No. 812,686. PATENTED FEB. 13, 1906.

H. T. SCHORK & F. A. STAHL.

SYRINGE.

APPLICATION FILED JULY 13, 1905.

Fig. 1

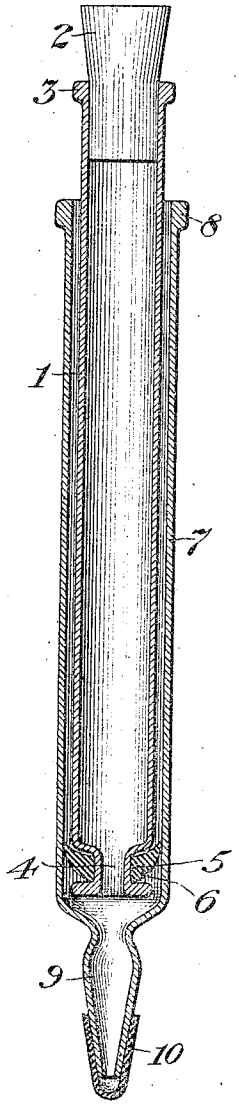


Fig. 2

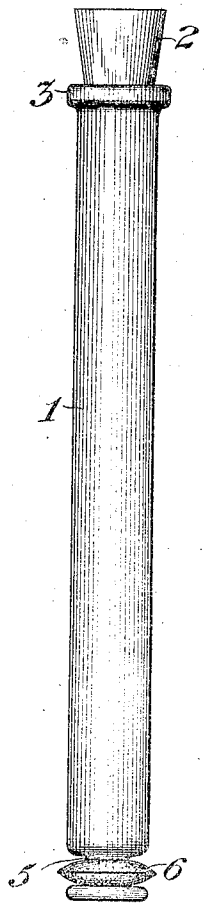
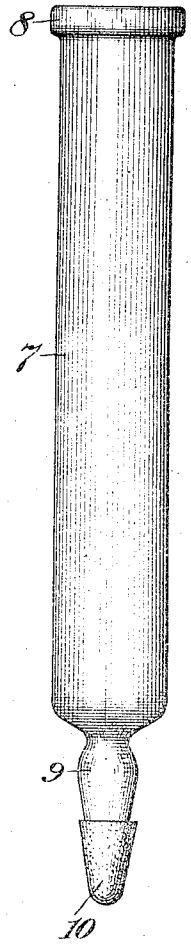


Fig. 3



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SYRINGE.

No. 812,686. Specification of Letters Patent. Patented Feb. 13, 1906.

Application filed July 13, 1905. Serial No. 269,468.

To all whom it may concern:

Be it known that we, HENRY T. SCHORK and FREDERICK A. STAHL, citizens of the United States, and residents of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Syringes, of which the following is a specification.

Our invention relates to syringes, particularly to syringes for injecting liquid medicant.

It has for its object to provide a syringe the piston of which is hollow and adapted to serve as a bottle for containing liquid medicant, to deliver it therefrom into the barrel in measured quantities, or to draw it therein again from the barrel.

It has for a further object to provide a device of the character set forth embodying advantages in point of easy and perfect operation, simplicity and inexpensiveness of construction, lightness, and compactness.

In the drawings, Figure 1 is a vertical sectional view of the syringe; Fig. 2, a side view of the piston, and Fig. 3 a side view of the barrel.

In all the figures of the drawings illustrating my invention like reference characters designate corresponding parts.

Referring to the drawings, 1 designates the piston, which is formed of a tube adapted to contain liquid medicant, the upper end of said tube being closed by a stopper 2 and provided with a circumferential flange 3, to be grasped between the fingers and the lower end thereof reduced and provided with a small opening 4 and a circumferential groove 5, having a flexible resilient packing-ring 6 therein provided with rounded faces. The barrel 7, in which the piston is reciprocally located, is formed of a tube adapted to receive the liquid medicant from the piston in such quantity as it is desired to inject, the upper end of said tube being open for the insertion of the piston and provided with a circumferential flange 8, to be grasped between the fingers and the lower end thereof reduced to form a nozzle having a small opening 9 and adapted to receive a cap 10 of rubber or other flexible elastic material.

While we preferably make the piston and valve of our syringe of glass, so that its operation may be observed and also for sanitary reasons, it may be made of rubber or other suitable material.

The diameter of the ring 6 is greater than that of the interior of the barrel 7, and for this reason and that the ring is thin, flexible, and has rounded faces when the piston 1 is moved the edges of the ring will be turned over in the opposite direction to the movement of said piston, thereby effecting a close yielding contact with the interior surface of the barrel, yet allowing the piston to be easily and readily moved.

It will be understood that this syringe will also serve as an ordinary syringe by permanently retaining the stopper in the upper end of the piston, in which case the liquid will be drawn into the barrel by pulling the piston outwardly and forced therefrom by pushing it inwardly.

The operation is as follows: The parts being in the position shown by Fig. 1 of the drawings, the stopper is removed and liquid medicant is poured into the piston, and while the stopper is out of the piston it is pulled upwardly until the required amount of medicant has been drawn therefrom into the barrel. The stopper is then placed in again, the cap removed from the nozzle, and the piston pressed down, which has the effect of forcing the liquid through the nozzle. If the piston is pulled upwardly while the stopper is out, any medicant left in the barrel will be returned to said piston. The cap can then be placed on the nozzle and the piston pushed in.

We do not wish to be understood as limiting ourselves to the precise details and arrangements of parts shown and described, but reserve the right to all modifications within the scope of our invention.

Having now described our invention, what we claim as new, and desire to secure by Letters Patent, is—

In a syringe, the combination with a hollow cylindrical barrel, the upper end of said barrel being open and the lower end reduced to provide a nozzle having a small opening, of a hollow cylindrical piston reciprocally located within said barrel and spaced therefrom, the upper end of said piston being open, a stopper for said open end of the piston, the lower end of said piston reduced to provide a small opening and a circumferential groove, said piston being adapted to contain a liquid medicant which upon outward reciprocation of the piston, the stopper being removed, flows into the barrel in front of the piston in position to be forced out of the nozzle by an inward reciprocation of the piston, a thin flexible resilient packing-ring seated in said groove and spacing the piston from the bar-

rel, said ring having convex upper and lower faces and a sharp circumferential edge, one of said faces adapted to bear against the exterior surface of the piston and the other face against the interior surface of the barrel when the piston is reciprocated inwardly, substantially as described.

Signed at New York, in the county of New York and State of New York, this 21st day of June, A. D. 1905.

HENRY T. SCHORK.
FREDERICK A. STAHL.

Witnesses:
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