No. 739,098. PATENTED SEPT. 15, 1903.

T. W. MESSENGER.

COMBINED HEAD GEAR AND EAR TRUMPET.

APPLICATION FILED JULY 21, 1902.

NO MODEL. 2 SHEETS—SHEET 1.

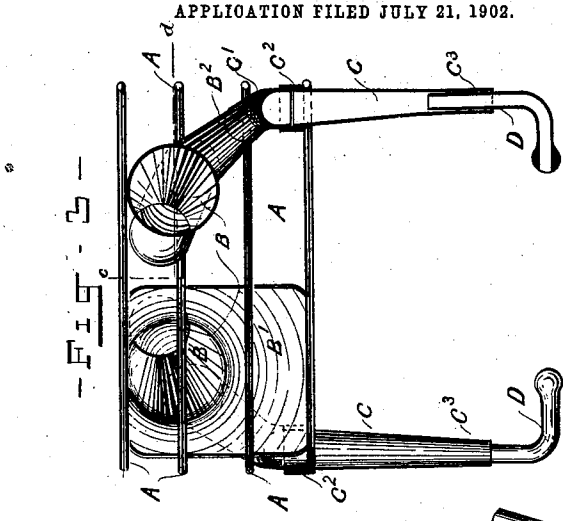


FIG. 3.

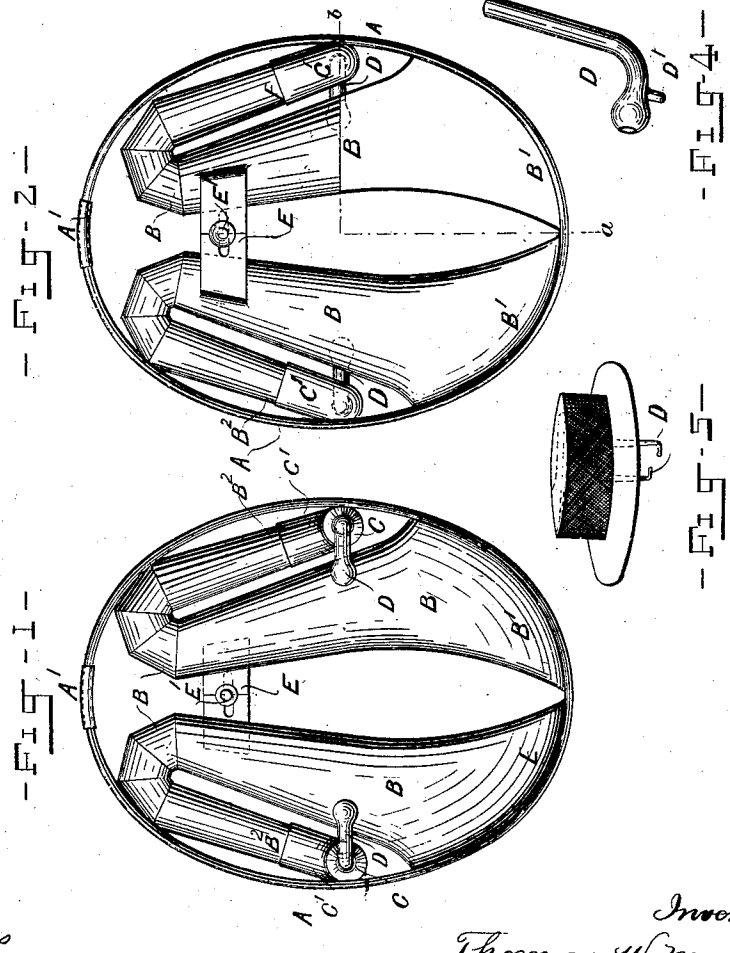


FIG. 2.

FIG. 4.

FIG. 5.

FIG. 1.

Witnesses
Chas. H. Smith
J. Stair

Inventor
Thomas W. Messenger
per L. W. Serrell & Son
Attys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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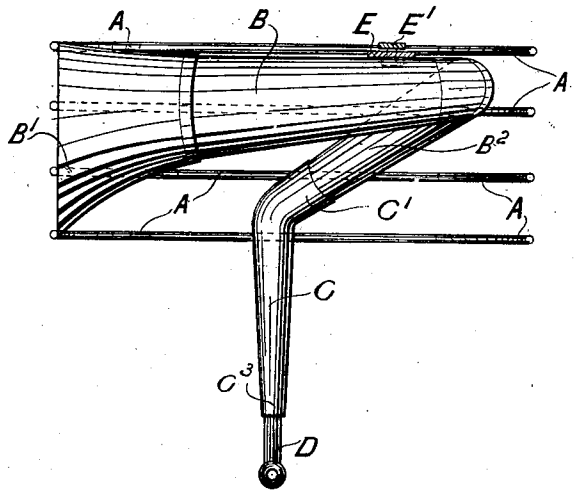
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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 6.



