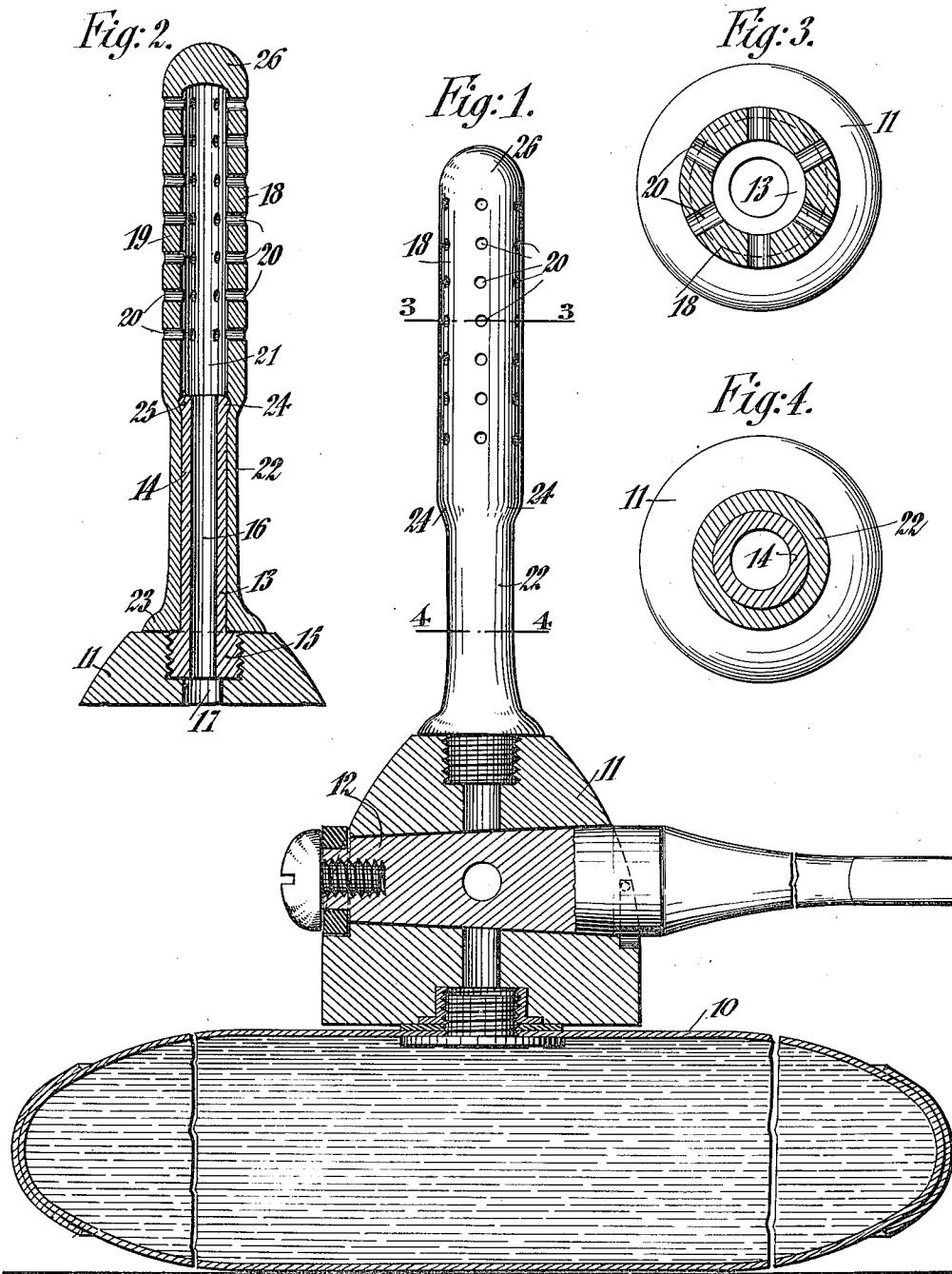


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RECTAL SYRINGE.
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1,155,848.

Patented Oct. 5, 1915.



Witnesses:
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UNITED STATES PATENT OFFICE.

CHARLES A. TYRRELL, OF NEW YORK, N. Y.

RECTAL SYRINGE.

1,155,848.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES A. TYRRELL, a citizen of the United States, and a resident of New York, in the State of New York, have invented certain new and useful Improvements in Rectal Syringes, of which the following is a specification.

The object of the present invention is to provide an improved nozzle or "injection point" for rectal syringes.

