C. LARRICK.

AUDIPHONE.

APPLICATION FILED MAR. 26, 1919.

1,351,254. Patented Aug. 31, 1920.

FIG. 4.

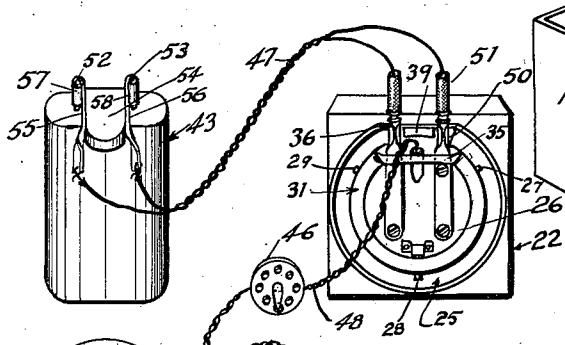


FIG. 3.

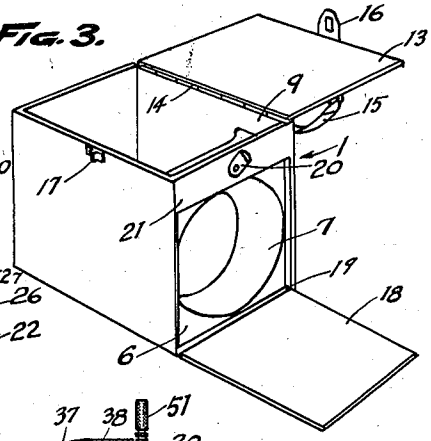


FIG. 6.

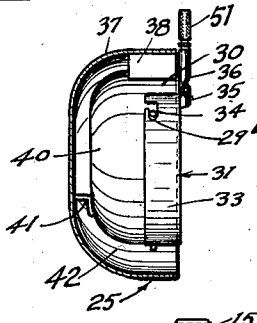


FIG. 1.

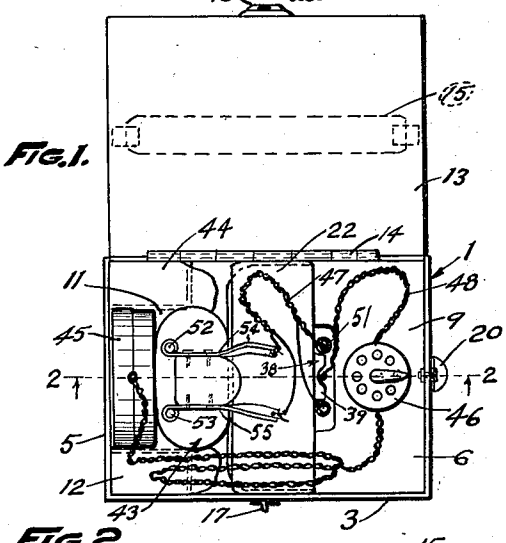


FIG 5.

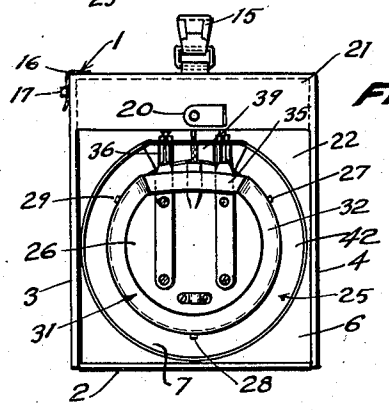
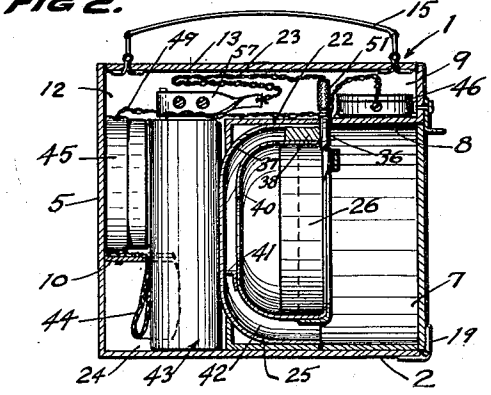


FIG 2.



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AUDIPHONE.

1,351,254. Specification of Letters Patent. Patented Aug. 31, 1920.