Witnesses.

Chas. A. Smith

J. Stair

Inventor

Thomas W. Messenger

per L. W. Terrell & Son

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UNITED STATES PATENT OFFICE.

THOMAS WILLIAM MESSENGER, OF QUORN, SOUTH AUSTRALIA, AUSTRALIA.

COMBINED HEAD-GEAR AND EAR-TRUMPET.

SPECIFICATION forming part of Letters Patent No. 739,098, dated September 15, 1903.

Application filed July 21, 1902. Serial No. 116,373. (No model.)

To all whom it may concern:

Be it known that I, THOMAS WILLIAM MESSENGER, engineer, a subject of the King of Great Britain, residing at Quorn, in the State of South Australia, in the Commonwealth of Australia, have invented certain new and useful Improvements in a Combined Head-Gear and Ear-Trumpet, of which the following is a specification.

My invention relates to certain improvements in ear-trumpets for the use more particularly of those afflicted with deafness.

My invention is also applicable for the use of reporters and others in a large hall or in rooms with defective acoustic properties where it is desirable to accentuate the sound-waves.

The object of my invention is to provide an effective instrument which can be used with very little inconvenience and which will not be unsightly or conspicuous. I accomplish this object by constructing an instrument in which means for concentrating the sound-waves, such as one or more ear-trumpets having downwardly-projecting earpieces, are arranged within a framework which is itself adapted to form the crown of a hat, cap, or other head-covering. These trumpets are so arranged within the framework that the open mouths extend toward the front and are adapted to bear upon the forehead. In this way use is made of the well-known fact that the hearing is considerably assisted by a portion of the instrument bearing upon the bones of the head. The downwardly-projecting earpieces are made extensible and with flexible joints and are so arranged that they may be adapted to suit the requirements of the person using them. They are furthermore constructed in such manner that they may be doubled inward for the purpose of occupying a small compass for carrying from place to place.

In order that my invention may be the better understood, I will now proceed to describe the same with reference to the accompanying drawings, in which—

Figure 1 is a bottom view of an instrument constructed according to my invention, showing the framework as adapted to form the crown of a hat or cap. Fig. 2 is a plan, partly in section, on line *c d*, Fig. 3; and Fig. 3, a front view, also partly in section, on the line *a b*, Fig. 2. Fig. 4 is a perspective view of an improved earpiece. Fig. 5 is a perspective view showing the adaptation of my invention to an ordinary straw hat; Fig. 6, a side sectional view of an instrument constructed according to my invention.

A is the framework of the instrument, and this is constructed, preferably, of wire bent to the required shape and size and may, if necessary, be covered with wire-gauze or netting.

In the accompanying drawings it will be seen that the framework A is made oval-shaped to adapt itself to form the crown of an ordinary hat or cap; but it will be well understood that this framework may be made of any convenient shape according to the design of head-covering required. In this way it may, if necessary, be adapted for use as a bonnet or other head-covering for ladies' wear. Within this framework A are provided two ear-trumpets B, arranged at the top and constructed of the necessary shape to concentrate the sound-waves.

For the purpose of adapting the instrument to various sizes the ends of the wires of the framework may be made to fit within sleeves A′ and the trumpets B are connected by means of plates E, having slots and a thumb-screw E′. By means of the thumb-screw E the trumpets B may be fixed in any position and the framework A made larger or smaller, as may be required.

The ear-trumpets B are arranged with their bell-shaped mouths B′ open toward the front and are extended forward to such an extent that they bear upon the top of the forehead, as shown more particularly in Fig. 6. In this way the metal of the ear-trumpets is adapted to lie in close contact with the bones of the head, and the hearing is thereby considerably assisted. The ear-trumpets B then extend back to the rear portion of the framework A and are made tapering in the ordinary way. At the back of the framework A the trumpets are doubled upon themselves and extend forward to immediately above the ears. If necessary, the rear portion of the trumpets B may be made to fit telescopically upon the front portion, as shown in Fig. 6, whereby

such rear portion may be turned slightly to conform to the shape of the head of the wearer. At their smaller ends B^2 and immediately above the ears the trumpets B are provided with downwardly-projecting pieces C, so-shaped that their upper ends C′ fit upon the portions B^2 of the trumpets B. In this way the downwardly-projecting pieces C may be at any time turned outward, more particularly for the purpose of applying the instrument to the head, and, further, if necessary, such pieces C may be removed for cleansing or other purposes. It will also be seen that the earpieces may, if necessary, be turned inward to the center of the instrument for convenience of transport. The pieces C are also provided with ball-and-socket or other similar joints, whereby they may be moved as required. These joints may be simply composed of the two pieces joined together by means of a piece of rubber tubing C^2, which I find in practice well answers the purpose. The lower ends of the downwardly-projecting pieces C are provided with earpieces D, preferably of vulcanite, for application to the ear-passage for the conveyance of the sound-waves. These earpieces D are made to fit telescopically within the lower end C^3 of the pieces C, whereby they may be varied in position to suit the requirements of the user.

