Nov. 12, 1957 J. ZANCA ET AL 2,812,615

VALVE DEVICE FOR TEARING DOLL

Filed Nov. 5, 1956 2 Sheets-Sheet 1

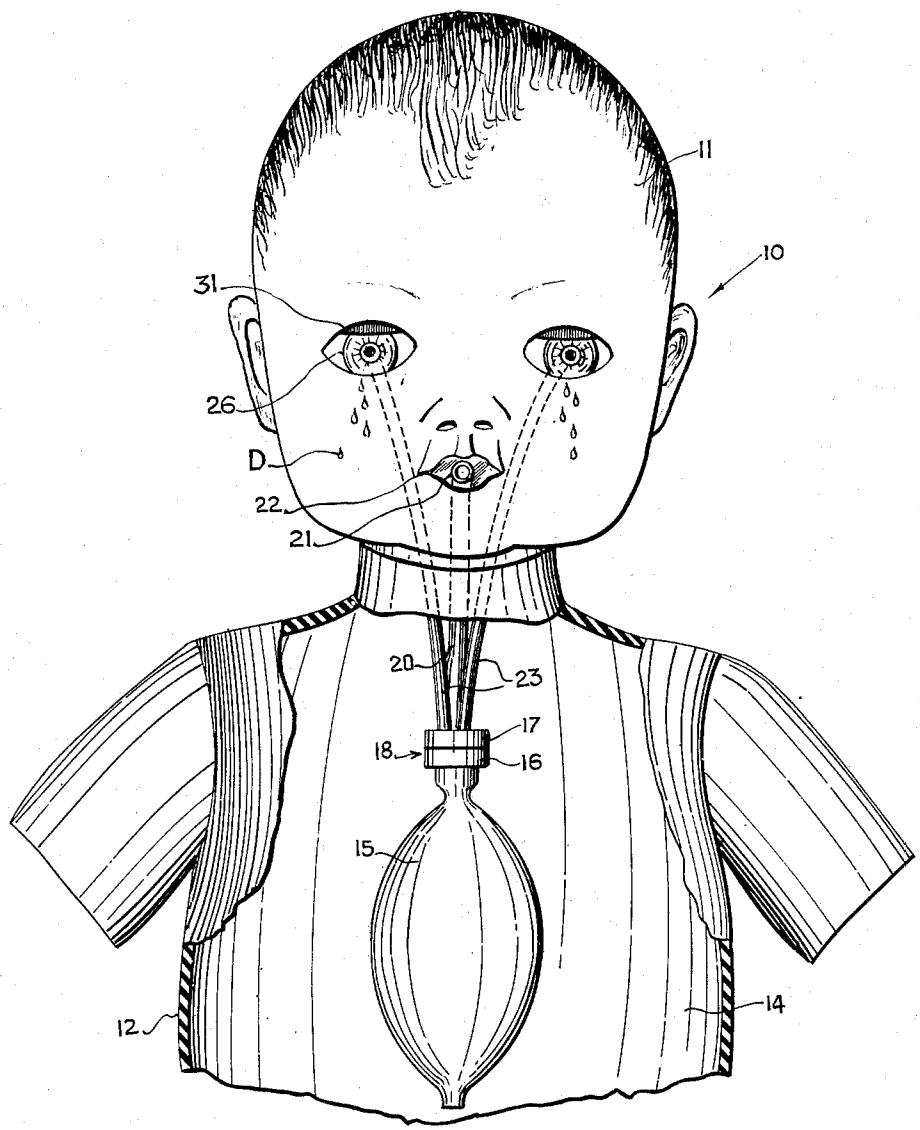

Fig. 1.

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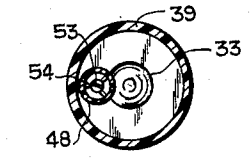

Fig. 7

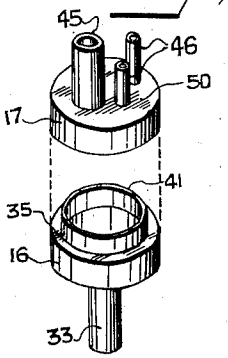

Fig. 8.

