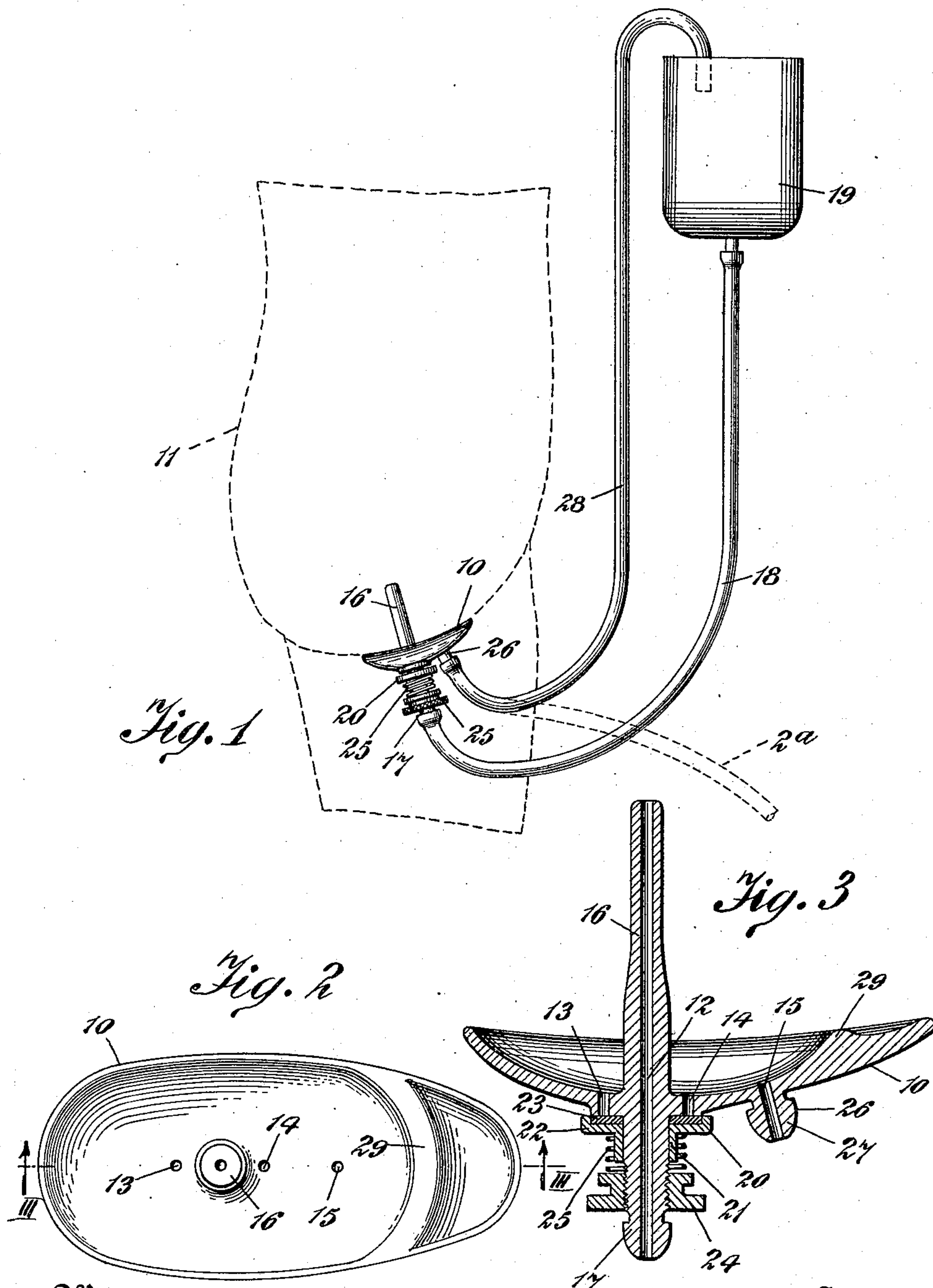


R. B. CRUMP & J. BERNSTEIN.
NOZZLE FOR SYRINGES.
APPLICATION FILED JAN. 27, 1915.

1,166,662.

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Witnesses:

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UNITED STATES PATENT OFFICE.

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NOZZLE FOR SYRINGES.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, ROBERT B. CRUMP and JOSEPH BERNSTEIN, both citizens of the United States, and residents of Hoboken, county of Bergen, and State of New Jersey, and of New York, borough of Brooklyn, county of Kings, and State of New York, respectively, have invented a certain new and useful Improvement in Nozzles for Syringes, of which the following is a full, clear, and exact specification.

This invention relates to a class of devices adapted to be used in medical treatment of persons.

