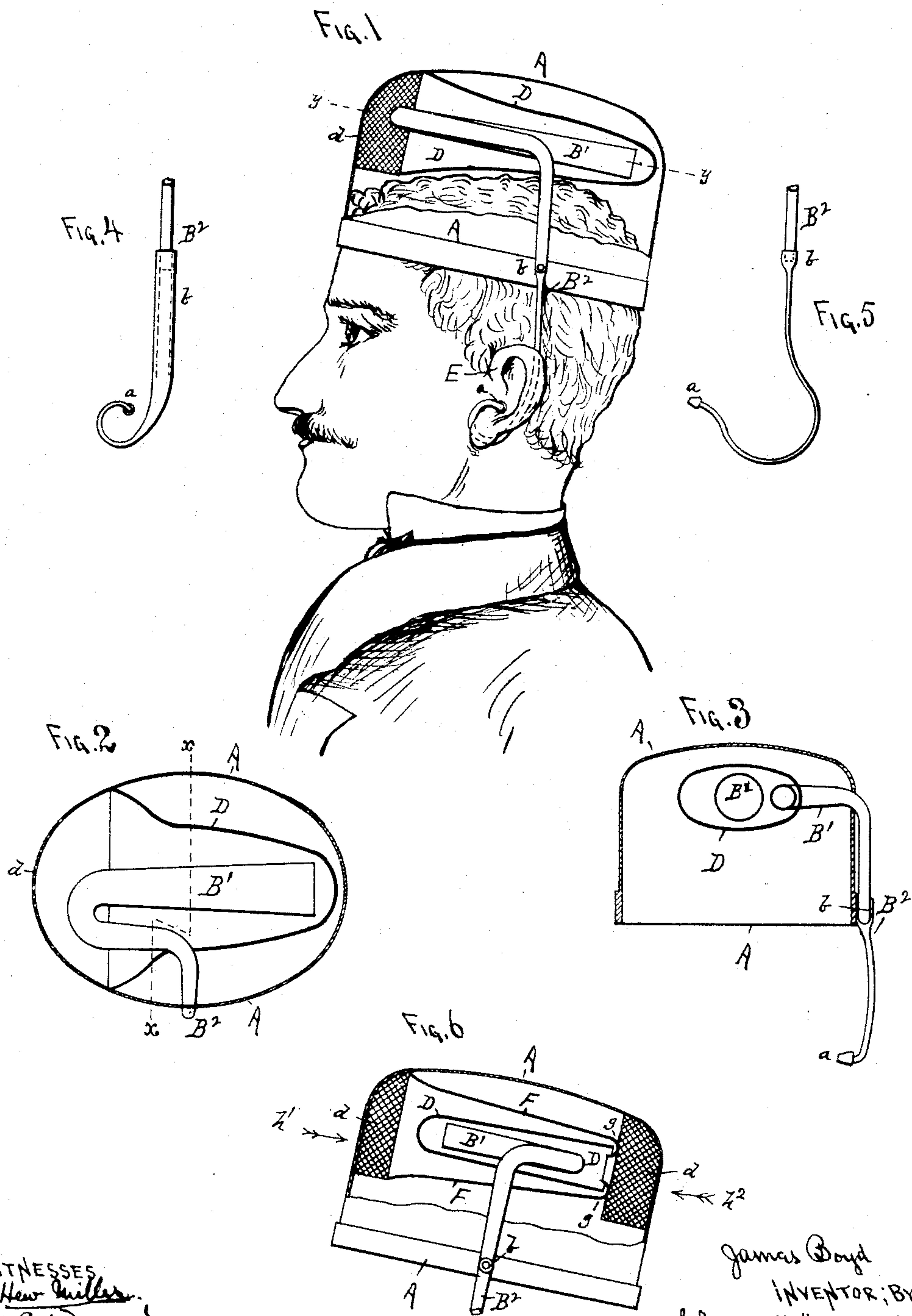


(No Model.)

J. BOYD.
EAR TRUMPET.

No. 438,369.

Patented Oct. 14, 1890.



WITNESSES
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UNITED STATES PATENT OFFICE.

JAMES BOYD, OF ST. PAUL, MINNESOTA.

