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J. GREEN

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TOY HAND-HELD VOICE MODIFIER

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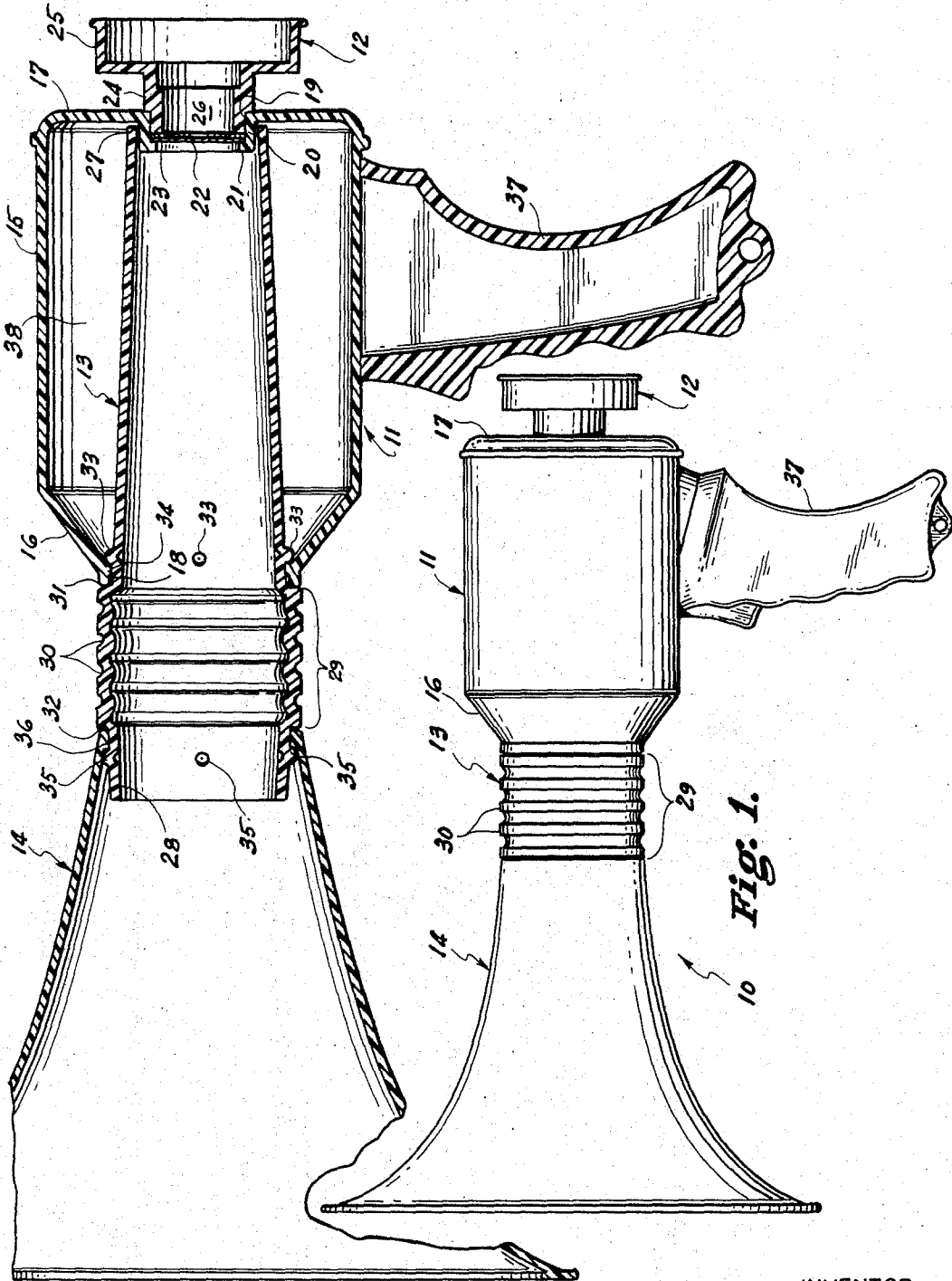


Fig. 2.

Fig. 1.

INVENTOR
JOSEPH GREEN

BY:

Alvin Siderman

ATTORNEY

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TOY HAND-HELD VOICE MODIFIER

Joseph Green, Hewlett, N.Y., assignor to Miner Industries, Inc., New York, N.Y., a corporation of Delaware
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ABSTRACT OF THE DISCLOSURE

A toy, hand-held voice modifier has a cylindrical, hollow body with relatively small openings in its ends, a flexible membrane seated in one of the openings to confine a chamber defined by a mouthpiece extending from such opening, and a tubular open-ended member extending axially in the body through the other opening of the latter for connection to a bell member, the tubular member being secured to the body only at said other opening and having its end remote therefrom extending with clearance around the opening seating the membrane to define an annular cavity within the body which is closed by the ends of the latter.

