

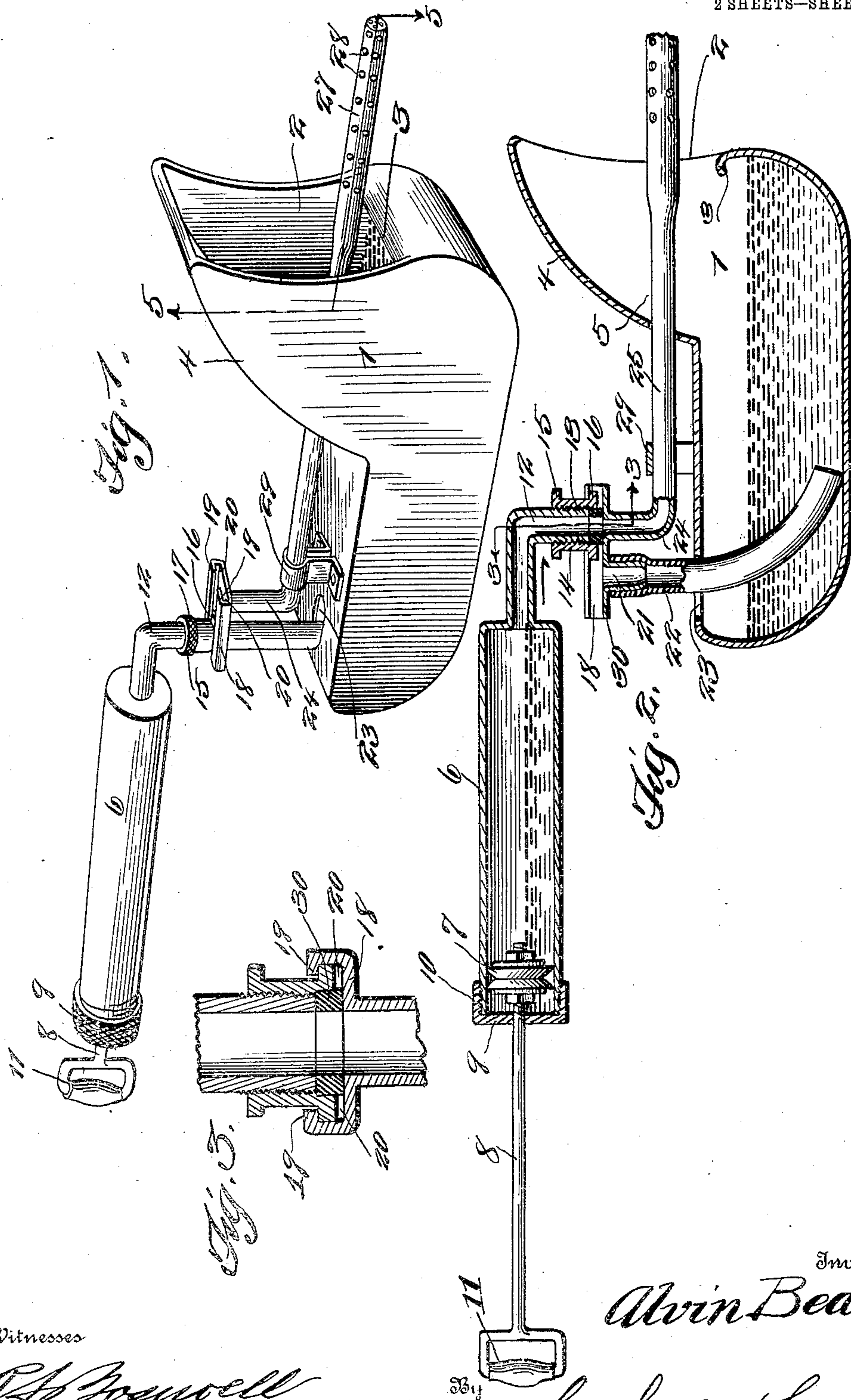
SYRINGE.