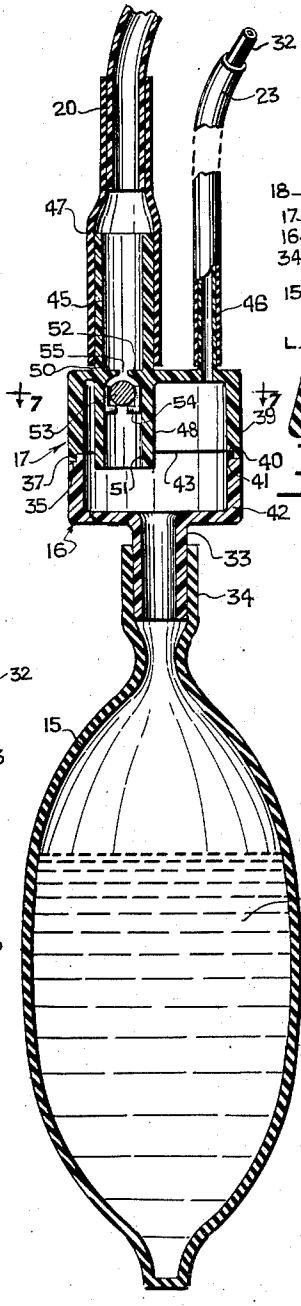

Fig. 6.

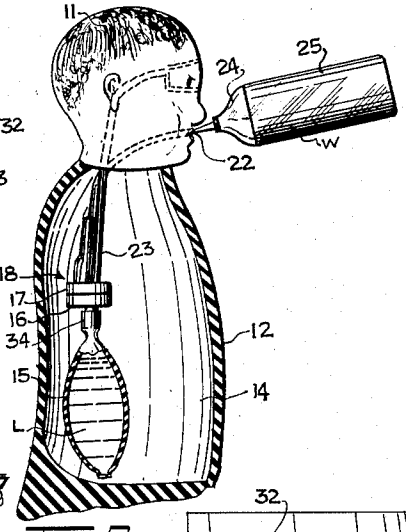

Fig. 2.

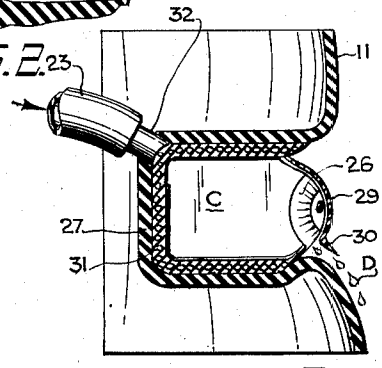

Fig. 3.

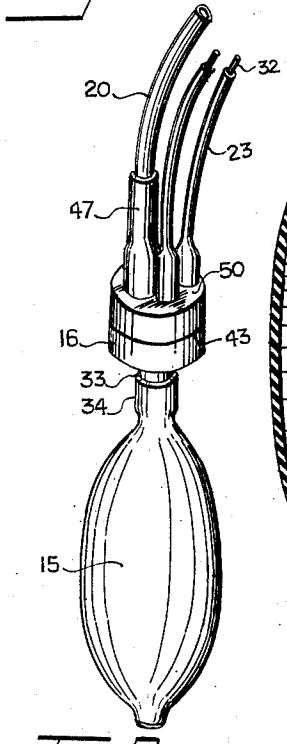

Fig. 5.

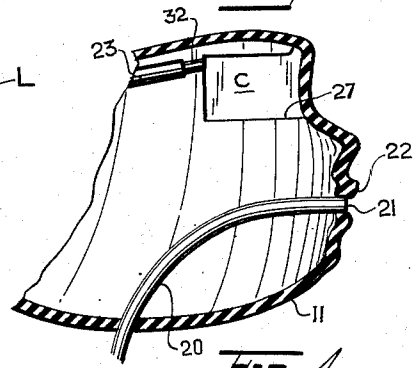

Fig. 4.

