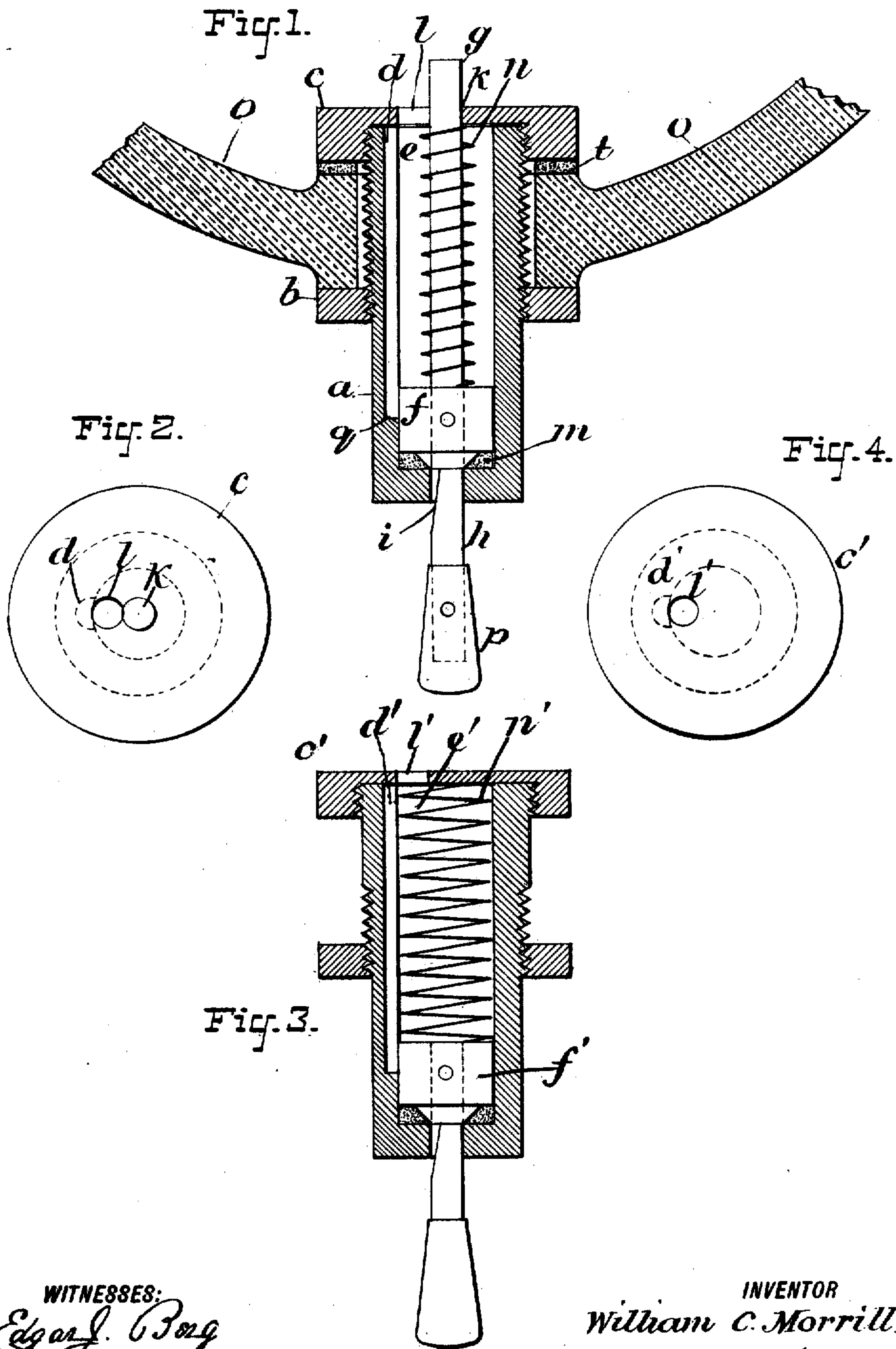


W. C. MORRILL.
 LIQUID DISCHARGING DEVICE.
 APPLICATION FILED JULY 22, 1908.

911,834.

Patented Feb. 9, 1909.



WITNESSES:
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WILLIAM C. MORRILL, OF NEW YORK, N. Y.

LIQUID-DISCHARGING DEVICE.

No. 911,834.

Specification of Letters Patent.

Patented Feb. 9, 1909.

Application filed July 22, 1908. Serial No. 444,710.

To all whom it may concern:

Be it known that I, WILLIAM C. MORRILL, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Liquid-Discharging Devices, of which the following is a specification.

The invention relates to that type of liquid discharging devices which discharges the liquid in a predetermined quantity, of which a full, clear and exact description will be given hereinafter.

The invention consists of the combination of certain mechanical elements adapted to work in unison one with the other in a manner that will enable it to discharge liquids in a predetermined quantity when operated, all of which will be fully described and pointed out in the claim hereinafter.