APPLICATION FILED DEC. 5, 1908.

931,113.

Patented Aug. 17, 1909.

2 SHEETS—SHEET 1.



Witnesses

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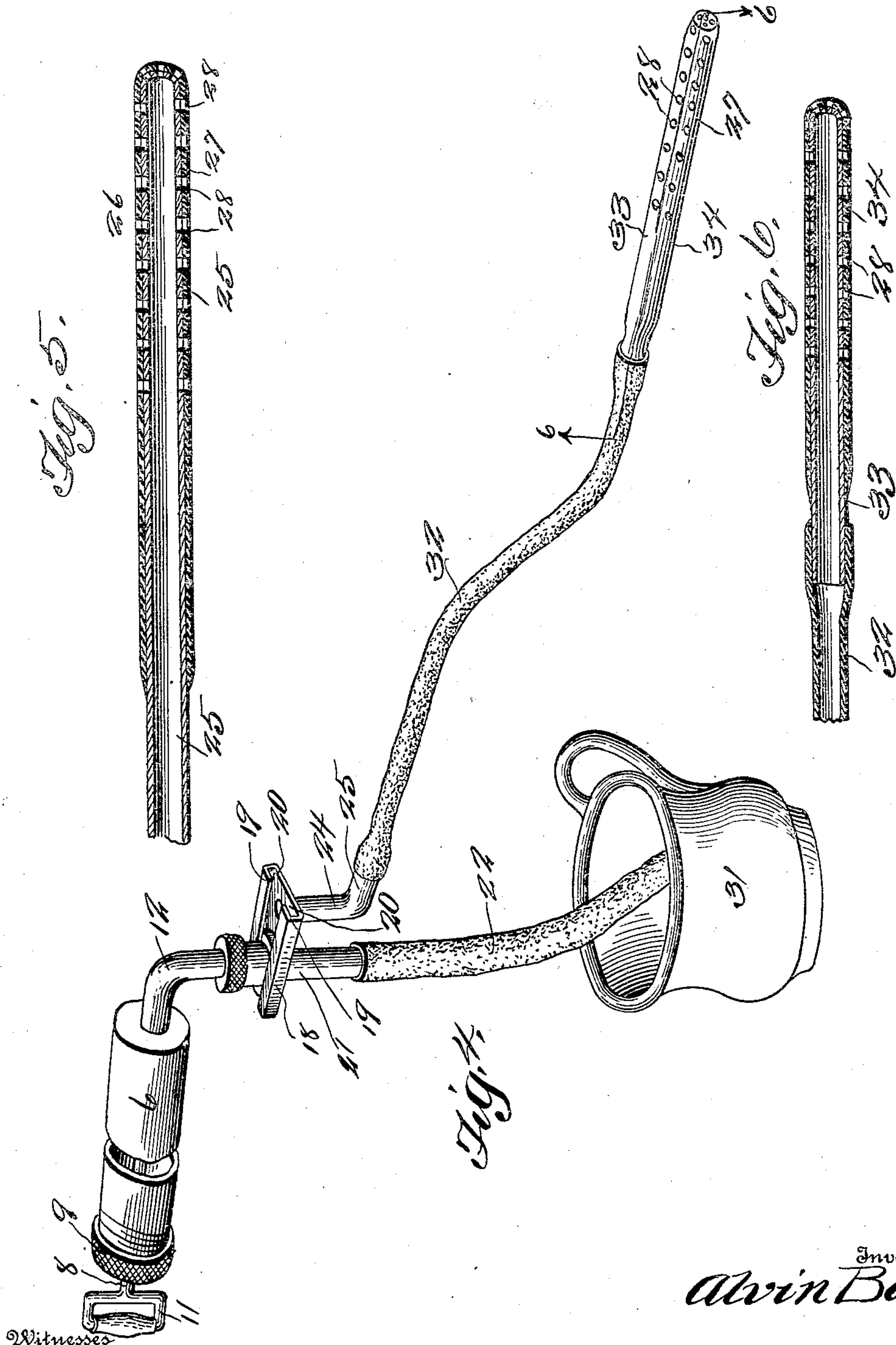
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UNITED STATES PATENT OFFICE.

