

Feb. 7, 1950

C. CUNNINGHAM

2,496,988

MEGAPHONE INCLUDING MOUTH AND EAR PIECES

Filed Jan. 18, 1946

2 Sheets-Sheet 1

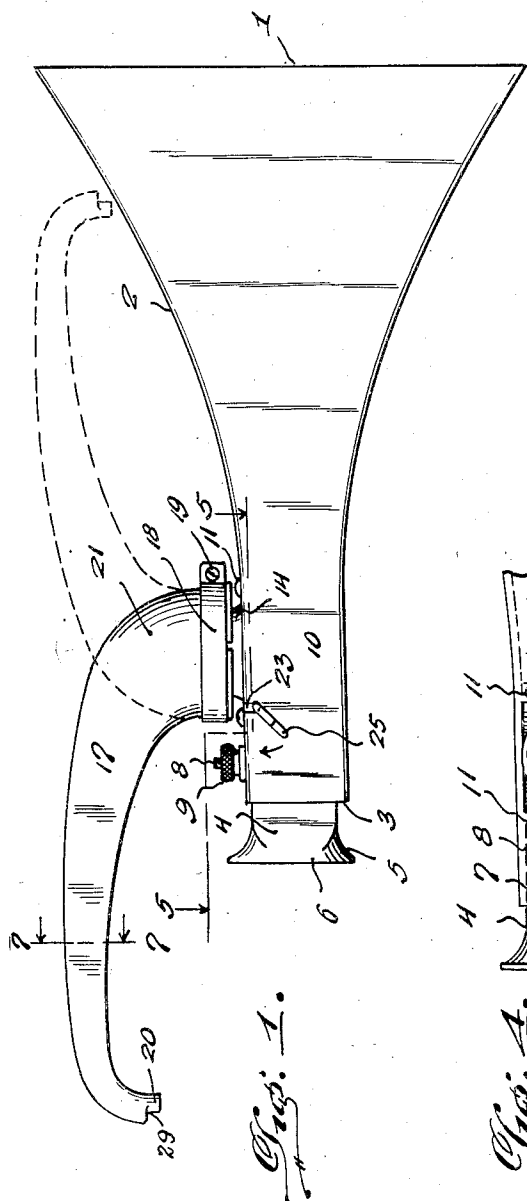


Fig. 1.

Fig. 6.

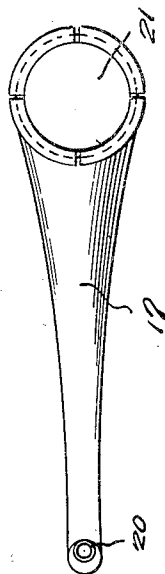
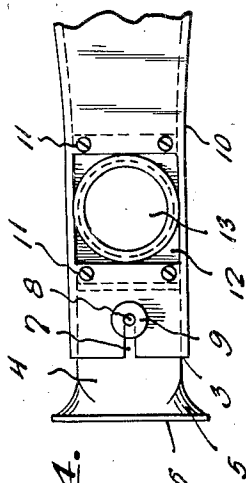


Fig. 4.

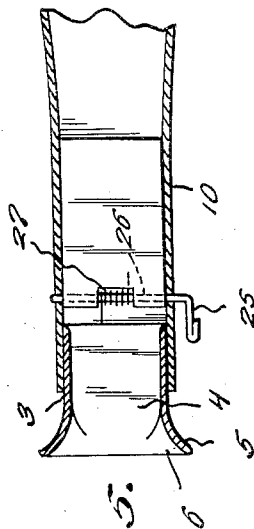


Fig. 5.

