Jan. 1, 1929. 1,697,834

C. M. McARTHUR

SPRAY DEVICE

Filed Dec. 21, 1927

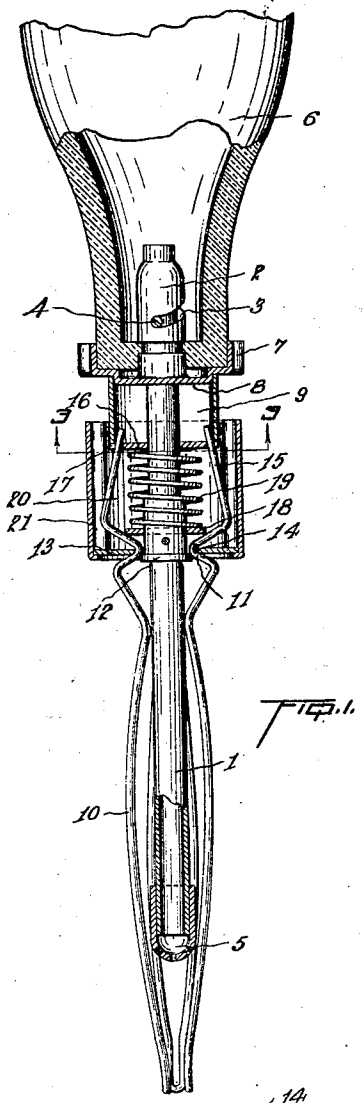


FIG. 1.

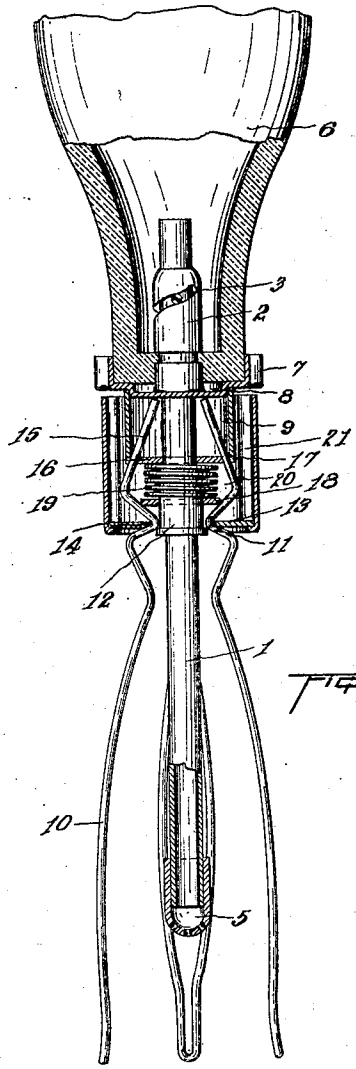


FIG. 2.

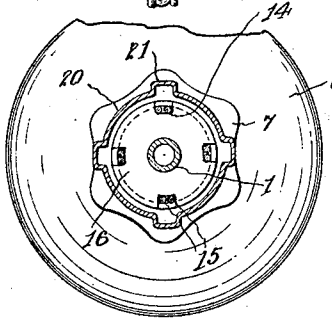


FIG. 3.

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Patented Jan. 1, 1929. 1,697,834

UNITED STATES PATENT OFFICE.

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SPRAY DEVICE.

Application filed December 21, 1927. Serial No. 241,492.

This invention relates to vaginal spray devices, and the principal object is to provide an inexpensive and efficient construction of a spray device for the cleansing of the vaginal cavity. A feature of the invention is a series of collapsible and expansible prongs or fingers for the purpose of dilating the uterus and of cleansing the same, or in the treatment of various ailments in which case a medicinal preparation may be introduced into the vaginal cavity or the uterus.

The device of the invention is similar in its general character to that disclosed in my United States Patent No. 1,483,360 of February 12, 1924, and is an improvement thereon in that the operating means for the dilating fingers is of more simple and durable construction. One of the particular improvements is that the means for spreading the fingers is directly associated with the spray bulb, so that the fingers may be adjusted and the spraying operation performed by one hand. Another feature of the invention is that the fingers have angular portions which are adapted to rock directly on the tube, while in the patented device the pivotal point is at some distance outwardly of the tube and requires therefore the interposition of a strong supporting or pivot member around the tube.

