

UNITED STATES PATENT OFFICE.

GEORGE S. OLIVER, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO
GERSHOM CUTTER, OF SAME PLACE.

SYRINGE.

SPECIFICATION forming part of Letters Patent No. 497,250, dated May 9, 1893.

Application filed March 28, 1892. Serial No. 426,668. (No model.)

To all whom it may concern:

Be it known that I, GEORGE S. OLIVER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Syringes, of which the following is a full, clear, and exact specification.

My invention relates more particularly to that class of syringes known as vaginal syringes, in which the water or solution used in the syringe is withdrawn from the vagina by the same action or movement of the piston, which injects the water or solution.

The prime object of my invention is to hold the vagina distended while the solution is injected and to so arrange the egress or outlet aperture of the syringe that the water or solution will have free egress as it runs down the vagina and will not be checked by the folds of the vagina.

A further object of my invention is to provide a syringe of this character which shall be simple of construction and easy of manufacture and be capable of being readily taken apart for cleaning.

With these ends in view, my invention consists in certain features of novelty by which the said objects and certain other objects hereinafter described, are accomplished, as fully explained in connection with the accompanying drawings and more particularly pointed out in the claims.

In the said drawings, Figure 1, is a longitudinal section of my improved syringe, showing the manner of its use. Fig. 2, is a transverse section thereof, taken on the line 2—2, Fig. 1, and Fig. 3, is a similar section taken on the line 3—3, Fig. 1.

In the drawings, wherein like signs of reference indicate like parts throughout the several views, A is a barrel or cylinder, which is provided at one end with a removable head or plug B, secured therein in any suitable manner, as by means of screw threads C, as shown.

Located within the barrel A, is any suitable piston or plunger D, which is provided at each side of its center with a piston rod E, the said rods E being secured to the piston D in any convenient way and passing through two perforations in the head B, each of which is preferably provided with a suitable stuffing box F, for preventing leakage around the

piston rods, and the piston rods are connected together at their extremities by means of a suitable cross-head *e*, which is secured thereto in any suitable manner, as by means of the taps or nuts *e'*, and is provided with a handle or finger ring, *e*². The other end of the barrel A is provided with an outwardly flaring mouth piece G, through the central opening of which passes a cylinder discharge tube H. The inner end of the discharge tube H is removably secured in a central boss or hollow teat, I, by means of screw threads or otherwise, and communication is established between the interior of this tube and the interior of the barrel A, through any desired and suitable number of perforations or ports J, formed in the sides of the hollow boss I and tube H, as more clearly shown in Fig. 2. The tube H passes through a central opening in the piston D and the piston is provided on one side with a suitable stuffing box K, which surrounds the tube H and thus prevents leakage through the central aperture in the piston around the tube. The tube H extends beyond the mouth of the barrel G, a suitable distance, as shown, so as to reach the seat of disease or the point at which it is desired to apply the medicine or solution, and in its extreme end it is provided with a number of small apertures or spraying vents, L, the extreme end of the tube being closed save for these vents.

Suitably secured to the end of the barrel G, are a number of spreading wires, M, preferably four in number, which consist of two "U" shaped wires, which are crossed and have their extremities secured in the edge of the flaring mouth G, in any suitable manner. These spreading wires M project slightly beyond the end of the tube H, as shown, in Fig. 1, and when the instrument is inserted, they act to distend the walls of the vagina and prevent the folds or muscles from crowding over the discharge vents L; but the more especial purpose of these spreading wires, is to prevent the folds of the vagina from crowding around the tube H and choking up the small aperture N around said tube, where it passes through the flaring mouth G.

