(No Model.)

F. T. VAN WOERT.

SYRINGE.

No. 455,371. Patented July 7, 1891.

Fig. 1.

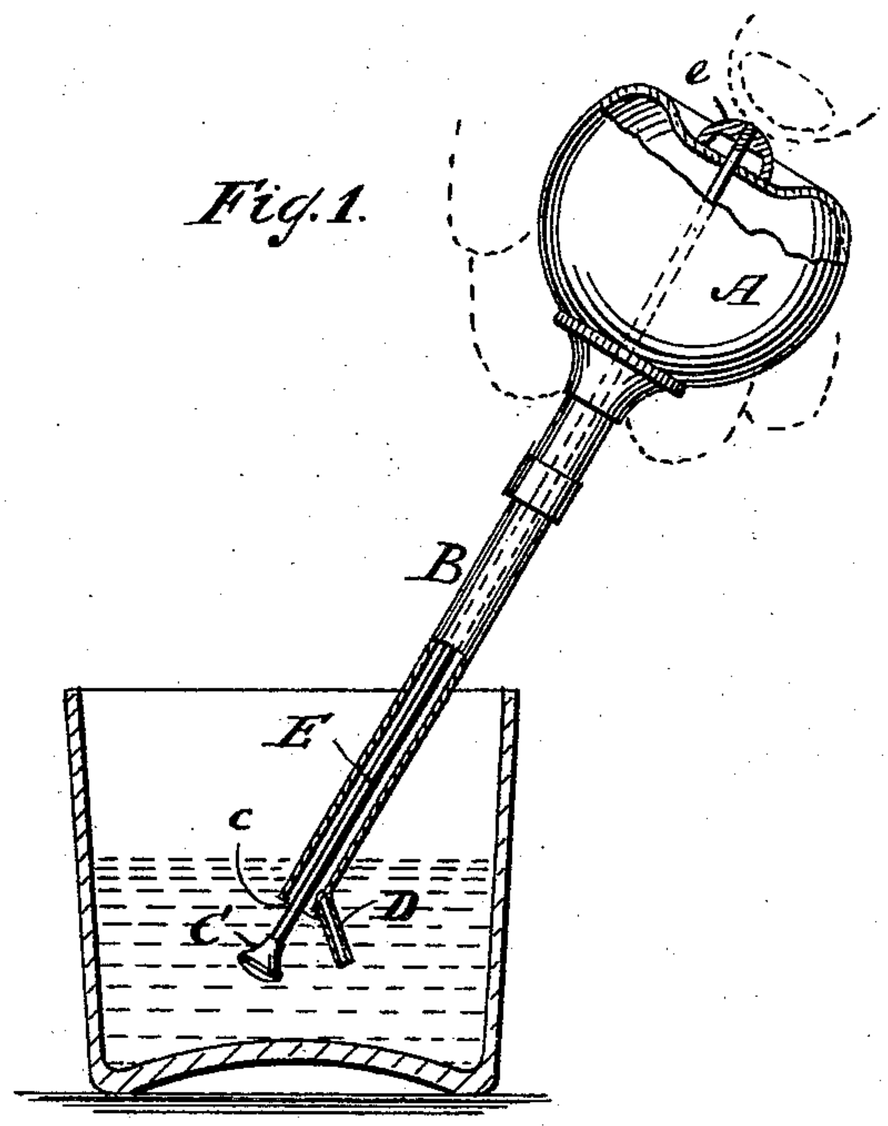


Fig. 2.

