(No Model.)

A. L. PITNEY.

SYRINGE FOR HAND FIRE EXTINGUISHERS.

No. 385,477. Patented July 3, 1888.

Fig. 1.

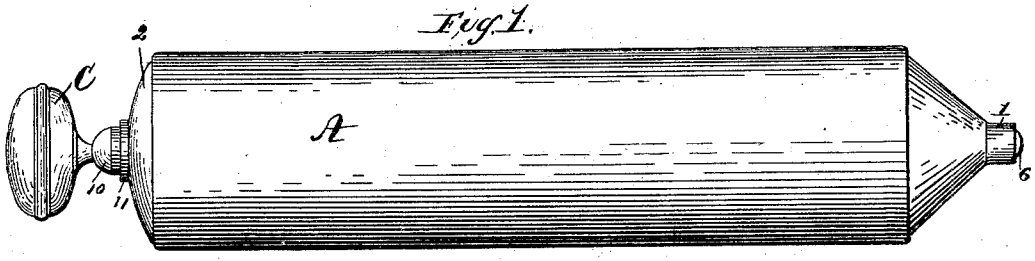


Fig. 2.

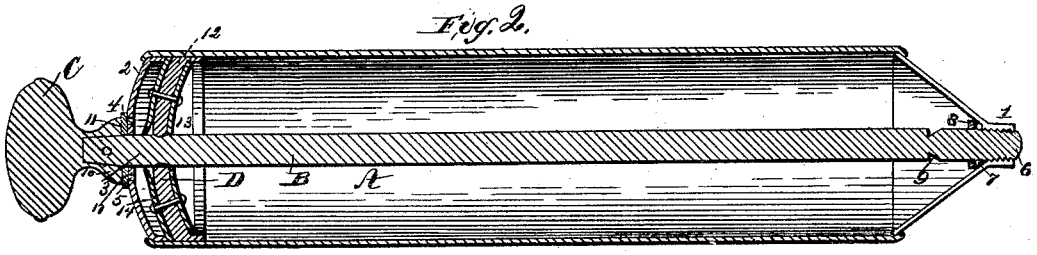


Fig. 3.

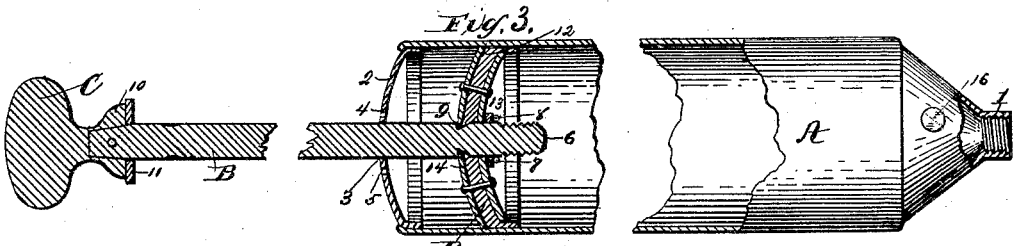


Fig. 4.

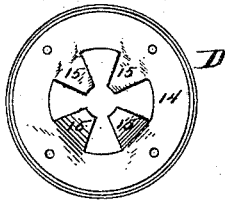


Fig. 5.

Fig. 6.

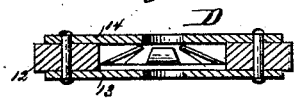
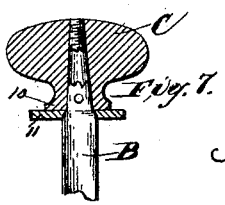


Fig. 7.



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UNITED STATES PATENT OFFICE.

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SYRINGE FOR HAND FIRE-EXTINGUISHERS.

SPECIFICATION forming part of Letters Patent No. 385,477, dated July 3, 1888.

Application filed September 21, 1887. Serial No. 250,311. (No model.)

To all whom it may concern:

Be it known that I, ALBERT L. PITNEY, of Washington, in the District of Columbia, have invented a certain new and useful Improvement in Syringes for Hand Fire-Extinguishers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which like letters and figures refer to like parts in the device.

Figure 1 is a side elevation of my improved syringe. Fig. 2 is a longitudinal section of said syringe with the parts in the position indicated in Fig. 1. Fig. 3 is also a longitudinal section showing the piston and its rod in position for the ejection of the contents of the syringe. Fig. 4 is a plan view of the piston. Figs. 5 and 6 represent modifications of the piston, and Fig. 7 a modification of the piston-rod handle.

