Jan. 5, 1926. 1,568,543

E. BOCCHINO

SOUND PRODUCING DEVICE

Filed Jan. 24, 1925

Fig. 1.

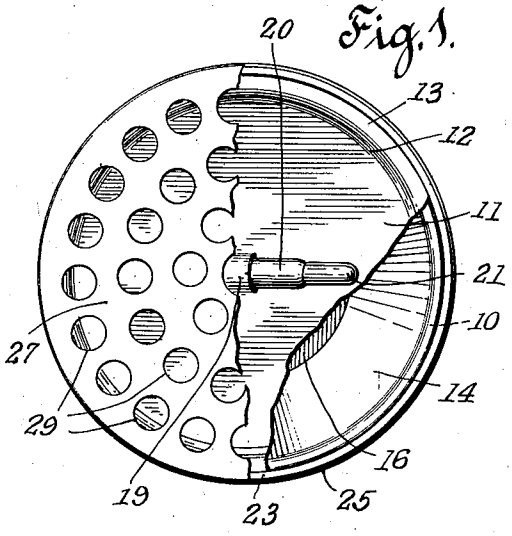


Fig. 2.

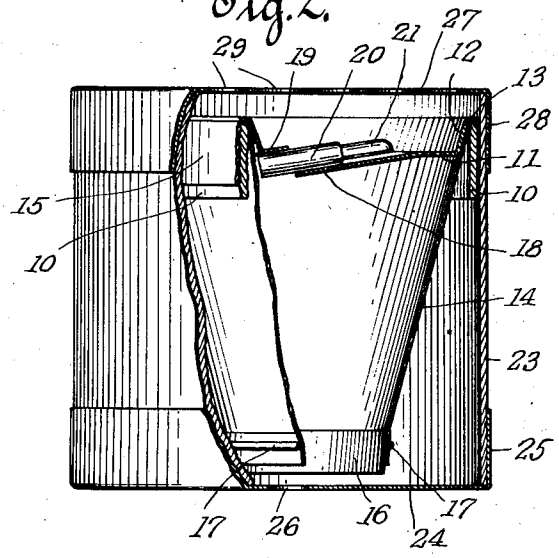
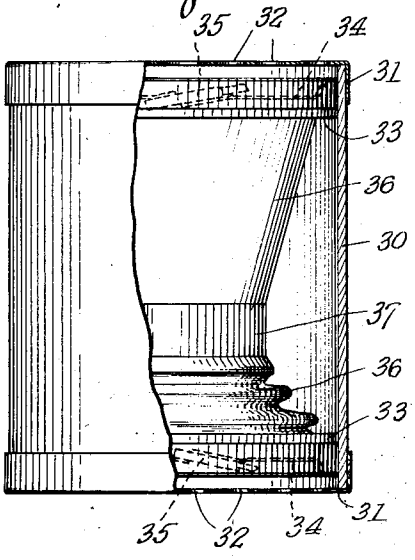


Fig. 3.



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UNITED STATES PATENT OFFICE.

ERNEST BOCCHINO, OF PASSAIC, NEW JERSEY, ASSIGNOR TO UP TO DATE MANUFACTURING CO., INC., OF JERSEY CITY, NEW JERSEY.

SOUND-PRODUCING DEVICE.

Application filed January 24, 1925. Serial No. 4,420.

To all whom it may concern:

Be it known that I, ERNEST BOCCHINO, a citizen of the United States, and resident of Passaic, in the county of Passaic and State of New Jersey, have invented new and useful Improvements in Sound-Producing Devices, of which the following is a specification.

This invention relates to sound producing devices, in which the cry of a distressed child or small animal is simulated artificially.

One object of the invention is to provide an extremely simple and compact device, capable of emitting sound by merely inverting its position, no pressure or extraneous parts being used.

It is a further feature to produce a device that can be manufactured at a low cost, and which is capable of long continued service without detriment to its parts or functions.

Another aim is in the provision of a sound maker that can be incorporated directly into the body of a toy or the like without the use of an intervening casing or shell, the sound producing structure requiring only a support and space in which to operate.

A still further feature is to furnish a vocal cry maker that will produce a distinct sound upon being reversed, irrespective of whichever end be up or down, or in other words, a double instrument.

These several important features are attained by the novel construction and combination of parts hereinafter described and illustrated in the annexed drawing, forming part hereof, and in which:—

Figure 1 is a plan view of an embodiment of the invention, parts being broken away to disclose the interior.

Figure 2 is a side elevational view of the same, also broken away to show the construction.

Figure 3 is a similar side elevational view showing a modified form of the device.