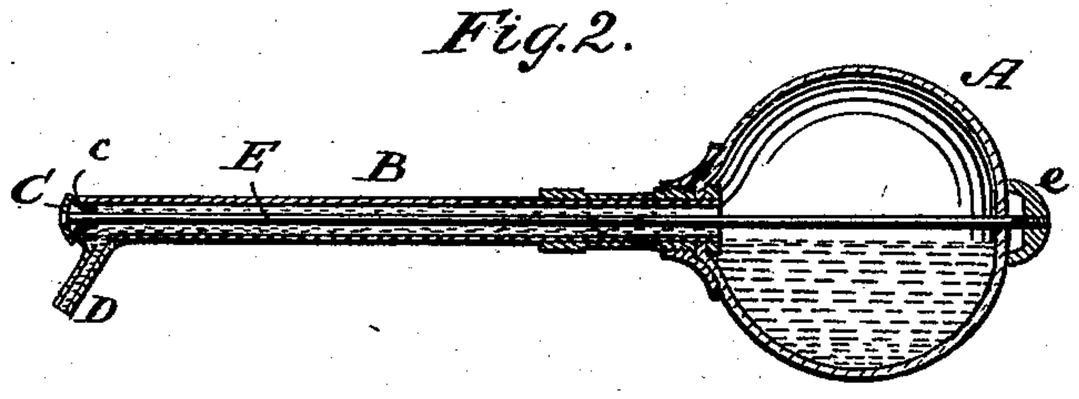
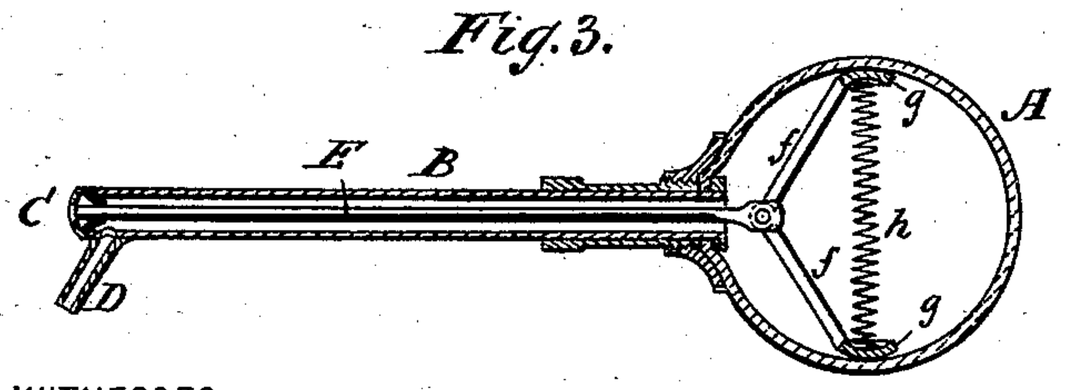


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

FRANK T. VAN WOERT, OF BROOKLYN, NEW YORK.

SYRINGE.

SPECIFICATION forming part of Letters Patent No. 455,371, dated July 7, 1891.

Application filed November 13, 1890. Serial No. 371,313. (No model.)

To all whom it may concern:

Be it known that I, FRANK T. VAN WOERT, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Syringes, of which the following is a specification.

This invention relates to a syringe composed of an elastic bulb, a nozzle extending from said bulb, a valve for closing the nozzle, a spout extending laterally from the nozzle between the valve-seat and the bulb, and a rod extending from the valve through the nozzle into the bulb, as pointed out in the following specification and claim, and illustrated in the accompanying drawings, in which—

Figure 1 represents a section side view showing the syringe in position to be charged. Fig. 2 is a longitudinal central section of the syringe when charged. Fig. 3 is a similar view of a modification.

In the drawings, the letter A designates a hollow elastic bulb, from which extends the nozzle B. This nozzle is firmly secured in the bulb, and it is made of metal, hard rubber, or any other suitable rigid material.

C is a valve for closing the nozzle, said nozzle being provided with a valve-seat *c*, and from the side of the nozzle extends a spout D. This spout is situated between the valve-seat and the bulb. From the valve C extends a rod E, through the nozzle into the bulb, so that when the bulb is compressed in one direction (see Fig. 1) the valve is forced away from its seat and the syringe can be charged with liquid, and when the bulb is compressed in another direction the liquid contained in the bulb and in the nozzle is driven out through the spout D.

In the example represented in Figs. 1 and 2 of the drawings the valve-rod E extends through the bulb and is secured to the same by means of a nut *e;* and if the mouth of the nozzle is immersed into a liquid and the bulb is compressed, as shown in Fig. 1, the valve is opened, and by releasing the bulb a portion of the liquid is sucked into the syringe, so that on moving said syringe from the liquid it is charged, as shown in Fig. 2. If the bulb is now compressed in a direction at right angles to the valve-rod, the liquid contained in the syringe is driven out through the spout D.

Instead of extending the valve-rod through the bulb, as shown in Figs. 1 and 2, said valve-rod may be provided with arms *f f*, Fig. 3, which are pivoted to said rod and provided with tappet-plates *g g*, which are held in contact with the sides of the bulb by a spring *h*. In this case the bulb must be compressed in a direction at right angles to the valve-rod for charging and in the direction of the valve-rod for discharging.

My syringe is intended particularly for dental use when it becomes desirable to inject a stream of liquid into a hollow tooth or into the cavity left after a tooth has been extracted; but it can be used for various surgical operations, such, for instance, as hypodermic injections, and it can also be used as a dropper.

What I claim as new, and desire to secure by Letters Patent, is—

In a syringe, the combination, with the elastic bulb and with its nozzle, of a valve for closing the nozzle, a spout extending from the nozzle between the valve-seat and the bulb, a rod extending from the valve into the bulb, and means, substantially as described, for retaining the valve-rod in contact with the bulb.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

FRANK T. VAN WOERT.

Witnesses:
WM. C. HAUFF,
W. HAUFF.