

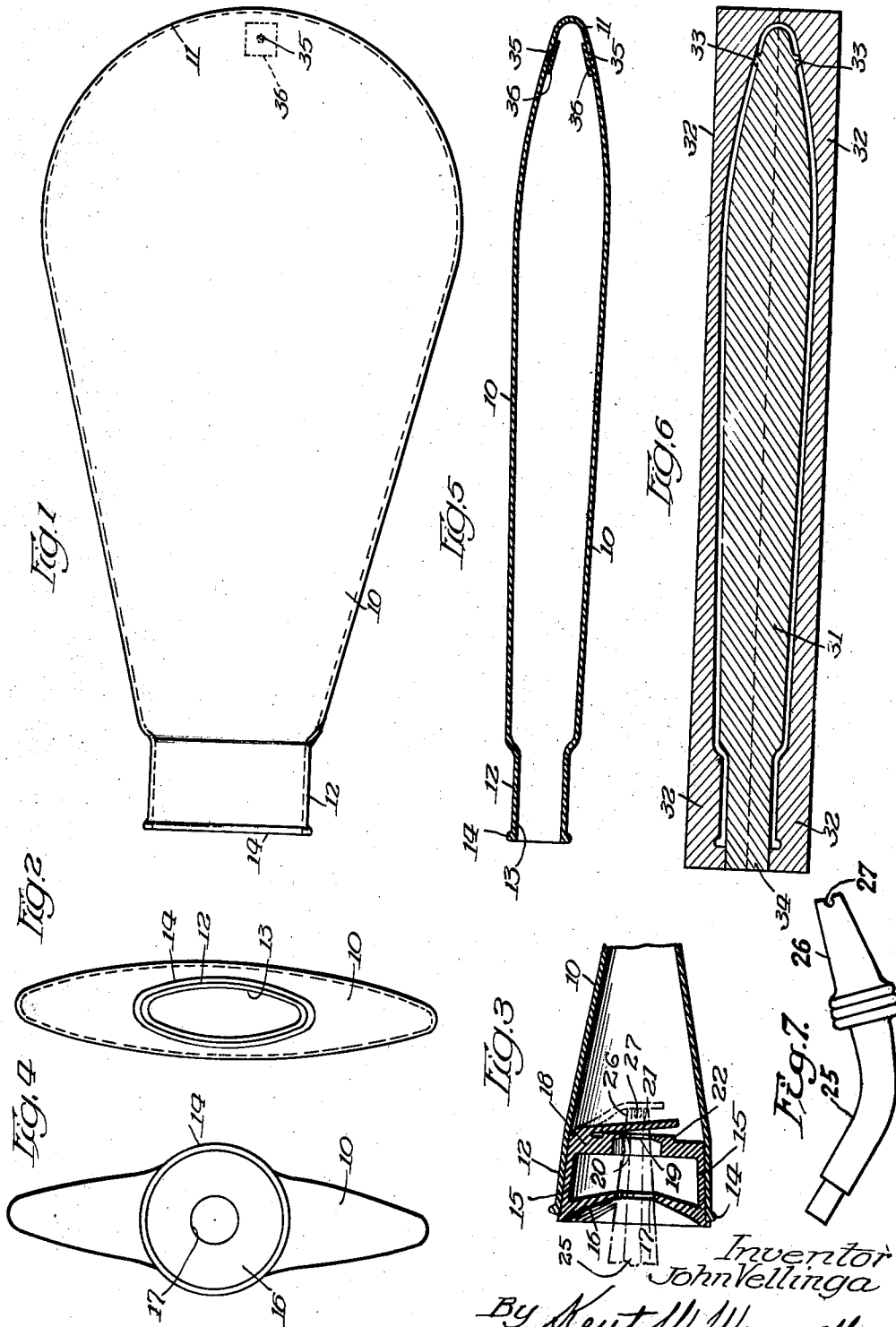
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DOUCHE

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DOUCHE

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6 Claims. (Cl. 128-251)

This invention relates in general to sanitary douche equipment and has more particular reference to an expansible bag provided with an automatic valve which allows material to be poured into the mouth of the bag, and when fluid under pressure is admitted to the bag to distend it, the valve will be automatically closed.

An important object of the invention is in the provision of a valve structure installed and fixed in the neck of an expansible bag for admitting liquid under pressure or not under pressure.

A further object of the invention is in the method of making an expansible bag structure with uniform walls, which has an opening at one end only to avoid vulcanizing the bag after it is formed.

