No. 770,739. PATENTED SEPT. 27, 1904.

R. F. COLEMAN.

SYRINGE NOZZLE.

APPLICATION FILED MAR. 17, 1904.

NO MODEL.

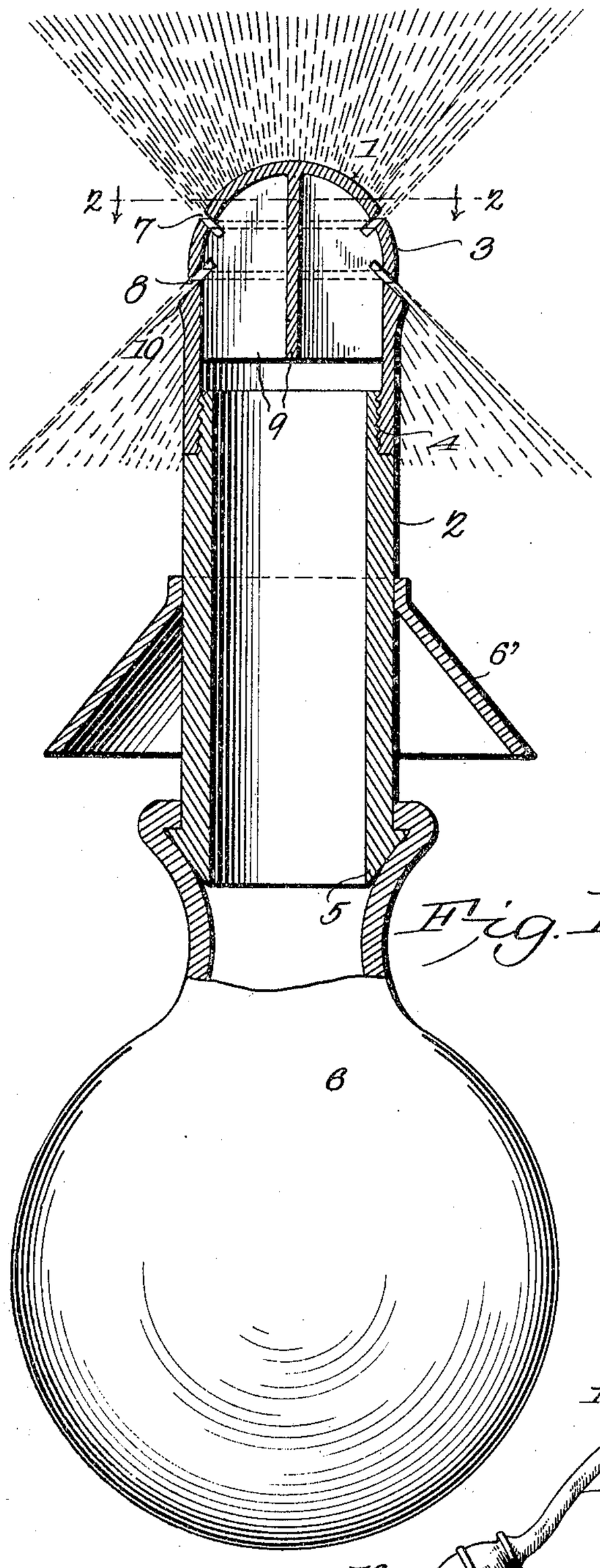

Fig. 1.

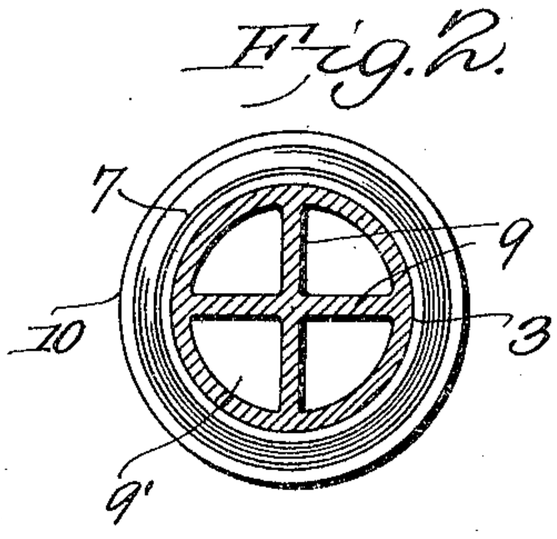

Fig. 2.

