June 19, 1923.

1,459,053

E. HALPERN

VOICE FOR DOLLS

Filed March 4, 1922

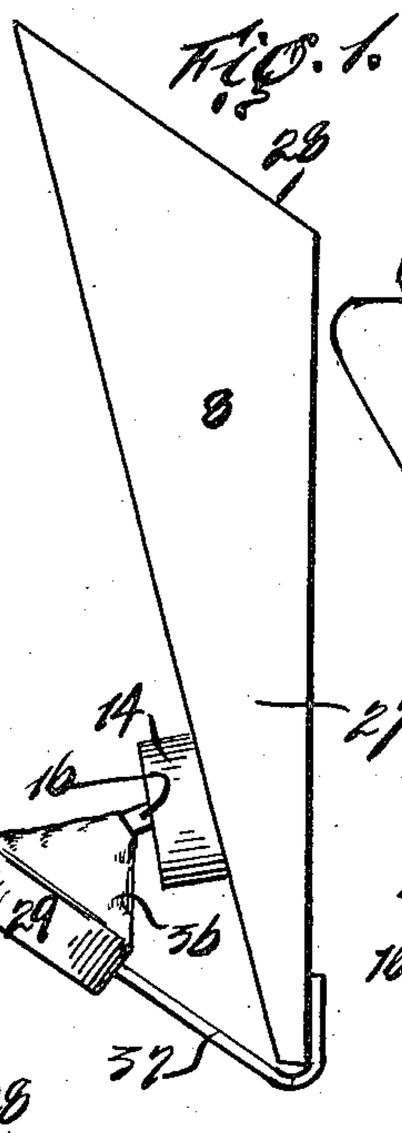

Fig. 1.

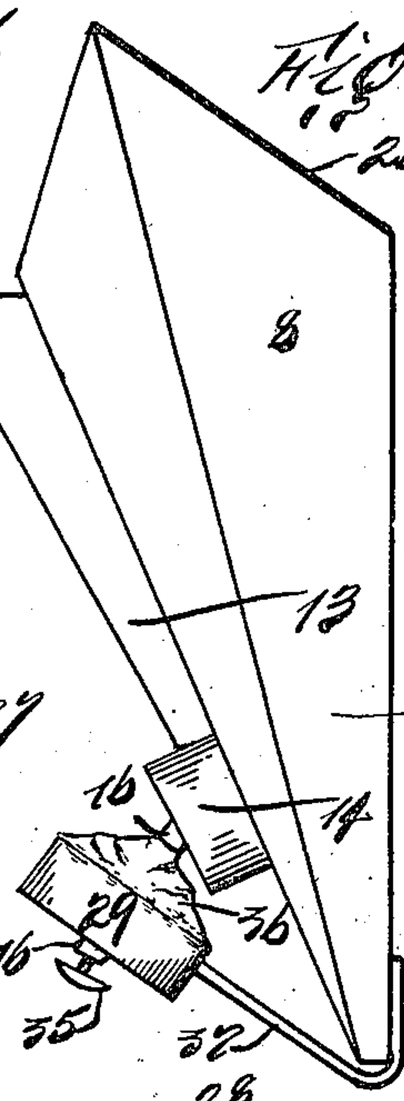

Fig. 2.

