

No. 731,639.

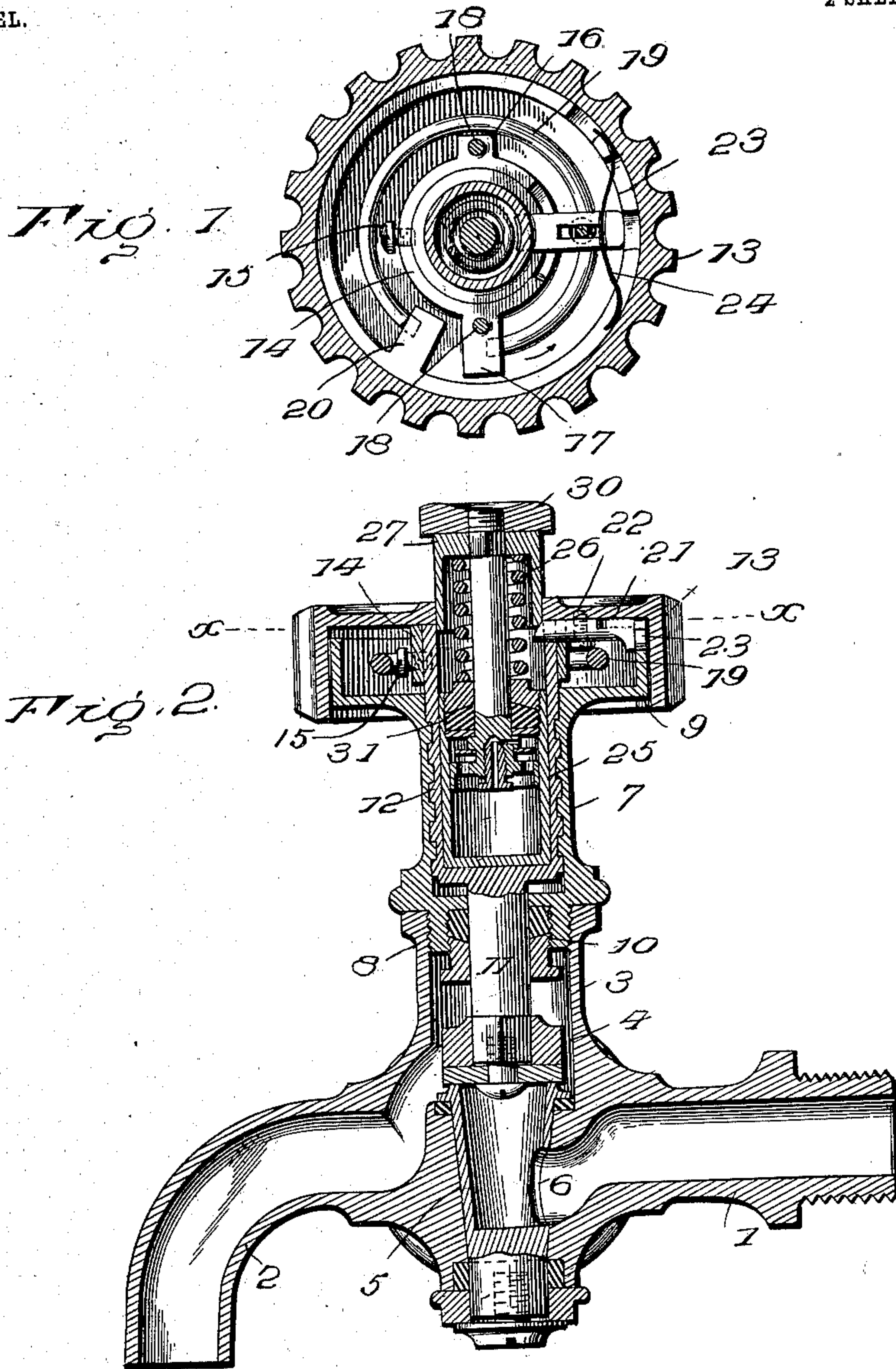
PATENTED JUNE 23, 1903.

E. L. WALTER.
FAUCET.

APPLICATION FILED JULY 11, 1902.

2 SHEETS—SHEET 1.

NO MODEL.



Witnesses.

Wm. B. Hillyard.

Inventor.
Edwin L. Walter

By
R. H. Racey Attorneys.

UNITED STATES PATENT OFFICE.

EDWIN L. WALTER, OF SCRANTON, PENNSYLVANIA.

FAUCET.

SPECIFICATION forming part of Letters Patent No. 731,639, dated June 23, 1903.

Application filed July 11, 1902. Serial No. 115,196. (No model.)

