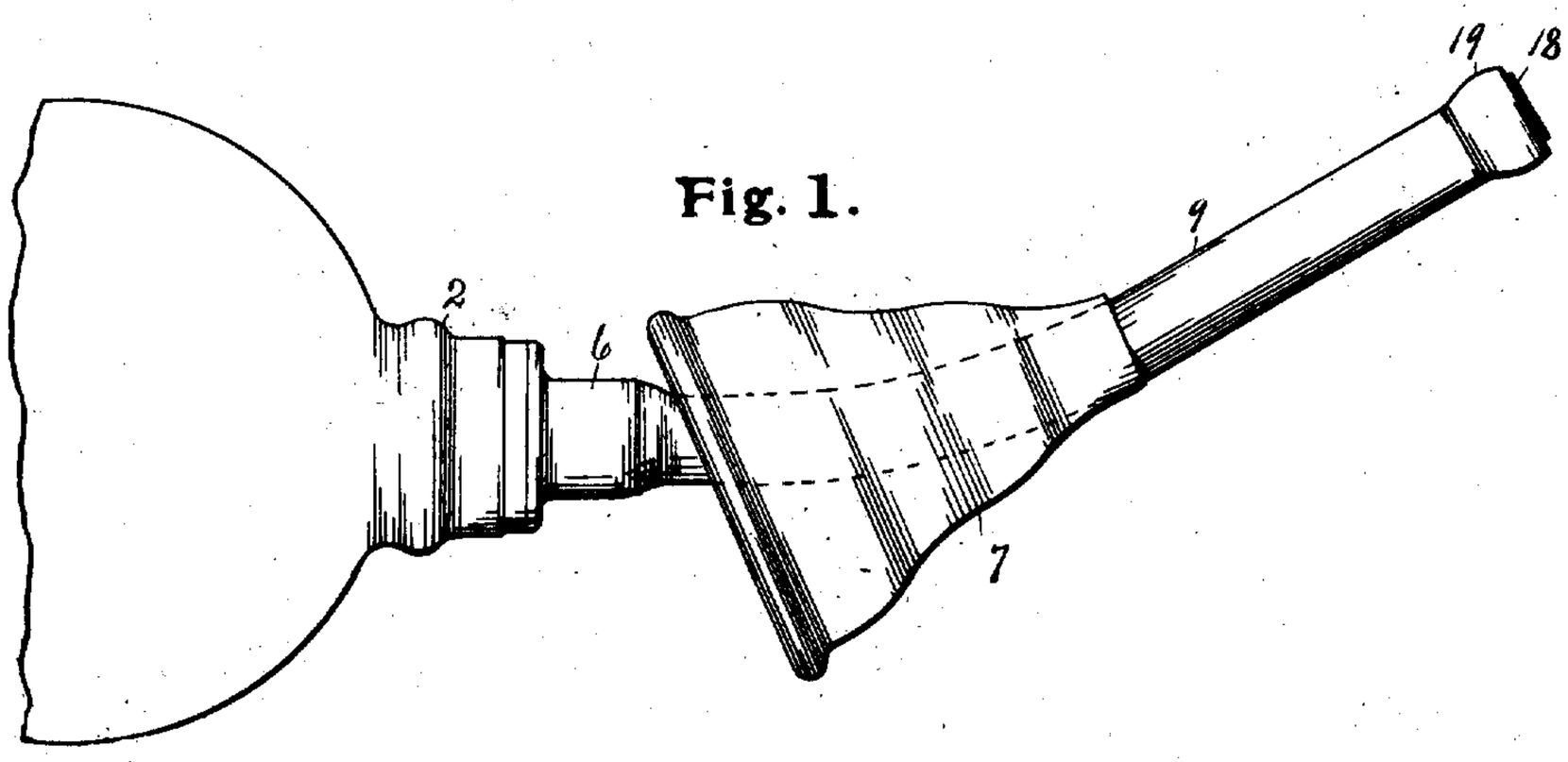
A. H. C. HEITMAN.

SYRINGE.

APPLICATION FILED MAR. 16, 1908.

901,100. Patented Oct. 13, 1908.

Fig. 1.