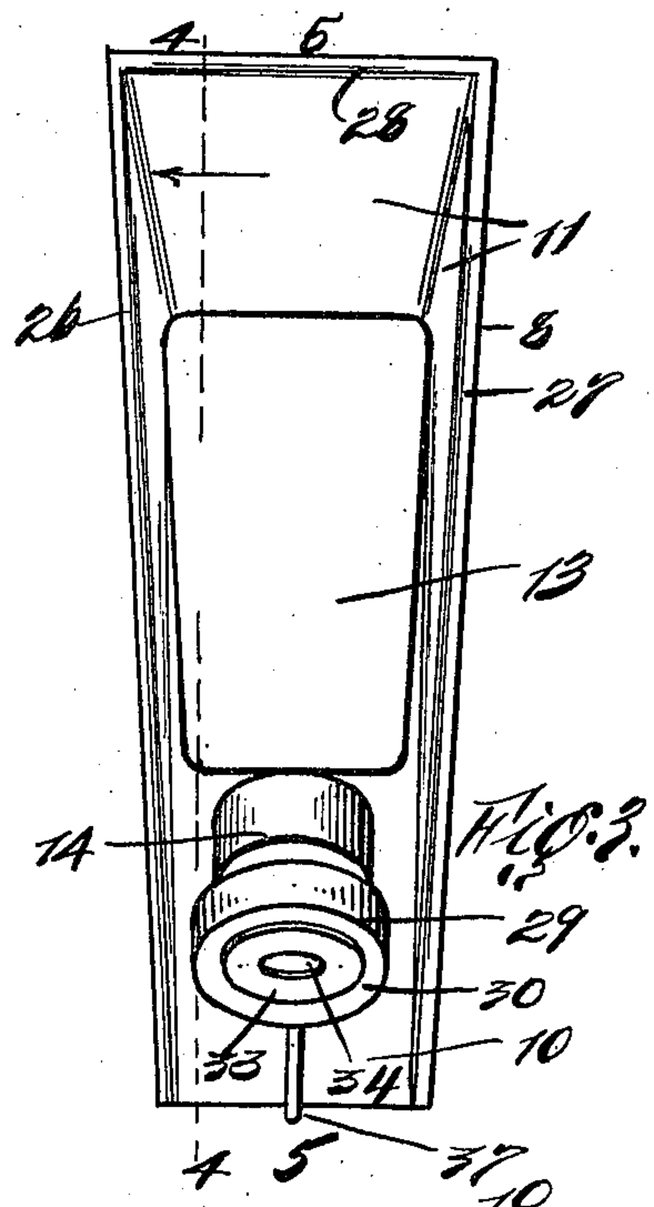

Fig. 3.

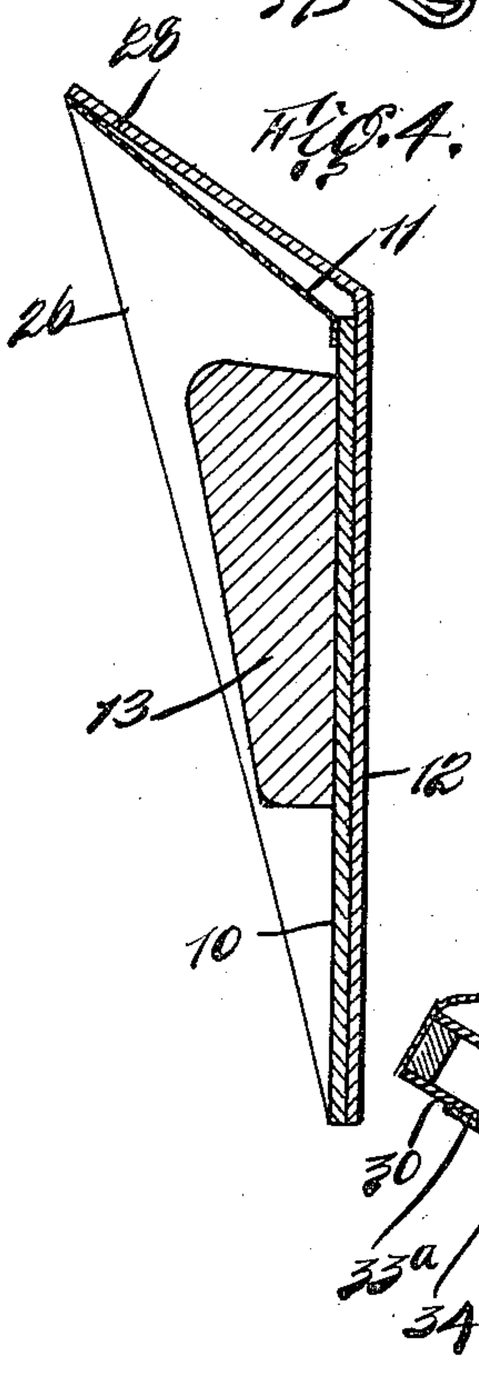

Fig. 4.