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VALVE DEVICE FOR TEARING DOLL

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Application November 5, 1956, Serial No. 620,362

2 Claims. (Cl. 46—135)

This invention concerns a feeding and tear shedding doll. The invention is particularly directed to providing an improved means for feeding liquids to the doll and for controlling the release of fluid to eyes of the doll.

A principal object of the invention is to provide a doll having a body cavity with a liquid containing bulb and an associated valve having inlet and outlet ports, said ports being connected to openings at the eyes and mouth of the doll.

A further object is to provide a feeding and tear shedding doll with a check valve mechanism including a gravity and fluid pressure operated ball member.

A further object is to provide a feeding and tear shedding doll with an improved two-part plastic check valve housing containing a ball valve member, a plurality of flexible conduits being connected to the housing and adapted to extend to openings at the eyes and mouth of the doll, the housing having a passage connected to a flexible liquid containing bulb.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is an elevational view of a doll embodying the invention, a portion of the body of the doll being broken away to show internal parts.

Fig. 2 is a side elevational view, partly in section, showing the doll with a bottle feeder and internal parts.

Fig. 3 is a longitudinal sectional view of a portion of the head of the doll showing a conduit connected to an eye opening.

Fig. 4 is a fragmentary sectional view of the head of the doll showing a conduit connected to the mouth opening.

Fig. 5 is a perspective view of the liquid storage member, valve, and connected conduits.

Fig. 6 is an enlarged longitudinal sectional view of the liquid storage member, valve, and connected conduits.

Fig. 7 is a sectional view taken on lines 7—7 of Fig. 6.

Fig. 8 is a perspective view of parts of the housing of the valve mechanism.

In Figs. 1 and 2 is shown a doll 10 having a hollow head 11 and a hollow body 12 attached together. The body is formed wholly or in part of flexible material such as rubber, vinyl or polyethylene plastic, etc. In the body is a cavity 14 in which is suspended a flexible bulb 15 secured to lower section 16 of a valve housing 18. The housing 18 has an upper section 17 mating and interfitted with the lower section 16. Attached to the upper section 17 is a flexible plastic conduit or pipe 20 extending upwardly and terminating at an opening 21 at the mouth 22 of the doll. A pair of other plastic pipes or conduits 23 are connected to openings at the eyes 26 of the doll. A bottle 25, shown in Fig. 2, having an attached nipple 24 is provided to feed liquid such as water

to the doll by insertion of the narrow end of the nipple into the opening in conduit 20 at the mouth of the doll.

In Fig. 3 is shown one eye 26 of the doll surrounded by a wall 27. A transparent plastic lens 29 is disposed over the eye and is spaced at its lower end from wall 27 to define a passage 30. The wall 27 forms a chamber C which is lined with a sponge rubber layer 31. Each conduit 23 terminates in a nipple 32 which is lodged in an opening in wall 27. The nipple opening is juxtaposed to lining 31 so that when water is discharged into the chamber C it is absorbed by lining 31 until the lining is fully saturated. The water is then released in drops D which simulate tears.

In Fig. 4, the conduit 23 is shown connected to wall 27. Each of the two conduits 23 is connected to a respective one of the two walls 27 provided at the eyes 26. Conduit 20 has its free end inserted in the mouth 22.

In Figs. 5–8 are shown the several parts of the liquid reservoir or storage member, the valve mechanism, and the connecting conduits. Valve housing 18 consists of two cup-like members 16 and 17. Cup 16 has a centrally disposed opening formed as a nipple 33. This nipple fits into neck 34 at one end of the bag or bulb 15. Bulb 15 is adapted to hold a substantial quantity of water or other liquid L. The cylindrical cup 16 has a recessed ledge 35 in its wall 42 which serves as a seat for the interfitting annular extension 37 of the cylindrical wall 39 of cup 17. A corresponding recess 40 is formed on the inside of wall 39 to seat extension 41 of wall 42.