Inventor
Cecil Cunningham,

By *McMurray, Brown & Davidson*
Attorneys

Feb. 7, 1950

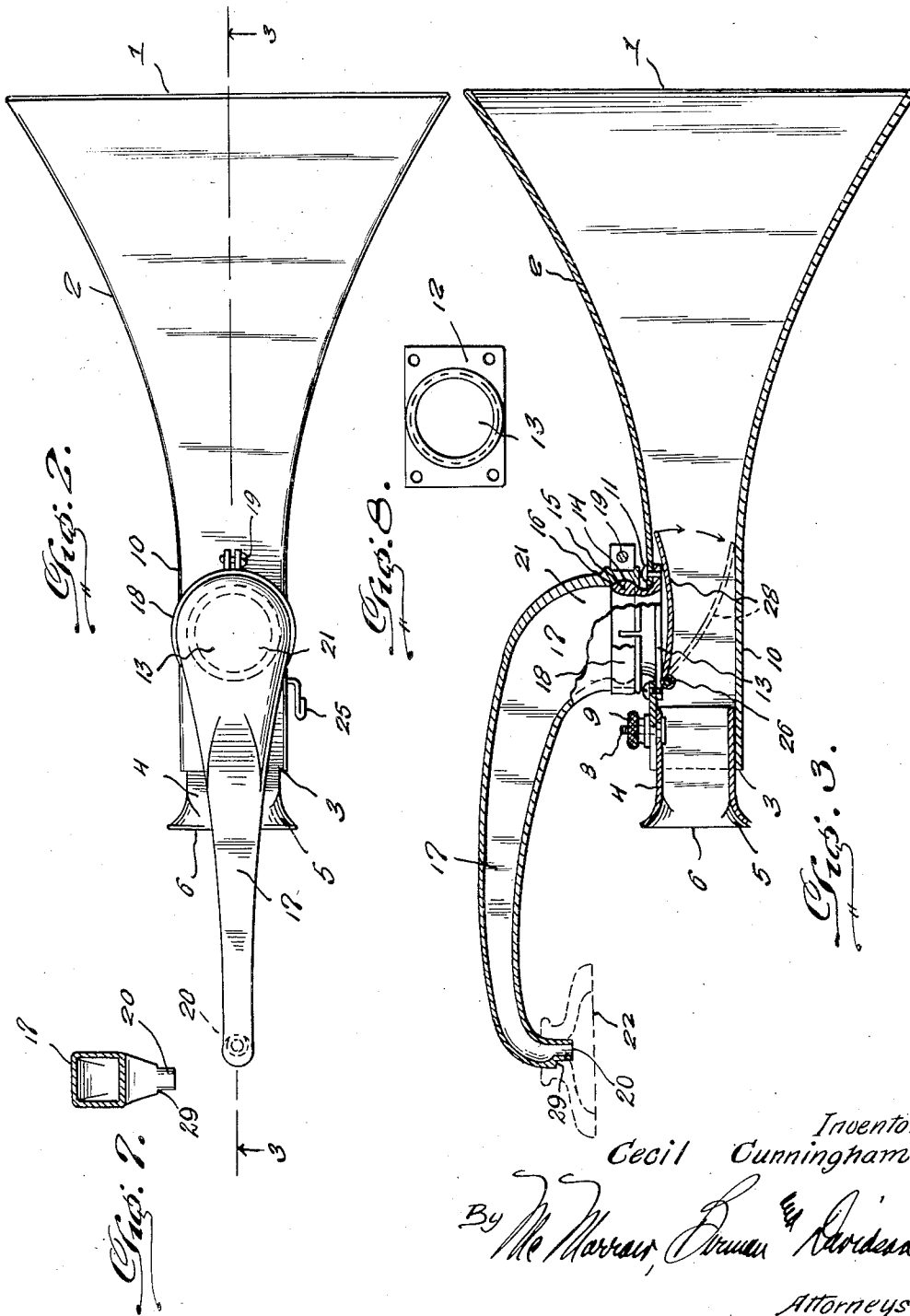
C. CUNNINGHAM

2,496,988

MEGAPHONE INCLUDING MOUTH AND EAR PIECES

Filed Jan. 18, 1946

2 Sheets-Sheet 2



Inventor
Cecil Cunningham,
By *McNair, Brown & Anderson*
Attorneys

UNITED STATES PATENT OFFICE

2,496,988

MEGAPHONE, INCLUDING MOUTH- AND
EARPIECES

Cecil Cunningham, East Orange, N. J.