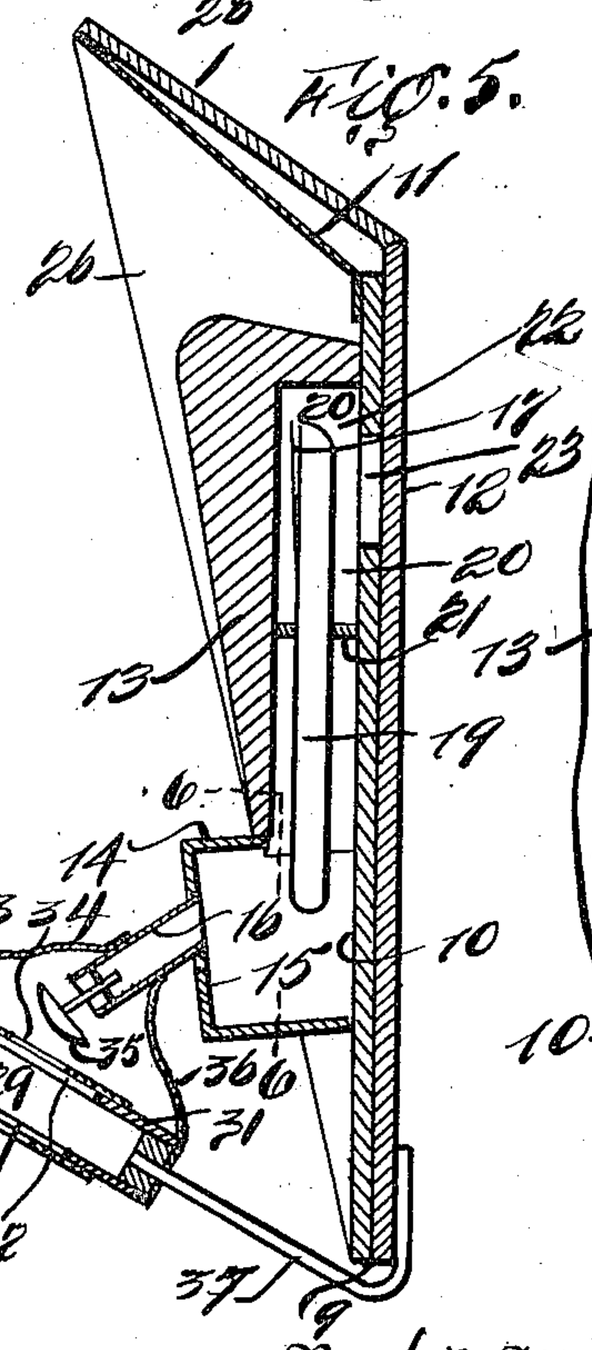

Fig. 5.

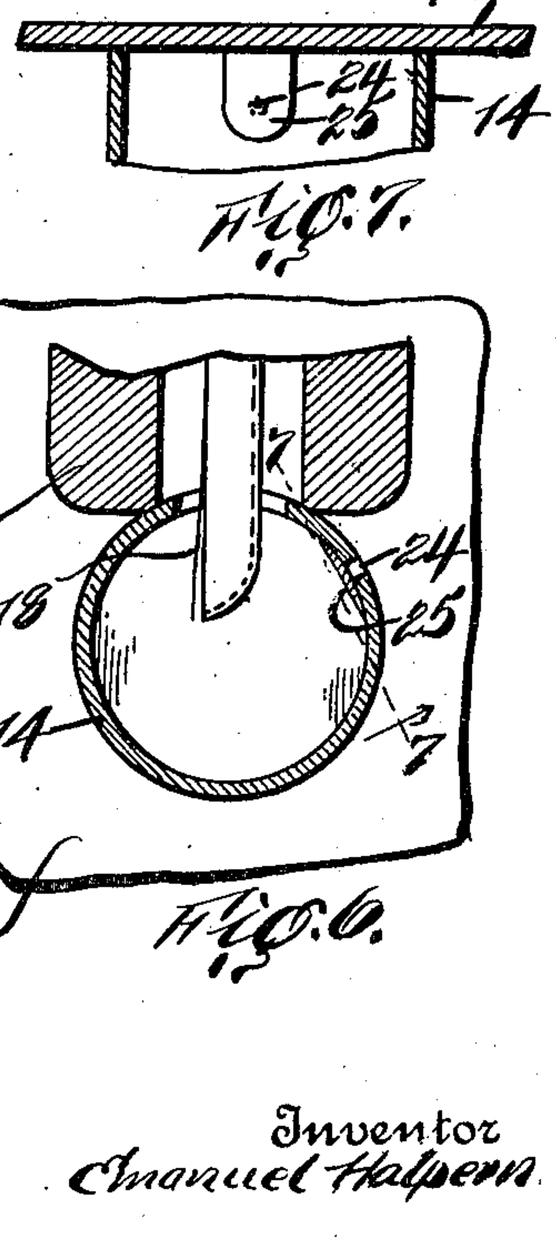

Fig. 7.

