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M. V. GRAHAM

2,606,399

BURPING DOLL

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FIG. 1

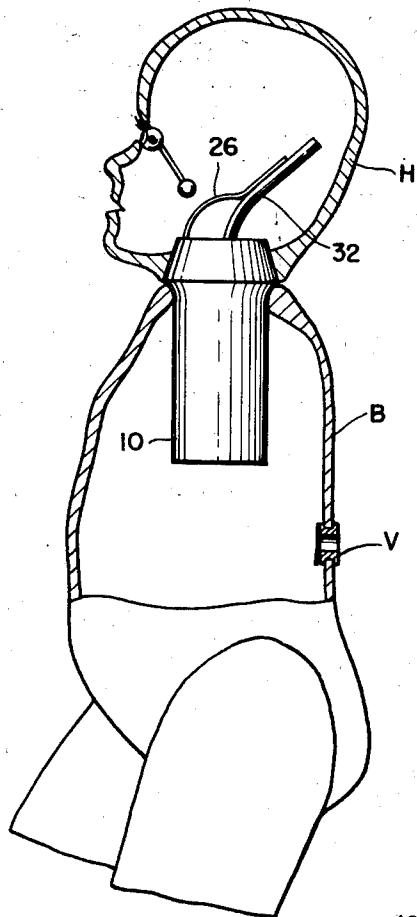


FIG. 3

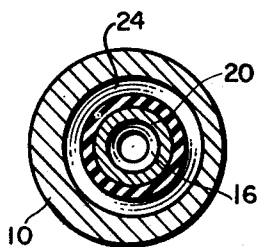
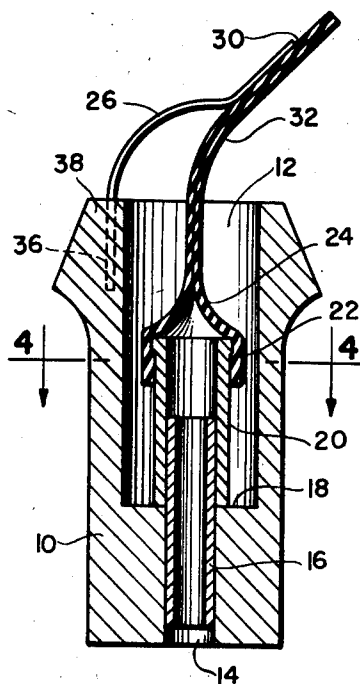


FIG. 4

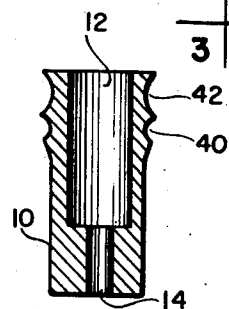


FIG. 5

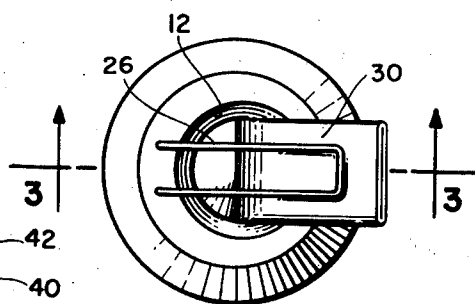


FIG. 2

MURIEL V. GRAHAM

Inventor

Smith & Tuck

Attorneys

UNITED STATES PATENT OFFICE

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BURPING DOLL

Muriel V. Graham, Kent, Wash.

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5 Claims. (Cl. 46—178)

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My present invention relates to the general art of sound producing dolls and more particularly to a burping doll.

Dolls for the amusement and entertainment of children have been produced for as far back as we have known history. However, since the era of manufactured devices there has been a very extensive development of dolls which endeavor to simulate in some manner one or more of the characteristic actions of human infants. We have, for instance, the sleeping doll which is equipped with means for closing its eyes, dolls which are provided with means that simulate the wetting of diapers, and there has been quite a development of dolls carrying sound producing means. The highest development of this latter type of doll, probably, being one which produces the sound of "mama." This latter form of sound producing mechanism cannot in real truthfulness be applied to baby or infant representing dolls since infants are unable to pronounce words.

The mechanisms that have been observed in the sound producing dolls normally use means that are most properly classified as whistles in that they normally employ substantially fixed elements which either themselves vibrate at high frequency or which cause the air stream to be so sharply changed in its course of direction that the whistling action is obtained. In reviewing a large number of such constructions it appears that none of these sound producing means produce a sound that is truly characteristic of an infant. In counter distinction to the above I have provided a sound producing mechanism for use in my doll that produces the very characteristic "burping" sound of an infant that is very prevalent during its nursing period. Thus it is believed I have produced a life-size sound that is very characteristic of an infant which is represented by the usual baby doll.

