

W. J. COVELL.
NON-LEAKABLE RECHARGING SYRINGE.
APPLICATION FILED MAY 1, 1918.

1,316,222.

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Fig. 1.

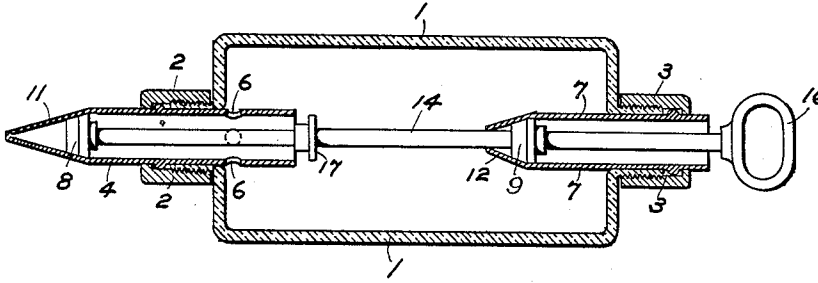
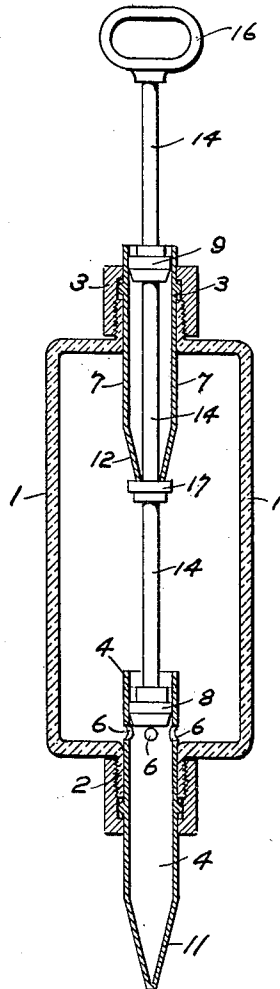


Fig. 2.



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NON-LEAKABLE RECHARGING-SYRINGE.

1,316,222.

Specification of Letters Patent.

Patented Sept. 16, 1919.

Application filed May 1, 1918. Serial No. 233,181.

To all whom it may concern:

Be it known that I, WILLIAM J. COVELL, a citizen of the United States, residing at No. 910 Geary street, in the city and county of San Francisco and State of California, have invented a new and useful Improvement in Non-Leakable Recharging-Syringes, of which the following is a specification.

My invention relates to syringes wherein a container and piston operate in conjunction with a discharging tube having a nozzle thereon and extending beyond the said container; and the objects of my invention are—

First, to provide an improved syringe having improved recharging means;

Second, to provide a syringe of the character described adapted to dispense a predetermined charge;

Third, to provide improved means adapted to limit the movement of the discharging means;

Fourth, to provide a syringe that shall be practically non-leakable when in a non-operating position.

Other objects and advantages will appear from the following detailed description, the accompanying drawings and the appended claims.

I accomplish these several objects by means of the preferred form of the device disclosed in the drawings forming a part of the present specification wherein like characters are used to designate similar parts throughout the said specification and drawings and in which—

Figure 1 is a longitudinal sectional view of the syringe disclosing the arrangement and position of the several parts when in a non-operating position.

Fig. 2 is a sectional view of the syringe disclosing the position for permitting the passage of a charge to the discharging tube.

Referring to the drawings the numeral 1 is used to designate a container, composed preferably of glass or a similar acid resisting material, having stuffing glands 2 and 3 on the ends thereof. The stuffing gland 2 is used to secure a discharge tube 4, composed preferably of glass, to the container 1 so that said tube is held approximately midway in said stuffing gland 2 with a portion of said tube extending into and beyond the container 1. That portion of the tube 4 extending within the container 1 is apertured as at 6 the purpose of which will hereinafter be more fully described.

A second glass tube 7 extends within the opposite end of the container and is secured thereto by means of the second mentioned stuffing gland 3.

Pistons 8 and 9 are slidably mounted within the tubes 4 and 7 respectively and are arranged to tightly fit the conical portions 11 and 12 of the said tubes 4 and 7 when in a normal or non-operating position for the purpose of preventing leakage.

