

No. 675,700.

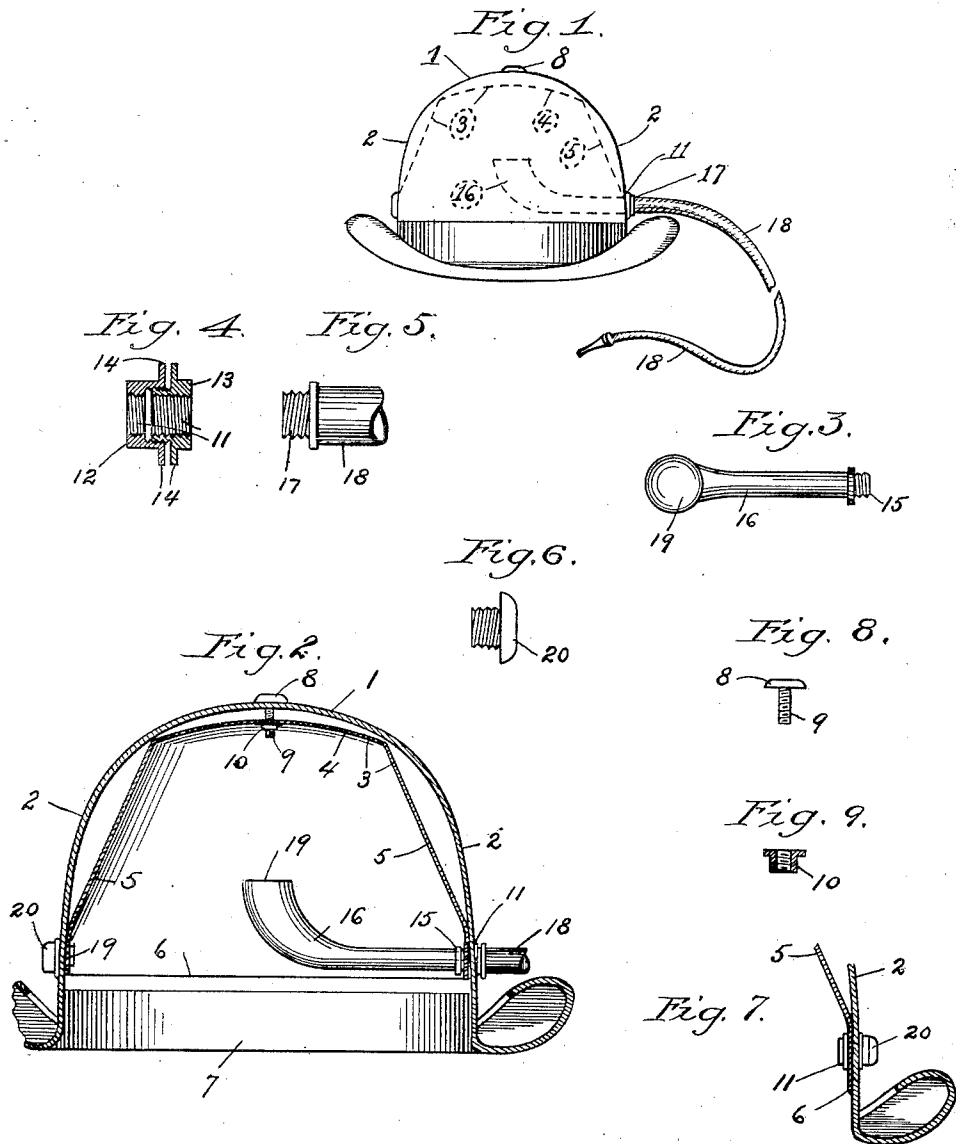
Patented June 4, 1901.

A. G. ZIMMERMANN.

DEVICE ATTACHED TO HATS TO AID IN HEARING.

(Application filed Nov. 9, 1900.)

(No Model.)



Witnesses:

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UNITED STATES PATENT OFFICE.

ALBERT G. ZIMMERMANN, OF CHICAGO, ILLINOIS.

DEVICE ATTACHED TO HATS TO AID IN HEARING.

SPECIFICATION forming part of Letters Patent No. 675,700, dated June 4, 1901.

Application filed March 9, 1900. Serial No. 35,912. (No model.)

To all whom it may concern:

Be it known that I, ALBERT G. ZIMMERMANN, a citizen of the United States, residing in the city of Chicago, county of Cook, and State of Illinois, have invented a new and useful Device Attached to Hats to Aid in Hearing, of which the following is a specification.

My invention relates to devices to assist hearing wherein a sound-collecting apparatus is mounted within an apparel-hat; and the objects of my invention are, first, to provide a sound-receiver adapted to be secured within a hat, thereby affording opportunity for carrying and using a receiver of unusually large size without attracting attention; second, to make provision for detachably securing said receiver to hats of different shapes; third, to provide means for transmitting the sound-waves from the receiver to the ear of the user, the transmitting devices being so constructed that they may be readily detached when not in use, and, fourth, to provide the other details hereinafter set forth. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 shows a hat with my apparatus attached thereto, the parts within the hat being shown in dotted lines. Fig. 2 is a sectional view taken on a vertical plane extending transversely through the hat, the scale being somewhat enlarged to better show the construction of the parts. Fig. 3 is a top view of the collector. Fig. 4 is a longitudinal sectional view in detail of the coupling whereto the collector and ear-tube are attachable. Fig. 5 is a detail view of a portion of the ear-tube, showing the method of attachment to the coupling. Fig. 6 shows the replacing-button adapted to be screwed into the coupling when the ear-tube is detached. Fig. 7 shows a portion of the hat with the replacing-button in place in the coupling. Fig. 8 is a detail view of the attaching-button employed at the crown of the hat. Fig. 9 is a detail sectional view of the threaded eyelet for receiving the threaded shank of said attaching-button.