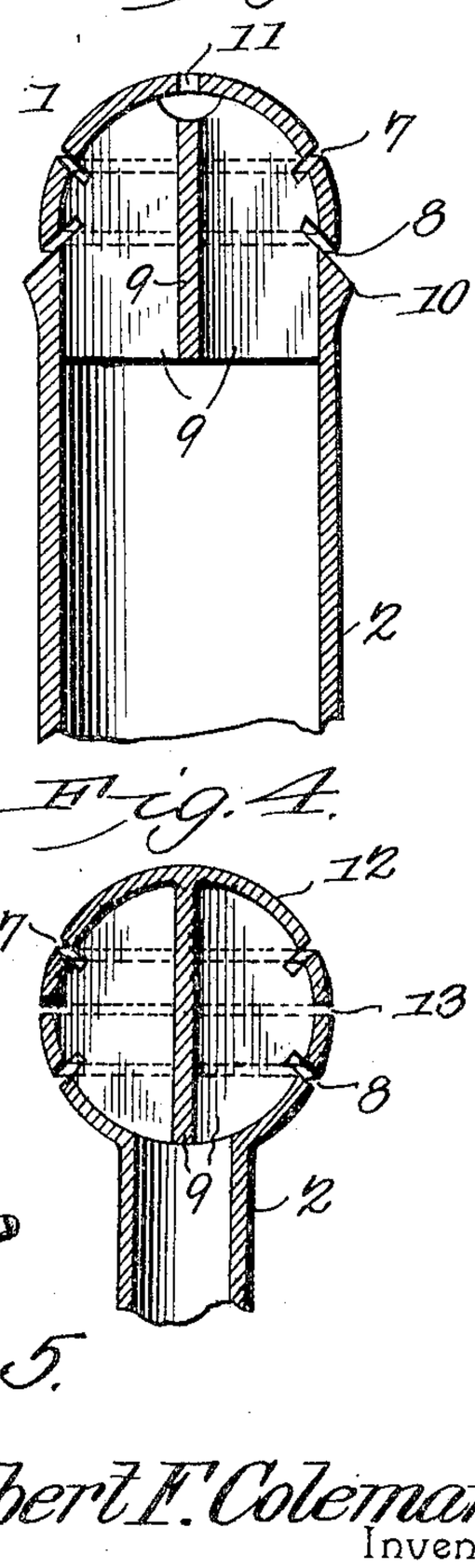

Fig. 3.

Fig. 4.

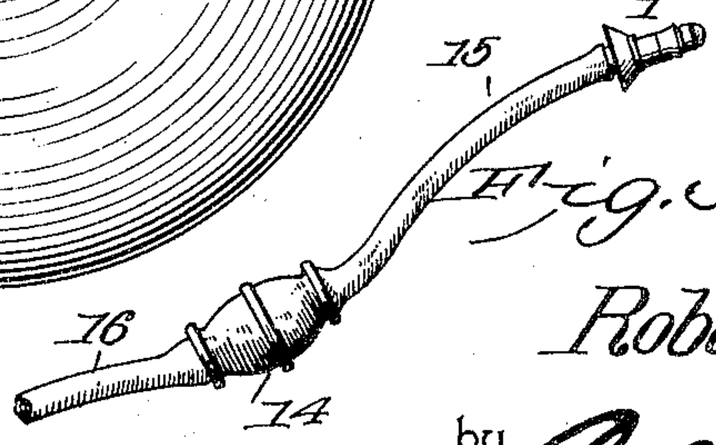

Fig. 5.