To all whom it may concern:

Be it known that I, EDWIN L. WALTER, a citizen of the United States, residing at Scranton, in the county of Lackawanna and State of Pennsylvania, have invented certain new and useful Improvements in Faucets, of which the following is a specification.

This invention appertains to cocks and faucets of the self-closing type to prevent wanton waste of water or other medium controlled thereby. This class of devices is adapted to be opened against a resisting force which when released instantly operates to close the faucet and shut off the supply, thereby requiring the person to hold the faucet open in order to wash in a running stream, which is oftentimes preferable.

This invention has for its primal object to combine with a self-closing cock or faucet a time-lock which when thrown into action holds the faucet open the required distance for a predetermined interval of time, as one minute, more or less, said lock being automatically released at the expiration of the allotted time to permit the faucet to instantly and automatically close.

This invention while it leaves both hands of the person free and enables a running stream being obtained precludes useless waste, because at the expiration of the time limit for which the lock is set the faucet automatically closes by a snap action.

A further purpose of the invention is the provision of a faucet which can be operated by hand should the self-closing contrivance fail to work from any cause, thereby enabling the water to be turned on and shut off at will, the faucet being operable in the accustomed way.

A still further purpose of the invention is the isolation of the self-closing and time-locking mechanisms, so that they are out of reach of the water and are not affected in any wise thereby.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and drawings hereto attached.

While the essential and characteristic features of the invention are susceptible of modi-

fication, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a plan section of the hand-wheel and adjunctive parts on the line X X of Fig. 2. Fig. 2 is a vertical central longitudinal section of a faucet embodying the vital features of the invention. Fig. 3 is a vertical central section of the hand-wheel and stem of the faucet on a larger scale. Fig. 4 is a view similar to Fig. 1, showing the hand-wheel turned so as to open the valve to its full limit and the lock-bolt projected so as to secure the hand-wheel.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The invention is applicable to a self-closing faucet, cock, or like appliance for controlling the flow of liquid or fluid and is illustrated in connection with a faucet of the self-closing type, the body being provided with the coupling end 1, nozzle 2, and stem 3, in which a valve 4 operates by a reciprocating action, and is adapted to close upon the seat formed at the upper end of a tapering plug 5, fitted into the body of the faucet and having a side opening 6 to register with the passage of the coupling end 1, said turning plug being operable from without the faucet to admit of throwing the opening 6 out of register with the passage through the coupling end 1, so as to shut off the flow of water or other medium through the faucet, thereby admitting of removal of the valve 4 and adjunctive parts to admit of repairs, inspection, or other purpose. The turning plug also admits of regulating the flow of water through the faucet according to the head or pressure.

A tubular extension 7 is fitted to the stem 3 in any desired way, preferably by means of a screw-thread joint 8, and its upper portion is enlarged or terminates in a circular casing 9, in which is located the lock-bolt and spring for closing the faucet. A stuffing-box 10 is provided at the lower end of the section 7, so as to maintain a tight joint between the part 7 and the valve-stem 11, whereby water is prevented from finding its way into the part 7 and casing 9. The interior of the section 7 is formed with a screw-thread for coöperation

with a corresponding thread upon the outer side of the shell 12, forming a part of the stem 11 or connected to said stem, so as to form in effect a part thereof. The valve 4 is applied to the lower end of the stem 11 and may be of any type of construction commonly employed in faucets of the variety illustrated. The hand-wheel 13 may be milled or otherwise finished to enable the hand to obtain a firm grip thereon when it is required to unseat the valve. The hand-wheel is rotatable with the shell 12 and may be connected therewith in any practicable way, so as to admit of ready access to the casing 9. The hand-wheel 15 is hollow, and its rim encircles the rim of the casing 9 and is of a depth to prevent uncovering said casing when the valve is opened to its full limit. In the preferable construction a ring or band 14 is secured to the upper end of the shell 12 by means of the screw 15 or in any other selected way, and is provided with lugs 16 and 17, preferably disposed at diametrically opposite points and formed with threaded openings to receive screws 18, by means of which the hand-wheel 13 is secured to the part 14 and to the shell 12. The spring 19 for closing the valve and holding it seated is located within the casing 9, which is closed at its upper end by the hand-wheel 13. One end of the spring 19 is fitted to a lug 17, and the opposite end is fitted to a lug 20, projected inward from the hand-wheel 13. This spring 19 may be of any strength and constructed of any metal, not excepting steel, which latter is protected from the injurious action of water, since provision is had for precluding access of water to the casing 9 by reason of the stuffing-box 10 in the manner stated.

