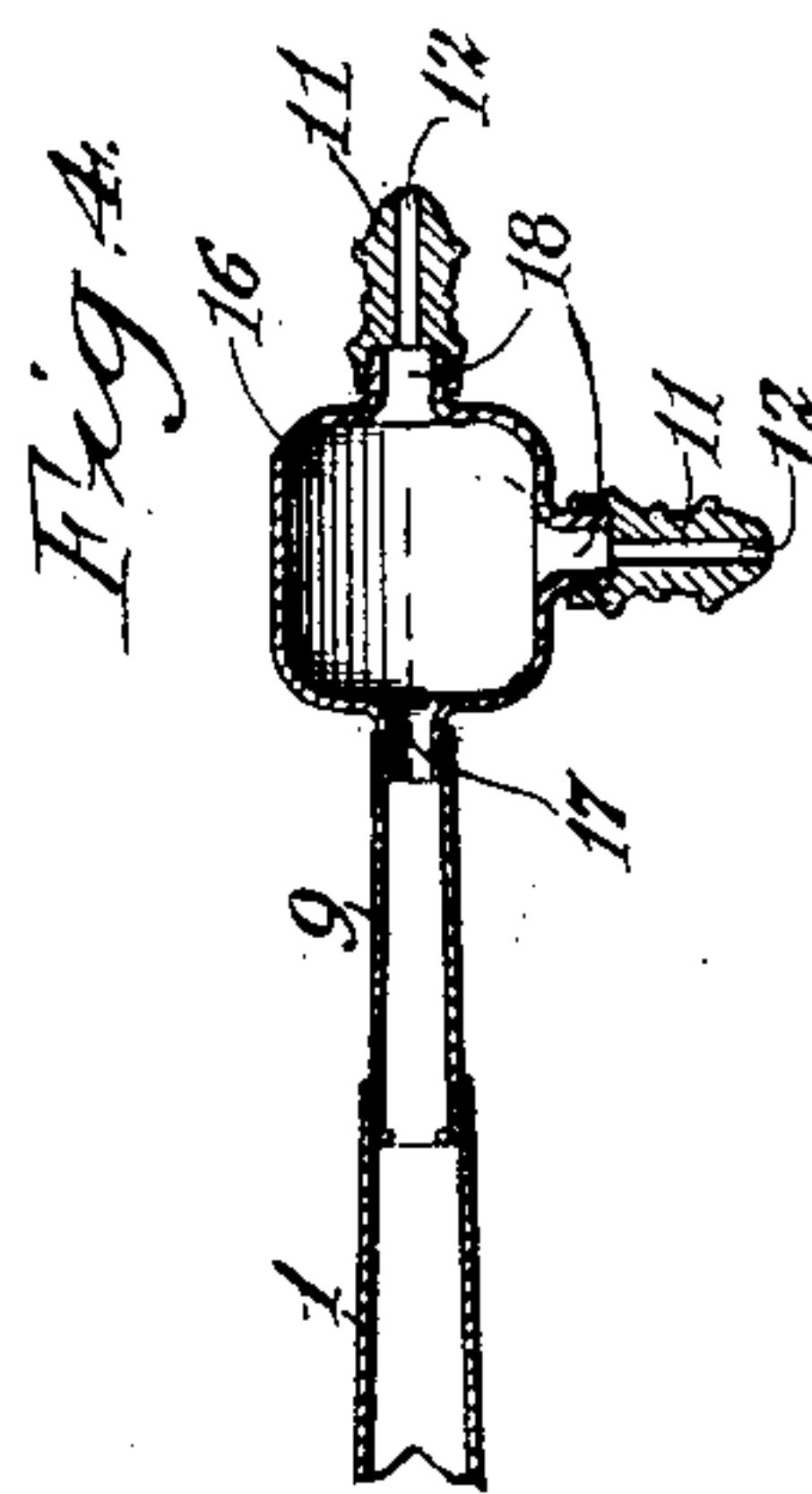


Fig. 4.