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UNITED STATES PATENT OFFICE.

ROBERT F. COLEMAN, OF PHILADELPHIA, PENNSYLVANIA.

SYRINGE-NOZZLE.

SPECIFICATION forming part of Letters Patent No. 770,739, dated September 27, 1904.

Application filed March 17, 1904. Serial No. 198,632. (No model.)

To all whom it may concern:

Be it known that I, ROBERT F. COLEMAN, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Syringe-Nozzle, of which the following is a specification.

This invention relates to vaginal-syringe nozzles.

The object of the invention is to present a nozzle which shall be safe and easy of employment and which in use shall with great force project a plurality of continuous sheets of liquid in all directions—that is to say, forwardly, rearwardly, and laterally—thereby in a certain and rapid manner to effect cleansing and treatment of all of the parts and the positive dislodgment and removal of all secretions; furthermore, in a practical manner to obviate premature escape of the detergent or of the medicinal agent where one is employed.

With the above and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a nozzle of the class described, as will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like characters of reference indicate corresponding parts, there are illustrated three forms of embodiment of the invention each capable of carrying the same into practical operation, it being understood that the elements therein exhibited may be varied or changed as to shape, proportion, and exact manner of assemblage without departing from the spirit thereof.

In the drawings, Figure 1 is a view of a syringe supplied with a nozzle constructed in accordance with the present invention, the nozzle being in sections. Fig. 2 is a view in transverse section taken on the line 2 2, Fig. 1, and looking in the direction of the arrow thereon. Fig. 3 is a detail sectional view of a modified form of cap. Fig. 4 is a similar view of still another modified form of cap. Fig. 5 is a view of a form of bulb that may be employed in lieu of that shown in Fig. 1.

Referring to the drawings, and to Figs. 1 and 2 thereof, 1 designates generally the nozzle, comprising a shank 2 and a cap 3, these parts being in this instance formed as separate elements and connected by a threaded joint 4, although, as will hereinafter appear, if desired, the nozzle may be made an integral structure throughout and of any suitable material for the purpose. The lower end of the shank is provided with a flange or head 5, which serves to hold it properly associated with the bulb 6, which may be of the usual or any preferred construction. Slidably mounted upon the shank is a soft rubber shield or guard 6′, which is designed to prevent premature discharge of the liquid in the use of the device. The cap portion of the nozzle, which constitutes the essential feature of the present invention, is constructed in such manner as to project a series of continuous sheets of liquid forwardly, rearwardly, and laterally, so that rapid and thorough cleansing and treatment of all parts is positively effected. This result is secured by the employment of a plurality of circumferential discharge slots or orifices 7 and 8, formed by cutting slots entirely through the walls of the cap, thus to establish communication with the interior thereof. In order to hold the cap-sections separated from the slots combined with the cap, cross-webs 9 are employed, which constitute, in effect, a spider, these webs being integral with the cap, as clearly shown in Fig. 1, and the spaces between which present passageways 9′, through which the liquid passes to and escapes from the slots. The walls of the slots are disposed at oppositely-inclined angles to the long diameter of the cap—that is to say, the walls of the slot 7 are inclined toward the upper or outer end of the nozzle, and the walls of the slots 8 are inclined toward the lower or inner end of the nozzle—and by this arrangement it will be seen that the sheets of liquid in discharging form approximately a ball or globe. The provision of the cross-webs is of importance, inasmuch as it will positively hold the separated sections of the cap against displacement in use, and will maintain a clear and uninterrupted space between the walls of the

slots, thus to insure equal discharge of liquid from all sides of the nozzle. As the cap shown in Fig. 1 is a true cylinder, with a rounded end, there would be a tendency of the liquid escaping from the slot 8 to flow down or follow the outer wall of the cap, and to obviate this the said wall of the cap adjacent to the slot 8 is formed with a peripheral enlargement 10, which constitutes a deflector for directing the discharge of liquid away from the cap.