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SYRINGE.

No. 931,113.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALVIN BEAN, a citizen of the United States, and a resident of New Brunswick, in the county of Middlesex and State of New Jersey, have invented certain new and useful Improvements in Syringes, of which the following is a specification.

This invention relates to certain new and useful improvements in syringes, and it has for its object among others to provide a simple and efficient form of syringe by means of which the medical fluid may be injected as many times as may be required, the syringe being provided with a receiving bucket or vessel from which the fluid is drawn to be injected into the desired part and then returned to the vessel for re-use.

A further object is to provide a simple yet very efficient construction of valve for use in connection with the ejecting and withdrawal tubes by which a fluid tight joint is preserved.

I aim further at improvements in the details of construction whereby more satisfactory results are attained.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be specifically defined by the appended claims.

The invention is capable of embodiment in a variety of forms, some of the most desirable ones of which are herein illustrated by way of example. The invention, in such preferred forms, is clearly illustrated in the accompanying drawings, which, with the numerals of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a perspective view of my improved syringe. Fig. 2 is a substantially central vertical longitudinal section through the same. Fig. 3 is an enlarged vertical transverse section, taken on the line 3—3 of Fig. 2. Fig. 4 is a perspective view of a modified form of the invention, minus the receiving vessel seen in Fig. 1. Fig. 5 is a longitudinal section through one form of nozzle employed. Fig. 6 is a longitudinal section on the line 6—6 of Fig. 4.

Like numerals of reference indicate like parts throughout the several views.

Referring to the drawings 1, in Fig. 1, designates a vessel of any suitable material and capacity, but preferably of substantially the shape shown, being closed at the top except for the passage of the pipes as hereinafter described. Its front end is shaped to

fit more or less closely up against the rectum as indicated in Fig. 2, and provided with an opening 2 as seen in Figs. 1 and 2. The top wall of the lower edge of this opening is preferably turned over or inward within the receptacle as seen at 3 so as to avoid any sharp corner or edge that might tend to irritate the part against which the receptacle is placed. The rear wall of the upper portion 4 of this receptacle or vessel is provided with an opening 5 for the passage of a tube as will soon be explained.

6 is a cylinder or liquid-receiving chamber in which works the piston 7, which latter may be of any of the well known forms adapted for this purpose, being made to work fluid tight in the cylinder in a well known manner.

8 is the stem of the piston, working through an opening in the end or head 9 of the chamber, which head is removably attached to the end of the cylinder as shown at 10. The stem is provided with a suitable handle or the like 11 by which it may be easily reciprocated. Projecting from the other end of the cylinder or chamber 6 and communicating with the interior thereof is the bent tube 12, the outer end of which is screw threaded as seen at 13 and upon this threaded end is engaged the screw threaded coupling member 14, provided at opposite ends with the flanges 15 and 16, the former of which is roughened as seen at 17 whereby it may be readily turned when desired.

18 is a metal plate having its body portion formed with the oppositely disposed side flanges 19 forming the channels 20 as seen clearly in Figs. 1 and 3, and also in Fig. 4, in which channels and under which flanges are received the underlying portions of the flange 16 of the coupling member 14 as seen clearly in Figs. 1, 3 and 4. Depending from this plate is the nipple 21 which receives the end of a rubber tube 22 which extends through an opening 23 in the top of the vessel 1 as seen in Figs. 1 and 2, this opening being elongated as seen best in Fig. 1 to permit of the necessary movement of the tube. Also depending from this plate 18 is a nipple 24 which has a right-angled portion 25 which may be of greater or less length, depending upon the mode of use, and as shown in Figs. 1 and 2 this right angled or horizontal portion has connected therewith the nozzle 26 which may be of any of the well known forms best adapted for the purpose. In

Figs. 1 and 2, and in Fig. 5, this is shown as composed of the interior metal portion which is the outer end of the horizontal portion 25 and the hard rubber mounting 27, the metal and hard rubber being provided with coincident openings 28 for an obvious purpose. This nozzle extends through the opening 5 in the back of the front portion of the receptacle 1 and through the front opening 2 as seen in Figs. 1 and 2. The horizontal portion 25 is shown as supported in a suitable clamp or support 29 rising from the top of the receptacle to which it is secured in any well known manner.