Application January 18, 1946, Serial No. 641,949

2 Claims. (Cl. 181—20)

1

This invention relates to megaphones and in particular to megaphones having a sound receiving attachment, which may be mounted on a swivel joint, and turned to inoperative position, if desired.

A principal object of the invention is to provide a device of the above character which shall be of improved arrangement and construction.

A further object of the invention is to provide an improved megaphone which shall be compactly constructed, and which shall be capable of conversion from a sound-projecting device to a sound receiving device by simple manipulation of a conveniently located lever.

With the above and still further objects in view, which will be made apparent hereinafter, the invention consists in certain novel constructions, arrangements and combinations of parts which will be fully described in the following specifications, illustrated in the accompanying drawings, and particularly defined in the appended claims.

Reference is now had to the accompanying drawings wherein like characters of reference indicate like parts throughout the several views, and wherein:

Figure 1 is a front elevational view of the device embodying the invention, and showing in dotted and full lines, two positions which may be assumed by one element of the device;

Figure 2 is a plan view of Figure 1, without the dotted lines;

Figure 3 is a median section of the device taken on the line 3—3 of Figure 2 and illustrating various interior details;

Figure 4 is a plan view of the mouthpiece and adjacent parts of the device;

Figure 5 is a sectional view taken on the line 5—5 of Figure 1;

Figure 6 is a plan view of the earpiece associated with the device; and

Figure 7 is a sectional view taken on the line 7—7 of Figure 1; and

Figure 8 is a plan view of an element of the device.

The sound transmitter and receiver horn consists of a hollow, tapered body 1 of generally square cross section having open ends and tapering from its large to its small end in accordance with a gently sloping curve 2, which may follow a logarithmic law. While I have disclosed a horn of square cross section, it is to be understood that my invention may be practiced with horns having other cross sections, and that I do not desire to be limited to square cross sections.

2

At the mouth 3 of the horn is provided a mouthpiece 4, which is slidably translatable into and out of the end 3, as a means of adjustment to suit the needs of various users. The mouthpiece 4 is of generally square cross section and provides a close sliding fit with the mouth 3 of the horn but flares slightly at its outer extremity 5 and evolves into a shape of circular cross section 6, adapted to fit the mouth of the user.

In the upper wall of the horn end 3 is provided a longitudinal slot 7 providing access for a stub screw 8 extending upwardly from and secured to the mouthpiece 4. After longitudinal adjustment of the mouthpiece 4 within the mouth 3 has been accomplished the said mouthpiece 4 may be fixed relatively to the horn by means of a thumb screw 9, which threadably engages the stub screw 8 and clamps the upper wall of the horn end 3 against corresponding wall of the mouthpiece 4.

Secured against the underside of the upper wall of the throat 10 of the horn by means of screws 11, is a flanged ring 12 having a generally rectangularly shaped base having a circular aperture 13 therein, and from which extends an annular flange 14 provided with a convex outer surface 15, which engages with an annular groove 16 in an earpiece 17, to provide a swivel joint for the said earpiece. The upper wall of the horn is provided with a circular aperture, registering with aperture 13 of member 12.

An annular clamp 18 comprising a clamping screw 19 substantially surrounds the earpiece 17 over the annular groove 16, and tightening of said screw 19 serves to tighten the clamp 18 and thereby to compress the annular groove 16 in the earpiece 17 against the annular shoulder 15 of the member 12, when such adjustment is desired.

The earpiece 17 is provided with an ear tip 20 of generally rounded cross section adapted to be inserted slightly only in the ear, which extends generally perpendicularly to the center line of the horn; the earpiece 17 flares to a square cross section over a portion thereof which substantially extends parallelly to the center line of the horn, following however a slight and graceful curve, pleasing to the eye. The large end 21 of the earpiece 17, flares from a substantially square cross section to a circular cross section at the annular shoulder 15, simultaneously bending to take a direction at right angles to the center line of the horn, or parallel to the axis of the annular shoulder 15.

