

(No Model.)

W. G. A. BONWILL.
EAR TRUMPET.

No. 473,608.

Patented Apr. 26, 1892.

FIG. 1.

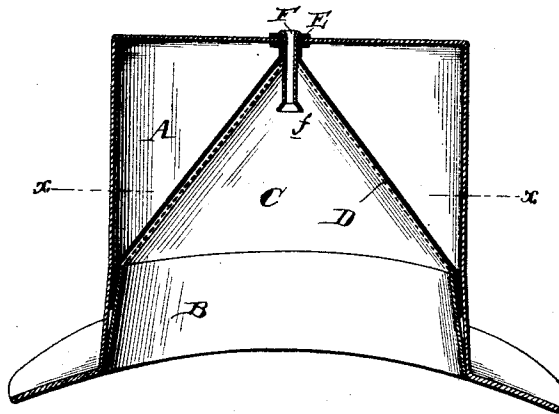


FIG. 4.

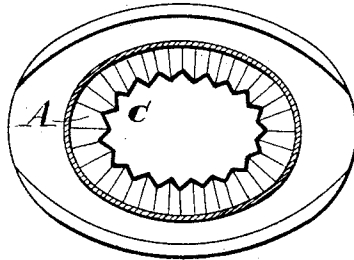


FIG. 2.

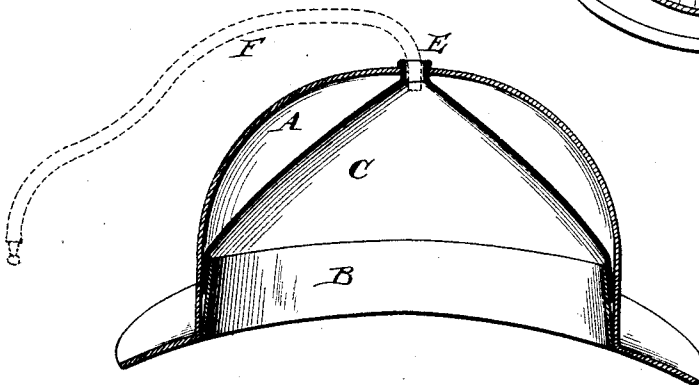
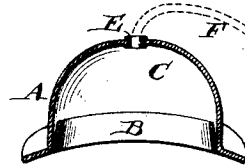


FIG. 3.



Witnesses:
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Inventor:
W. G. A. Bonwill
By his atty
[Signature]

UNITED STATES PATENT OFFICE.

WILLIAM G. A. BONWILL, OF PHILADELPHIA, PENNSYLVANIA.

EAR-TRUMPET.

SPECIFICATION forming part of Letters Patent No. 473,608, dated April 26, 1892.

Application filed March 10, 1891. Serial No. 384,394. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM G. A. BONWILL, of the city and county of Philadelphia, and State of Pennsylvania, have invented an Improvement in Ear-Trumpets, of which the following is a specification.

My invention has reference to ear-trumpets for persons afflicted with deafness; and it consists of certain improvements which are fully set forth in the following specification and are shown in the accompanying drawings, which form a part thereof.

My invention consists in the employment of a trumpet or bell-mouthed portion in an ordinary hat, with its end for receiving the sound-waves open to the ordinary opening in the hat for the head of the wearer and with its small end terminating in the crown of the hat in a sound-transmitting orifice, through which the sound-waves may be transmitted to the ear. To all appearance the hat is an ordinary one, and a casual observer would not detect the presence of an ear-trumpet therein. The hat may be used as an ear-trumpet when the hat is removed from the head, the open portion or interior being presented toward the source of sound, so that the sound-waves may enter therein and be transmitted through the orifice in the crown of the hat to the ear. If desired, the bell-mouthed portion of the trumpet may be formed integral with the structure of the hat, though in practice it is preferable to make it of separate material, either of metal or card-board or other equivalent material, and to secure it within the body of the hat, either as a lining or with a thin lining covering it.

In the drawings, Figure 1 is a sectional elevation of a hat having my improvement applied thereto. Fig. 2 is a similar view showing my invention as applied to a Derby hat. Fig. 3 is a view similar to Fig. 2, illustrating a modification of the invention in which the body of the hat itself acts as the bell or cone of the trumpet; and Fig. 4 is a cross-sectional view on line *x x* of Fig. 1, showing the bell or cone made with corrugations.

A is the body of the hat, and B is the usual hat-band thereof. Within the body of the hat and extending away from the hat-band is a cone or bell C, formed of metal, card-board, or other suitable material, with its smaller end

arranged adjacent to the upper or crown part of the hat and preferably positively secured thereto. An excellent material for the bell or cone is hard-rolled aluminum, since it possesses lightness, together with strength and fine resonant qualities.