I produce my burping sound by means of a flexible tube. Many types of material are available for the production of such a tube; however, it appears that a flat rubber or neoprene tube can be most easily made to produce this distinctive sound. A means of producing air under low pressure is necessary to produce the actual sound. This may be the entire body of a rubber or a flexible bodied doll that is air tight, or in a soft doll a large bulb or piston arrangement would achieve the same purpose. In any event, however, low pressure air is most desirable because, in effect, the infant in producing the sound is itself actually using low pressure air.

The low pressure air is discharged out through

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the flattened end of the flexible tube so that a two-fold action occurs: one is the low frequency vibration of the end of the tube and the second is the distortion of the air column as it is projected from the tube. A study of the human throat will indicate that the burping sound of an infant or an adult is made generally by the same type of action.

The principal object of my present invention, therefore, is to produce a baby doll having a mechanism which will produce a distinct "burping" sound.

A further object of my invention is to produce a mechanism capable of generating a burping sound which is simple in construction to the end that it will give long useful service and be so economical in construction that it may be applied to dolls in the lower price range.

A further object of my invention is to provide means whereby the burping sound can be generated within reasonable frequency limits and then, by adjustment, be fixed so as to thereafter reproduce a sound of a definite type.

A further object of my invention is to provide means whereby a burping sound producing mechanism can be readily adapted to dolls of different structural forms.

A further object of my invention is to provide a sound producing element which generates a sound within the head cavity of the doll so that the muffling of this cavity furthers the truthfulness of the burping sound.

Further objects, advantages and capabilities will be apparent from the description and disclosure in the drawings or may be comprehended or are inherent in the device.

In the drawings:

Figure 1 is a vertical sectional view through a portion of a doll's body and showing the essential elements of my sound producing mechanism.

Figure 2 is a top plan view of the basic sound producing mechanism employed in my invention.

Figure 3 is a vertical sectional view taken along the plane of line 3—3 of Figure 2.

Figure 4 is a cross-sectional view taken along the plane indicated by line 4—4 of Figure 3.

Figure 5 is a vertical sectional view showing the housing member of Figure 3 and showing a modified form of the same.

Referring to the drawings, throughout which like reference characters indicate like parts, the numeral 10 designates the housing member of my sound producing mechanism, this member can be made of any inert material, although experiments to date indicate that wood is the most

desirable material. Reference is now made, particularly, to Figure 3 for a typical construction of this housing member; the exact construction of necessity must vary somewhat with the structure employed in the doll itself. For an exemplary showing I have illustrated in Figure 1 a type of doll construction in which the body B is made of resilient rubber and the head portion H is formed of a reinforced plaster composition. It therefore follows in this present showing that the doll body B is employed as a bulb having an air inlet valve V. If the form of doll structure was to be employed wherein the body was kid-covered and soft for instance, it would be necessary to employ a resilient or self-filling bulb which in turn would need a means for securing it to housing 10. Such details of construction however, it is believed are well within the scope of those skilled in this line of endeavor, and for the sake of simplicity have been omitted in this present disclosure.

Housing 10 is provided with a bore 12. This, as will be noted by reference to Figure 4, is eccentrically positioned with respect to housing 10. Such a construction provides a heavier side wall on the left hand side of Figures 2, 3, and 4, as viewed in the present drawings and has been found desirable, especially when wood is used as the structural material. Coaxial with bore 12 I provide a bore of reduced diameter 14, into which is inserted tube 16. Tube 16 extends upwardly sufficient to extend well into bore 12, substantially above the floor 18 of bore 12. To the upward extension of tube 16 I secure a second tube as 20. Tube 20 has an annular lip at 22 so as to provide a secure seat for the resilient tube 24. This construction provides an exact positioning of lip 22.

The most suitable material I have found for tube 24, to date, is a firm rubber tube. The desirable characteristics of this tube are that it can be distorted to give the flat nozzle effect desired and can be maintained in that distorted position for long periods and still work satisfactorily. The choice between a flat formed tube or a round tube will depend on the characteristics of the material of which the tube is made. It further must have the characteristics that permit it to be distorted as air is forced through the same in such a manner that it, itself can vibrate on the end and thus give a pulsating effect to the air that is forced through the tube. This action accounts for the distinct sound that can be so produced and which I prefer to identify as a "burping" sound. Experiments have indicated that some of the synthetic rubbers are usable and certain of the plastic materials, particularly those that are formed of fibres which are consolidated by plastic material.