Fig. 6.

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By his Attorney
Maurice Bloch

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UNITED STATES PATENT OFFICE.

EMANUEL HALPERN, OF NEW YORK, N. Y.

VOICE FOR DOLLS.

Application filed March 4, 1922. Serial No. 541,020.

To all whom it may concern:

Be it known that I, EMANUEL HALPERN, a resident of New York city, Bronx County, State of New York, and a citizen of the United States of America, have invented certain new and useful Improvements in Voices for Dolls, of which the following is a specification.

This invention relates to sound producing devices, more especially for the so-called talking dolls, or dolls that say mama. One of the objects of my invention is to improve the device that produces a blast of air which is forced through a reed, means being employed to interrupt the blast to produce two sounds resembling the word mama. A further object of the invention is to provide a device of the character named to produce sound resembling both the words mama and papa. Other features of improvement will be hereinafter set forth.

In the accompanying drawing, which forms part of this specification,

Fig. 1 illustrates a side elevation of my invention, the bellows being closed;

Fig. 2 is a similar view illustrating the bellows open;

Fig. 3 is a face view looking from the left in Fig. 1;

Fig. 4 is a sectional view on line 4—4 in Fig. 3;

Fig. 5 is an enlarged sectional view on line 5—5 in Fig. 3;

Fig. 6 is an enlarged fragmentary sectional view, the section being taken on line 6—6 in Fig. 5; and

Fig. 7 is a fragmentary sectional view taken on line 7—7, Fig. 6, looking in the direction of the arrow.

One of the objects of my invention is to produce an air blast producing device or bellows that will produce a maximum blast of air with minimum movement on the part of the movable member of the bellows. A further object is to produce a device of this nature requiring but little movement to operate it. To this end I provide a hollow wind chest 8 of triangular formation having hingedly connected thereto at 9 a plate 10. The ends and sides of plate 10 are connected to the edges of the chest 8 by a fabric cover 11 arranged to fold into the chest, the plate being of a size permitting the plate to be moved entirely into the chest to expel air therefrom, as indicated in Fig. 5. When plate 10 is forced into the chest, it (the plate) and the fabric member 11 will expel all of the air from the chest, as the fabric member will be forced substantially against the inner surface of the sides and one end of chest 8, the plate being forced against the bottom 12 of the chest. The plate 10 will be hingedly connected to the bottom 12, at 9, by the fabric member 11; as said connection is flexible, the plate can be swung out of or into the chest 8. To operate the plate 10, I provide a weight 13 which is carried by the plate. The plate 10 is further provided with an air chamber 14 having a cover 15 carrying a tube 16. During the operation of the device, the plate will swing out of the chest or into the chest.

To produce sound, I provide reeds 17 and 18, one at each end of a tubular body 19, the tubular body being mounted within a pocket 20 formed in the weight 13. The pocket 20 is divided into two smaller non-communicating pockets by a partition 21 which supports the tubular body 19. The reed 18 projects into air chamber 14, while reed 17 is located in compartment 22 opposite an opening 23 in the plate 10. The reed 18 in air chamber 14 is located opposite a bleed hole 24 cooperating with a valve 25 arranged to close same against the passage of air from bellows but to allow outside air to be drawn in.

When the device is tipped slightly to the left in Fig. 1, the weight will cause plate 10 to fall outwardly, thereby drawing air in through tube 16 and bleed-hole 24 (which will be necessarily a small stream) to operate reed 17 which, by the aid of means to be described will produce relatively low tones resembling the word mama. The air drawn in through tube 16 and bleed-hole 24 will pass through reed 18 operating it, and into tubular member 20, through the reed 17, without operating the latter to fill the bellows with air. When the device is tipped to the right again, the weight will force plate 10 into the chest, thereby forcing the air through opening 23 into tubular member 19, thence out past the reed 18, causing same to give forth a loud tone, which by the aid of the means to be described will be divided into two tones resembling papa. When air is forced out of the bellows, valve 25 will close opening 24 to prevent escape of air therethrough.