In the use of my instrument, the perforations L in the tube H may be immersed in the water or solution to be injected and the piston then forced inward toward the mouth G. This

action of the piston will create suction in the chamber O formed by the piston and the head B, which will draw the solution in through the openings L and thence into the portion of the barrel A, designated as the chamber O, *via* the tube H and the ports or openings J. The barrel A now being fully charged with the solution for injection, the device is ready for use and it may be inserted into the vagina in the ordinary manner, and when inserted, the piston D may be drawn outward, by means of the ring or handle *e*², which will cause the solution contained in the barrel A to discharge into the tube H and to be sprayed from such tube through the holes L against the walls of the vagina, in various directions, with great force, which will dislodge any particles of foreign matter therein and wash the same downward, whereupon such particles, together with the water of injection, will be caught by the flaring mouth G and guided into the aperture N, from whence they are drawn by the suction of the piston D, back into the cylinder or barrel A, but this time into the chamber P, formed by the upper side of the piston and the mouth G; thus immediately drawing off the objectionable matter before it again has an opportunity to adhere to the walls of the vagina. When the piston D has reached the limit of its outward stroke, it will have drawn back into the cylinder or barrel A all of the solution which was injected, together with the objectionable foreign matter, thus making it possible to remove the instrument with such matter and solution, without wetting the clothing of the patient or slopping the person.

In order to prevent the regurgitation or the accidental spilling of the solution from the chamber P after the instrument is removed, the tube H may be provided just inside the opening N with an annular or peripheral rib Q, which makes the passage through the opening *n* circuitous or irregular, and thus reduces the liability of the solution discharging therefrom without being forced out by the piston.

With an instrument constructed according to my invention, it will be seen that its constituent parts may be readily disassembled and access had to their interior, and hence any filth or foreign matter which ordinarily collects within the passages, may be readily and conveniently removed.

While I have been particular to describe the boss I as being hollow and provided with ports which register with the ports in the inner end of the tube H, it is, nevertheless, very obvious, that this particular construction is not essential and that the ports J may be formed in the tube H above the boss I, thus avoiding the necessity of forming any ports at all in the boss I, or making such boss hollow.

Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. In a syringe, the combination of a barrel having a contracted centrally arranged

inlet aperture, a discharge tube having inlet and outlet openings secured in said barrel and protruding through said centrally arranged inlet therein, and a piston working in said barrel, for forcing the fluid from one end thereof into said discharge tube and drawing it in through said contracted inlet, substantially as set forth.

2. In a syringe, the combination with a barrel or cylinder having an inlet; of a tube having an inlet at one end and an outlet at its other end, arranged in said barrel, a piston through which said tube passes playing on said tube between its said inlet and outlet, and a rod for actuating said piston, substantially as set forth.

3. In a syringe, the combination of the main barrel or cylinder having an inlet, a discharge tube having inlet and discharge openings, passing through said inlet in the barrel and being fixed with relation to said barrel, a piston arranged in said barrel and adapted to force the solution therefrom into said tube, and spreading wires arranged around said tube, substantially as set forth.

4. In a syringe, the combination of the barrel or cylinder, a discharge tube provided with inlet and outlet openings having one end secured in said barrel or cylinder and its other end protruding therefrom, a piston in said barrel or cylinder, through which said tube passes, and two piston rods secured to said piston, substantially as set forth.

5. In a syringe, the combination of the barrel or cylinder; a head in one end of said barrel or cylinder, having a teat or boss, a tube having one end secured to said boss and communicating with said barrel, and its other end protruding therefrom, and a piston in said cylinder, having a stuffing box through which said tube passes and being provided with two piston rods working through said head, substantially as set forth.

6. In a syringe, the combination of the barrel having a central aperture in one end thereof, a discharge tube communicating with said barrel and projecting through said aperture and being provided with the rib Q adjacent to said aperture and a discharge aperture at its outer end, and the piston working in said barrel between said aperture and the point of communication between said barrel and tube, substantially as set forth.

7. In a syringe, the combination with the barrel; of a removable discharge tube secured in said barrel and communicating therewith, a piston working in said barrel, and through which piston said tube passes, a removable head secured to said barrel and discharge tube, and two piston rods working through said head and being secured to said piston, substantially as set forth.

GEORGE S. OLIVER.

Witnesses:

R. C. OMOHUNDRO,
F. A. HOPKINS.