No. 747,444. PATENTED DEC. 22, 1903.

E. N. LA VEINE.

COMBINED SYRINGE AND APPLICATOR.

APPLICATION FILED NOV. 13, 1902.

NO MODEL.

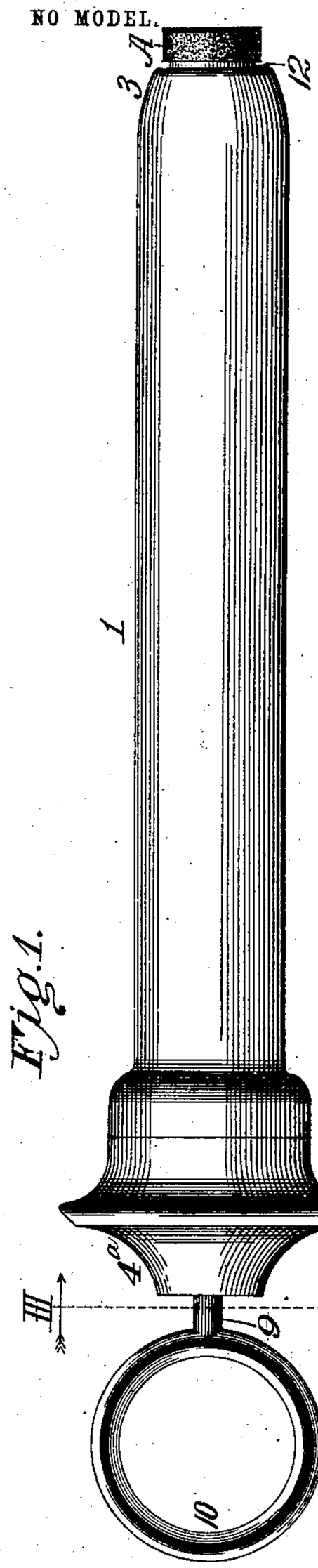

Fig. 1.

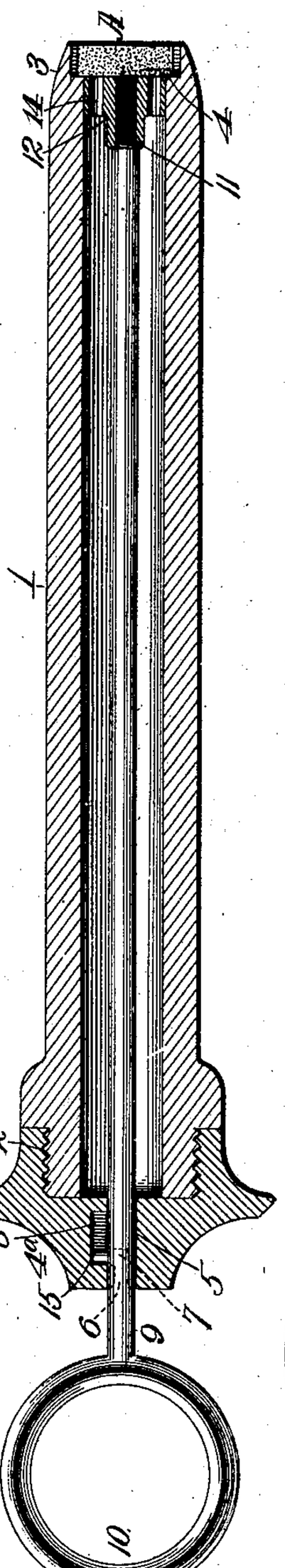

Fig. 2.

