

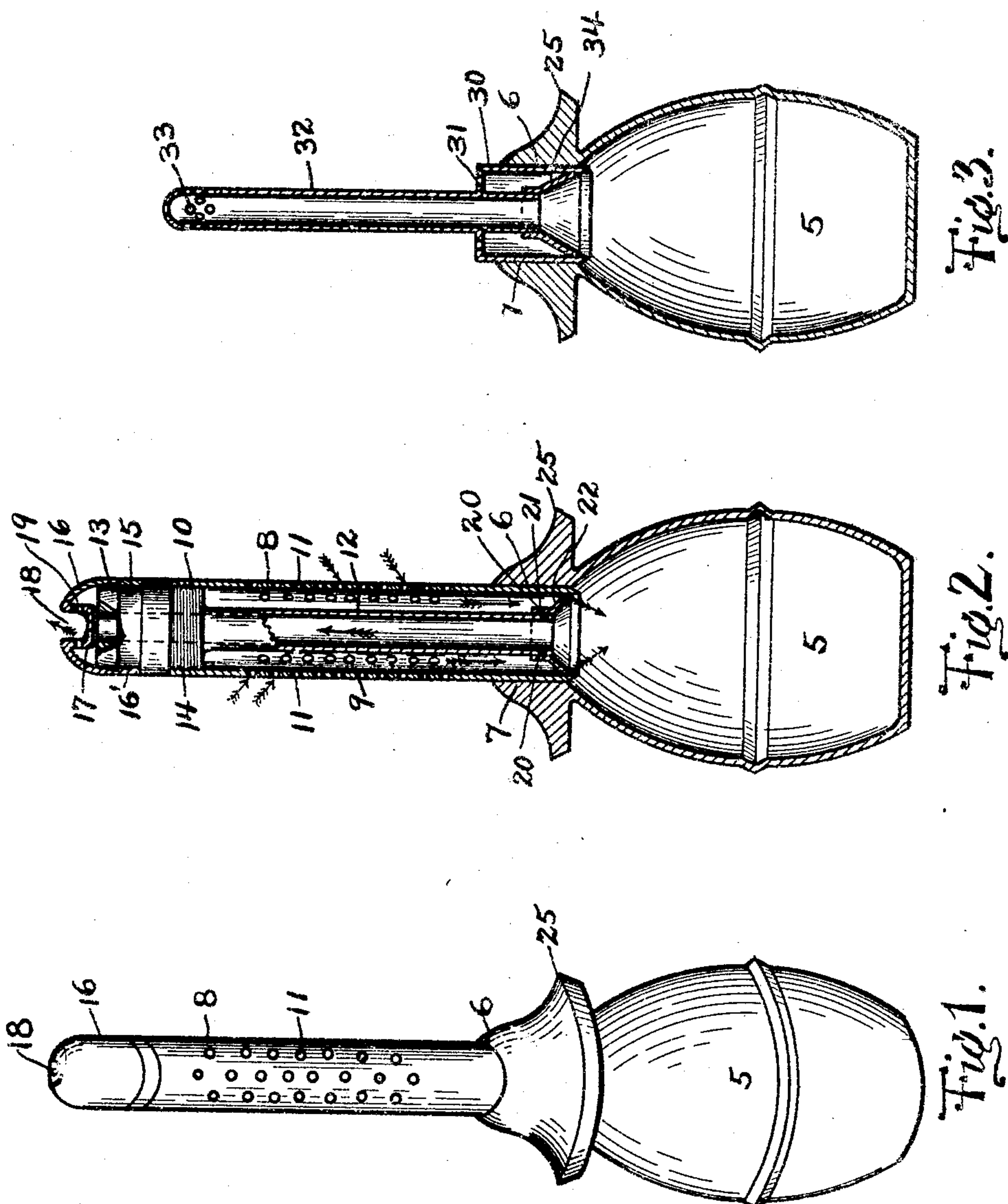
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PATENTED JULY 12, 1904.