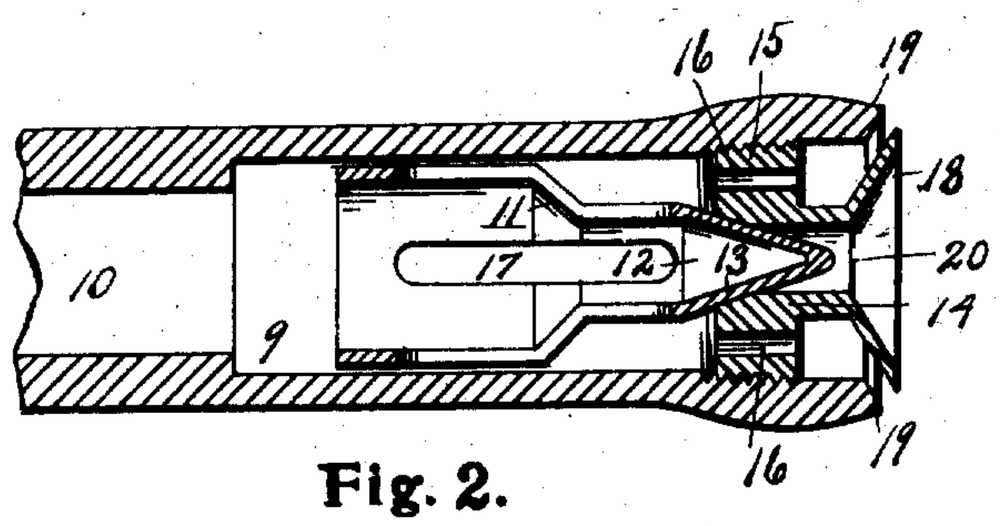


Fig. 2.

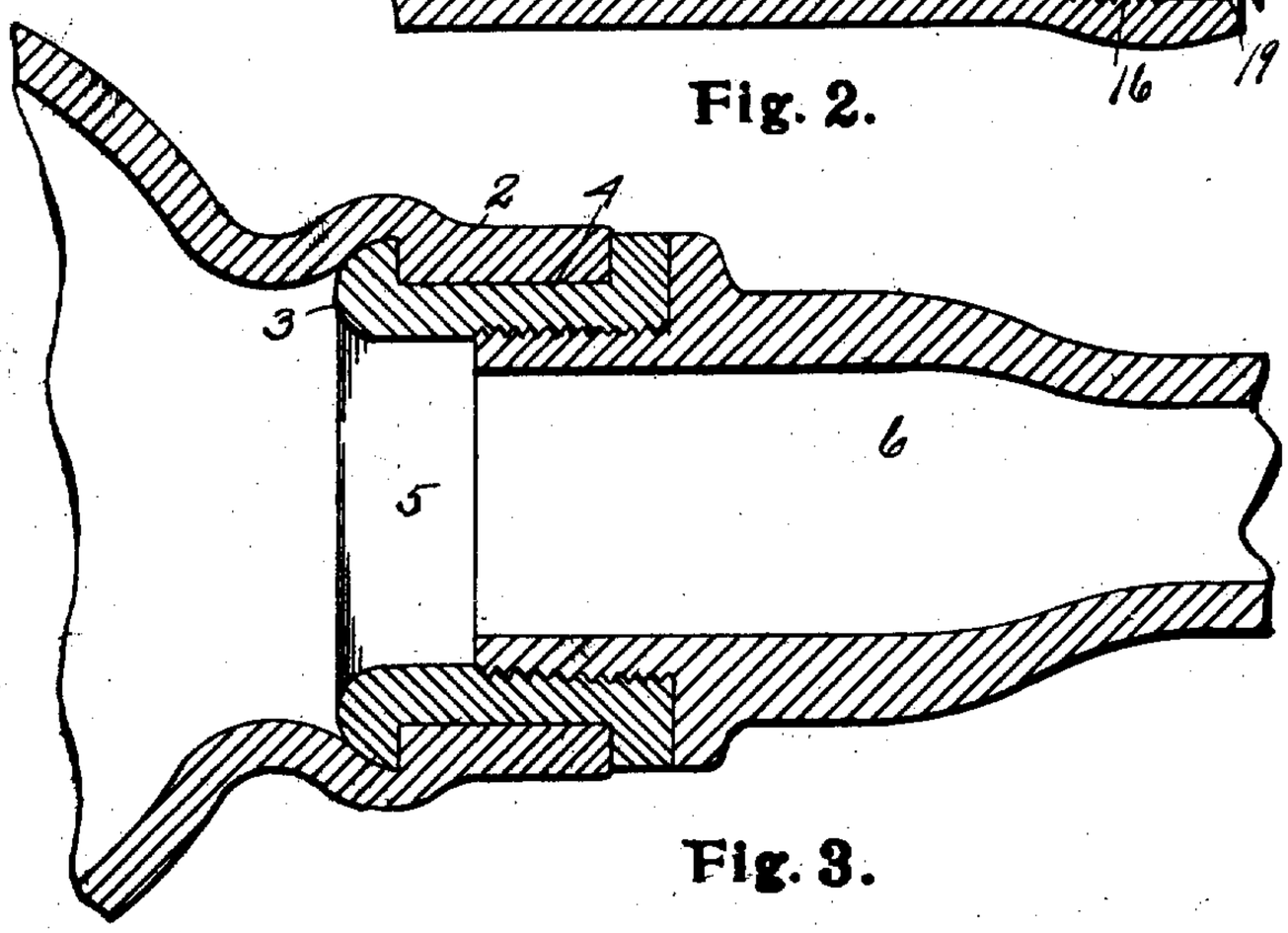


Fig. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

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SYRINGE.