A further object of the invention is in the provision of a douche bag in which liquid under pressure or not under pressure may be admitted thereto, both liquids being discharged by the insertion of a nozzle.

A still further object of the invention is to form a valve structure which will make a fluid-tight connection with filling faucets of various sizes and with a discharge nozzle inserted therein.

Other objects of the invention will appear in the specification and will be apparent from the accompanying drawing in which,

Fig. 1 is a side elevation of an inflatable douche bag in accordance with this invention;

Fig. 2 is an end view of the bag in Fig. 1;

Fig. 3 is a sectional view showing the valve structure installed in the neck of the bag;

Fig. 4 is an end view of the bag with the valve therein;

Fig. 5 is a sectional view of the bag as in Fig. 1;

Fig. 6 is a sectional view showing a mold for forming the bag with accurate uniform walls, and Fig. 7 illustrates the nozzle.

One objection to the distendable bag has been that the valve structure for making it liquid tight would not permit the entry or insertion of a liquid such as a germicide or a prophylactic which is not under pressure and usually inserted as a medicament in small amounts or doses. In the present invention, this objection is overcome by providing a valve which is open or may be opened by the admission of liquid when the bag is not under pressure, but which will close automatically when fluid under pressure is admitted to the bag, the bag being then distended or inflated according to the amount inserted, and holding an amount greatly in excess of the normal uninflated capacity of the bag.

Referring now more particularly to the drawing, a bag 10 is formed of distendable elastic material such as rubber with a continuous rounded extremity 11 at one end, and a reduced

neck 12 at the other. The size of the bag is relatively small and is molded or formed in substantially flat or slightly oval condition so that it may be rolled or folded flatly into a small compact package. The opening 13 of the neck has an outer beaded extremity 14 and may be extended or stretched to strip it from or to remove an inner form or mandrel upon which the bag is made.

A circular head 15 is inserted in the neck of the bag distending it slightly from oval to circular form and secured thereto by cementing or vulcanizing it in place. One form of the head is formed of relatively harder or more rigid material than the bag, such as yielding rubber, or a rubber substitute, and has a flexible outer partition 16 inclined inwardly and graduated in thickness from the end, and with a reduced central opening 17. It also has an inner partition 18 with a reduced central opening 19 and a tapered inner flexible lip 20 at the inner edge of the opening 19.

At the inner side of the partition 18 is a flap valve 21 cemented, vulcanized or otherwise secured to or formed integral with the head at one side of the inner opening 19, and preferably offset slightly so that the free portion of the valve will slightly overlap and seat firmly all around upon a flat circular downward seat projection 22 surrounding the opening 19. In its normal position the flap valve is inclined slightly away from the opening as shown in Fig. 3, but it will close against its seat when the bag is inflated.

In order to open the valve, a nozzle 25 has a reduced extremity 26 of a size adapted to be inserted freely through the outer opening 17 of the head 15 against the valve 21 pressing it away from its seat 22, the larger portion of the nozzle making a fluid-tight connection with the thin edge of the outer partition 16 at the opening 17, and the reduced portion of the nozzle making a fluid-tight connection with the inner thin flexible lip 20 to discharge the contents of the bag through the opening in the nozzle. At the inner end of the nozzle are one or more notches or recesses 27 to prevent the valve from sealing the end against liquid flowing out through the nozzle.

With this construction, it is possible to insert a liquid or a powdered material through the valve into the bag in any desired quantity when the bag is not inflated or the valve closed by pressure therein.

In order to fill the bag with fluid or liquid under pressure, the outer partition 16 is stretched over the end of a discharging faucet to make a fluid tight connection therewith, the liquid under pressure enters through the valve and distends the bag in accordance with the material and pressure applied thereto.

When the bag is inflated and ready for use with any desired kind of liquid therein, the valve is held tightly in closed position and can be opened for a controlled discharge only by inserting a nozzle which fits tightly therein, thus preventing any dripping or leakage in handling the bag, the nozzle fitting tightly in the openings so that there is no leakage when the nozzle is inserted to open the valve and discharge the contents of the bag under pressure therefrom. In producing an inflatable bag of this kind, extreme care must be taken making the walls of uniform thickness, for if one portion of the wall is thinner than the other, it will tend to bulge at that place and will break if sufficiently inflated. It is also objectionable to form a bag with a core opening at both ends and then to close up one of the ends by attempting to cement or vulcanize one of the ends.