T. H. ELLIS.
SYRINGE.

APPLICATION FILED JULY 8, 1903.

NO MODEL.



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SYRINGE.

SPECIFICATION forming part of Letters Patent No. 764,996, dated July 12, 1904.

Application filed July 8, 1903. Serial No. 164,704. (No model.)

To all whom it may concern:

Be it known that I, THOMAS HENRY ELLIS, a citizen of the United States, residing at New Orleans, in the parish of Orleans, State of Louisiana, have invented certain new and useful Improvements in Syringes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to syringes in general, and more particularly to the class of vaginal syringes or douches, the object of the invention being to provide a syringe wherein the discharge will be at the outer end of the nozzle, while the liquid discharged will be caused to return and reënter the bulb at the inner end of the nozzle, the arrangement of the parts thereof, including the valves, being such as to prevent suction at the end of the nozzle and to thoroughly cleanse the vaginal and uterine cavities.

A further object of the invention is to provide a syringe which will close the orifice through which it is inserted and wherein the length of the nozzle or tube may be adjusted to reach to the proper depth, also to provide a syringe which may be operated to cause the fluid therefrom to inflate the vagina while the patient is in a reclining position.

Other objects of the invention are to provide for easy cleaning of the parts of the syringe and to insure their efficient operation, an additional object of the invention being to provide a bulb which may be used as a breast-pump.

Further objects and advantages of the invention will be understood from the following description.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a perspective view showing the syringe equipped for adult use. Fig. 2 is a longitudinal central section of the structure shown in Fig. 1. Fig. 3 is a view similar to

Fig. 2 and showing the syringe constructed for misses' use.

Referring now to the drawings, the present syringe (illustrated in Figs. 1 and 2) consists of a collapsible rubber bulb 5, the mouth 6 of which has a cylindrical bore 7, which extends some distance into the body of the bulb for a purpose which will be hereinafter explained, and the walls of the bulb are sufficiently heavy to possess a degree of elasticity sufficient to permit use of the bulb alone as a breast-pump, the mouth of the bulb being fitted over the nipple of the breast, as will be understood.

In addition to the bulb 5 the syringe includes a nozzle 8, comprising a cylindrical casing 9, the outer end of which is internally threaded, as shown at 10, and through the walls of which casing are formed perforations 11, which may be of different sizes, as shown, the perforations extending from a line just short of the outer end to a line somewhat more distant from the inner end, the outer face of the casing or member 9 being smooth. The nozzle includes also an inner member 12, which is tubular in form and at the outer end of which is the head 13, having its inner end exteriorly threaded, as shown at 14, to engage the threads 10, so that said head may act to plug the outer end of the member 9 and prevent flow of liquid into the member 9 around the head. The bore of the member 12 is continued through the head, the outer end of said head being flat to form a valve-seat, and in the cylindrical face is formed an annular groove 15. A soft-rubber cap 16 is provided for the head 13, which cap has an interior flange 16' adjacent to its open end, which engages in the groove 15 and holds the cap yieldably upon the head.

Upon the outer end of the cap is a hollow reëntrant portion 17, having a flat end adapted to close the bore of the member 12, the position of the flange 16' being such as to hold the cap with the free end of this reëntrant portion against the end face or valve-seat of the head. In the reëntrant portion are dis-

charge-openings 19, the axes of which intersect the axis of the said reëntrant portion exteriorly of the cap, so that the several streams thrown through the perforations will radiate from the axis of the nozzle with a most efficient washing action.

The stem of the member 12 is somewhat shorter than the member 9, and in the face of said stem, remote from the head, is formed an annular groove 20, in which is engaged the flange 21, formed upon the inner face of the minor end of a frusto-conical valve 22, of rubber, the flared end of which lies normally in contact with the inner surface of the imperforate inner end of the member 9. This conical valve prevents passage of water between the members 9 and 12 in the direction of the head, but permits of ready passage of water in the opposite direction. The member 9 is of such diameter as to cause it to fit snugly into the neck or mouth of the bulb 5, while permitting it to be readily slipped into or out of the bulb in the manner and for the purpose hereinafter explained.