In the form of embodiment of the invention shown in Fig. 3 the cap is in the same general shape and arrangement as that shown in Fig. 1, the main difference residing in the fact that the top of the cap is provided with an additional discharge-orifice 11, thus providing for the projection of a spray or jet of liquid in addition to the sheet escaping from the slot 7. In this form of embodiment of the invention the shank is shown as integral with the cap, although, if preferred, it may be made detachable therefrom.

In the form of embodiment of the invention shown in Fig. 4 the cap 12 is round and is provided, in addition to the slots 7 and 8, with an intermediate slot 13, this operating to discharge a sheet of liquid laterally from the cap or head. Owing to the shape of the cap or head, the shank 2, which is preferably integral with the head, is of less diameter than the cap, and this will render unnecessary the employment of the deflector 10, as shown in Figs. 1 and 3.

It will be obvious that additional discharge-slots may be provided in the form of the invention shown in Fig. 1, and as this will be obvious detailed illustration is deemed unnecessary.

In the form of bulb used in connection with the embodiment of the invention shown in Fig. 1 separation of the nozzle therefrom is necessary when the bulb is to be filled with water or a medicinal agent, and to obviate this the form of bulb shown in Fig. 5 may be employed, which is of the ordinary syringe type and embodies a bulb 14 and pipe-sections 15 and 16, the section 15 to be secured to the nozzle and the section 16 to be immersed in the liquid to be used.

The nozzle of this invention while exceedingly simple in construction will be found of the highest efficiency and durability in use and may be readily and cheaply manufactured. Furthermore, owing to the provision of the spider for holding the walls of the slots properly spaced any clogging of these slots will be positively prevented. Ordinarily there will be no danger of any stoppage of the discharge-slots; but to prevent such a contingency or to relieve it if it should arise the cap may be detachable from the nozzle-shank, as described, so that cleansing may be readily effected.

Having thus fully described my invention, what I claim is—

1. A syringe-nozzle having its discharge end separated into a plurality of sections, and means for holding the sections spaced to present continuous circumferential escape-orifices.

2. A syringe-nozzle having its discharge end separated into a plurality of sections, and means integral with the nozzle to hold the sections spaced to present continuous circumferential escape-orifices.

3. A syringe-nozzle provided internally with cross-webs and having continuous circumferential escape-orifices entering the webs.

4. A syringe-nozzle provided internally with integral cross-webs and having continuous circumferential escape-orifices entering the webs.

5. A syringe-nozzle provided with continuous circumferential escape-orifices discharging in opposite directions.

6. A syringe-nozzle having continuous escape-orifices discharging in opposite directions, and an orifice discharging in the direction of the length of the nozzle.

7. A syringe-nozzle provided internally with cross-webs and having continuous circumferential escape-orifices entering the webs and discharging in opposite directions.

8. A syringe-nozzle provided with oppositely-discharging continuous circumferential escape-orifices, one of which has a deflector arranged adjacent thereto.

9. A syringe-nozzle comprising a shank and a cap detachably connected, the cap being provided with integral internally-arranged cross-webs and having continuous escape-orifices entering the webs.

10. A syringe-nozzle comprising a shank and a cap detachably connected, the cap being provided internally with integral cross-webs and with continuous escape-orifices entering the webs, the orifices discharging in opposite directions, and a deflector arranged adjacent to the rear orifice.

11. A syringe-nozzle provided internally with integral cross-webs and having continuous circumferential orifices entering the webs.

12. A syringe-nozzle comprising a shank and a cap detachably connected, the cap being provided with integral internally-arranged cross-webs and having continuous circumferential escape-orifices entering the webs.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ROBERT F. COLEMAN.

Witnesses:
JOHN M. ENBURG,
ANNIE COLEMAN.