Our invention has for its object primarily to provide a nozzle designed to be employed in conjunction with fountain syringes for permitting douches to be given to women especially, and which is of a form whereby all the vaginal parts may be effectually treated by a medicated liquid, the invention consisting essentially of an orificed cup or parabolic-shaped member or keeper adapted to be applied so as to encompass the lips of the vagina to cause the medicated liquid to be retained by the patient, and extending from the concavity of the cup-shaped keeper is a tubular member adapted to be inserted in the parts so that the liquid may be properly injected.

Other objects of the invention are to provide on the convex side of the keeper a nipple for permitting the nozzle to be removably attached to the hose of a bag or receptacle in which the supply of the medicated liquid is contained; to provide a regulator whereby the pressure of the liquid injected into the patient may be controlled; to provide a controlling-vent for allowing air in the parts of the patient to be exhausted during the process of douching as well as to cause a desired quantity of the liquid to be retained by the patient and to permit the liquid to escape when desired without wetting any garments, or bed clothing, and the like; and to provide on the concavity of the keeper an extension so that it may be used on patients with large or small parts.

A further object of the invention is to provide a nozzle of simple and efficient construction which may be made of hard-rubber, metal, glass, or other material so as to be easily sterilized and cleaned.

A practical embodiment of the invention is represented in the accompanying drawing forming a part of this specification in which similar characters of reference indicate corresponding parts in all the views, the said invention being more fully described hereinafter, and then pointed out in the claims at the end of the description.

In the drawing, Figure 1 is an elevation of one form of nozzle for syringes embodying my invention showing the manner of using the same. Fig. 2 is a top plan of the nozzle, and Fig. 3 is a section taken on the line III—III of Fig. 2.

The device, or nozzle has a cup-shaped, or parabolic-shaped member, or keeper 10 of a substantially oval or elliptical form to adapt it to encompass the lips of the vagina of a patient, as 11, when the nozzle is in use. Through the central portion of the cup-shaped keeper 10 is a passage 12 in proximity to which are two holes or outlets 13 and 14, and also through the keeper at a slightly spaced interval from one of these holes is another passage or outlet 15. Extending vertically from the concavity of the cup-shaped keeper 10 is a tubular member, as 16, which is disposed so that its passage is in register with the passage 12, and this tubular member is adapted to be inserted in the vagina of the patient so that a medicated liquid may be properly injected.

On the convex side of the keeper 10 is a nipple 17 the passage through which registers with the passage 12 of the keeper and with the passage through the tubular member 16, and this nipple serves to permit the pipe, or hose, as 18, of a bag or receptacle 19 to be removably attached thereto, the receptacle being of any suitable form adapted to contain a supply of medicated liquid. When the nozzle is in use the receptacle 19 with the required quantity of the liquid therein is held at a suitable elevation above the patient in a similar manner to using an ordinary fountain syringe, and the air pressure in the receptacle on the liquid will force it through the hose and through the registered passages of the nipple 17, the keeper 10, and the tubular member 16 for injection into the patient.

In order to permit the pressure of the liquid when injected to be controlled, on the nipple 17 is provided a regulator, or

valve 20. The regulator, or valve 20 has a sleeve 21 which is movably disposed on the nipple, and on the end of the nipple in opposed relation to the convex side of the keeper 10 is an annular flange 22. Also on the sleeve 21 in contact with its annular flange is a washer or valve-seat 23 of rubber, leather, or the like in the form of a disk of a circumference adapted to control the closing and opening of the outlets 13 and 14 of the keeper 10. Part of the nipple 17 in proximity to its free end is exteriorly threaded, and on this threaded part is an adjusting nut 24. Encircling this nipple between the nut 24 and the movable sleeve 21 of the regulator is a spiral spring 25 normally serving to force the sleeve toward the keeper 10 so that its valve-seat will close the outlets 13 and 14, and by properly tensioning the spring 25 by adjusting the nut 24 on the nipple 17 the valve-seat 23 will be held against the keeper 10 for closing the outlets 13 and 14 to permit the parts of the patient to be thoroughly filled with the liquid, and in instances when the force of the liquid flowing from the bag is too great its pressure will cause the liquid to move the sleeve 21 and its valve-seat 23 on the nipple 17 against the tension of the spring 25 to open the outlets 13 and 14 so that the overflow of the liquid will escape therethrough. This action of the regulator 20 thus serves to allow the pressure of the injections to be controlled as occasion requires whereby not only the upper vaginal parts but the parts adjacent to the lips of the vagina may be effectually treated.