Secured to the tip 20 in any convenient manner may be provided an earpiece 22. For example

the earpiece 22 may be of rubber or plastic and may be pressed on the tip 20, and secured adhesively or by means of a set screw. However, the mode of securing earpiece 22 to tip 20 is not part of my invention. The use of an earpiece is recommended in connection with my invention, but is not necessary, since the shoulder 29 will obviate the possibility of harming the ear of the user by careless insertion of the tip 20 too far into the ear.

Extending through the upper wall of the throat 10 just forwardly of the longitudinal slot 7 is a further transverse slot 23, which receives a crank-shaft 24 having a crank 25 extending externally of the horn and a shaft 26 extending across the throat 10 and bearing in the side walls of said throat 10. Surrounding a portion of the shaft 26 is a coil spring 27 one end of which extends under and is secured to a valve or baffle 28, the other end being secured in any convenient manner. The spring 27 serves to retain valve or baffle 28 in the position shown in full lines in Figure 3, to provide clear passage for sounds outgoing from the megaphone, and to block, at the same time, passage to earpiece 17. When it is desired to use the device as an audiphone the baffle 28 is depressed by actuation of crank 25, thereby providing a clear passage from mouth of the horn to the earpiece 17.

In use, the device is supported by the hand with the mouthpiece 4 adjacent the mouth, the earpiece 17 extending about the face to support earpiece 22 or tip 20 adjacent to the ear. Crank 25 in unactuated position enables baffle 28 to protect the ears from sounds projected into mouthpiece 4 when the device is used as a megaphone, by blocking the passageway to earpiece 17. When used as an audiphone, however, crank 25 is actuated by a finger of the hand supporting the device, to block the passage to the mouthpiece 4, and thereby causing all received sound energy to flow to the earpiece 17.

When the device is not in use earpiece 17 may be rotated 180 degrees about its swivel joint 15, 16 to the position shown in dotted outline in Figure 1, to provide compact stowage.

What I claim is:

1. A convertible megaphone comprising an elongated, tapered horn having open ends, a throat portion adjacent the smaller end and a lateral opening through the wall of said throat portion, a mouthpiece detachably secured in the smaller end of said horn, a flanged ring secured in said throat portion with the annular flange thereof extending through said lateral opening,

a rigid, tapered tube having curved end portions receiving said annular flange in its larger end, the smaller end of said tube being shaped to provide an ear-piece, means carried by said tube at the larger end thereof operative to adjustably secure said tube to said flanged ring, a shaft extending through the throat portion of said horn at the side of said lateral opening adjacent the smaller end of said horn, a crank on said shaft, and a baffle in said throat portion secured at one end to said shaft and movable by said crank between a position in which it closes said lateral opening and a position in which it closes the smaller end of said horn.

2. A convertible megaphone comprising an elongated, tapered horn having open ends, a throat portion adjacent the smaller end and a lateral opening through the wall of said throat portion, a mouthpiece detachably secured in the smaller end of said horn, a flanged ring secured in said throat portion with the annular flange thereof extending through said lateral opening, a rigid, tapered tube having curved end portions receiving said annular flange in its larger end, the smaller end of said tube being shaped to provide an ear-piece, means carried by said tube at the larger end thereof operative to adjustably secure said tube to said flanged ring, a shaft extending through the throat portion of said horn at the side of said lateral opening adjacent the smaller end of said horn, a crank on said shaft, a baffle in said throat portion secured at one end to said shaft and movable by said shaft between a position in which it closes said lateral opening and a position in which it closes the smaller end of said horn, and spring means operatively connected with said baffle resiliently urging said baffle to its position closing said lateral opening.

CECIL CUNNINGHAM.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
404,868	Rush	June 11, 1889
454,399	Cutmore	June 16, 1891
630,990	Salmond	Aug. 15, 1899
652,926	Salmond	July 3, 1900
918,111	Woods	Apr. 13, 1909
958,680	Purcell	May 17, 1910
1,145,146	Johnson	July 6, 1915