

W. S. LIVENGOOD.
SELF CLOSING VALVE.
APPLICATION FILED FEB. 17, 1919.

1,316,906.

Patented Sept. 23, 1919.

Fig. I.

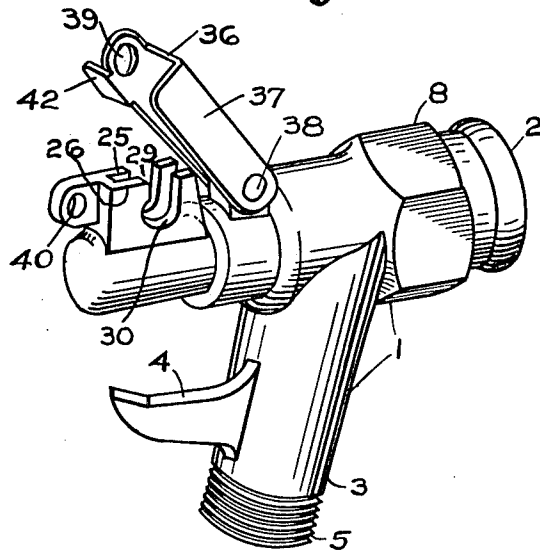


Fig. II.

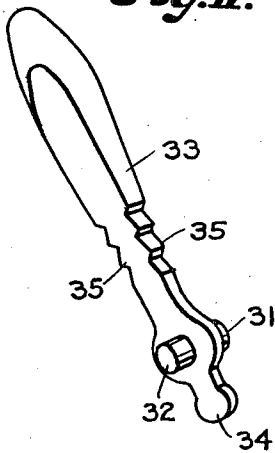


Fig. IV.

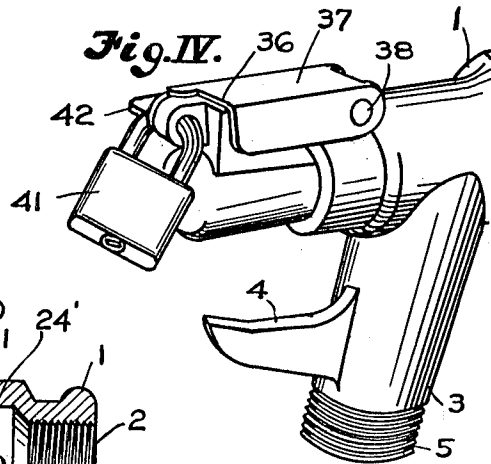
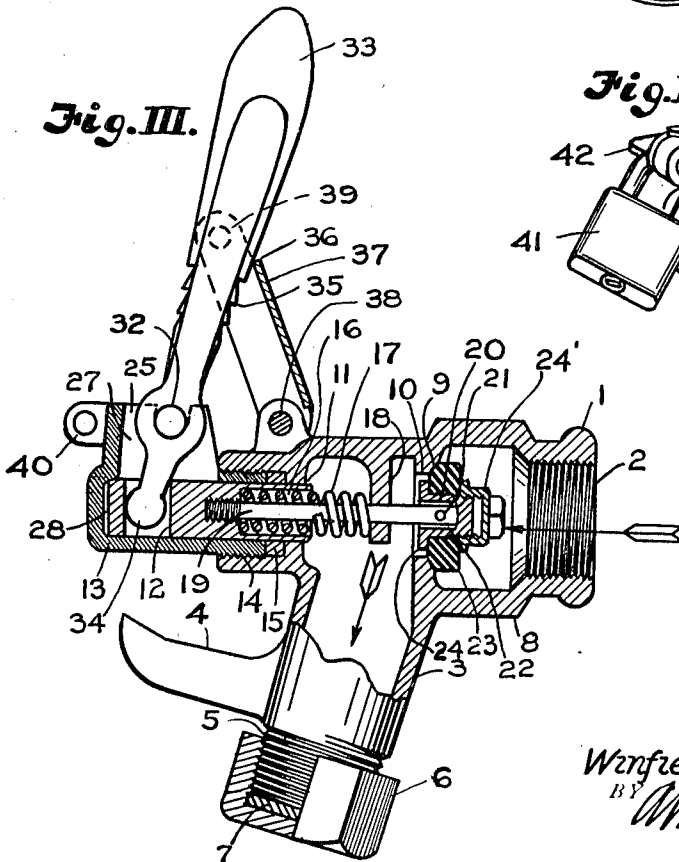


Fig. III.



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SELF-CLOSING VALVE

1,316,906.

Specification of Letters Patent. Patented Sept. 23, 1919.

Application filed February 17, 1919. Serial No. 277,480.

To all whom it may concern:

Be it known that I, WINFIELD S. LIVENGOD, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Self-Closing Valves; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to self-closing faucets for use on tanks or containers, and particularly for that class of receptacles containing oils and the like.

