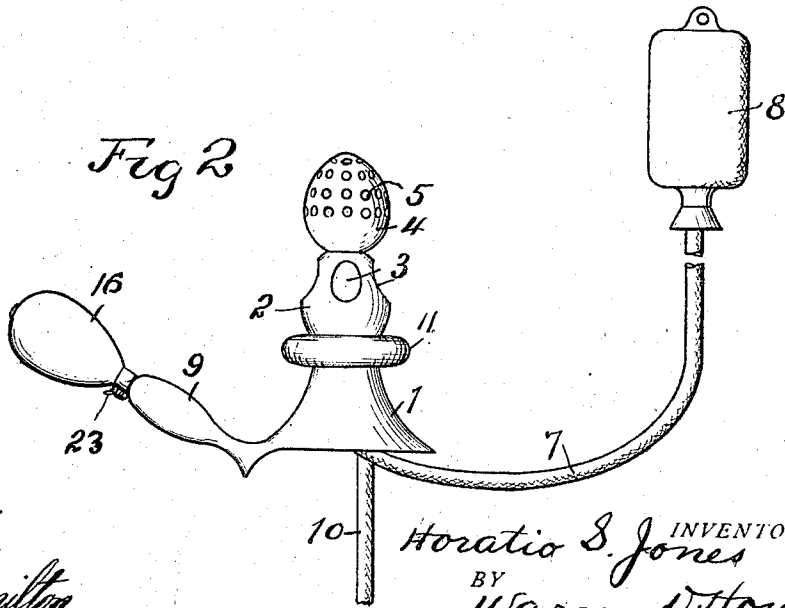
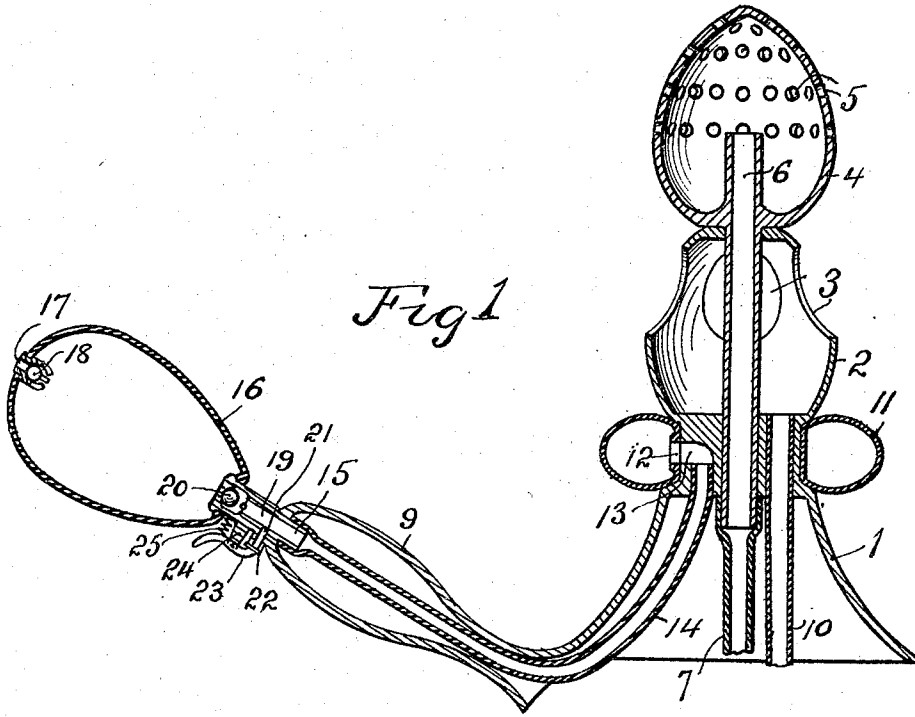


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SYRINGE.

APPLICATION FILED NOV. 16, 1918.

1,306,184.

Patented June 10, 1919.