By means of my improved construction, I am able to produce a device of the char-

acter described that will produce sound when closing or opening, the device requiring but little movement to operate it. The device will, of course, be mounted vertically within a doll, or substantially as indicated in Figs. 1 and 2.

It will be noted that the sides 26 and 27 and end 28 slant inwardly to produce a chest, the mouth of which is of greater area than the bottom. When the plate 10 is forced into the chest, there will be a slight compression of the air within, thereby increasing the force of the stream passing out through the reed 18, whereby loud tones will result.

To control the flow of air into and out of the bellows, I provide a drum 29 having heads 30 and 31, each provided with an opening 32. Over opening 32 in head 31 I place a yieldable diaphragm 33 having an opening 34 and a similar diaphragm 33[a] over opening 34 in head 30. To interrupt the flow of air I provide tube 16 with a valve or shutter 35. The tube 16, and drum 29, is connected by a flexible apron or connection 36, to bridge the space between the tube and drum to confine the indrawn or outwardly forced air in order that it will pass through the drum 29. When air is forced out of the wind-chest through tube 16, it will pass through the drum 29. The valve or shutter 35 will close the opening 34 in diaphragm 33 when the plate 10 moves outwardly as it passes therethrough, thereby interrupting the sound. When valve or shutter passes through opening 34 in diaphragm 30 the sound will again be interrupted. The two interruptions referred to will produce sounds simulating the word ma-ma. The drum 29 is in this instance carried by bracket 35 secured at one end to the bottom 12 of the wind chest. The drum, as will be obvious, will be fixed relative to the plate 10.

What I desire to secure by Letters Patent is:—

1. In a sound producing device, a wind-chest having a bottom member, sides extending upwardly and outwardly therefrom, an end member also extending upwardly and outwardly, whereby the mouth of said chest will be of greater area than the bottom thereof, a plate hingedly connected to the bottom member at the end opposite to the aforesaid end wall, a flexible cover connecting the plate and edges of the slanting sides and end wall and a sound producing device associated with the chest, said plate being insertable into the chest to expel air therefrom.

2. In combination with a wind chest having a movable member to draw air into said chest and also to force air out of said chest, a weight carried by the movable member having a pocket, a hollow body within the pocket, a reed at each end of said body, and a partition to separate the pocket into non-communicating compartments, one of said reeds being in one compartment and the other reed in the other compartment, said chest having an opening for the passage of air into and out of same.

3. In combination with a wind chest having a movable member to draw air into said chest and also to force air out of said chest, a weight carried by the movable member having a pocket, a hollow body within the pocket, a reed at each end of said body, a partition to separate the pocket into non-communicating compartments, one of said reeds being in one compartment and the other reed in the other compartment, said chest having an opening for the passage of air into and out of same, and means to interrupt the flow of air into and out of said chest.

4. In combination with a wind-chest having a movable member, a reed associated with the chest, a drum supported by the wind-chest adjacent the movable member, each end of said drum being provided with an opening, means to convey air from the wind-chest to said drum, and a shutter carried by the movable member of the wind-chest arranged to pass through said openings to interrupt the sound produced by the reed.

5. In combination with a wind-chest having a movable member, a reed associated with the chest, a drum supported by the wind-chest adjacent the movable member, each end of said drum being provided with an opening, a tube carried by the movable member of the chest, a flexible apron or covering connecting the tube and drum and a shutter carried by the movable member of the wind-chest arranged to pass through said openings to interrupt the sound produced by the reed.

6. A sound-producing device, comprising a bellows-member, having a movable member, a reed associated therewith, a hollow carrier adjacent the bellows, each end of said carrier having an opening, a flexible diaphragm over each of said openings, also having an opening, means to convey air from the wind-chest to the carrier, and a shutter carried by the movable member of the bellows operable through the opening in each of said diaphragms to interrupt sound produced by the reed.

EMANUEL HALPERN.