In Fig. 4 will be seen an improved construction of earpiece which is provided with a downwardly-projecting stud D′ upon the underneath side, which when applied to the ear bears upon the lower bones of the ears and greatly assists in transmitting the vibrations to the ear-drum.

In practice the framework A is either covered with an open network of silk or other material of any desired ornamental design, whereby it is adapted to form the crown of a cap or other head-covering, or if necessary the whole framework A may be adapted to fit within the crown of a hat, as shown in Fig. 5. Care must, however, be taken that the front portion is covered only with loose open-work material, such as open crossed strawwork, whereby the sound-waves may be allowed to enter the bell-mouths B′ of the trumpets B. The hat or cap or other head-covering comprising the instrument is then placed upon the head, with the bell-shaped mouths B′ of the trumpets B toward the front and the metal of the trumpets B bearing upon the top of the forehead, and the earpieces D are placed within the ears. In this way the sound-waves as entering the mouths B′ of the trumpets B are conveyed to the ear without any inconvenience to the user and are accentuated by bearing upon the bones of the head, and at the same time an instrument is provided which is not unsightly or conspicuous.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In ear-trumpets and in combination, a framework adapted to form the crown of a hat, cap or other head-gear, means adapted to be secured within the said framework for concentrating the sound-waves, downwardly-projecting earpieces secured to said means, and studs upon the under sides of said earpieces and integral therewith, substantially as specified.

2. In ear-trumpets and in combination, a framework adapted to form the crown of a hat, cap or other head-gear, trumpets secured within the said framework, downwardly-projecting earpieces secured to the said trumpets, and studs upon the under sides of said earpieces and integral therewith, substantially as specified.

3. In ear-trumpets and in combination, a framework adapted to form the crown of a hat, cap or other head-gear, trumpets secured with the said framework, means for adjusting the length of said trumpets, downwardly-projecting earpieces secured to the said trumpets, and studs upon the under sides of said earpieces and integral therewith, substantially as specified.

4. In ear-trumpets and in combination, a framework adapted to form the crown of a hat, cap or other head-gear, two trumpets adapted to fit adjustably within said framework and to be secured thereto, means for connecting said trumpets together, downwardly-extending tubular parts, devices connecting the same to the said trumpets, earpieces connected telescopically to said tubular parts, and studs upon the under sides of said earpieces and integral therewith, substantially as specified.

5. In ear-trumpets and in combination, a framework adapted to form the crown of a hat, cap or other head-gear, trumpets having telescoping parts whereby they may be adjustably fitted to and secured within the said framework, plates, having slots, for adjustably connecting the said trumpets together, downwardly-extending tubular parts, devices connecting the same to the said trumpets, earpieces connected telescopically to said tubular parts, and studs upon the under sides of said earpieces and integral therewith, substantially as set forth.

6. In ear-trumpets and in combination, a framework adapted to form the crown of a hat, cap or other head-gear, a trumpet secured within the said framework and having a mouth adapted to bear upon the forehead of the wearer, and downwardly-projecting earpieces secured to the said trumpet.

7. In ear-trumpets and in combination, a framework adapted to form the crown of a hat, cap or other head-gear, trumpets secured within the said framework and having mouths conforming with the outline of said framework and adapted to bear upon the forehead of the wearer, means for adjusting the lengths of said trumpets, and downwardly-projecting earpieces secured to the said trumpets, substantially as specified.

8. In ear-trumpets and in combination, a

framework adapted to form the crown of a hat, cap or other head-gear, two trumpets adapted to fit adjustably within said framework and having mouths adapted to bear upon the forehead of the wearer, means for connecting the trumpets together, downwardly-extending tubular parts, devices connecting the same to the said trumpets, and earpieces connected telescopically to the said tubular parts, substantially as specified.

9. In ear-trumpets and in combination, a framework adapted to form the crown of a hat, cap or other head-gear, a trumpet secured within the said framework and having a mouth conforming therewith and adapted to bear upon the forehead of the wearer, and downwardly-projecting earpieces secured to the said trumpet, substantially as specified.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

THOMAS WILLIAM MESSENGER.

Witnesses:
CHARLES S. BURGESS,
CLEM. A. HACK.