Similar figures of reference indicate similar parts throughout the several views.

1 represents the crown, and 2 2 the sides, of the hat to which my apparatus is shown attached. The receiver 3 consists, preferably, of thin sheet metal, and comprises a sound-

reflector 4, to which is connected the funnel-shaped mouth 5. Said reflector is of parabolic form and adapted to occupy a position beneath the crown 1 of the hat, said reflector being preferably of an area approximately equal to that of said crown. The rim 6, which forms a portion of said receiver at the lower extremity of said mouth 5, is cylindrical and of such size as to make contact with the sides of the hat at a point preferably somewhat above the inner hat-band 7. Said receiver 3 is of such proportion as to occupy substantially the entire space within the hat, so that the reflector 4 approaches to within a short distance of the said crown 1 thereof.

The receiver 3 is detachably secured to the hat by means of fasteners, one of which consists of the button-head 8, having the threaded shank 9, which screws into the correspondingly-threaded eyelet 10, said button and eyelet being best shown in Figs. 8 and 9. When in position, the said shank 9 penetrates the crown 1 and the reflector 4, the button-head 8 resting upon said crown and the eyelet 10 being screwed upon said shank in such a manner as to support said receiver. As the eyelet 10 is adjustable upon said shank 9, the receiver may be attached to hats of different heights of crown.

The coupling 11 (shown in detail in Fig. 4) also constitutes one of the receiver-fastenings, and consists of the parts 12 and 13, adapted to be secured together in such a manner that the lips or flanges 14 14 thereon shall clamp the rim 6 of the receiver 3 to the side 2 of the hat, thereby holding said receiver in place and at the same time rigidly fixing the position of said coupling. The parts of said coupling are interiorly threaded to receive, respectively, the threaded extremity 15 of the collector 16 and the threaded extremity 17 of the ear-tube 18. Said collector 16 consists of a tube having its extremity 15 threaded, so as to be secured to the said coupling 11, and thereby hold said collector in place. The said collector is so constructed that the flaring mouth 19 thereof lies at the focus of the parabolic reflector 4 in such a manner as to collect the sound-waves reflected therefrom and transmit such waves to said coupling 11 and ear-tube 18.

The ear-tube 18 is of the ordinary pattern

and is provided with a threaded extremity 17 for screwing into the coupling 11. When the tube 18 and collector 16 are in position in said coupling, a continuous passage is afforded through the parts mentioned. At a point opposite to said coupling 11 is a similar coupling 11^a, which serves to further secure the receiver 3 to the hat and also preserves the symmetry of appearance.

10 The button 20 (shown separately in Fig. 6) is adapted to be screwed into the coupling 11^a and into the coupling 11 when the ear-tube 18 is detached.

When the hat is to be worn, the collector 16 and tube 18 are removed and a button 20 screwed into the coupling 11 to close the aperture therein, and thereby improve the appearance of the hat. As the receiver 3 is light in weight and lies near the sides and crown of the hat, above the inner hat-band, no inconvenience is felt by the wearer, and the receiver is not exposed to view. At such times the collector 16 and ear-tube 18 are conveniently carried in the pocket or elsewhere.

25 When the apparatus is to be used—as, for example, in public halls, &c.—the button 20 is removed from the coupling 11 and the collector 16 and ear-tube 18 screwed into place in the manner shown in Fig. 2. The hat is then held in the lap of the listener or in other convenient position, so that the sound coming from the platform or stage may strike the receiver 3. The sound-waves are reflected to the focus of the parabolic reflector—that is, to and into the mouth 19 of the collector 16—whence they are transmitted through said collector and ear-tube 18 to the ear of the listener.

One of the salient advantages of my device is that it enables the listener to carry and use without attracting practically any notice whatever a receiver of such large size as to be almost prohibitive if constantly exposed to view or carried or used separately.

45 Moreover, in my device there is obviated the confusion of noises resulting from sound-

waves striking both the inside and outside of the receiver. By the construction here shown both the material of the hat and the air-space included between the hat and the receiver act as means for insulating said receiver and preventing sound-waves from reaching the outer side thereof.

As the receiver may be easily removed from the hat by unscrewing the couplings 11 and 11^a and button 8, said receiver may be placed in different hats of approximately the same size, and as the button 8 may be adjusted in the eyelet 10 said receiver may be applied to hats of various heights of crown.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a device attached to hats to aid in hearing, the combination of a hat, a coupling placed at the side of the hat, a parabolic reflector attached within said hat and opening toward the hat-band, a sound-collecting tube for conveying sound from the focus of said reflector to said coupling, said tube being removably attached to said coupling, a second tube removably attached to said coupling for conveying sound from the hat to the ear of the listener and a replacing-button attachable to said coupling on the outside of the hat for replacing said second tube when the latter is removed from the hat.

2. In a device to assist hearing, the combination of a hat, a reflecting-receiver attached within said hat, and conforming to the shape of the crown thereof said receiver being open at the hat-band; tubes for conveying sound from within said hat to the ear of the listener, a coupling for clamping said receiver to said hat, said coupling having a threaded aperture for attachment to said sound-tubes, and a replacing-button for screwing into said coupling when said tubes are removed.

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