The interfitting walls of the cups are joined by a layer 43 of a suitable cement, or the cups can be secured together by heat sealing if they are formed of thermoplastic material. Cup 17 has openings formed as a wide nipple 45 and two narrower nipples 46. A short flexible tube 47 is fitted over nipple 45. Conduit 20 fits into tube 47 and is spaced a short distance from nipple 45 as shown in Fig. 6 so that the conduit can be bent forwardly between conduits 23 to reach mouth 22 of the doll. Another nipple 48 depends from the upper side 50 of cup 17 inside housing 18. This nipple has a bore 51 terminating in a rounded end 52 which serves as a seat for ball 53. Ball 53 is held in bore 51 by inwardly or radially extending fingers of lugs 54 located on the inner wall of the bore. An opening 55 in seat 52 serves as a passage between nipples 45, 48. Water L can enter through this passage when the ball is held by gravity on lug fingers 54. The liquid will be supplied through conduit 20 from a supply such as bottle 25. When the plastic body 12 of the doll is squeezed, the bulb 15 is compressed. Ball 53 moves up under air and/or water pressure to seal opening 55 so that the water leaves valve housing 18 through nipples 46. Conduits 23 are secured to nipples 46 so that the water enters the eye chambers C. After the pads or linings 31 are saturated the tear drops D are formed as described above.

While we have illustrated and described the preferred embodiment of our invention, it is to be understood that we do not limit ourselves to the precise constructions herein disclosed and that various changes and modifications may be made within the scope of the invention as defined in the appended claims.

Having thus described our invention, what we claim as new, and desire to secure by United States Letters Patent is:

1. A liquid feeding and tear shedding doll, comprising a hollow head and a hollow body attached together, said head having mouth and eye openings, a wall surrounding each eye to form a chamber, said wall having a first opening for liquid to leave the chamber near said eye, said wall having another opening within said head, a conduit connected to each of the other openings in the respective chambers, said conduits being connected to a valve hous-

ing, said housing comprising a pair of hollow cups having interfitting walls joined together in a liquid-tight seal, one of said cups having a pair of nipples for attachment of said conduits thereto, the other of said cups having an opening terminating in a large nipple, a flexible bulb having a narrow neck attached to said large nipple, said one cup having another externally formed nipple and an internally formed nipple communicating with each other, a tube mounted on said externally formed nipple, another conduit inserted in the free end of said tube and connected to said opening in the mouth of the doll, and a ball movably disposed in said internally formed nipple, said internally formed nipple having a bore terminating at one end in a seat having a central opening arranged to be sealed by said ball, there being a plurality of lugs in said bore to retain the ball in said bore, said body having a flexible portion, whereby liquid may be fed through said mouth and said last-named conduit into said bulb, and whereby said liquid may be discharged from said bulb into said chambers via said first-named conduits.

2. A liquid feeding and tear shedding doll, comprising a hollow head and a hollow body attached together, said head having mouth and eye openings, a wall surrounding each eye to form a chamber, an absorbent pad disposed in each chamber, said wall having a first opening for liquid to leave the chamber in the form of drops simulating tears, said wall having another opening within said head, a conduit connected to each of the other openings in the respective chambers, said conduits being connected

to a valve housing, said housing comprising a pair of hollow cups having interfitting walls joined together in a liquid-tight seal, one of said cups having a pair of nipples for attachment of said conduits thereto, the other of said cups having an opening terminating in a large nipple, a flexible bulb having a narrow neck attached to said large nipple, said one cup having another externally formed nipple and an internally formed nipple communicating with each other, a tube mounted on said externally formed nipple, another conduit inserted in the free end of said tube and connected to said opening in the mouth of the doll, and a ball movably disposed in a bore in said internally formed nipple, said body having a flexible portion, whereby liquid may be fed through said mouth and said last-named conduit into said bulb, and whereby said liquid may be discharged from said bulb into said chambers via said first named conduits for saturating the pads therein.

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