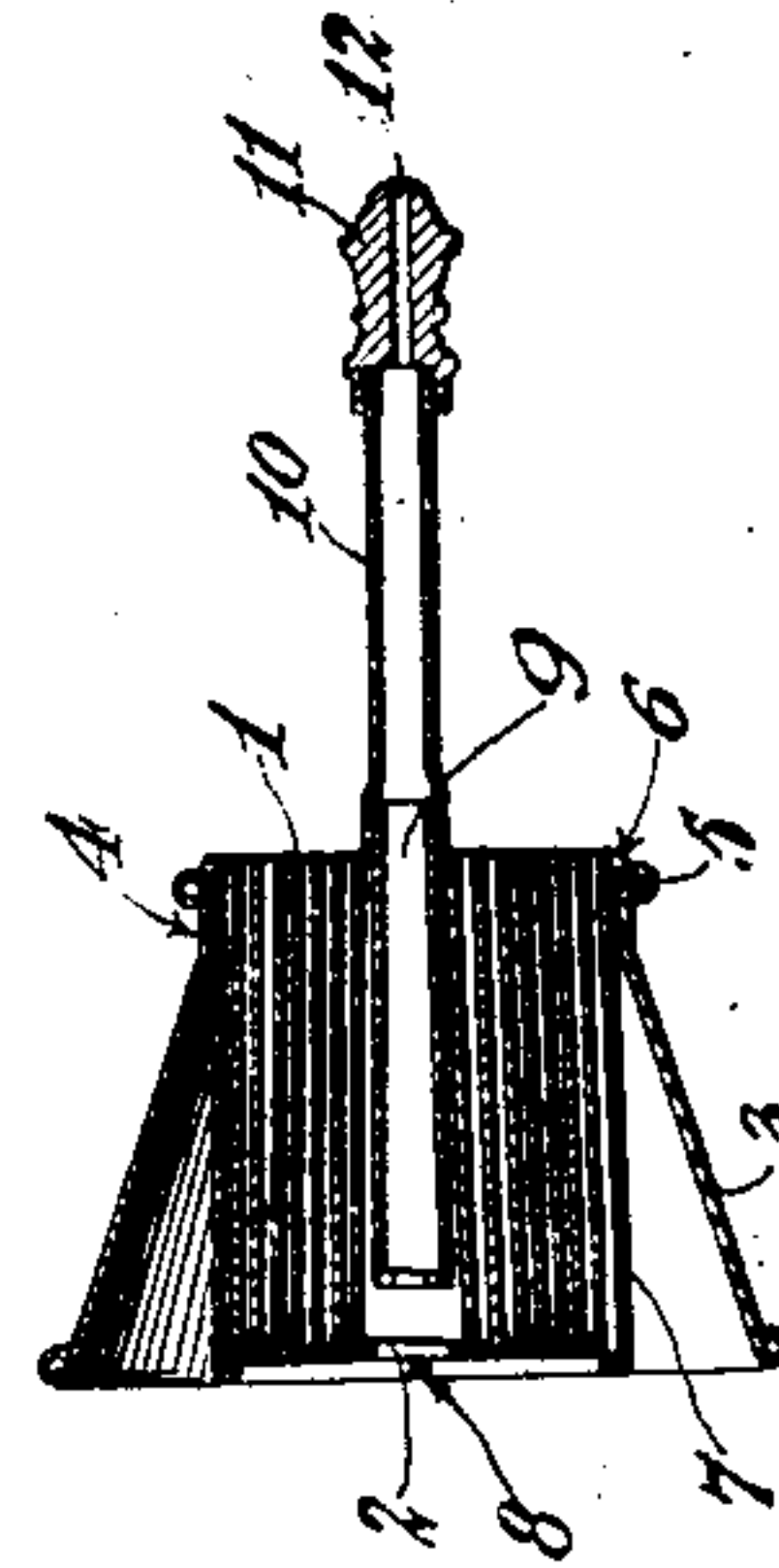


Fig. 5.

Witnesses:

Louis W. Gratz.
Frank A. Williams.

Inventor;
George W. Cline.
By
Townsend, Outbackley & Wright
His Atty.

UNITED STATES PATENT OFFICE.

GEORGE W. CLINE, OF AMALIE, CALIFORNIA, ASSIGNOR OF ONE-HALF TO J. W. RIEDEMAN,
OF LOS ANGELES, CALIFORNIA.

EAR-TRUMPET.

No. 888,144.

Specification of Letters Patent.

Patented May 19, 1908.

Application filed February 19, 1907. Serial No. 358,315.

To all whom it may concern:

Be it known that I, GEORGE W. CLINE, a citizen of the United States, residing at Amalie, in the county of Kern and State of California, have invented a new and useful Ear-
Trumpet, of which the following is a specification.

This invention relates to ear trumpets for the use of deaf persons, and the main object of the invention is to provide an ear trumpet which is adjustable in length and which when not in use may be collapsed into a small and compact form adapted to be readily carried in the pocket.

Another object of the invention is to provide an ear trumpet having superior acoustic properties.

Further objects of the invention relates to details of construction which will hereinafter be pointed out.