30 is a packing sleeve within the coupling 14 as seen in Fig. 2 and in enlarged detail in Fig. 3. It is designed to be engaged by the lower end of the vertical portion of the tube 12 around which the coupling is placed as shown in Fig. 3 so that when it is compressed against the top face of the plate 18 by manipulation of the coupling member it insures a liquid tight joint between the tube 12 and the coinciding opening in the plate 25 with which the said tube is in communication.

It is to be understood that the syringe is to be equipped with the various forms of nozzles, for vaginal and other uses, the same as other forms of syringe now in use.

The mode of use will be apparent from Figs. 1 and 2. With the parts in the position in which they are shown in Fig. 1 the piston being at the inner end of its stroke and the tube 12 being in communication with the nipple 21 and pipe 22 and thus with the interior of the vessel 1 within which latter is placed the medicament to be used, by pulling outward on the handle of the piston the fluid is drawn in through the tube 22, nipple 21, packing sleeve 30, and tube 12 into the chamber of cylinder 6. The coupling and its packing is then moved so that the same are in communication with the nipple 24 and the nozzle having been placed in proper position, by forcing inward on the piston the liquid is forced out through the tube 12, and packing sleeve and the nipple 24 and through the nozzle into the part to be treated. From thence it flows back into the receptacle 1 for reuse as many times as may be desired. It is to be understood that the coupling sleeve and packing are moved alternately back and forth according to whether the fluid is to be drawn into or forced from the cylinder 6.

In Fig. 4 I have shown another form of embodiment of the invention in which the parts are the same with the exception of the vessel 1 which is omitted, and the tube 22 extended into any suitable receptacle 31

which is adapted to contain the medicament to be used, and in this instance the liquid is not reused but may be allowed to flow from the part to be treated to any desired receptacle, not shown. In this form the nipple 24 has its horizontal member 25 shortened and connected thereto is the rubber tube 32 which has connected to its other end the nozzle 33 of any desired shape and form of construction, preferably having a hard rubber mounting 34 as seen in Fig. 6.

Other modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

What is claimed as new is:—

1. In a syringe, a plate having a plurality of openings, tubes leading from said openings, liquid-forcing means, and an outlet therefrom for coöperation with either of said openings and an interposed packing between said plate and outlet for insuring a liquid-tight joint therebetween.

2. In a syringe, a plate having a plurality of openings, a liquid-forcing device having a tube movable over said plate and its openings, a coupling, and a packing carried by said tube and coupling.

3. In a syringe, a vessel, a plate having a depending tube for connection with said vessel, and a second depending tube for connection with a nozzle, a liquid-forcing device and a slidable connection between the same and the plate.

4. In a syringe, a vessel, a plate having a tube connected with the vessel, and an outlet for connection with a nozzle, a liquid forcing device, a tube leading therefrom, and a packing-coupling connected therewith and slidably mounted on said plate.

5. In a syringe, a vessel, a plate having a tube for connection with said vessel, and an outlet for connection with a nozzle, a liquid-forcing device having a tube, a coupling mounted on the tube, and having sliding engagement with said plate, and a packing device carried by said tube and coupling and adapted to be forced against the plate to insure a tight joint.

6. In a syringe, a vessel, a plate having a tube for connection therewith, a liquid-forcing device and a slidable liquid-tight connection between the said device and plate, said plate having a further opening for connection with a nozzle and with which the said connection may be made operative by sliding the same on the plate.

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