J. T. PALMER.

Syringe.

No. 212,046. Patented Feb. 4, 1879.

Fig. 1

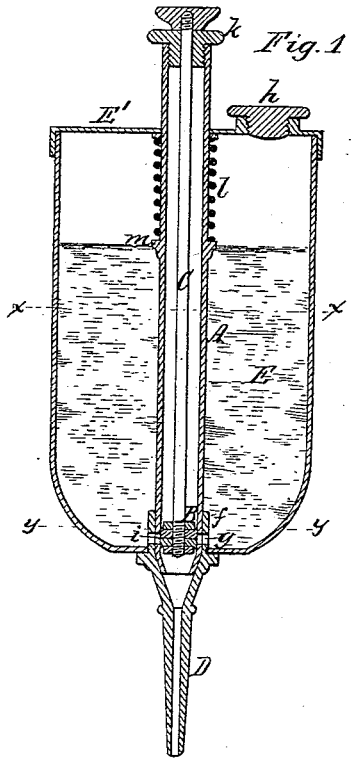


Fig. 2.

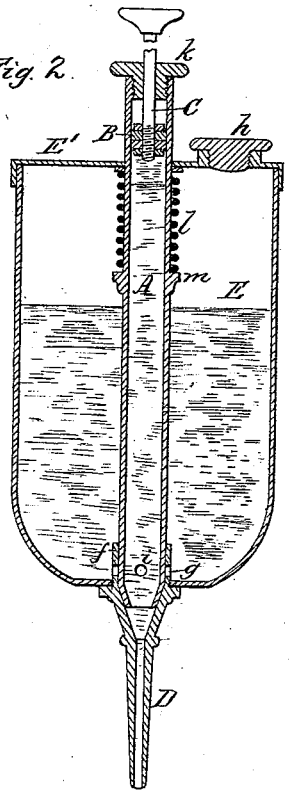


Fig. 3.

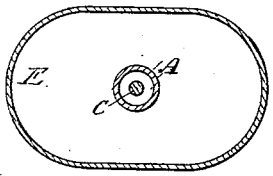


Fig. 4.

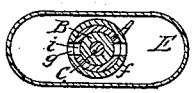
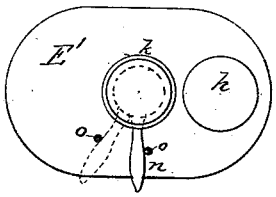


Fig. 5



Witnesses.

Chas. J. Buchheit.

E. J. S. Brady.

J. T. Palmer. Inventor.

By Wilhelm & Bonner.

Attorneys.

UNITED STATES PATENT OFFICE.

JAMES T. PALMER, OF BUFFALO, NEW YORK.

IMPROVEMENT IN SYRINGES.

Specification forming part of Letters Patent No. **212,046**, dated February 4, 1879; application filed October 7, 1878.

To all whom it may concern:

Be it known that I, JAMES T. PALMER, of the city of Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Syringes, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to that class of syringes in which the liquid is ejected from a cylinder or barrel by means of a piston or plunger, and more particularly to a syringe in which the cylinder or barrel is provided with a liquid-receptacle surrounding the cylinder or barrel, and communicating with the lower end thereof, above the discharge-nozzle, so that the liquid will enter the cylinder or barrel from the surrounding receptacle when the piston is raised, and be discharged through the nozzle as the piston descends.

My invention consists in the particular construction of the apparatus, so as to be simple and efficient, as will be hereinafter fully set forth.

In the accompanying drawings, Figure 1 is a sectional elevation of my improved syringe, with the piston in its lowest position. Fig. 2 is a similar view, with the piston raised and the cylinder turned in its seat, so as to close the opening communicating with the surrounding receptacle. Figs. 3 and 4 are cross-sections in lines *x x* and *y y*, Fig. 1, respectively. Fig. 5 is a top-plan view of the syringe.

Like letters of reference refer to like parts in each of the figures.

A represents the cylinder or barrel of the syringe; B, the piston or plunger; C, the rod by which the latter is operated, and D the discharge-nozzle. E is the liquid-reservoir, surrounding the cylinder A, and made of cylindrical or any other suitable form. *f* is an upwardly-projecting sleeve or collar arranged centrally on the bottom of the reservoir E, and *g* represents one or more openings formed in the collar *f*.

The collar *f* is a continuation of the discharge-nozzle D, which is secured to or formed with the bottom of the reservoir E. The top of the latter is closed by a cover, E′, provided with a feed-opening, which is closed by a screw-plug, *h*.

The lower end of the cylinder A is made slightly tapering, so as to fit tightly into the collar *f*, the interior of which is correspondingly tapered.

i represents one or more openings formed in the lower end of the cylinder A, so as to register with the openings *g* of the collar *f*.

The upper end of the cylinder A extends through the cover E′, and is closed by a perforated screw-cap, *k*, in which the piston-rod works.

l is a spiral spring, arranged on the under side of the cover E′ around the barrel A, and bearing upon a collar, *m*, secured to the barrel, so as to hold the latter down to its seat in the collar *f*. A washer, of leather or other suitable material, is placed between the spring *l* and the cover E′.

When the parts are in the position shown in Fig. 1, the plunger B closes the openings *g* and *i*, and prevents the liquid contained in the reservoir E from entering the cylinder A. Upon raising the plunger the openings *g* and *i* are uncovered, and the liquid is admitted to the cylinder A. When the plunger has been raised to the desired height the barrel A is turned in its seat, so as to break the coincidence of the openings *g* and *i*, as shown in Fig. 2, when, by depressing the plunger, the liquid contained in the cylinder A is ejected through the nozzle D. When the piston has arrived in its lowest position the operation may be repeated.

It is obvious that if it is desired to use a liquid different from that contained in the receptacle E, the cylinder A may be so turned as to close the openings *g* in the collar *f*, when the syringe can be used in the same manner as an ordinary plunger-syringe.

n is an index finger or pointer secured to the barrel A, above the cover E′ of the receptacle, and *o o* are two stops secured to the cover E′, for limiting the rotatory movement of the barrel, and enabling the operator to determine when the openings *g i* are open or closed.

My improved syringe is very convenient in use, easily operated, and very simple in its parts, so as to be durable and at the same time cheap of construction.

I claim as my invention—

1. The combination, with the barrel A, provided with openings *i*, and plunger B, of the surrounding reservoir E, provided with collar *f*, having openings *g*, and discharge-nozzle D, substantially as and for the purpose set forth.

2. The combination, with the reservoir E E′, provided with a seat, *f*, on its bottom, of the movable barrel A, provided with collar *m* and spiral spring *l*, substantially as and for the purpose set forth.

3. The combination, with the barrel A, provided with openings *i*, and plunger B, of the surrounding reservoir E E′, having collar *f*, provided with opening *g*, nozzle D, index-finger *n*, and stops *o o*, substantially as and for the purpose set forth.

J. T. PALMER.

Witnesses:
JNO. J. BONNER,
CHAS. J. BUCHHEIT.