EAR-TRUMPET.

SPECIFICATION forming part of Letters Patent No. 438,369, dated October 14, 1890.

Application filed June 9, 1890. Serial No. 354,789. (No model.)

To all whom it may concern:

Be it known that I, JAMES BOYD, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Ear-Trumpets, of which the following is a specification.

This invention relates to instruments for aiding or accelerating the hearing of partially-deaf persons; and it consists in arranging an ear-trumpet or other similar device in the hat, cap, or other head-covering and connecting it to one or both of the ears, as hereinafter shown and described, and specifically pointed out in the claims.

In the drawings, Figure 1 is a side view in profile of the side of the head of a man with one of my improved devices arranged within a cap upon the head. Fig. 2 is a plan view of the head-covering in section on the line Y Y of Fig. 1. Fig. 3 is a cross-sectional view on the line X X of Fig. 2. Figs. 4 and 5 are detached details of the ear-tubes, showing some slight modifications in the construction. Fig. 6 is a view similar to Fig. 1, showing another modification of the construction, whereby the trumpet is formed double-ended.

The device may be arranged in any form of head-covering, either in the ordinary hat, cap, bonnet, or hood of the person using the instrument or in a head-covering made especially for the purpose and worn either under the ordinary head-covering or adapted to be placed upon the head in place of the ordinary head-covering.

For the purpose of illustration I have shown the instrument arranged in a "skull-cap" A, the instrument, as shown in Figs. 1, 2, and 3, consisting of an ordinary ear-trumpet B' within a bell-mouth-shaped casing D, the side of the cap A opposite the open end of the casing D being provided with eyelets or formed of wire-cloth, bolting-cloth, or otherwise provided with means for passage of the sound-waves to the trumpet, as at *d* in Figs. 1 and 2. From the trumpet B' the ear-tube B² leads down to the ear E of the wearer, and is provided with the usual ear-bulb or "head" *a*. (See Fig. 3.) The tube B² will be formed in any desired manner, but will preferably be

formed to encircle the ear, as shown in Fig. 1, as in that form it can be almost entirely concealed by the ear and the hair of the wearer. The tube B² will also be provided with a joint *b*, by which means the lower end may be folded up when not in use, and thus occupy less room and enable the apparatus to be packed in a small compass for transportation. This joint *b* may be made in any desired manner, either a hinged joint, as in Fig. 1, or arranged to be "telescoped," as in Fig. 4, or formed of a section of flexible tubing, as in Fig. 5, or in any other suitable manner.

I do not wish to be limited to any specific form for the parts B', B², and D, as I am aware that many different forms may be employed.

The cap A may be of metal, if required, but will preferably be of some kind of flexible fabric, so as not to be conspicuous or unsightly.

Two or more of the trumpets may be arranged in one of the head-coverings with the open ends of the casings D pointing in opposite directions, if required, to enlarge the scope of the instrument, or an additional case F may be arranged outside the casing D with an inwardly-curved rim *g*, beneath which the open end of the casing D fits, as shown in Fig. 6, so that the sound-waves will enter the tube B' no matter from which side they come. If the sound-waves come from the direction of the arrow *h'*, they will pass around the casing D and, striking the inside of the rim *g*, be thrown back into the interior of the casing D, and thence by the trumpet to the ear-tube. If the sound-waves come in from the opposite end or in the direction of the arrow *h²*, they will pass directly into the casing D, as in Fig. 1, and will not be affected by the presence of the casing F. By this simple means the trumpet is made double-ended, and the cap or other head-covering may be formed with two of the openings *d*, so that sounds may be heard from either direction.

Having thus described my invention, what I claim as new is—

1. A head-covering having the openings *d*, in combination with an ear-trumpet concealed therein and adapted to be employed by the

person wearing the head-covering, substantially as and for the purpose set forth.

5 2. The combination, with a head-covering, of an ear-trumpet formed of the casing D and tapering tube B' and an outer flaring casing F, open at both ends and having the curved lip g, inclosing the open end of the casing D, substantially as and for the purpose set forth.

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

JAMES BOYD.

Witnesses:

STILES W. BURR,
WALTER T. BURR.