WITNESS:

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SYRINGE.

1,306,184.

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To all whom it may concern:

Be it known that I, HORATIO S. JONES, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented a certain new and useful Improvements in Syringes, of which the following is a specification.

My invention relates to improvements in syringes.

It is particularly adapted for use in the vaginal canal, but it may also be used effectively for treatment of rectal diseases.

One of the objects of my invention is to provide a syringe which, after its insertion, may be firmly retained in its operative position and which may be used so as to retain for a period of time in the canal which is being treated the medicinal fluid employed for such treatment.

My invention provides further an inflatable and deflatable sealing ring with which the syringe nozzle is securely held in its operative position, and which further serves to prevent the outward flow around the nozzle of the medicinal fluid which has been injected, with the syringe.

My invention provides still further novel means by which the sealing ring may be inflated and deflated.

Other novel features of my invention are hereinafter fully described and claimed.

In the accompanying drawing which illustrates the preferred embodiment of my invention,

Figure 1 is an enlarged central vertical sectional view of the nozzle and parts carried thereby of my improved syringe.

Fig. 2 is a side elevation, partly broken away, of my improved syringe.

Similar reference characters designate similar parts in the different views.

The nozzle of my improved syringe is provided at its outer end with an outwardly flaring hollow bell-shaped portion 1 and an intermediate hollow pear-shaped intermediate portion 2, the upper side portions of which are provided with one or more inlet holes 3 adapted to receive the medicinal fluid which has been discharged into the canal in which the nozzle has been inserted.

The inner end of the nozzle is provided with a hollow head 4 having a plurality of discharge openings 5, said head being provided with a central longitudinal hollow stem 6 which extends through the intermediate portion 2 and projects into the flaring

bell-shaped portion 1. A rubber tube 7 is fitted over the outer end of the stem 6 and has its other end connected to the lower discharge end of an ordinary fountain syringe bag 8.

The flaring portion 1 of the nozzle is provided with a hollow laterally extending handle 9 with which the nozzle may be easily inserted into or withdrawn from the canal which is to be treated.

A discharge pipe 10 extends through the outer end of the bell-shaped portion 1 and communicates at its inner end with the interior of the intermediate portion 2.

Encircling the nozzle intermediate of the portions 1 and 2, is a hollow inflatable and deflatable ring 11, preferably of soft rubber, provided with an inner peripheral passage 12, which communicates with a passage 13, which extends from the interior of the flaring portion 1 to the periphery of the nozzle.

For inflating the ring 11, there is provided an air pipe 14, which has one end mounted in the passage 13 and the other end of which is fitted over an inwardly extending tubular projection 15 in the handle 9 adjacent to the outer end thereof. The handle 9 has fitted on its reduced tubular outer end a rubber bulb 16 provided at its outer end with an air inlet 17, the inner end of which is closed, when the bulb is compressed, by an inwardly opening valve 18 of the check valve type, and which may be a ball valve.

The tubular extension 19 at the outer end of the handle 9 has mounted in it an inwardly opening ball check valve 20, which prevents air passing backwardly into the bulb 16.

The tubular extension 19 is provided with a lateral passage 21, arranged to permit air to pass outwardly to the atmosphere. The passage 21 is normally closed by a valve 22 mounted on one end of a lever 23 which is pivoted to a lug 24 on the extension 19 and which is normally forced to the closed position by a coil spring 25 which is supported by the extension 19.

When used for treatment of the vaginal canal, the nozzle is inserted in the canal while the ring 11 is deflated. In this condition, the ring 11 has a diameter no greater than the diameter of the intermediate portion 2. Preferably, the diameter of the deflated ring 11 is less than the diameter of the portion 2 to permit of the ready en-

trance of the ring past the sphincter muscle of the vagina.