This invention relates generally to a toy hand-held voice modifier.

An object of this invention is to provide a toy having the external appearance of an electrically powered voice amplifier, for example, of the type known as a "bull horn," and which modifies the voice of the user so as to simulate the sound of such a voice amplifier without resort to an electrical power source or any other electrical components.

Another object is to provide a toy of the described character which is capable of relatively inexpensive manufacture.

In accordance with an aspect of this invention, a toy hand-held voice modifier comprises a hollow body having a generally cylindrical wall with inturned, annular flanges at its opposite ends defining openings at the corresponding ends of the body, a flexible membrane seated in one of the openings with a mouthpiece extending from that opening to define a chamber which is confined at one end by the membrane, a tubular open-ended member extending axially in the body through the other opening of the latter and having an end portion within the body which extends around the opening having the membrane seated therein and terminates adjacent the annular flange of the body defining that one opening so that an annular cavity is formed within the body between its cylindrical wall and the tubular member, and a flaring bell member extending axially from the tubular member in the direction away from the body.

In a preferred embodiment of the invention, there is an exposed section of the tubular member between the bell member and the hollow body, which exposed section of the tubular member has an axially arranged series of circumferential corrugations, and the tubular member is secured to the hollow body only at the opening of the latter adjacent the exposed section of the tubular member.

The above, and other objects, features and advantages of this invention, will be apparent in the following detailed description of an illustrative embodiment thereof which is to be read in connection with the accompanying drawing wherein:

FIG. 1 is a side elevational view of a toy, hand-held voice modifier embodying this invention; and

FIG. 2 is a longitudinal sectional view of the voice modifier on an enlarged scale.

Referring to the drawing in detail, and initially to FIG. 1 thereof, it will be seen that a toy, hand-held voice

modifier embodying this invention, and there generally identified by the reference numeral 10, comprises, as its main components, a body 11 having a mouthpiece 12 extending from one end, a tubular member 13 projecting from the other end of body 11, and a flaring bell member 14 which extends axially from tubular member 13. The foregoing components of the toy 10 are all preferably formed of plastic materials, for example, by the blow molding of linear polyethylene.

Referring particularly to FIG. 2, it will be seen that the hollow body 11 includes a generally cylindrical wall 15 formed with radially inturned flanges 16 and 17 at its opposite ends to define central openings 18 and 19, respectively, at the corresponding ends of body 11. A tubular extension 20 projects axially inward from the inner margin of flange 17 around opening 19, and has an internal lip 21 at its inner end. The lip 21 forms a seat for a disk of paper 22 or other flexible material forming a membrane which is adhesively secured at its periphery to a supporting cardboard ring 23.

The mouthpiece 12 is open at its opposite ends and has a cylindrical portion 24 fitting into, and frictionally retained within the tubular extension 20 so that the end edge of portion 24 of the mouthpiece engages the cardboard ring 23 to hold the latter and the membrane 22 against the seat formed by the lip 21. The mouthpiece 12 further has an enlarged diameter portion 25 extending from portion 24. The mouthpiece 12 is of sufficient axial extent so that, when the user of the toy speaks into the enlarged diameter end portion 25, the user's lips are substantially spaced from the membrane 22 and the interior of the mouthpiece defines a chamber 26 between the source of the sound and the membrane 22 which is vibrated thereby.

The tubular member 13 extends axially into hollow body 11 through opening 18 at the end of the body remote from mouthpiece 12. The end 27 of tubular member 13 terminates adjacent flange 17 and extends loosely around the tubular extension 20 which constitutes the periphery of opening 19. The other end portion 28 of tubular member 13 telescopes a short axial distance into the small diameter end of bell member 14. As shown, a section 29 of tubular member 13 is exposed between body 11 and bell member 14, and that section 29 is preferably formed with an axially arranged series of corrugations 30. At the opposite ends of its section 29, tubular member 13 is formed with external radial shoulders 31 and 32 which are engageable with the adjacent end edges of body 11 and bell member 14 in order to limit the extension of tubular member 13 into body 11 and into bell member 14, respectively.

The tubular member 13 is preferably secured to body 11 only at the end of the latter where the tubular member extends through opening 18. Such securing of tubular member 13 to body 11 is preferably effected by means of projections 33 extending radially outward from tubular member 13 at locations spaced axially from shoulder 31 so as to engage behind an inwardly directed bead 34 extending around opening 18. The projections 33 may be formed by striking the wall of the tubular member 13 radially outward with a heated tool after the tubular member has been inserted into body 11, or the projections 33 may be molded on tubular member 13 and dimensioned so as to snap past and engage in back of bead 34.