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To all whom it may concern:

Be it known that I, ARNOLD H. C. HEITMAN, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Syringes, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to vaginal syringes, and has for its object an improved syringe of simple and economical construction, that is easily separated into its constituent parts for packing, and cleansing, is convenient for use, and has means whereby the cleansing fluid used with it is discharged in a diverging or spreading sheet, not broken upon into dangerous streams or masses, and is recovered into the bulb of the syringe without soiling either the body or the clothing of the user.

In the drawings:—Figure 1, is a side elevation of the entire syringe. Fig. 2, is a section on an enlarged scale, showing the nozzle. Fig. 3, is a section on an enlarged scale, showing the bulb connection.

The bulb made from elastic material, preferably rubber, is provided with a thickened rim 2 that is expanded over the flange 3, and contracts into the neck 4 of a coupling 5 of hard rubber. The coupling 5 is internally screw threaded; the nozzle 6 is provided with a screw threaded terminal that engages in the coupling 5. The coupling between the nozzle and the bulb, is readily disengaged and ready access to the bulb is possible at all times for the purpose of cleansing the interior of the bulb. The nozzle is preferably a solid piece of hard rubber, having a slight angle or bend intermediate its extremities, and is provided with a flexible rubber shield 7 that engages at any convenient point along the tube, and is held thereto by a contractile terminal of the flexible material of which the shield 7 is made. The delivery end of the nozzle is provided with a chamber 9 of slightly larger bore than that of the main body of the nozzle; within the chamber 9 is located a check valve 11, whose valve part 12 is made in the form of a cone, and is adapted to engage against a seat 13 on the deflector plug part of the nozzle 14. The deflector part of the nozzle is a plug provided with a screw threaded flange 15, by means of which the plug engages in the outer end of the nozzle, and is adjustable with respect to the rim 19 at the delivery end of the nozzle.

The flange 15 is provided with a number of by-passages 16 through which the liquid is forced in its discharge travel; to reach these by-passes the liquid travels through perforations 17 in the walls of the check valve 12; from the by-passages the liquid travels forward against a conical expanding or deflecting ring 18 on the plug. This conical expanding or deflecting ring extends opposite and parallel to the rim 19 of the nozzle, and causes the fluid which is forced through the nozzle and out through the annular passage between the deflector and the rim, to assume a sheet form for a distance from its exit from the nozzle, which sheet form continues until the fluid expanding, thins down and breaks. Through the center of the plug is a passage 20, that opens when the check valve 12 is drawn back or forced back consequent to the relaxation of the pressure on the bulb, but which is closed when the bulb is compressed and the fluid contained in it forced outward through the nozzle.

What I claim is:—

1. In a syringe nozzle, the combination of a tubular conduit, a deflecting plug having a screw threaded portion adapted to engage within a complementary portion of the conduit and a conical terminal portion extending across the end of said conduit, there being a central aperture and a plurality of by-passages extending lengthwise of said conduit through the body of the plug, and a slotted check valve slidably arranged within said conduit, through which the fluid ejected from the syringe passes without change in its direction of flow, said valve when projected to the forward limit of its travel serving as a closure to said central aperture, substantially as described.

2. In the nozzle of a syringe, the combination of a tubular conduit, a deflecting plug having a central passage, inserted in the end of said conduit, the body portion of said plug having a plurality of smaller passages arranged about said central passage substantially parallel therewith, and a slotted valve member having a limited path of travel within and with respect to said conduit, through which the fluid introduced into and

expelled from the syringe bulb passes, adapted to close said central passage in the deflecting plug, substantially as described.

3. In a syringe, in combination with a conduit member, a valve member slidable therein and through which all fluid passing through the conduit must pass, and a plug member having a central aperture adapted to be closed by the engagement of said valve member thereagainst, a plurality of by-passages arranged thereabout, and a deflector member integral with the apertured portion and extending across one end of said conduit member, being slightly spaced therefrom, substantially as described.

In testimony whereof, I sign this specification in the presence of two witnesses.

ARNOLD H. C. HEITMAN.

Witnesses:

CHARLES F. BURTON,

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