Application filed March 26, 1919. Serial No. 285,377.

To all whom it may concern:

Be it known that I, CHARLES LARRICK, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Audiphones, of which the following is a specification.

My object is to make an improved audiphone, and my invention consists of the novel features herein shown, described and claimed.

Figure 1 is a top plan view of an audiphone embodying the principles of my invention with the top lid in open position and showing the parts packed in the box ready for transportation.

Fig. 2 is a vertical central section taken substantially on the line 2—2 of Fig. 1 with the lid closed and looking in the direction indicated by the arrows.

Fig. 3 is a perspective of the box with the audiphone mechanism removed.

Fig. 4 is a perspective of the audiphone mechanism removed from the box.

Fig. 5 is a front elevation of the audiphone with the front lid open for use.

Fig. 6 is a vertical central section through the amplifier and showing the means for holding the transmitter in place relative to the amplifier.

The details of the audiphone box 1 are as follows:

The flat rectangular bottom 2 is formed rigid with the sides 3 and 4 and the back 5. A filler 6 fits rigidly in the front end of the box between the sides 3 and 4 and upon the bottom 2 and has a cylindrical lining 7 extending from the forward edge of the bottom 2 backwardly near one-third of the length of the bottom 2. The upper face 8 of the filler is a short distance below the upper edges of the sides 3 and 4 thus forming the switch chamber 9. The shelf 10 extends forwardly from the back 5 substantially one-third of the way up from the bottom 2 and has a raised forward edge 11 thus forming a chamber 12 above the shelf 10 to receive the receiver. The upper lid 13 is connected to the upper edge of the sides 4 by hinges 14 and has a carrying handle 15 secured to its upper face. A hasp 16 secured to the lid 14 engages a fastener 17 secured to the upper part of the outer face of the side 3 to hold the lid closed. The front lid 18 is secured to the front edge of the bottom 2 by hinges 19, and a button 20 is secured to the front face of the crossbar 21 to engage the front lid 18 to hold the lid closed. The crossbar 21 connects the upper parts of the front edges of the sides 3 and 4 and forms the front of the chamber 9.

The amplifier box 22 is a rectangular shell adapted to slide down between the walls 3 and 4 back of the cylindrical lining 7 and fit tightly in the box thus leaving the chamber 23 above the amplifier in the main box and the chamber 24 back of the amplifier box. The amplifier 25 fits closely within the rectangular shell, the shell contacting with the amplifier at four points so as to hold the amplifier from rattling in the shell, and the transmitter 26 fits in the forward side of the amplifier 25.

Pins 27, 28 and 29 project radially from the periphery of the casing 30, and a cap ring 31 has an inturned flange 32 engaging the front face of the transmitter and a band portion 33 fitting around the casing 30, there being bayonet joint slots 34 in the band to engage the pins 27, 28 and 29 to hold the transmitter in place. A bar 35 connects the ends of the flange 32 and passes in front of the binding posts 36 of the transmitter. The casing 30 is spaced from the sound collector 37 by a block 38, and a lug 39 extends from the block 38 and fits between the binding posts 36 to hold the transmitter from rotating in the casing 30. The casing 30 is a part of the sound concentrator 40. A brace 41 connects the lower part of the sound collector 37 to the sound concentrator 40, and the casing 30 is connected to the block 38, and the block 38 is connected to the sound collector 37, to hold the sound concentrator 40 carrying the transmitter 26 in place. The passage through the cylindrical lining 7 leads directly to the sound collecting passage 42. The frame part of the sound collector 37 is substantially the same size as the cylinder 7, and the cylinder 7 serves as an extension of the sound collector 37.

The battery 43 fits in the space 11 and in the chamber 24 and presses against the back of the sound collector 37. A cushion 44 is attached to the shelf 10 and covers the upper face of the shelf and hangs downwardly in the space 11, so that the battery 43 may be pressed tightly into place to hold the battery steady and to hold the amplifier steady.

The receiver 45 fits closely in the chamber 12 between the battery 43 and the back 5.