The pistons 8 and 9 are connected by means of a suitable stem 14 terminating in a suitable handle 16. That portion of the stem 14 between the tubes 4 and 7 is provided with a suitable stop 17 whereby the movement of the stem 14 and the pistons 8 and 9 thereon may be limited.

The operation is as follows:

The container 1 may be filled with the liquid to be dispensed in predetermined amounts or charges by removing either tube 4 or 7, or by immersing the nozzle or conical portion 11 of the tube 4 in the liquid and drawing the piston 8 upward by means of the stem 14. When the tube 4 has been filled in the manner above indicated the liquid may be permitted to pass through the apertures 6 and into the interior of the container 1 by simply reversing or inverting the entire device.

To operate the recharging syringe the pistons 8 and 9 are moved, by means of the stem 14 to the position indicated in Fig. 2 of the drawings. This will permit the passage of sufficient liquid through the apertures 6 and into the tube 4, the capacity of the said tube 4 being the predetermined or required charge.

By inserting the nozzle 11 of the tube 4 into the place where the charge is required and pressing or moving the stem 14 inward the piston 8 will force the liquid from the tube 4 and nozzle 11 thereof.

The pistons 8 and 9 are so arranged upon the stem 14, that, when the stem is pressed inward to its full extent the conical portions of the pistons 8 and 9, which may be of cork or other suitable material adapted to prevent leakage, will simultaneously enter the conical portions or seats 11 and 12 of the tubes 4 and 7 respectively and the conical seats being made to fit closely the conical portions of the pistons, will thereby effectively cork or seal said tubes and thereby prevent leakage.

When the stem 14 is moved to the position

for filling the discharge tube 4 with the required charge, the stop or collar 17 will engage the inner end of the tube 7 and thereby limit the movement of the piston 8 so that the same cannot be inadvertently withdrawn from the tube 4.

It is obvious from the foregoing that I have provided an improved syringe adapted to dispense a predetermined charge and also means whereby leakage of the syringe will be prevented when in an inoperative position, so that a person may safely carry a filled syringe of my construction on or about him without danger of having his clothing or personal effects spoiled as a result of the escape of the contents from the syringe.

In addition to serving as a housing for the seat 12, upon which the piston 9 rests when the stem 14 has reached the extremity of its inner movement relative to the container 1, it is seen that the tube 7, being alined with the tube 4, also performs the novel and useful function of guiding the piston 9 and preventing wobbling of the piston during the operation of the syringe, which wobbling would result in leakage around the piston stem during such operation. A packing around the piston stem is therefore unnecessary for preventing leakage from the end of the container at which the tube 7 is secured.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is—

1. A syringe comprising a container having a suitable stuffing gland on both ends thereof; a discharging tube extending within and beyond the stuffing gland in one end of the container and having apertures therein connecting the tube with the container and also being provided with a seat in the outer end thereof; a second tube secured within the other stuffing gland and extending within the container and being alined with the discharging tube and provided with a seat in its inner end; a piston slidably mounted within each tube and having one

end adapted to fit closely the seat in the respective tube; a suitable stem so connecting the pistons and extending beyond the second tube that the piston in the discharging tube may be moved inward beyond the apertures in the discharging tube and thereby allow the passage of a predetermined charge to said tube from the container, and also so connecting the pistons that the respective ends thereof will rest upon their respective seats simultaneously and thereby prevent leakage from the syringe; and means secured upon the stem between the tubes for limiting the movement of said stem.

2. A syringe comprising a container having a suitable stuffing gland on both ends thereof; a discharging tube extending within and beyond the stuffing gland in one end of the container and having apertures therein connecting the tube with the container; and also being provided with a conical seat in the outer end thereof; a second tube secured within the other stuffing gland and extending within the container and being alined with the discharging tube and provided with a conical seat in its inner end; a piston slidably mounted within each tube and having a conical end adapted to fit the conical seat in the respective tube; a suitable stem so connecting the pistons and extending beyond the second tube that the piston in the discharging tube may be moved inward beyond the apertures in the discharging tube and thereby allow the passage of a predetermined charge to said tube from the container, and also so connecting the pistons that their conical ends will rest upon the respective seats simultaneously and thereby prevent leakage from the syringe; and means secured upon the stem between the tubes for limiting the movement of said stem.

In witness whereof I hereunto set my signature.

WILLIAM J. COVELL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."