Figure 1 is a longitudinal vertical section of the discharging device showing the manner in which it is mounted upon the reservoir. Fig. 2 is a plan of the discharging device. Fig. 3 is a longitudinal vertical section of a modified form of the discharging device in which the guide rod is dispensed with. Fig. 4 is a plan of Fig. 3.

Similar letters refer to similar parts throughout the drawings in which the chambered body *a*. is shown mounted upon the reservoir *o*. a part of which is shown in section in Fig. 1. The upper exterior circumferential surface of the body *a*. is provided with screw threads terminating at the extreme upper end of the said body *a*. Upon the top of the said body *a*. is mounted the internally screw threaded doubly perforated cap *c*. The lower end of the aforesaid screw threads receives the lock nut *b*. which, when screwed up tightly, will exert sufficient pressure upon the compressible washer *t*. to make a liquid tight joint between the perforated cap *c*. and the wall of the reservoir.

The body *a*. is provided with the chamber *e*. having the feed channel *d*. ending at *g*. opening into it. There is within the chamber *e*. the piston *f*. which is capable of being operated reciprocally and which is provided with the vertically arranged guide rod *g*., the upper end of the latter engaging with the perforation *k*. made in the cap *c*. and serving as a guide for the aforesaid rod. The cap *c*. is provided with the permanently open port *l*. Connected with and depending from the bottom of the piston *f*. is arranged the oper-

ating rod *h*. which travels through a port in the bottom of the chambered body *a*. This operating rod *h*. is provided with the chamfered recess *i*. and the push knob or button *p*. The piston is provided with a frustum base which, when in its normal position, seats itself into a pliable washer *m*. the conical section of which has been purposely made a little smaller than the frustum base of the piston so that the frustum base may make for itself a perfect fitting seat and act as a conical valve. The length of the chamfer is so proportioned that the rod below it completely closes up the port through which the rod passes at the instant, or immediately before, the flat base of the piston, on its upward stroke, reaches the bottom of the channel *d*.

In Fig. 3 is shown a modification of Fig. 1. In this figure the piston *f'* is shown void of the guide rod *g*. It also shows the screw cap *c'* provided with a single perforation *l'* and an enlarged spring *n'* placed within the chamber *e'*. It will be obvious that the liquid will enter at the open port *l'* thence to the feed channel *d'*, in the same manner as it does in the device shown in Fig. 1.

I do not wish to confine myself strictly to the forms shown and described as it is obvious that many modifications may be employed without departing from the spirit of my invention.

Mode of operation: I shall describe the apparatus when used for liquid soap. When the reservoir *o*. which at the top may be air tight, open, or partially closed, shall have been filled with liquid soap, it will then be ready for use. It will be obvious that there will always be open communication between the reservoir *o*. and the feed channel *d*. by means of the permanently open port *l*. When desirous of extracting the liquid soap from the reservoir *o*. the operator simply places the palm of his hand beneath the push knob or button *p*. and presses same upward as far as it will go. This operation carries the lower flat surface of the piston *f*. above the base *g*. of the feed channel *d*. sucking the air from the outside in through the lower port and up through the feed channel into the space immediately above the level of the liquid soap, thus maintaining the equilibrium of the atmospheric pressure between the inside and outside of the reservoir. As the air ascends the liquid soap flows down into the space between the piston and the

valve seat, the latter of which, in this case, is formed of the pliable disk *m*. The port at the bottom of the chambered body and beneath the valve seat will have been closed by that portion of the operating rod *h*. lying below the chamfer *i*. When the upward pressure shall have been removed from the operating rod, the spring will carry the piston *f*. back to its normal position. It will be obvious that the communication of the feed channel *d*. will have been cut off from that part of the chamber *e*. lying beneath the piston at the instant or before the lower end of the chamfer of the operating rod shall have reached the exterior. When the lower end of the chamfer reaches the exterior the pressure of the piston forces out and discharges through the partially open port into the hand of the operator the amount of liquid soap contained between the base of the piston and the bottom of the chamber. At the end of the downward stroke the frustum base of the piston seats itself into the conical hole of the washer, forming a conical valve which shuts off completely. This operation may be repeated at will, the operator getting the same amount of soap at each operation. It will be obvious that there can never be a

continuous open communication between the reservoir *o*. and the exterior through the port at the bottom of the chambered body *a*. and that therefore, at no position of the piston, will a steady stream of soap flow, but, on the contrary, only a predetermined quantity will be discharged and a complete cycle will have to be gone through with to get each fresh supply of soap.

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

In a liquid discharging device, the combination, consisting of a chambered body having a feed channel opening therein and a valve seat, a piston yieldingly supported and capable of being operated reciprocally within the aforesaid chamber said piston also forming a valve, and a chamfered rod depending from the aforesaid piston.

Signed at New York in the county of New York and State of New York this 21st day of July A. D. 1908.

WILLIAM C. MORRILL.

Witnesses:

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