In producing a satisfactory inflatable bag by molding it in a form, a central core 31 of the desired shape and size is enclosed and supported from one end by centrally divided mold pieces 32 leaving a thin space between them for the production of a bag of the desired size and shape, closed at one end and having a reduced neck at the other. Near the closed end, the core is provided with small projections 33 preferably rounded on opposite sides of a height equal to the thickness of the desired walls in the bag, the outer ends of these projections engaging the opposite mold parts 32 and holding the inner end of the core accurately spaced from the opposite sides of the mold parts. At the neck 34 of the core, it is held in proper spaced relation by the engagement with the ends of the mold parts 32. Thus both ends of the core are held accurately in proper spaced relation to form a bag in which the wall thickness is uniform.

In the formation of the bag by this method, a tiny hole represented by a dot 35 in Fig. 1 is produced in each side of the bag near the closed or rounded end thereof. After the bag is formed and set by the mold, the outer mold parts 32 are removed and the formed bag is stripped from the core 31 in inside out relation, and the inner recesses produced by the rounded spacing portions 33 are covered with small patches 36 of rubber, the same material as the bag, or other suitable material, cemented or vulcanized in place and thereby sealing the openings 35. The bag is again reversed bringing the outside outermost, disposing the patches inside of the bag as shown in Fig. 5 ready for the application of the valve head. As the openings 35 in the outer wall are very small, they will not be noticed in the completed bag when ready for use, and as the patches 36 more than fill the opening, there is no danger of the bag blowing out through the openings regardless of the pressure applied thereto.

With this construction, an extremely strong bag is produced which may be inflated to large size without danger of breaking the bag due to inflation, or to uneven strains because of variable thicknesses in different portions of the wall, or because the bottom portion has a seam or a core opening which is cemented or vulcanized to close it.

I claim:

1. In a douche, a distendable elastic bag with a reduced neck, a valve head secured in the neck and comprising spaced partitions with reduced openings, a valve seat at the inner side of the inner partition, a resilient flap valve at one edge

of the inner side of the inner partition to open freely for admitting liquid and closing against the partition to maintain pressure in the bag, the outer partition comprising means for resiliently engaging faucets of different sizes to make liquid tight connection therewith, the inner partition having an inner thin lip around the opening, and a nozzle inserted through the inner partition to engage the valve and to make a fluid tight connection with the lip, the valve being opened by the nozzle for discharging the contents of the bag therethrough.

2. In a douche, a distendable elastic bag rounded at one end and having a reduced neck at the other end, a valve head secured in the neck comprising spaced partitions with openings therein, a pressure closing flap valve at the inner side of the inner partition, means comprising a graduated thin edge in the outer partition for flexibly engaging a faucet inserted therein to make a fluid tight connection, and a flexible lip in the inner partition for making a fluid tight connection with a nozzle inserted therethrough to open the valve.

3. A douche comprising a distendable elastic bag with a reduced neck, a valve head secured in the neck and comprising spaced partitions with reduced openings therethrough, a flap valve at the inside of the inner partition to open freely for admitting liquid and other material when the bag is not under pressure, and closing against the partition to maintain pressure in the bag, and the outer partition comprising means for resiliently engaging faucets of different sizes to make liquid tight connection therewith for filling and inflating the bag.

4. A douche comprising a distendable elastic bag with a reduced neck, a valve head secured in the neck and comprising spaced partitions with reduced openings therethrough, a flap valve at the inside of the inner partition to open freely for admitting liquid and other material when the bag is not under pressure, and closing against the partition to maintain pressure in the bag, the outer partition comprising means for resiliently engaging faucets of different sizes to make liquid tight connection therewith for filling and inflating the bag, and a nozzle insertable through the partitions to open the flap valve and to tightly engage the edges of the openings to discharge liquid from the bag and to prevent leakage therefrom around the nozzle.

5. A douche in accordance with claim 4 in which the nozzle has one or more notches at its inner end to prevent the flap from closing this end of the nozzle when the flap is opened thereby.

6. In a douche a distendable elastic bag with a reduced neck, a valve head secured in the neck comprising spaced partitions with openings therethrough, a pressure closing flap valve at the inner side of the inner partition, means comprising a graduated thin edge in the opening of the outer partition for flexibly engaging faucets of different sizes inserted therein to make liquid tight connections a flexible lip in the inner partition for making a fluid tight connection with a nozzle inserted therethrough to open the valve, and a nozzle insertable through the openings in the partitions to open the flap valve and having portions for tightly engaging the said thin edge and a flexible lip in the partitions to prevent leakage around the nozzle in discharging the contents of the bag.

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