The letter A refers to the barrel or cylinder of the syringe, constructed of any suitable material and in the shape most suitable for the purpose intended. The nozzle 1 is formed either by the contraction of the cylinder at the lower end or by a separate piece of material set into or onto the end of the barrel, with a thread turned in the apex to receive and hold the outer end of the piston-rod, also screw-threaded. At the nozzle end of the barrel may be located an opening, 16, for filling the liquid into the syringe. The head of the cylinder 2 has three openings—the larger one, 3, for the passage of the piston-rod, the two smaller ones, 4 and 5, for the inlet or outlet of air when the syringe is in use.

The letter B refers to the piston-rod, which is detachable from the piston. At its lower end, 6, is a screw-thread to fit the thread in the apex of the nozzle-piece. When these are screwed together, the rod acts as a stop or cork to the opening and prevents leakage or corrosion at this point. A washer, 7, is placed on the end of the piston-rod just below the collar or flange 8, and when the rod is screwed home the washer is pressed against the inner end of the nozzle, where the threads terminate, thereby securely sealing the same. The collar 8 acts both to press the washer home to its seat on the nozzle, and, when the piston-rod is withdrawn, as a stop to prevent its entire withdrawal through the piston. Just above the collar 8 is cut a crease or notch, 9, intended to receive the ends of the teeth of a spring-plate when the rod is drawn out and partly through the piston ready for use.

The letter C refers to the handle of the piston-rod. It is provided with a shoulder, 10, next which is a washer, 11, intended to fit closely around the rod and to spread out far enough to cover and close the port-holes 4 and 5 in the top of the cylinder when the rod is pushed down and screwed into the nozzle.

The letter D refers to the detachable piston, which is not rigidly connected with the rod until ready to be used. Said piston is composed of a pliable washer, 12, and the upper and lower disks, 13 and 14. The piston may be constructed in several different ways without departing from the principle of the invention; but the one preferred and shown is concave below and convex above, having a lower plate, 13, stamped into proper form, and a suitable washer, 12, with an opening in the center just large enough to allow the piston-rod to pass, and at the same time make a close fit to prevent the passage of the liquid employed. The upper plate of the piston is made of spring metal and notched or cut so as to form teeth 15, projecting toward its center, the central opening between the teeth being slightly smaller than the piston-rod. When the main part of the rod is drawn between the teeth 15, they are spread apart a little more than normally and are slightly elevated at their points; but when the rod is drawn out to connect with the piston, or until collar 8 stops the piston, the teeth will spring into the notch. If, however, a heavier spring-plate were used, the teeth would grasp the rod firmly enough to prevent back-slipping, even though no notch were cut in the rod. In the modification shown in Fig. 5 the upper plate is cone-shaped and a packing is extended across the piston and has an opening in the center for the piston-rod. In this case the packing 12 acts as a washer to prevent moisture from passing through the central part of the piston. Upon the upper side of the packing, and between it and the upper plate, is placed a plate with spring-teeth, for the purpose heretofore described. In Fig. 6 the packing-ring between the plates has a

recess in its center, in which and between the plates is placed the plate with spring-teeth, for the purpose heretofore described. When the handle is turned to the left until the rod is free from the nozzle and the rod drawn out until the spring-teeth engage with the notch, the device may be used as a syringe to throw an extinguishing-fluid.

It will be perceived that the spring-connection above described permits the rod not only to be detached from the piston-head, but to be entirely withdrawn from the cylinder, (without removing a cylinder-head,) for convenience in storing for transportation, or to allow the substitution of another rod in case one is found defective; and, further, it may be noted that when the rod is screwed into the nozzle the shoulder 10 and washer 11 are drawn against the cylinder-head, with the effect to tie or hold together the opposite ends of the cylinder, and the syringe is thus strengthened against injury from the pressure or hydrostatic action of fluids stored therein.

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

1. The combination of the cylinder having a screw-threaded nozzle with the detachable piston, the removable screw-threaded piston-rod, the handle, and its washer, these being close to the cylinder-head when the rod is screwed into the nozzle, substantially as described.

2. The combination of the cylinder having a perforated head and a screw-threaded nozzle, with the removable piston-rod provided with a collar or stop and screw on its end, a washer between the collar and nozzle, a handle on the rod, and a washer between the handle and the cylinder-head, the handle and its washer being normally close to the cylinder-head when the rod is screwed into the nozzle, substantially as described.

3. The combination of the cylinder with the detachable piston provided with spring-teeth, the rod provided with a groove for engaging with the teeth, and also provided with a collar and screw-thread on its end, a washer between the collar and cylinder, a handle on the rod, and a washer between the handle and the cylinder-head, substantially as shown and described.

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