The lock-bolt 21 is applied to the hand-wheel and is adapted to have a radial sliding movement, the inner end being beveled and the outer end vertically elongated, so as to insure contact thereof with the toothed portion of the casing 9. The lock-bolt is longitudinally slotted and is held to the top plate of the hand-wheel by the screw or fastening 22, which passes through the slot of the bolt. A portion of the casing 9 is toothed or cogged, as shown at 23, for engagement therewith of the outer end of the lock-bolt 21, so as to hold the hand-wheel open at any desired position. A bow-spring 24 cooperates with the lock-bolt 21 to hold it out of engagement with the teeth 23, so as to permit free movement of the hand-wheel in either direction. The lock-bolt is adapted to be held in engagement with any selected tooth of the series 23 by a time mechanism which includes in its organization a dash-pot 25, constructed to hold the block projected for a minute or any other interval of time that may be determined upon. Cooperating with the dash-pot is an expansion-spring 26 and finger-piece 27, the latter being fitted to the stem 28 of the valved plunger 29, adapted to operate in the casing or barrel of the dash-pot. The

finger-piece 27 is hollow at its lower end and is adapted to move through the hand-wheel 13 and within the upper portion of the shell 12 and receives the upper end of the spring 26. The part 27 is fitted to an angular portion of the stem 28 and is held in place by a nut 30, screwed upon the projecting end portion of said stem. The lower end of the finger-piece 27 is adapted to engage with the inner beveled end of the lock-bolt and move the latter outward into engagement with any one of the teeth 23 upon depressing the finger-piece 27, thereby locking the hand-wheel to the casing 9 after the faucet has been opened to the desired point.

The dash-pot 25 is adapted to be slipped into the shell 12 and is held in place either by friction or by any positive means, so as to prevent casual displacement. The upper end of the shell 12 is closed by the finger-piece 27, which also incloses the expansion-spring 26. The dash-pot is provided at its upper end with a stuffing-box 31, through which the stem 28 passes, this being essential in order to prevent any escape of the liquid or like medium contained in the dash-pot. The valved plunger 29 fits the barrel or cylinder of the dash-pot tight, so as to prevent the escape of the liquid therearound. The plunger 29 has a series of openings 32, which are adapted to be closed by means of a puppet-valve 33. A plug 34 is fitted into a threaded opening formed in the plunger 29 and lower end of the stem 28 and is longitudinally bored, as shown at 35, the inner or upper end of the plug being conical and the inner end of the opening being of corresponding shape to form a seat therefor whereby the effective passage through the plug 34 may be regulated by screwing the plug in to a greater or less extent. A passage 36 extends laterally through the lower end of the stem 28 and communicates at its inner end with the opening into which the plug 34 is fitted, and this passage opens into a dash-pot above the plunger.

When the valve 4 is seated, as shown in Fig. 2, the faucet is closed and no liquid or fluid can pass therethrough. Upon grasping the hand-wheel 13 and turning the same the shell 12 is correspondingly turned and by reason of its screw-thread connection with the section 7 of the stem simultaneously moves upward and unseats the valve 4, thereby opening the faucet and permitting the liquid or fluid to pass therethrough. The hand-wheel 13 is turned against the tension of the spring 19 and upon releasing the hand-wheel the spring 19, regaining itself, rotates the hand-wheel, so as to automatically seat the valve 4 and close the faucet. If it be required to let the faucet remain open, the finger-piece 27 is depressed after the hand-wheel has been turned to the required position, and this operation projects the lock-bolt into engagement with a tooth 23 and holds the valve open, the lock-bolt being held projected by the finger-piece 27 bearing against its inner end.

When the finger-piece 27 is depressed, the spring 26 is compressed, as shown at 23, and the valved plunger 29 is moved to the lower end of the dash-pot and the liquid contained in said dash-pot passes above the plunger through the openings 32. Upon releasing the finger-piece from downward pressure the spring 26, tending to regain a normal position, exerts an upward pressure on the finger-piece and plunger, thereby closing the valve 33 and confining the liquid above the said plunger and causing it to pass to the lower end of the dash-pot or below the plunger through the passage 36 and opening 35, and inasmuch as this passage is exceedingly small some time must elapse before the plunger will return to a normal position, and during this interval the lock-bolt 21 is held projected by the finger-piece 27. The instant the finger-piece 27 clears the lock-bolt 21 the spring 24, regaining itself, withdraws the lock-bolt from engagement with the teeth 23, thereby permitting the hand-wheel to return to a normal position under the tension of the spring 19, so as to automatically close the faucet. The passage through the plunger may be controlled by screwing the plug 34 into the plunger and stem 28 to a greater or less extent, thereby regulating the time of holding the faucet open.