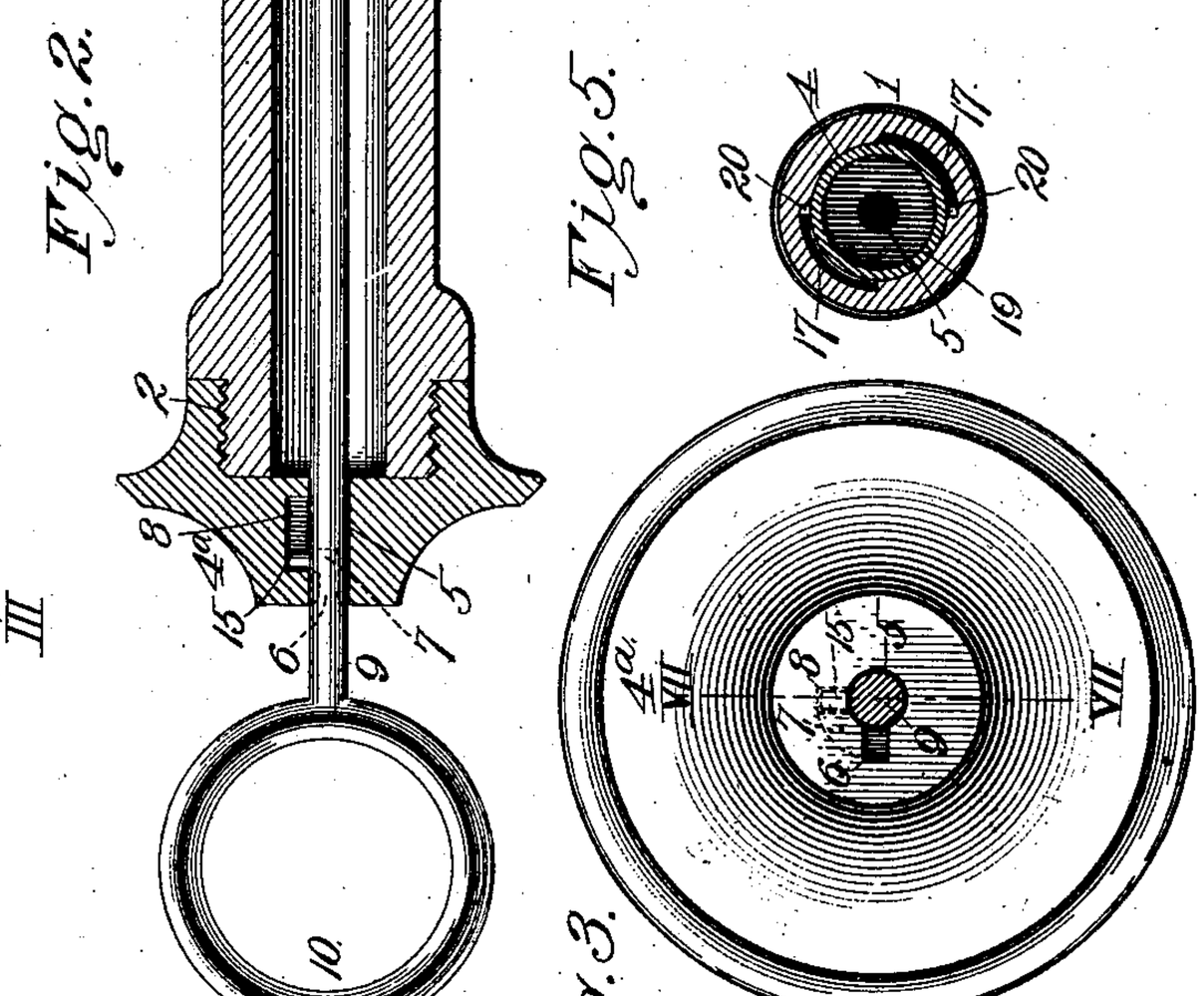

Fig. 3.

Fig. 5.

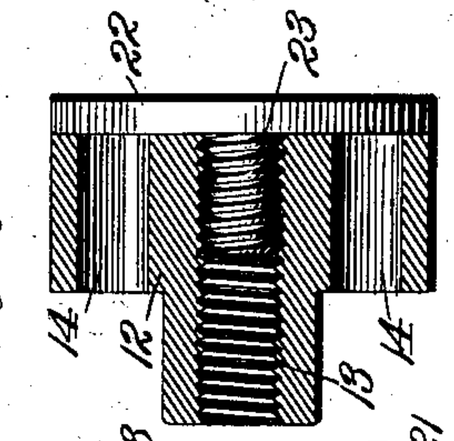

Fig. 4.

Fig. 6.