The neck of the bulb is provided with an exterior elliptical flange 25, having a concave taper to the free end of the neck, so as to fit into and tightly close the orifice through which the nozzle is inserted in use.

In the operation of this syringe the bulb is filled with a suitable liquid, and the nozzle is adjusted in the mouth of the bulb to project to the proper extent, the cylindrical bore of the mouth insuring closure of all of the perforations 11 that are not exterior to the bulb. The nozzle is then passed into the vagina, the soft-rubber cap preventing injury to the parts, and when the bulb has been pressed firmly against the person it is squeezed, and the liquid is discharged therefrom and, passing through the member 9 at the inner end thereof, passes into and through the member 12 into the cap, from which latter it is discharged through the orifices of the cap in the manner above described. In its passage from the member 12 the liquid raises the valve from its seat. By proper pressure upon the bulb of the syringe the proper force of the discharge may be obtained. A sufficient quantity or all of the contents of the bulb having been discharged, the bulb is permitted to expand, when the valve or projection 17 moves back to its seat and closes the outer end of the member 12. At the same time the valve 22 moves from contact with the inner face of the member 9, and suction is set up through the member 9, so that the liquid is drawn through the perforations 11 into said member and thence past the valve and into the bulb. This operation may be repeated as often as desired.

In Fig. 3 of the drawings there is shown a form of the invention wherein the nozzle is of lesser diameter than that shown in Figs. 1

and 2 and is intended for misses' use after menstruation. The nozzle in this case comprises a short outer member 30, which is adapted to fit in the mouth of the bulb the same as in the former case, said member having a closed outer end, save for the perforations 31 formed therethrough. Through the center of the closed end of the member 30 is passed the tube 32, having perforations 33 in its outer end to direct the discharge therefrom, the inner end of the tube having a frusto-conical valve 34 engaged therewith of the same form and arrangement as the valve in the former construction described. In this form of the invention the discharge is through the end of the tube 32, the valve preventing outward passage of liquid through the perforations, while permitting return-passage therethrough to the bulb. Liquid may also return through the end of the tube in this form of the invention. With this construction it will be seen that the various objects of the invention as enumerated are obtained, and it will be understood that in practice other modifications may be made, and any suitable materials and proportions may be used for the various parts without departing from the spirit of the invention.

What is claimed is—

1. A syringe comprising a reservoir and a nozzle including an outer member having perforations therein, an inner member having a head at its outer end, the said head having an annular groove in its cylindrical face near its outer end, a seat on its outer end, and adapted to engage the outer end of the inner member, and a cap having an interior flange adjacent to its open end, said flange being adapted to engage in the groove of the said head to hold the cap yieldably thereupon, the said cap having a reëntrant portion, said reëntrant portion being perforated and having a flat end adapted to engage the valve-seat on the outer end of the inner member and to close the bore therein.

2. A syringe comprising a reservoir and a nozzle including an outer member having perforations therein, an inner member tubular in form having a head at its outer end, the inner end of the said head being adapted to engage the outer end of the outer member and a stem, the said stem being shorter than the outer member and having an annular groove near its inner end, a frusto-conical valve having a flange formed upon the inner face of its minor end, the said flange being adapted to engage the annular groove on the stem, the flared end of the said frusto-conical valve being adapted to be normally in contact with the inner surface of the inner end of the outer member, and a cap adapted to be engaged to the outer end of the said inner member, the said cap having perforations therein.

3. A syringe comprising a reservoir and a nozzle, said nozzle consisting of a tube having perforations in its outer end and a frusto-conical valve engaged to its inner end, a cylindrical member having a closed end, the closed end of the said inner member being perforated and bored and rigidly attached near the inner end of the said tube, the flared end of the said frusto-conical valve being adapted to

be normally in contact with the inner surface 10 of the inner end of the said cylindrical member.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS HENRY ELLIS.

Witnesses:

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