E is a small tubular part extending through the crown of the hat, which may be arranged to rest against the ear for receiving the sound transmitted through the bell or cone. This small tubular part E may be provided with an extensible tube-section or nozzle F, which may be drawn out to extend the portion which is received in the ear. When this tubular extension F is used, it is preferable that its inner end be made flaring, as at *f*, to fit the conical bell C of the trumpet, and to avoid breaking the sound-waves. If desired, this extensible tube F may be formed of flexible material, as indicated in dotted lines in Figs. 2 and 3, so that the hat may be held in the lap while the tube is brought to the ear. When this tube is employed, it may be made detachable, so that it may be removed and placed in the pocket when the hat is on the head. The construction in Fig. 2 is substantially the same as that shown in Fig. 1. In the one case the invention is applied to a Derby hat and in the other to a silk hat.

Fig. 3 corresponds exactly with Fig. 2, except that the body of the hat itself constitutes the bell or cone of the ear-trumpet. In this case the hat may be formed of light material—such as paper or aluminum—plain or covered upon the outer side with felt or cloth.

The cone or bell may be formed with corrugations radiating from the apex or tubular end, as shown in Fig. 4, to increase the area and improve the resonant qualities.

If desired, the hat-body may be covered with a lining D of light material, arranged upon the inner surface of the bell or cone C of the ear-trumpet; or the bell or cone C itself may be formed to represent the lining.

While I prefer the details of construction which are here shown, I do not limit my invention to them, as it is apparent that they may be varied without departing from it.

I am aware that it has been proposed to place an ordinary ear-trumpet in a cap or head-cover with communication to the ear-trumpet to the opening in the hat to admit

the sound-waves thereto and a tube leading from the end of the ear-trumpet to the ear of the wearer, and I do not claim such an invention.

5 In my invention the ear-trumpet is formed by a bell-mouthed piece which leads from a contracted sound-transmitting opening through the structure of the hat down to the open portion of the hat which is adapted to receive the head of the wearer, so that the hat may be used as an ear-trumpet when it is removed from the head by presenting the ordinary opening or interior of the hat toward the source of sound to receive the sound-waves.

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

1. As a new article of manufacture, a hat adapted for use as an ear-trumpet, having upon its interior a bell-mouth leading from a contracted sound-transmitting opening through the structure of the hat down to the open portion of the hat which is adapted to receive the head of the wearer, whereby said hat may be used as an ear trumpet when removed from the head of the wearer, the sound-waves being received into the interior of the hat through the ordinary opening therein and transmitted thence through the bell-mouth to the contracted opening in the body of the hat to the ear.

2. A hat having a sound-transmitting opening through the top of the hat structure and a bell-mouth upon the interior thereof leading from said contracted opening down to the ordinary opening of the hat which receives the head of the wearer and being otherwise closed to the reception of sound-waves, whereby the sound-waves may enter the ear-trumpet only through the ordinary opening to the interior of the hat when it is removed from the head.

3. As a new article of manufacture, a hat adapted for use as an ear-trumpet, having upon

its interior a bell-mouth leading from a contracted sound-transmitting opening through the structure of the hat down to the open portion of the hat which is adapted to receive the head of the wearer, whereby said hat may be used as an ear-trumpet when removed from the head of the wearer, the sound-waves being received into the interior of the hat through the ordinary opening therein and transmitted thence through the bell-mouth to the contracted opening in the body of the hat to the ear, and a movable tube for transmitting the wave-currents to the ear carried by said contracted opening in the hat structure.

4. As a new article of manufacture, a hat provided upon its interior with a bell-mouth for transmitting sound-waves, formed of aluminum and terminating in a contracted opening communicating with an opening through the hat structure.

5. The combination of the hat structure A with the metallic bell or cone C, arranged within it and having its bell-mouth leading to the opening in the hat which receives the head of the wearer, whereby it may receive sound-waves through said opening when removed from the head and terminating in a tubular part E through the top of the hat, and an internal lining or covering D, extending over and concealing the interior surface of the bell or cone.

6. As a new article of manufacture, a hat having a sound-receiving portion open to the atmosphere at its large end and formed with a corrugated or grooved internal surface, and terminating at its smaller end in a sound-transmitting orifice.

In testimony of which invention I have hereunto set my hand.

WM. G. A. BONWILL.

Witnesses:

GEO. W. REED,
GEO. B. LAUER.