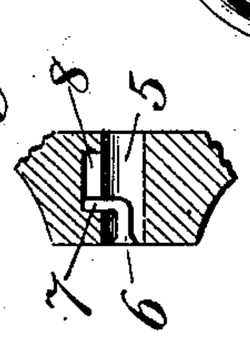

Fig. 7.

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No. 747,444. Patented December 22, 1903.

UNITED STATES PATENT OFFICE.

EDWARD N. LA VEINE, OF KANSAS CITY, MISSOURI.

COMBINED SYRINGE AND APPLICATOR.

SPECIFICATION forming part of Letters Patent No. 747,444, dated December 22, 1903.

Application filed November 13, 1902. Serial No. 131,085. (No model.)

To all whom it may concern:

Be it known that I, EDWARD N. LA VEINE, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in a Combined Syringe and Applicator, of which the following is a specification.

My invention relates to devices for enabling a woman to apply medicine in liquid or solid form to certain internal organs of her body for antiseptic or astringent purposes; and it has for its object the production of a single instrument of this character which may be used as a syringe or as a lozenge depositor and whereby said organs may be sprayed or one of them—the vagina—have deposited therein a lozenge or tablet.

A further object is to produce a device of this character which can be operated easily and quickly and with the least possible inconvenience to the operator.

The invention consists in certain novel and peculiar features of construction and organization, as hereinafter described and claimed, and in order that it may be fully understood reference is to be had to the accompanying drawings, in which—

Figure 1 represents a side elevation of an instrument of the character mentioned when employed as a lozenge or tablet depositor, said figure showing the relative positions of its parts as the lozenge is deposited. Fig. 2 is a central longitudinal section of the same with the parts in the positions they occupy just previous to the expulsion of the lozenge. Fig. 3 is an enlarged section taken on the line III III of Fig. 1. Fig. 4 is an enlarged section of the piston or plunger as employed in the device for discharging medicine in liquid form. Fig. 5 is a vertical section taken on the line V V of Fig. 6. Fig. 6 is a central longitudinal section of the nozzle end of the device when used especially for the discharge of a liquid. Fig. 7 is a section on the line VII VII of Fig. 3.

Referring to the drawings in detail, 1 designates a cylindrical tube or barrel of hard rubber, glass, or equivalent material and having its rear end externally threaded, as at 2, and its front end tapering forwardly, as at 3, to enable it to be inserted into the vagina easily and without pain, and at such end the bore of the tube or barrel is enlarged, as at 4, to receive snugly, but easily, a cylindrical lozenge or tablet A of suitable substance or composition to effect the purpose desired. Screwed upon the opposite end of said tube or barrel is a cap 4^a, having a central passage 5 in axial alinement with the bore of the tube or barrel, and communicating with said passage 5 is a bayonet or approximately **Z**-shaped slot consisting of an arm 6, which opens through the outer or rear face of the cap, a laterally-extending arm 7, communicating with the inner end of arm 6, and an inner arm 8, which, like arm 6, extends longitudinally and has its rear end communicating with the opposite end of arm 7.

9 designates the piston-stem, extending slidingly through passage 6 and into the tube or barrel and having at its rear or outer end a handle, as at 10, and its front end threaded by preference, as at 11. The piston 12 is provided with a threaded passage 13, so that it may be properly attached to the front end of the stem, and with the slots or apertures 14, so that when forced forward the air may pass therethrough in the opposite direction and not affect the expulsion of the lozenge, as would certainly be the case otherwise if the piston fit the tube or barrel very snugly. Near the opposite end the piston-stem is provided with a radially-projecting pin 15, and before the piston can be brought to bear directly upon the lozenge for the purpose of forcing the same out of the tube said pin must be caused to enter and traverse the full length of the bayonet-slot—that is to say, must enter, advance to the front end of slot-arm 6, then move laterally under the rotation of the piston-stem imparted by turning the handle to enter and travel to the opposite end of arm 7, and then enter and move forwardly to the front end of arm 8, no pressure from the piston being applied on the lozenge until said pin begins its advance movement in arm 8 of said slot. By the time the piston has reached its forward limit of travel it and the lozenge in advance are disposed in approximately the position shown in Fig. 1, at which time the tissues of the vagina have closed down around and properly clasped the lozenge in such a manner that it is maintained

reliably in such position—*i. e.*, with its axis coincidental with that of the opening occupied, so as to completely and reliably close such opening. As the tissues thus close around and overlap the margin of the lozenge the instrument is withdrawn.