The switch 46 fits in the chamber 9, and the electric cords 47 connecting the receiver 45 to the transmitter 26, the electric cords 48 connecting the ransmitter 26 to the switch 46, and the electric cords 49 connecting the switch 46 to the receiver 45 are packed in the chamber 23 above the amplifier 25 and above the battery 43 and above the receiver 45. The cords 47 are detachable from the transmitter and detachable from the battery. The binding posts 36 upon the transmitter 26 have tubular sockets 50 to receive the electric plugs 51 to which the cords 47 are attached, and the binding posts 52 and 53 of the battery 43 are straight parallel posts. A block 54 of insulation has flat sides against which metal strips 55 and 56 are attached, and the ends of the straps are rolled to form tubular sockets 57 and 58 to fit removably upon the posts 52 and 53, the opposite ends of the straps 55 and 56 from the sockets 57 and 58 extending away from the block 54 and the straps are perforated, and the wires 47 are tied to the straps through these perforations, so that the block 54 may be manually grasped to remove the sockets 57 and 58 from the binding posts or to replace the sockets upon the binding posts. When desired the cord 47 carrying the terminals 51, 57 and 58 may be disconnected and packed by itself.

For transportation the audiphone is packed, as shown in Figs. 1 and 2, the front lid 18 closed and the top lid 13 closed and the box carried by the handle 15. When it is desired to use the audiphone the lid 18 is opened and the box set with the front side toward the stage, pulpit, or other source of entertainment, and the receiver 45 applied to the ear and the switch 46 operated.

The amplifier 25 is a great magnifier of sound by itself, but when placed in the box with the cylinder 7 acting as an extension of the sound collector of the magnifier the effect is still better.

Usually in using the audiphone at an opera or other entertainment the box will be held in the lap, or any other convenient position facing the entertainer.

Various changes may be made without departing from the spirit of my invention as claimed.

I claim:

1. An audiphone comprising a box having a front lid, a filler mounted in the front end of the box and having a cylindrical lining, an amplifier mounted behind the filler in line with the cylindrical lining, a transmitter mounted in the amplifier, a battery mounted behind the amplifier and connected to the transmitter, a switch conected to the transmitter, and a receiver connected to the switch, there being space within the box for packing the switch and receiver and the cords.

2. An audiphone comprising a box having a top lid and a front lid, a filler mounted in the front end of the box and having a cylindrical lining, a rectangular shell adapted to slide downwardly into the box behind the cylindrical lining, an amplifier in the rectangular shell and adapted to register with the cylindrical lining, a battery mounted behind the amplifier and adapted to press the amplifier against the cylindrical lining, a switch mounted above the filler, a transmitter mounted in the amplifier, and a receiver mounted behind the battery.

3. In an audiphone, a box, a filler mounted in the front end of the box, a cylindrical lining mounted in the filler, an amplifier mounted behind the filler and registering with the cylindrical lining, and a transmitter mounted in the amplifier.

4. In an audiphone, a box, a cylindrical lining mounted in the front end of the box, a rectangular shell slid down into the box behind the lining, an amplifier mounted in the rectangular shell, and a transmitter mounted in the amplifier.

5. An audiphone including a box having a top lid and a front lid, a cylindrical lining in the front end of the box, a rectangular shell adapted to slide downwardly into the box behind said cylindrical lining, an amplifier in said rectangular shell adapted to register with said cylindrical lining, a transmitter mounted in said amplifier, a shelf secured to the inside of the rear wall of said box, a battery slidable downwardly into the box between said amplifier and said shelf, a receiver adapted to rest between said battery and the rear end wall of said box, there being a space between said lining and said top lid and a switch adapted to rest in said space.

6. An audiphone including a box having a top lid and a front lid, a cylindrical lining in the front end of the box, a rectangular shell adapted to slide downwardly into the box behind said cylindrical lining, an amplifier in said rectangular shell adapted to register with said cylindrical lining, a transmitter mounted in said amplifier, a shelf secured to the inside of the rear wall of said box, a battery slidable downwardly into the box between said amplifier and said shelf, a receiver adapted to rest between said battery and the rear end wall of said box, there being a space between said lining and said top lid and a switch adapted to rest in said space, and a cushion attached to the top of the shelf and depending downwardly from the front edge thereof upon which cushion said receiver rests and against which cushion said battery engages.

In testimony whereof I have signed my name to this specification.

CHAS. LARRICK.