June 1, 1948. J. R. STAFFORD 2,442,573

SYRINGE NOZZLE

Original Filed Jan. 13, 1947

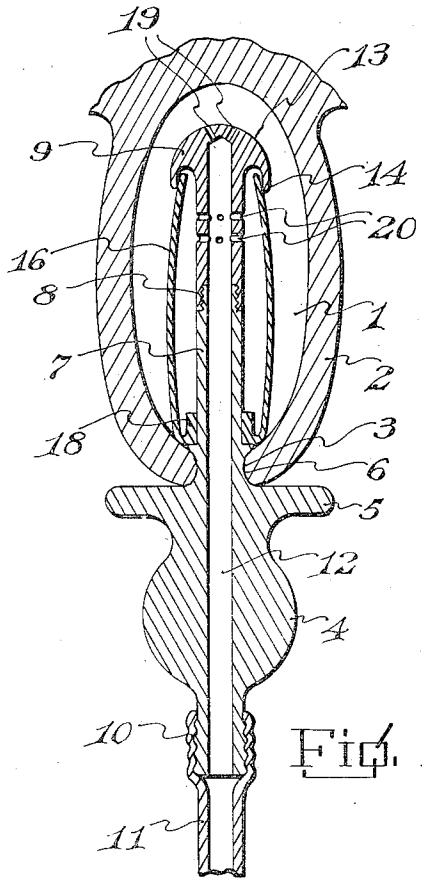

Fig. 1

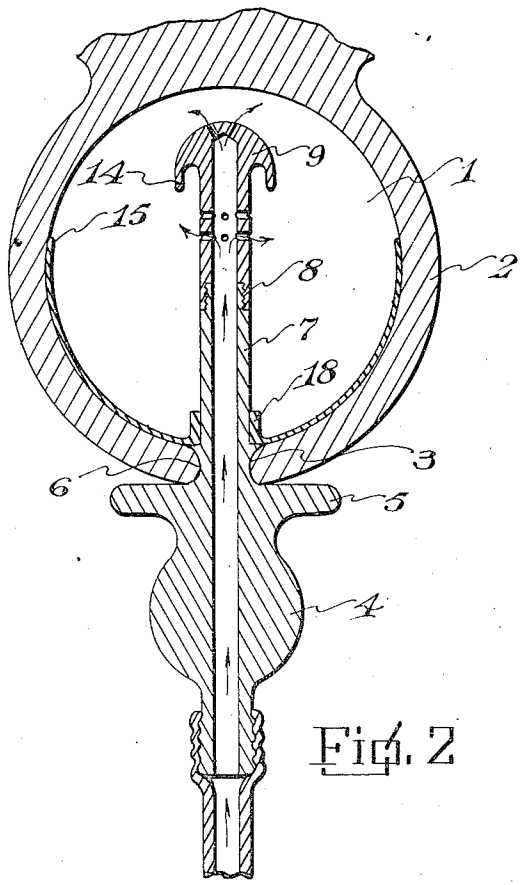

Fig. 2

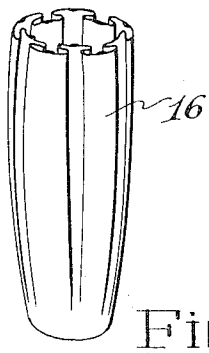

Fig. 3

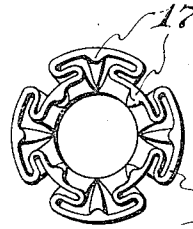

Fig. 4

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SYRINGE NOZZLE

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Substituted for abandoned application Serial No. 721,792, January 13, 1947. This application October 7, 1947, Serial No. 778,437

2 Claims. (Cl. 128—251)

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This application is a substitute for application 721,792 filed January 13, 1947, now abandoned.

The invention relates to syringe nozzles, particularly adapted for conveying a medicament to organs, such as the vagina, and has for its object to provide a nozzle for entering the organ orifice, and provided with an umbel shaped flexible member surrounding the nozzle and adapted to be spread or opened into engagement with the inner wall of the organ as the fluid passes through the nozzle, thereby preventing leakage during an irrigating operation.