In order to secure bell member 14 on tubular member 13, the tubular member 13 is preferably formed with projections 35 similar to the above mentioned projections 33, but spaced from the shoulder 32 so as to snap past and engage in front of an internal rim 36 formed at the small diameter end of bell member 14.

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As shown particularly on FIG. 2, the tubular member 13 flares slightly in the direction from its end 27 toward the end 28 so that, when tubular member 31 and bell member 14 are assembled together, such members combine to form a horn which is generally of exponential configuration.

The toy 10 is completed by a handle 37, which is preferably in the form of a pistol grip, as shown, so that the entire toy may be supported only by grasping of the handle 37 to avoid any damping contact with resonating portions of the toy, particularly, the tubular member 13 and bell member 14 thereof.

It has been found that the toy 10 constructed and arranged as described above and shown in the drawing is capable of modifying the voice of the user so as to provide an entertaining simulation of the sound issuing from an electrically powered voice amplifier, such as, a "bull horn." Although the exact manner in which the toy 10 achieves the close simulation of the sound of an electrically powered voice amplifier is not fully understood, it has been found that features of the device contributing strongly to the desired result are the attachment of the tubular member 13 to body 11 only at the opening 18 of the latter and the loose engagement of the end 27 of the tubular member around the seating structure for the membrane 22 so that substantially the entire length of the tubular member 13 is free to vibrate within body 11. Further, the annular cavity or space 38 defined within body 11 between tubular member 13 and cylindrical wall 15 appears to constitute a resonant chamber when the tubular member 13 is mounted, as described, so as to be free to resonate within body 11. It is also believed that the corrugated exposed section 29 of tubular member 13 which connects bell member 14 to body 11 provides a relatively softly resilient connection which contributes to the resonant or metallic quality of the sound issuing from the bell member.

Although a particular embodiment of the invention has been described in detail herein with reference to the accompanying drawing, it is to be understood that the invention is not limited to that precise embodiment, and that various changes and modifications may be effected therein by one skilled in the art without departing from the scope or spirit of the invention, except as defined in the appended claims.

What is claimed is:

1. A toy, hand-held voice modifier comprising a hollow body having a generally cylindrical wall with inturned, annular flanges at its opposite ends defining openings at the corresponding ends of the body which have diameters substantially smaller than that of said wall, a flexible membrane seated in one of said openings, a mouthpiece extending from said one opening and defining a chamber confined at one end by said membrane, a tubular open-ended member extending axially in said body along substantially the entire length of the latter and projecting through the other of said openings said tubular member being secured to said body only at said other opening and having an end portion within said body which extends with clearance around said one opening and terminates adjacent the annular flange defining said one opening so that an annular cavity is formed within said body between said cylindrical

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wall and said tubular member, said cavity being confined, at its ends, by said flanges of the body, and a flaring bell member extending axially from the other end portion of said tubular member in the direction away from said body.

2. A toy, hand-held voice modifier as in claim 1; wherein said tubular member has a section thereof exposed between said body and bell member and which has an axially arranged series of circumferential corrugations.

3. A toy, hand-held voice modifier as in claim 1; wherein said body has a handle extending from said cylindrical wall thereof.

4. A toy, hand-held voice modifier as in claim 1; wherein said tubular member flares slightly in the axial direction from said end portion within the body to said other end portion thereof.

5. A toy, hand-held voice modifier as in claim 1; wherein said other end portion of the tubular member telescopes into said flaring bell member at the small diameter end of the latter, and said tubular member has outwardly directed projections engageable with the flange defining said other opening of the body and with the small diameter end of the bell member for securing said tubular member to said body and to said bell member, respectively.

6. A toy, hand-held voice modifier comprising a hollow body having a generally cylindrical wall with inturned, annular flanges at its opposite end defining openings of relatively smaller diameter at the corresponding ends of the body, a flexible membrane seated in one of said openings, a mouthpiece extending from said one opening and defining a chamber which is confined at one end by said membrane, a tubular open-ended member extending axially in said body and being spaced radially from said cylindrical wall to define an annular cavity therebetween, one end of said tubular member terminating adjacent the flange of said body which defines said one opening and extending with clearance around said one opening, the other end portion of the said tubular member projecting axially from said body through the other of said openings and being closely engaged by the respective flange of said body to close said annular cavity, said tubular member being secured to said body only at said other opening of the body, a flaring bell member secured on, and extending axially from said other end of the tubular member with a section of said tubular member being exposed between said body and said bell member, said exposed section of the tubular member having an axially arranged series of circumferential corrugations, and means securing said tubular member to said body only at said other opening of the body.

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F. BARRY SHAY, *Primary Examiner.*

RICHARD C. PINKHAM, *Examiner.*

R. F. CUTTING, *Assistant Examiner.*