The accompanying drawings illustrate the invention, and referring thereto:—

Figure 1 is a longitudinal sectional view through one form of the invention, showing the trumpet extended for use. Fig. 2 is an end elevation of the flaring portion of the trumpet. Fig. 3 is a view similar to Fig. 1 but showing the trumpet collapsed. Fig. 4 is a longitudinal sectional view of a portion of the hearing end of the trumpet constructed in a modified form. Fig. 5 is a view similar to Fig. 4, showing another form of the hearing end.

The trumpet comprises a horn composed of telescopic sections, one end section being flared to form a bell at the speaking end, the other extreme end section being provided with a suitable ear piece. In its preferred form the telescopic sections 1 are graded in diameter and slightly coned so that when extended the horn is conical or tapering as shown. Each section is preferably composed of metal having its larger rim strengthened with a wire 2. The other section 3 at the speaking end is flared to collect the sound and facilitate talking into the trumpet, and as shown in Fig. 2 its rim is preferably oval so that when collapsed it does not form a bulging object and may readily be carried in the pocket. The section 3 has a narrow cylindrical flange 4 with its edge curled around a wire 5 which forms an abutment or stop for the curled edge 6 of the adjacent section 7 to prevent section 7 from dropping out of

the section 3 when it is collapsed or nested therein.

The section 7 is provided with cross bars 8 at its inner end against which the inner, or curled edges of the other sections 1 rest, except the end section 9, when the horn is collapsed, as shown in Fig. 3. The flange 4, guides the section 7 into the flaring, or end, section 3, so as to center the other sections therein, when the horn is collapsed, or holds them in a straight line when it is drawn out or extended. The smallest section 9 at the hearing end has attached thereto a flexible rubber tube 10, the outer end of which is provided with an ear piece 11 consisting of a nipple formed of hard rubber or other suitable material and having a small central orifice 12. The nipple 11 is adapted to be inserted in the ear of the deaf person and its end is rounded in order to not injure the ear of the person. With each trumpet several ear nipples 11 may be provided each having a different sized hole 12, a nipple having a large hole being used by a person who is very deaf, the nipple having the smallest hole being used by a person who is relatively less deaf, and the nipple having a hole of intermediate size being used by persons of intermediate degrees of deafness.

I have found in practice that unless a person is very deaf it is advisable to make the hole in the nipple 12 quite small, otherwise a too great amount of sound is conveyed to the ear which would make the use of the instrument very disagreeable besides detracting from the clearness of the conversation. On the other hand if the person is extremely deaf the size of the hole 12 should be larger to permit a greater amount of sound to pass therethrough. These nipples are interchangeable and may be screwed to the end of the tube 11 or fastened thereto in any other desired manner, while the tube 10 may be attached to the section 9 by stretching its end thereover as shown. This allows the tube to be pulled off from the section 3 when the instrument is collapsed.

Fig. 5 shows a form in which the tube 10 is dispensed with and the section 9 is formed at its outer end with a substantially hemispherical socket 13, which receives a hemispherical hollow knuckle 14 having a tube 15, to the outer end of which is screwed the nipple 11. The socket 13 is slightly greater

than the knuckle 14 in order to retain the knuckle and yet allow the latter to turn in the socket 13, to permit the tube 15 to be swung at a wide angle to the section 9, which
5 enables the two persons using the trumpet to look toward each other without inconvenience. Thus the form shown in Fig. 5 gives practically the same results as the rubber tube 10, but in addition the size of socket 13
10 and knuckle 14 is such that a sound box is provided which augments the acoustic properties of the trumpet and makes it possible to distinctly hear a whisper.

Fig. 4 shows another form in which, instead of the tube 10, a cylindrical sound box
15 16 is employed having threaded extensions 17 and 18, the threaded extension 18 being screwed into the section 9 and the threaded extension 18 being screwed to the ear nipple
20 11. This sound box 16 serves the same acoustic function as the ball and socket joint in Fig. 5, making it possible to hear a whisper spoken into the trumpet. The trumpet

being telescopic permits of its length being adjusted to suit the distance between the two persons using it.

What I claim is:—

An ear trumpet comprising a plurality of telescopic members, the smaller section being provided with an ear nipple flexibly secured thereto, and the larger section being in the form of a flat sided funnel with a cylindrical flange at its smaller end, and the section fitting in the flange of said funnel having its outer end curled to form a stop for engaging with said flange and its inner end provided with cross bars for engaging with the inner ends of the other sections when the horn is collapsed.

In testimony whereof, I have hereunto set my hand at Los Angeles California this 6th day of February 1907.

GEORGE W. CLINE.

In presence of—

GEORGE T. HACKLEY,
FRANK L. A. GRAHAM.