After the nozzle has been inserted to its operative position as above described, the bulb 16 is compressed, thus forcing air therefrom past the valve 20 and through the extension 19 and pipe 14 into the ring 11 through the passages 13 and 12. The ring 11 will thus be expanded and with the flaring portion 1 will tightly embrace the sphincter muscle so as to firmly retain the nozzle in operative position, and at the same time seal the vaginal canal against outflow of medicinal fluid around the exterior of the nozzle.

Medicinal fluid contained in the fountain bag 8 is then permitted to flow by gravity through the tube 7 and stem 6 into the head 4 from which it is discharged into the vaginal canal through the holes 5. The medicinal fluid will fill the canal around the nozzle at the inner side of the ring 11, and will pass through the holes 3 into the portion 2, from which it will seek to escape through the discharge pipe 10. As soon as the fluid begins to discharge through the pipe 10, this pipe may be closed by being pinched together. It may be retained closed for any period of time by a clasp or other suitable means not shown.

After the medicinal fluid has been retained in the vaginal canal for the time desired, the discharge pipe 10 may be opened to permit of the discharge therethrough of the medicinal fluid from the nozzle. When it is desired to remove the nozzle, the lever 23 is swung against the pressure of the spring 25 so as to open the valve 22, upon which the air contained in the ring 11 will pass therefrom through the passages 12 and 13, pipe 14, extension 19 and passage 21 to the atmosphere, whereupon the ring 11 will become deflated, after which the nozzle may be readily removed from the vagina.

I do not limit my invention to the structure shown and described, as modifications, within the scope of the appended claims, may be made without departing from the spirit of my invention.

What I claim is:—

1. In a syringe, a nozzle having at its outer end an outwardly flaring portion provided with a laterally extending handle, a hollow inflatable and deflatable peripheral sealing ring mounted on the nozzle at the inner end of said flaring portion, and means carried by the handle by which said ring may be inflated and deflated.

2. In a syringe, a nozzle having an outwardly flaring outer end provided with a laterally extending hollow handle, a hollow inflatable and deflatable peripheral sealing ring mounted on the nozzle at the in-

ner end of said flaring part of the nozzle, the ring and nozzle having respectively passages which communicate with each other, an air pipe extending through said handle and discharging at one end into the passage of the nozzle, and means for forcing air into the other end of the air pipe.

3. In a syringe, a nozzle having a hollow flaring outer end, a hollow perforated head, and a hollow pear-shaped intermediate portion, the side wall of the intermediate portion having a drainage inlet, the intermediate portion being partitioned from the head and flaring portion, a filling pipe extending through the flaring portion and the intermediate portion and discharging into the head, and a discharge pipe into which the intermediate portion discharges and extending through said flaring portion.

4. In a syringe, a nozzle having a hollow flaring outer end, a hollow perforated head, and a hollow pear-shaped intermediate portion partitioned from said head and flaring portion and provided at the inner side of its largest diameter with a lateral drainage inlet, a filling pipe extending through the flaring and intermediate portions and discharging into said head, a drainage pipe into which said intermediate portion discharges and extending through said flaring portion, an inflating ring intermediate of the flaring and intermediate portions inflatable to a diameter greater than the diameter of the intermediate portion and collapsible to a diameter less than the intermediate portion, and means for inflating and deflating said ring.

5. In a syringe, a nozzle having a laterally extending handle, an inflatable ring encircling the nozzle at the inner side of said handle, an air conductor carried by the handle and communicating interiorly with said ring and having an opening adapted to communicate with the atmosphere, a manually opened valve for closing said opening, and means for forcing air through said conductor into said ring.

6. In a syringe, a nozzle, an inflatable ring encircling the nozzle, the nozzle having a laterally extending hollow handle, an air conductor extending longitudinally through said hollow handle and into said nozzle and communicating interiorly with said ring and provided with an opening adapted to communicate with the atmosphere, a valve for closing said opening, a check valve which opens inwardly in said conductor at the outer side of said opening, and means for forcing air into said conductor past said check valve.

In testimony whereof I have signed my name to this specification.

HORATIO S. JONES.