A further object is to provide the outer end of the nozzle with an annular downwardly extending flange, adapted to receive therein the collapsed upper end of the umbel shaped member, for holding the same collapsed during the insertion of the nozzle, but allowing the collapsible member to be expanded outwardly into engagement with the wall of the organ under the influence of the fluid pressure passing through the nozzle to the discharge perforations, the initial fluid passing through the end of the nozzle before the spreading of the flexible member.

A further object is to provide longitudinal stiffening ribs on the collapsible member for maintaining the open end of the collapsible member within the annular flange of the nozzle so there will be a delayed opening action, thereby allowing the walls of the organ to be flushed before the collapsible member is expanded for preventing leakage.

With the above and other objects in view the invention resides in the combination and arrangement of parts as hereinafter set forth, shown in the drawing, described and claimed, it being understood that changes in the precise embodiment of the invention may be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawing:

Figure 1 is a vertical longitudinal sectional view through the nozzle, showing the same in position in an organ, and the parts in position before the entrace of the fluid.

Figure 2 is a view similar to Figure 1, but showing the umbrella shaped collapsible member extended, to sealing position.

Figure 3 is a perspective view of the collapsible member.

Figure 4 is a top plan view of the collapsible member.

Referring to the drawing, the numeral 1 designates the chamber of the vagina 2, and 3 the entrance thereto. It has been found that there is

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considerable leakage around the nozzle during an irrigating operation, and the present device has been designed to overcome this difficulty.

The nozzle comprises an enlarged handle portion 4 having a flange 5, and the restricted portion 6, received within the opening 3. The nozzle above the restricted portion is provided with an integral tube 7, which has threaded thereon, at 8, the outer end 9 of the nozzle. Detachably connected at 10 to the lower end of the device is the usual hose 11, through which hose the medicated fluid passes for the irrigating operation, and which fluid passes through the nozzle port 12 to the end of the nozzle. The end 9 of the nozzle is rounded as shown at 13 so it will easily enter the organ, and is provided with an inwardly extending annular flange 14, which flange receives therein the marginal open edges 15 of the umbrella shaped sealing member 16, preferably formed from thin rubber, and longitudinally reinforced at spaced points by flexible stiffening ribs 17, so the sealing member will be held in collapsed position until fluid pressure is applied thereto. The inner end of the umbrella shaped member 16 is provided with a contractable sleeve 18 surrounding the tubular portion 7 of the nozzle.

In operation, the nozzle is inserted in the organ 2 with the parts in position as shown in Figure 1. Fluid is then allowed to pass through the hose 11 and port 12, and the initial flow will pass through the discharge ports 19 in the outer end of the nozzle and will flush the walls of the organ. Further pressure and fluid will then pass through the ports 20 into the umbrella shaped member and will bulge outwardly said member, thereby freeing the marginal edge of the member 16 so it will move outwardly into conforming engagement with the wall of the organ, thereby preventing leakage at the entrance 3, and the irrigating operation may be continued. After the irrigating operation is completed, the hose 11 may be detached at 10, and the fluid in the organ will flow through the nozzle as the nozzle is removed. As the nozzle is moved outwardly the umbrella shaped member will be collapsed inwardly, and it will be noted that its marginal edge will be to the outside of the annular flange 14 so said flange will pass through the opening 3 without difficulty.

From the above it will be seen that an irrigating nozzle is provided with a sealing means, which sealing means is collapsible, and one which is simple in construction and positive in its operation.

The invention having been set forth what is claimed as new and useful is:

1. The combination with an irrigating nozzle having a collapsible umbrella shaped sealing member thereon, of means carried by the outer end of the nozzle and cooperating with the marginal edge of the open end of the sealing member for holding the same collapsed during an inserting operation and until opened by fluid pressure.

2. A device as set forth in claim 1 wherein the outer end of the nozzle is provided with an annular flange extending inwardly and forming means for cooperating with the outer marginal edge of the sealing umbrella for holding the umbrella collapsed until opened by pressure.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
388,510	Terrell	Aug. 28, 1888
797,676	Flowers	Aug. 22, 1905