The construction is such that should the spring 19 become broken, weakened, or otherwise unserviceable for the purpose intended the faucet may be manipulated by hand in the accustomed way, so as to open or close it. It is also observed that the self-closing feature of the faucet is independent of the lock and time mechanisms and is not impaired by the absence of said mechanisms, which may be dispensed with. When the plug 5 is turned to throw the opening 6 thereof out of register with the passage through the coupling end 1, the section 7 of the stem and the parts carried thereby may be removed to admit of inspection or repairs being made. Hence the cut-off 5 is a very important adjunct in the efficiency and desirability of the faucet or like article.

Having thus described the invention, what is claimed as new is—

1. In a faucet and in combination with the valve mechanism, means for opening the valve and means for instantly and automatically closing the valve when released, a lock for holding the valve open against the action of the closing means, and an automatic time mechanism operable independent of the valve mechanism or the fluid passing therethrough for releasing the lock to permit instant closure of the valve, substantially as specified.

2. In a faucet, and in combination with the valve mechanism, means for opening the valve and means for instantly and automatically closing the valve when released, a lock for holding the valve open against the action of the closing means, means for normally holding the lock out of action, and a time mechanism

for holding the lock projected to keep the valve open a given length of time and adapted to release the lock to permit instant closure of the valve, substantially as described.

3. In a faucet, and in combination with the valve mechanism, means for opening the valve and means for instantly and automatically closing the valve when released, a lock for holding the valve open against the action of the closing means, and a time mechanism for cooperation with the said lock to permit instant closure of the valve, said time mechanism including a dash-pot, substantially as set forth.

4. In a faucet, and in combination with the valve mechanism, means for opening the valve and means for instantly and automatically closing the valve when released, a lock for holding the valve open against the action of the closing means, means for normally holding the lock out of action, means for holding the lock projected to keep the valve open, and a time mechanism to effect a release of the lock to permit instant closure of the valve, substantially as specified.

5. In a self-closing faucet, and in combination with the valve mechanism and operating means, a lock-bolt for holding the valve mechanism open, a finger-piece for holding the lock-bolt projected, and time mechanism for releasing the finger-piece from the lock-bolt, substantially as set forth.

6. In a self-closing faucet, and in combination with the valve mechanism and operating means therefor, a locking means for holding the valve open, a time mechanism for holding the locking mechanism in effective operation, said time mechanism comprising a dash-pot, and means for regulating the effective passage through the plunger so as to vary the time of holding the valve open, substantially as specified.

7. In a faucet, and in combination with the valve mechanism, means for opening the valve and means for instantly and automatically closing the valve when released, a lock, means for throwing the lock into action to hold the valve open at any adjusted position for a given time, and a time mechanism for releasing the lock to permit instant closure of the valve, substantially as set forth.

8. In a faucet, and in combination with the valve mechanism, means for opening the valve and means for instantly and automatically closing the valve when released, a lock, means adapted to be operated by hand after the valve is opened to project the lock and hold the valve open against the action of its closing means, and a time mechanism for releasing the lock to permit instant closure of the valve, substantially as specified.

9. In a faucet, a valve-casing having a tubular stem, a valve having the outer end of its stem chambered and cut off from the valve-chamber, means applied to the valve for automatically and instantly closing the valve

when released, a lock for holding the valve open a given time, and a time mechanism located within the chamber of the valve-stem and adapted to effect a release of the lock to permit instant closure of the valve, substantially as set forth.

10. In a faucet, a tubular stem extended therefrom and terminating in a casing, a valve having its stem connected by a screw-thread joint with said tubular stem, a band secured to the upper end of the valve-stem and provided with offstanding lugs, a spring for closing the valve located in said casing and having its end portions connected with, respectively, said band and casing, and a hand-wheel encircling the casing and closing the upper end thereof and secured to the lugs of the aforesaid band, substantially as set forth.

11. The herein-described faucet comprising a body having a tubular stem extended therefrom terminating in a casing provided with teeth, said stem having a stuffing-box in its length, a cut-off plug within the body

forming a valve-seat, a valve, a stem extended from the valve and operating in said stuffing-box and having its outer portion hollow to form a shell, a spring for closing the valve located in the aforesaid casing and having its ends connected, respectively, to said casing and shell, a hand-wheel encircling the casing and closing the upper end thereof and secured to the outer end of the said shell, a spring-actuated lock-bolt applied to the hand-wheel and adapted to cooperate with the teeth of the casing to hold the valve open, a dash-pot located within said shell, and a spring-actuated finger-piece mounted to operate through the hand-wheel and within the upper portion of the shell to hold the lock-bolt projected, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

EDWIN L. WALTER. [L. S.]

Witnesses:

GLADYS L. THOMPSON,
GENEVIEVE MATTHEWS.