In the above operation it will be apparent that the bayonet-joint connection eliminates any possibility of the accidental expulson of the lozenge from the piston movement, so that the operator in making the application can insert the tube or barrel into the proper position quickly and without any attention to the piston, even though the handle end of the latter is grasped simultaneously with the tube or barrel. Being properly positioned, the operator presses inward lightly on the piston-handle and turns the same until the pin registers with and slips into arm 6 of the slot, after which the manipulation is as before described.

In order that the instrument may be employed as a syringe for the purpose of discharging water or medicine in liquid form, or perhaps in powdered form, the front end of the tube or barrel is provided at diametrically opposite points with a pair of longitudinal grooves 16, opening into and in length equal to the depth of passage-enlargement 4, the rear end of each groove registering with one end of a cam-groove 17, which extends spirally toward the rear.

18 designates a rose-nozzle externally rounded to conform approximately to the tapering end of the tube and provided with a cylindrical portion or flange 19 to fit snugly in bore, enlargement 4, said flange being provided with external diametrically opposite lugs 20, which enter and by moving in the cam-grooves lightly clamp the nozzle in place, said nozzle at the junction of the tapered and cylindrical and flanged portions being provided with an outwardly-projecting flange 21 to close the front end of said grooves 16 and at the same time bring the external surfaces of the tube and nozzle flush or even, as shown clearly in Fig. 6. The employment of this nozzle to spray a liquid for cleansing or medicinal purposes necessarily involves the use of a piston which will effect such expulsion Consequently I provide a piston-cap 22 of the same diameter as the piston and adapted by fitting against its front side to completely cover passages 14, said cap being provided with a threaded stem 23 to screw into the front end of passage 13, as shown clearly in Fig. 4.

The operation of the device as a syringe is obvious, it being apparent that for such use it is unnecessary for the piston to make its full forward stroke, and consequently for the pin 15 to enter the bayonet-slot.

From the above description it will be apparent that I have produced a device of the character described which embodies the features of advantage enumerated as desirable, and which is simple, durable, and cheap of construction. It will also be apparent that it is susceptible of modification in some particulars without departing from the principle and scope of the invention or sacrificing any of its advantages.

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

1. In a device of the character described, a cylindrical tube or barrel having its front end tapering toward a point; the front end of the bore or passage of the tube being enlarged and of uniform diameter for its full length, and a reciprocatory piston within said tube or barrel consisting of a body portion and a detachable cap.

2. In a device of the character described, a cylindrical tube or barrel, having the front end of its bore or passage enlarged, a reciprocatory piston within said tube or barrel, and a bayonet-joint connection whereby the piston is given an additional advance movement.

3. In a device of the character described, a tube or barrel, a cap closing the rear end of the same, a reciprocatory piston in the tube or barrel, a stem projecting from the same and through said cap, and a pin-and-slot connection between said stem and cap.

4. In a device of the character described, a tube or barrel, a cap closing the rear end of the same and provided with an approximately **Z**-shaped slot opening through its rear face, a reciprocatory piston in the tube or barrel, the stem projecting from the same and through said cap, and a pin projecting from said stem for operation in said slot.

5. In a device of the character described, a tube or barrel having its bore enlarged at its front end, and having a longitudinal groove registering with said enlargement, and a cam-groove registering with said longitudinal groove, a nozzle at the front end of the bore or passage and provided with a flange engaging said enlargement, and a pin to operate in said groove and slot, in combination with a reciprocatory piston in said tube or barrel.

6. In a device of the character described, a tube or barrel having its bore enlarged at its front end, and having a longitudinal groove registering with said enlargement, and a cam-groove registering with said longitudinal groove; a nozzle at the front end of the bore or passage provided with a flange engaging said enlargement, a pin to operate in said groove and slot, and an outwardly-projecting flange bridging the front end of said groove; and a reciprocatory piston in said tube or barrel.

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

EDWARD N. LA VEINE.

Witnesses:
H. C. RODGERS,
G. Y. THORPE.