Devices of the class mentioned are to be found in many varieties of toys, particularly dolls, which upon being placed in a recumbent or reclining position from an upright posture, produce sounds resembling the cry, wail, howl or bark of the object represented, such noise being continued for a period of time depending on the capacity of the structure.

The devices used for such purposes hitherto have ordinarily included a casing encompassing the entire structure, and the bellows are made of rubber which deterioriates in time, hardening, breaking and failing in its functions, rendering the device useless.

The present invention may be used without a casing and rubber is not employed in the device.

Referring now more particularly to the drawing, the numeral 10 designates a metal ring or band and 11 a metal disc generally flat and having a raised annular flange 12 tapering outwardly to present the shape of conic frustum, the upper, outer surface of which fits within the ring 10 and seated on the ring is an outstanding flange 13.

A thin but strong and highly flexible membranous element 14, made preferably of textile fabric impregnated with a substance to render it impervious to the passage of air, is formed into a cone, one of its ends being disposed around the conical flange 12, passed between the lower surface of flange and edge of the ring 10 and over a portion of the outer surface of the ring, as at 15, to which it is secured by any suitable adhesive.

Thus the element 14, which may be called a bellows, is supported by the ring 10 and hermetically engaged to the disc 11, also carried by the ring.

In the smaller, opposite end of the bellows 14, is fixed a cylindrical weighted head 16, secured by passing a thong or leash 17 over the bellows to draw the material tightly upon the periphery of the weight, the thong being preferably an elastic band.

The disc 11 is pierced at about its center and die pressed to present a concavely curved seat 18 extending radially in one direction, and on the opposite side the material is raised to provide a socket 19, the seat and socket being receptive of a small, open cylindrical tube 20, extending through the disc at a slight angle from its generally level surface.

The reed 21 is fixed in the open outer end of the tube 20, the other inner end of the tube being open to the interior of the bellows 14.

From the foregoing, it will be apparent that with the bellows expanded, as in Fig. 2, air will have been drawn into the space between its walls through the tube and this air will be expelled upon reversing the device by action of the weight 16, forcing the air outward through the reed, causing its tongue to vibrate and emit sound.

It is therefore necessary to provide a support for the ring and space in which the weight and bellows can operate, which requirements may be found in the structures to which the devices are applied or may be supplied in the manner shown, in which a cylindrical casing 23 having an interior diameter to tightly fit over the material 15 disposed on the outer surface of the ring 10, and is provided with a cap 24 having a flange 25 tight fitted to the casing and containing one or more perforations 26 for the passage of air as the bellows is operated.

Another similar cap 27 has a tightly fitted flange 28 and contains a plurality of perforations 29 to permit the entrance and exit of air as the bellows is moved and sound from the reed to emanate.

In the modification in Fig. 3 a double acting device is shown, in which a casing 30 is provided at each end with similar heads 31 containing like perforations 32 and has fitted to it rings 33 carrying discs 34 supporting reeds 35.

A bellows 36 is secured to the rings 33 at its ends, the bellows tapering conically to a point midway of its length, and attached thereto is a single weight 37 operative in either direction to draw the bellows by gravity thus alternately expanding and closing the same.

From the foregoing it will be seen that a simple device for this purpose has been disclosed in the preferred form of its embodiment, but it is not desired to restrict the details to the exact construction shown, it being obvious that changes, not involving the exercise of invention, may be made without conflicting with the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. A sound producing device comprising a flat support band, a metallic disc carried interiorially of said band, said disc having a raised conic flange extending over the edge of said band and shaped to produce an angularly disposed socket near its center, a cone composed of air tight flexible fabric secured at its larger end between the flange of said disc and said band, a weighted head secured in the smaller end of said cone, and sound producing means carried in the socket of said disc, said means being rendered tonic by the passage of air from said cone.

2. A sound producing device comprising a supporting annulus, a conical flexible textile fabric bellows fixed on said annulus and inverted to extend therethrough, a cylindrical weight forming a head for the smaller extending end of said bellows, an elastic thong confining the bellows around the head, means for producing sound fixed in the larger end of the bellows, a casing in which said annulus is fixed, and plurally perforate heads engaged on each end of said casing.

3. A sound producing device comprising a cylindrical casing having perforate heads, rings fixed in said casing adjacent its ends, a flexible bellows composed of two conical frustrum sections united at their smaller ends, a weighted partition at the joint of said sections, the larger ends of the sections being fixedly engaged over said rings, heads fixed in the larger ends of each section, said heads being carried by the rings, and sound producing elements, including reeds carried by the last named heads, said elements communicating between the spaces in the respective bellows sections and the spaces between the bellows heads and said perforate heads.

Signed at New York, in the county of New York and State of New York, this 23d day of January, 1925.

ERNEST BOCCHINO.