A desirable form for tubular member 24 is that probably best illustrated in Figures 3 and 2. In these showings the lower portion of the tube where it engages lip 22 is either circular or oval in cross section and then the tube is flattened, without stretching, so that the inner wall of the tube forms a single line after the showing of Figure 2 and with the two side walls, as thus produced from the tube, lying in close abutting relationship over considerable length. This gives a general effect much the same as when an individual, even an adult, burps, the sound they produce is not a controlled effort but actually a sound made by the air coming up through the throat passageway and forcing aside the membranes that normally tend to close that opening until they are finally discharged in the mouth

cavity. This similarity is fully carried out by the doll head H, which in effect, acts to a degree like the oral cavity of the mouth and tends to modify and muffle the burping sound. If Figure 3 is studied it will be seen that air coming up through and being discharged out tube 24 is following a course very similar to that experienced by air coming up from the stomach through the throat and into the mouth cavity.

Means is provided to maintain the tube 24 in its desired adjusted curved relationship. The means is preferably a wire member 26 which, as will be observed in Figure 2, is bent back on itself and provides uniform engagement with the upper end 30 of tube 24 for considerable distance and this engagement is in effect tangent to the curved portion 32. Form 26, as will be noted in Figure 3 especially, does not extend to the extreme end of tube 24. The ends of the wire 36 are inserted and secured in the reinforced wall 38; the wire ends 36 can thus be adequately and securely positioned.

In Figure 5 I have shown a modification of housing 10 only insofar as relates to the two annular grooves as 40 and 42. These are adapted respectively to form a point of engagement with a doll body which in itself is not self-constricting but must be tied or otherwise secured as in groove 40. Groove 42 is adaptable to receive a rubber doll head.

It is believed that it will be clearly apparent from the above description and the disclosure in the drawings, that the invention comprehends a novel construction of a burping doll.

Having thus described my invention, I claim:

1. A burping mechanism, for a doll body having means for supplying air under pressure as manual effort is applied to the body, comprising: a flexible burping tube to be connected to such air supply means; means for bending the tube in a manner so as to bring its walls into contact adjacent the point of bending and thus to prevent free flow of air therethrough, the last said means being arranged to restrict vibration of the tube in one direction and being arranged so that the tube is permitted to straighten under application of air of sufficient pressure, thus opening the tube for air flow and producing a sudden noise simulating a belch.

2. A burping mechanism, for a doll body having means for supplying air under pressure as manual effort is applied to the body, comprising: a flexible burping tube to be connected to such air supply means, means restricting the vibration of one side of the tube with respect to the amplitude of vibration of the other side, said burping tube being flattened with its inner walls pressing against each other to normally prevent passage of air through its passageway, said burping tube being positioned with its longitudinal axis curved, whereby a sudden burping noise is produced when sufficient air pressure is applied to the burping tube to open said passageway.

3. A burping mechanism, for a doll body having means for supplying air under pressure as manual effort is applied to the body, comprising: a flexible burping tube; means for connecting said tube to such air supply means and for supporting said burping tube, said burping tube being positioned with its longitudinal axis curved and being flattened with its inner walls normally pressing against each other to prevent passage of air through its passageway, whereby a sudden burping noise is produced when sufficient air pressure

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is applied to the burping tube to open said passageway.

4. A burping mechanism, for a doll body having means for supplying air under pressure as manual effort is applied to the body, comprising: a flexible burping tube; a housing for connecting said tube to such air supply means and supporting said burping tube, said housing having means pressing against said tube positioning said tube with its longitudinal axis bent, said burping tube being flattened adjacent said bend with its inner walls pressing against each other to normally prevent passage of air through its passageway, whereby a sudden burping noise is produced when sufficient air pressure is applied to the burping tube to open said passageway.

5. A burping mechanism, for a doll body having means for supplying air under pressure as manual effort is applied to the body, comprising: a sounding member formed of resilient material having an air passageway, said air passageway being bent and having its opposite inner side walls resiliently pressing against each other adjacent said bend to normally prevent passage of air through said passageway, means restricting the

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vibration of one of said inner side walls with respect to the amplitude of vibration of the other inner side wall, whereby a sudden burping noise is produced when sufficient air pressure is applied to the burping tube.

MURIEL V. GRAHAM.

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