One of the objects of the invention is to provide a self-closing faucet which will be inexpensive to manufacture, which will insure ease of operation, and which may be so constructed that it may be temporarily locked against unauthorized use, one of the features being the provision of means for utilizing part of the locking means to assist in maintaining the valve open when it is desired to empty or partly empty the receptacle to which the faucet is attached.

It is also an object of this invention to provide a means whereby leakage through the faucet will be prevented, and to this end I have eliminated the necessity for disposing the stuffing box above the valve seat so that the liability of leakage, due to pressure, will be avoided. I have also simplified the construction of the device and provided means whereby the valve can be unseated by a lever which can be readily inserted into position and removed therefrom as the occasion may demand.

Other objects and advantages of the invention will appear hereinafter, it being understood that changes in form, proportion, and other minor details of construction may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

In the drawings,

Figure I is a perspective view of a faucet constructed in accordance with my invention, the sealing cap being moved out of sealing position preparatory to inserting the operating lever.

Fig. II is a detailed perspective view of the operating lever.

Fig. III is a vertical longitudinal sectional view through a faucet constructed in accordance with my invention, showing the lever in place and the sealing cap in position to function as a pawl for the operating lever, and,

Fig. IV is a perspective view of the faucet with a valve mechanism sealed against operation.

Referring now to the drawings by numbers of reference,

1 designates the valve case which consists of substantially a T-shaped hollow casting, having a threaded inlet portion 2 whereby the faucet may be screwed to a pipe or threaded projection on a tank, the casting being provided with a downwardly projecting nozzle 3, having an outstanding bucket supporting lug 4, and a terminally threaded hose receiving end 5. The end 5 is adapted to be closed by a cap 6, which may be provided with a fibrous facing 7 if desired, so that in the event that it is desired to close off the faucet through means of the cap (for example should anything happen to the valve mechanism) this may be easily accomplished. The casting is also provided with a polygonal portion 8 whereby the same may be screwed upon a support or pipe by an ordinary wrench.

Within the casting 1 is a valve seat 9, surrounding an opening 10, concentric with the inner opening 2, and alining with an opening 11, in which is slidably secured a valve actuating head or slide 12, the member 12 being also slidable in the box 13, threaded at 14 into the casting 1, and bearing against the packing 15, about the opening 11, whereby a stuffing box is provided. The slide 12 is formed with a recess 16 in which one end of the coil spring 17 is seated, the opposite end of the coil spring bearing against the guide 18 in which the valve stem 19 is slidably secured. One end of the valve stem 19 is screwed into slide 12, and the other end carries a flanged sleeve 20 which is secured thereto by a transverse pin 21, which permits a slight rocking movement of sleeve 20 with respect to stem, because the diameter of the recess 22 in sleeve 21 is slightly greater than the outer diameter of the stem 19. Upon the sleeve 20 is a valve disk 23, one end of which bears against the flange 24 of the sleeve 20,

the disk 23 being held in place by a removable sleeve nut 24' threaded on the end of the sleeve 20. Since the spring 17 is an expansion spring, it is obvious that there will
 5 be a tendency to move the slide 12 away from the guide 18 and thereby seat the valve 23, and this tendency will be augmented by the pressure of oil passing through the inlet 2.

10 The box member 13 which constitutes the removable end of the casting 1 is provided with outstanding flanges 25 and 26, spaced apart to bound the lever receiving slot 27, adjacent to the pocket or slot 27 in slide 12,
 15 and these flanges 25 and 26 are provided with slightly curved transverse slots 29 and 30 to receive the oppositely disposed lugs or projections 31 and 32 on the valve operating lever 33, said lever having a slot engaging
 20 terminal 34 which is adapted to lie within the slot 28 of the slide 12, as best shown in Fig. 3.

The edges of lever 33 are provided with rack teeth 35 adapted to be engaged by the
 25 edge 36 of a pivoted closure or sealing member comprising a channel-shaped device 37 connected to the casting 1 by a pivot connection 38.

The sealing member consists of a channel
 30 member adapted to overlie the flanges 25 and 26 as shown in Figs. I and IV, and at one end of the sealing member is an opening or hole 39 adapted to register with the hole or opening 40 projecting from the mem-
 35 ber 13, so that when the two openings are in register, the sealing member may be locked in sealing position by a pad lock 41, or other suitable fastening device, as best shown in Fig. IV.

40 When it is desired to operate the valve, the fastening device 41 must first be removed to permit sealing device 37 to be swung away from the flanges 25 and 26, so that the operating tool or lever 33 may be
 45 put into operating position as best shown in Fig. 3. The lugs or projections 31 and 32 in slots 29 and 30 will act as fulcrums for the lever 33, so that by moving the handle of the lever from right to left, the slide 12 will
 50 be moved against the spring, and since the valve 23 is rigid on the stem 19, the valve will be unseated. As the lever is movable from right to left the edge 36 of the sealing device 37 may be dropped into one of the
 55 notches between the teeth 35, and thereby hold the valve open so that a continuous stream may flow from the tank through the outlet nozzle 5 without attention of the operator. It will also be noticed that the seal-
 60 ing device serves as a means for holding the lever in any adjusted position within the limits of its amplitude of movement.

