March 30, 1937. C. J. GERHARDSTEIN 2,075,577

SYRINGE

Filed Aug. 17, 1934

Fig. 1.

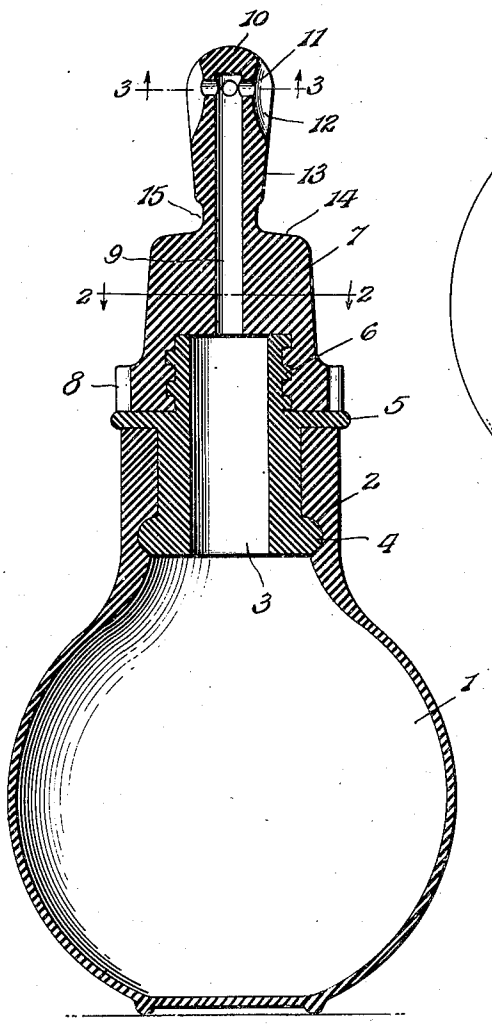


Fig. 2.

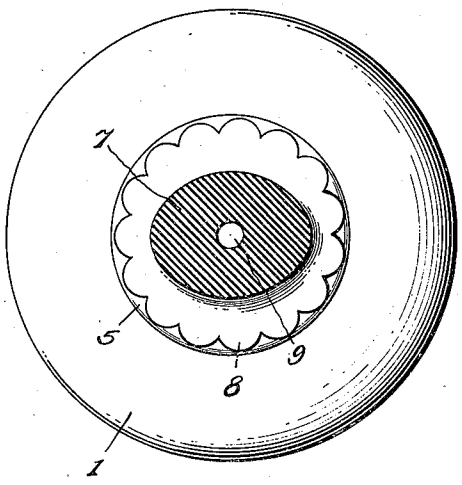
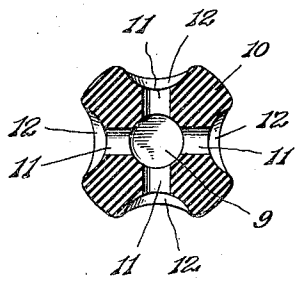


Fig. 3.



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UNITED STATES PATENT OFFICE

2,075,577

SYRINGE

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Application August 17, 1934, Serial No. 740,307

1 Claim. (Cl. 128—232)

This invention relates to syringes for treating cavities or canals in the human body and has for its object the provision of a novel form of syringe in which the tissues or walls of the cavity to be treated will be so supported as to avoid clogging the discharge openings of the syringe. It is also an object of the invention to provide a structure in which the mouth of the opening or cavity will be supported and be sealed against the syringe so that the water or medicated liquid may be retained in the cavity as desired. A device embodying the invention is illustrated in the accompanying drawing and will be hereinafter fully described, the novel features being particularly defined in the appended claim.

In the drawing:

Figure 1 is a longitudinal section of a syringe embodying the invention.

Figure 2 is a section on the line 2—2 of Figure 1.

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

The syringe comprises a soft rubber bulb 1 which may be of any known or approved form and is provided with a neck 2 which is somewhat thicker and stiffer than the body of the bulb. A coupling sleeve 3 of suitable material is fitted in the neck 2 and is provided at its inner end with a bead 4 which is adapted to snugly fit in an annular groove formed in the inner wall of the neck, as clearly shown, so that the parts will be firmly held together but may be readily separated when, for any reason, such separation is desirable. At an intermediate point of its length the coupling sleeve is provided with an external annular rim or flange 5 which fits against the end of the neck 2 and thereby serves to protect the end of the neck and also impart an attractive finish to the syringe. Beyond the flange 5, the sleeve is somewhat reduced in diameter and is provided with an external coarse screw or spiral rib 6. Fitted upon the outer end of the coupling sleeve 3 is a discharge nozzle comprising a body 7 of a flared formation, its base being adapted to rest upon the flange 5 and being formed with a socket having a coarse spiral groove or thread mating with the thread or rib 6 on the sleeve, as will be understood upon reference to Figure 1. Around the base are formed beads or lugs 8 which will impart an ornamental appearance to the nozzle and also furnish a convenient gripping means whereby the nozzle may be grasped and turned when it is desired to remove it from or mount it on the end of the sleeve. A bore or axial passage 9 extends through the body of the nozzle and terminates near its closed end 10 where outlet openings 11 are formed in the side of the passage. The end of the nozzle is arcuate or spherical but is blunt and in its sides are grooves or depressions 12 around the outlet openings 11 which will permit the discharged liquid to spread and reach the walls of the cavity to be treated, while, at the same time, the walls will be held against collapse onto the openings to clog the same. The outer end of the nozzle is tapered toward the body thereof, as shown at 13, and a shoulder 14, which may be inclined downwardly and outwardly, is formed on the end of the body to meet the reduced inner extremity of the outer end portion, an annular groove 15 being formed around the neck of the nozzle at the juncture of the body or shoulder 14 with the tapered end portion.

The peculiar shape of the nozzle facilitates its insertion into the cavity to be treated without any liability of puncturing the walls of the cavity as often occurs with the pointed nozzles now very generally employed. As shown in Figure 2, the body is of elliptical formation so that it may partly enter the mouth of the cavity and support the same, the shoulder 14 and groove 15 providing means whereby the walls of the cavity at its mouth may fit closely and comfortably about the nozzle so that the use of the nozzle will not cause any discomfort to or nervousness in the patient. The coarse threaded connection between the body and the coupling sleeve permits these parts to be quickly separated or assembled as occasion may require, and the formation of the coupling sleeve holds the bulb firmly thereon, while, at the same time, it may be very easily withdrawn from the bulb by slightly tilting the sleeve so that the neck of the bulb will be spread somewhat to permit it to slip off the bead 4.

While the nozzle and coupling sleeve are preferably formed of hard rubber, it will be understood, of course, that other material may be used, that the device may be made in various sizes, and that the invention is not limited to bulb syringes.

Having thus described the invention, what is claimed as new is:

In a syringe, a discharge nozzle consisting of a nipple having a hemispherical forward end and being gradually reduced in diameter toward its rear end to provide a rearwardly tapered nipple, an enlarged body formed integral with the rear end of said nipple, the body being elliptical in cross section and having a flat upper end for forming an elliptical shoulder about the rear end of said nipple, said body having a thick and solid

forward portion and the rear portion being recessed and internally threaded, the rear end of the nipple being formed with an external circumferential groove at its junction with the shoulder, merging into the shoulder, pockets being formed longitudinally in sides of the nipple adjacent its front end, and the nozzle having an axial passage extending through the thick and solid forward portion of the body and terminating in spaced relation to the front end of the nipple and adjacent its forward end provided with side outlets opening into the pockets intermediate ends thereof.

CLEMENT JOSEPH GERHARDSTEIN.