The invention relates more particularly to that class of syringes in which the nozzle is located stationarily on a recumbent water-bottle or bag.

The object is to provide a nozzle which in such a location will be found convenient, comfortable, and safe in use. For this purpose the nozzle is made in two parts, namely, an outer part of soft rubber, and an inner part of hard rubber, the latter, however, extending for only a portion of the length of the soft-rubber member, thus leaving a flexible portion at the outer part of the nozzle, while nevertheless giving to the nozzle as a whole, the firmness and stability of a nozzle made entirely of hard rubber.

In the accompanying drawing, Figure 1 is a side-view of one form of nozzle embodying the invention, shown connected with the other parts of the syringe, these being shown in section. Fig. 2 is a vertical central section through the nozzle, and Figs. 3 and 4 are horizontal sections on lines 3—3 and 4—4 of Fig. 1.

Similar reference numerals indicate the same parts in all the figures of the drawing.

Referring to the drawing, the water-bag 10, conoidal valve-casing 11, and valve 12 are well-known, and need no special description. The nozzle comprises a tubular lower member 13 made of hard rubber, and consisting of an elongated shank 14, and a head 15 of larger diameter at one end thereof. Said head 15 has an exterior thread, by which it engages a correspondingly threaded socket in the valve-casing 11. The member 13 is thereby firmly secured in place extending upward from the valve-casing 11, and having its bore 16 in register with and forming a continuation of the bore 17 of the valve-casing. Upon the lower member 13 is applied an upper, outer member 18, which is made of soft rubber, and extends beyond the upper end of the member 13. The projecting portion 19 is provided in its side-wall with a plurality of perforations 20, com-

municating with the bore 21 of said member 18. Said bore forms a continuation of the bore 16 of the lower member 13, but is of larger diameter. Notwithstanding the upper member 18 is made of soft rubber, it is made of such thickness and the material therein is so distributed that the outer portion 19 thereof has a large resistance to side thrust and bending, and great resistance to direct downward pressure. The result is that there is formed by the two members, a nozzle or injection point having a sufficient resistance to downward pressure and to side-thrust to maintain its form and position for entering the rectum, and at the same time adapted to yield laterally sufficiently at its outer end so as not to cause any injury to the intestine-wall when being fully inserted, which might be caused by a solid and non-yielding nozzle of equal length contacting therewith.

The use of a hard-rubber lower member enables the total outside diameter of the two members, at their lower portion, at rectum position, to be made of smaller diameter than the upper portion 19 of the upper member, as seen in the figures, which is desirable for retention of the nozzle in use. Such smaller diameter would be entirely impracticable were the whole nozzle made of soft rubber, as in this case the reduced portion would not give the nozzle sufficient stability for use.

The upper member is extended over the entire shank of the lower member, a shoulder 24 being formed at the junction between the outer portion 19 and the portion 22 in rectum position, and a lower rounded flange 23 being provided to break the angle with the top of the valve-casing 11, so that the flange forms practically a continuation of the conoidal surface of the valve-casing.

The upper member is of such size as to fit closely upon the shank of the lower member of the nozzle, and prevent the entrance of liquid between the parts even under the considerable pressures employed. The parts may be still further secured by a bead 25 on the upper end of the lower member, which causes additional friction with the upper member. The members do not require to be separated for cleansing, and the entire nozzle is treated, both when in use and when cleansing, as a unitary structure.

In operation, the liquid supplied under pressure from the water-bag 10, flows

through the valve-casing and valve, thence into the lower member and the upper member, and out through the openings of the latter. The tip 26 of the outer member is
5 made of much greater thickness than the side-wall thereof, so as to form an arch at the outer end of the flexible member, whereby the strength of said member is increased.

The nozzle described provides a convenient, safe and durable injection device having the required rigidity and at the same time a measure of pliability which adapts it to use under a wide range of conditions.

One embodiment of the invention has
15 been described and it is obvious that changes may be made therein without departing from the spirit of the invention as set forth in the appended claim.

I claim:

20 A rectal syringe nozzle comprising a rigid

tube whose inner end is adapted to engage a water-bag valve-casing and whose outer end is provided with an outward retaining lip, and a soft rubber tube comprising an elastic unperforated thin-walled shank fitting closely over said rigid tube and an elongated yielding but comparatively stiff extension projecting beyond the outer end of said rigid tube, said extension having thickened walls and a thickened closing
25 30 outer end and being provided with perforations below said thickened end.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

CHAS. A. TYRRELL.

Witnesses:

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