The invention is fully disclosed by way of example in the following description and in the accompanying drawing, in which—

Figure 1 is a longitudinal section of the device in contracted condition;

Fig. 2 is a similar view of the device in expanded condition; and

Fig. 3 is a transverse section on the line 3—3 of Figure 1.

Reference to these views will now be made by use of like characters which are employed to designate corresponding parts throughout.

The device includes a spray tube 1 provided at one end with a rotatable sleeve 2 having a spiral groove 3 which accommodates a screw 4 fixed in the tube, while at the other end is provided a perforated spray head 5. The sleeve is inserted in a spray bulb 6 to which it is fixedly secured. A finger piece or knob 7 is secured to the portion of the sleeve 2 disposed outside the bulb and fits around the neck of the bulb as clearly shown in Figure 2. The member 7 has a depression 8 formed away from the neck of the bulb, and this depression is loosely surrounded by a ring 9 which is concentric with the tube 1.

A series of curved or bowed dilating fingers 10 are arranged around the tube 1 and are formed each with an angular portion 11 engaging a head 12 fixed to the tube. For practical purposes it may be said that the angular portions are in direct engagement with the tube. A socket plate 13 surrounds the head and is formed in its inner periphery with openings 14 which receive the vertices of the angular portions 11 and thus retain the curved fingers 10 in constant contact with the head 12 at these points. The openings 14 are however of such size as to permit the fingers 10 to rock on the vertices of their angular portions.

Adjacent the angular portions, the fingers terminate in end portions 15 which converge towards the tube 1 in the direction of the member 7 and enter the ring 9. Adjacent the ring is provided a disk 16 slidably mounted on the tube and having in its periphery notches 17 which receive the angular end portions 15. A washer 18 loosely surrounds the head 12 and abuts the angular portions 11, and between this washer and the ring is inserted a compressed spring 19. Finally, the socket plate 13 and the angular ends 15 are surrounded by a circular shell 20 having a number of channels 21. The plate 13 is preferably formed to fit into these channels, and the shell partly surrounds the ring 9 when the device is contracted as in Figure 1.

As described in the above mentioned patent, the fingers are spread by turning the sleeve 2, which may be accomplished in this case by rotating the bulb 6. Due to this construction only one hand is required for actuating the fingers and forcing the spray fluid. The sleeve moves upwardly on the tube by reason of the groove 3 and pin 4, and the ring 9 is moved in the same direction. Inasmuch as the angular ends 15 are confined within the ring, they are drawn towards the tube as the ring moves upwardly on the tube. The consequence of this action is that the fingers rock on their angular portions 11 and withdraw from the tube as illustrated in Figure 2. On the reverse movement of the sleeve the spring 19 forces the disk 16 as near as possible to the knob 7 and thus contracts the fingers.

Although a specific embodiment of the invention has been illustrated and described, it

will be understood that various alterations in the details of construction may be made without departing from the scope of the invention as indicated by the appended claims.

What I claim is:—

1. A spray device comprising a spray tube, a series of dilating fingers around the tube and having angular portions engaging the tube, said fingers having end portions angular to the tube adjacent said angular portions, a socket member retaining said angular portions in engagement with the tube and permitting the fingers to rock therein, and means for drawing said end portions towards and away from the tube.

2. A spray device comprising a spray tube, a series of dilating fingers around the tube, a socket member retaining said fingers and permitting the same to rock therein, said fingers having end portions angular to the tube adjacent said socket member, a ring slidably mounted on the tube and enclosing said ends, a disk slidably mounted on the tube and having openings receiving said end portions, and means for holding said ring on the tube.

3. A spray device comprising a spray tube, a series of dilating fingers around the tube and having angular portions engaging the tube, said fingers having end portions angular to the tube adjacent said angular portions, a socket member retaining said angular portions in engagement with the tube and permitting the fingers to rock therein, a ring slidably mounted on the tube and enclosing said end portions, a disk slidably mounted on the tube and having openings receiving said end portions, and means for holding said ring on the tube.

4. A spray device comprising a spray tube, a series of dilating fingers around the tube and having angular portions engaging the tube, said fingers having end portions angular to the tube adjacent said angular portions, a socket member retaining said angular portions in engagement with the tube and permitting the fingers to rock therein, a ring slidably mounted on the tube and enclosing said end portions, a disk slidably mounted on the tube and having openings receiving said end portions, a washer surrounding the tube and abutting said angular portions, a compressed spring interposed between said washer and disk, and means for moving said ring on said tube.

In testimony whereof I affix my signature.

CLARENCE M. McARTHUR.