Serving to allow the air in the parts of the patient to be exhausted during the process of douching as well as to cause a desired quantity of the liquid to be retained by the patient and to permit the liquid to escape when desired without wetting any garment, or bed clothing, and the like, a controlling-vent, as 26, is provided. The controlling-vent 26 includes a nipple 27 extending from the convex side of the elliptic cup-shaped keeper 10 so that the passage therethrough is in register with the outlet 15 of the keeper, and to this nipple is attached one end of a hose or pipe 28. When the douche is administered to the patient the air in the upper part of the vaginal organ will be forced through the outlet 15 of the keeper 10, through the nipple 27, and through the pipe 28, thereby permitting the liquid to freely flow into all parts of the organ. By elevating the pipe 28 to a suitable height, for instance by resting its free end in the mouth of the receptacle 19, the liquid may be caused to be retained by the patient for a suitable period as the part of the liquid when backed-up into this pipe will be held therein, and by lowering the pipe, as shown

at 2^a, the liquid may be allowed to escape therethrough into a suitable vessel without wetting the garments of the patient, or the bed clothing, and the like.

When the nozzle is in use the keeper 10 is pressed closely to the parts of the patient for holding the liquid in the organ, and to permit the keeper to be applied to patients with larger or small parts projecting from its concavity between the nipple 17 and one of its ends is a curved extension 29 adapted to be inserted between the lips of the vagina.

In the foregoing description we have embodied the preferred form of our invention, but we do not wish to be understood as limiting ourselves thereto, as we are aware that modifications may be made therein without departing from the principle, or sacrificing any of the advantages of this invention, therefore we reserve to ourselves the right to make such changes as fairly fall within the scope of the appended claims.

Having thus described our invention, we claim as new and desire to secure by Letters Patent:—

1. In a nozzle for syringes, a cup-shaped keeper having a plurality of orifices therethrough, a tubular nipple projecting from the concavity of the keeper, the passage through the nipple being in register with one of the orifices of the keeper, a second tubular nipple on the convex side of the keeper at its registered orifice whereby the pipe of a receptacle for containing liquid may be attached thereto, and a regulator on the second nipple for controlling the passages of the other orifices through the keeper, for the purpose specified.

2. In a nozzle for syringes, a substantially elliptic cup-shaped keeper having a plurality of orifices therethrough, an extension projecting upwardly from the concavity of the keeper, a tubular nipple projecting from the concavity of the keeper, the passage through the nipple being in register with one of the orifices of the keeper, a second tubular nipple on the convex side of the keeper at its registered orifice whereby the pipe of a receptacle for containing liquid may be attached thereto, and a regulator on the second nipple for controlling the passages of the other orifices through the keeper, for the purpose specified.

3. In a nozzle for syringes, a cup-shaped keeper having a plurality of orifices therethrough, a tubular nipple projecting from the concavity of the keeper, the passage through the nipple being in register with one of the orifices of the keeper, a second tubular nipple on the convex side of the keeper at its registered orifice whereby the pipe of a receptacle for containing liquid may be attached thereto, and a spring actuated valve on the second nipple for control-

ling the passages of the other orifices through the keeper, for the purpose specified.

4. In a nozzle for syringes, a substantially elliptic cup-shaped keeper having a plurality of orifices therethrough, an extension projecting upwardly from the concavity of the keeper, a tubular nipple projecting from the concavity of the keeper, the passage through the nipple being in register with one of the orifices of the keeper, a second tubular nipple on the convex side of the keeper at its registered orifice whereby the pipe of a receptacle for containing liquid may be attached thereto, and a spring actuated valve on the second nipple for controlling the passages of the other orifices through the keeper, for the purpose specified.

5. In a nozzle for syringes, a cup-shaped keeper having a plurality of orifices and an outlet therethrough, a tubular nipple projecting from the concavity of the keeper, the passage through the nipple being in register with one of the orifices of the keeper, a second tubular nipple on the convex side of the keeper at its registered orifice whereby the pipe of a receptacle for containing liquid may be attached thereto, a regulator on the second nipple for controlling the passages of the other orifices through the keeper, and means on the convex side of the keeper at its outlet for con-

trolling the volume of liquid to be retained and also for controlling the exhaust of the liquid when the nozzle is in use, substantially as set forth and for the purpose specified.

6. In a nozzle for syringes a substantially elliptic cup-shaped keeper having a plurality of orifices and an outlet therethrough, an extension projecting upwardly from the concavity of the keeper, a tubular nipple projecting from the concavity of the keeper, the passage through the nipple being in register with one of the orifices of the keeper, a second tubular nipple on the convex side of the keeper at its registered orifice whereby the pipe of a receptacle for containing liquid may be attached thereto, a spring actuated valve on the second nipple for controlling the passage of the other orifices through the keeper, and means on the convex side of the keeper at its outlet for controlling the volume of liquid to be retained and also for controlling the exhaust of the liquid when the nozzle is in use, substantially as set forth and for the purpose specified.

This specification signed and witnessed this twenty sixth day of January, A. D. 1915.

ROBERT B. CRUMP.
JOSEPH BERNSTEIN.

Witnesses:

ROBT. B. ABBOTT,
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."