When it is desired to permit the valve to
 65 of engagement with the notch portion 35 of

lever 33 by pressing upon the ear or projection 42, or the lever cap may be released by a quick outward jerk, so that it may be detached from engagement with the casting as well as with engagement from the slide 12. 70

The lever 33 and its connection with the flanges 25 and 26 and slide 12 is such that a movement can be imparted to the slide by means of the lever in either direction. This is an advantage in that sometimes the valve
 75 mechanism has a tendency to stick so that the valve remains open when such open position is not desirable. If it is necessary to forcibly close the valve or to assist the spring 19, the lever can be moved from left to
 80 right, as will be clearly apparent by referring to Fig. III.

From the foregoing description it will be seen that the casing is substantially a single casting that can be cheaply made, and that
 85 the parts may be easily assembled, particularly the slide and its coöperating mechanism. After the parts are in place, liability of leakage will be prevented because there are no stuffing boxes or other openings on
 90 the pressure side of the valve 23. It will also be apparent that when it is desired to operate the valve and the sealing member 37 is moved out of engagement with flanges 25 and 26, that the lever can be quickly in-
 95 serted without any special knowledge of the operating mechanism, and in the event that the lever becomes lost, the valve can be operated by placing a nail crosswise in slots 29 and 30 and inserting screw driver or other
 100 bar to engage in slot 28 in slide 12.

The device is susceptible of various changes but I have illustrated what appears to me to be the very best form to accom-
 105 plish the desired result, although I do not desire to be limited to the exact details shown.

Having thus described my invention, what I claim as new therein, and desire to
 110 secure by Letters-Patent is:

1. A faucet comprising a casing having an inlet and an outlet, a valve seat between the inlet and the outlet, a spring actuated valve normally seated upon the valve seat and hav-
 115 ing opening movement toward the inlet end of the casing, a slide on the outlet side of the casing for operating the valve, a sealing member carried by the casing and removably covering a slot therein, a removable lever
 120 pivotally engaging the casing and projecting through the slot in the casing to engage the slide, and teeth on the lever for engage-
 125 ment with the edge of the sealing device.

2. A faucet comprising a casing having an inlet and an outlet, a valve seat between the
 130 inlet and the outlet, a spring actuated valve normally seated but unseatable toward the inlet, a slide in the casing on the outlet side of the valve seat for operating the valve, outstanding flanges on the casing providing
 135

walls for a slot, a channel-shaped device carried by the casing and movable into engagement with the flanges to close the slot, and a lever insertible through the slot to engage the slide.

3. A faucet comprising a casing having an inlet and an outlet, a valve seat between the inlet and the outlet, a spring actuated valve normally seated but unseatable toward the inlet, a slide in the casing on the outlet side of the valve seat for operating the valve, outstanding flanges on the casing providing walls for a slot, a channel-shaped device pivoted to the casing and having swinging movement into and out of engagement with the flanges to close the slot, and a lever insertible through the slot to engage the slide.

4. A faucet comprising a casing having an inlet and an outlet, a valve seat between the inlet and the outlet, a spring actuated valve normally seated but unseatable toward the inlet, a slide in the casing on the outlet side of the valve seat for operating the valve, outstanding flanges on the casing providing walls for a slot, a channel-shaped device carried by the casing and movable into engagement with the flanges to close the slot, and a lever insertible through the slot to engage the slide, said channel-shaped device having a part to engage notches in the lever whereby the valve may be held in any adjusted open position.

5. A faucet comprising a casing having an inlet and an outlet, a valve seat between the inlet and the outlet, a spring actuated valve

normally seated but unseatable toward the inlet, a slide in the casing on the outlet side of the valve seat for operating the valve, outstanding flanges on the casing providing walls for a slot, a channel-shaped device carried by the casing and movable into engagement with the flanges to close the slot, a lever insertible through the slot to engage the slide, the channel-shaped device having an opening adapted to register with an opening in the casing, and a locking device insertible through the registering openings.

6. A faucet comprising a casing having an inlet and an outlet, a valve seat between the inlet and the outlet, a valve unseatable in the direction of the inlet, a slide in line with the axis of the valve and on the outlet side of the valve seat, a stem rigidly connected to the slide and to the valve, a guide for the valve stem, a spring having one end bearing against the guide and the other against the slide, for normally holding the valve seated, a stuffing box through which the slide projects, said casing being provided with a slot having notched side walls, and a lever insertible through the slot in the casing and having oppositely disposed lugs for engagement with the notched side walls, said lever having an end adapted to project through the slot in the casing and engage the slide to impart longitudinal movement thereto when the lever is rocked.

In testimony whereof I affix my signature.

WINFIELD S. LIVENGOOD.