

J. F. OTT.
FAUCET.

APPLICATION FILED AUG. 11, 1904.

Fig. 1.

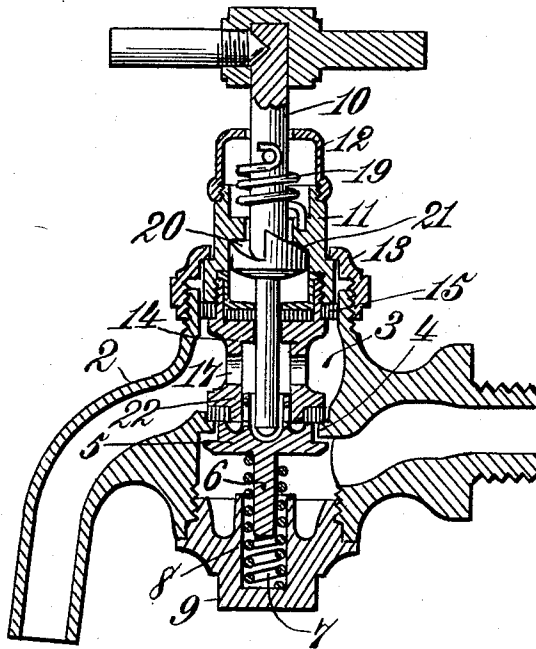


Fig. 2.

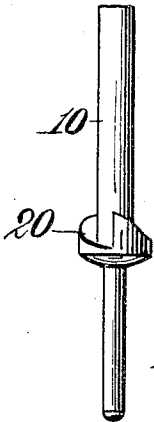


Fig. 3.

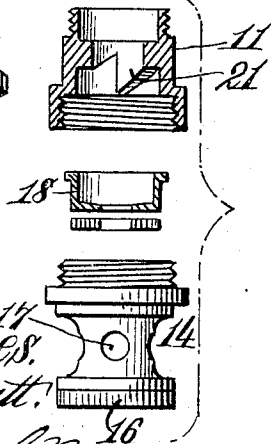


Fig. 4.

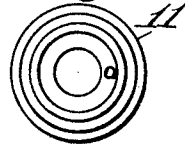


Fig. 5.

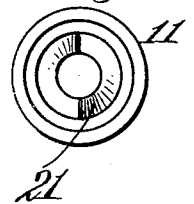
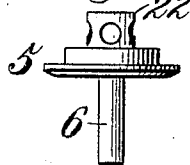


Fig. 6.



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Att'y.

UNITED STATES PATENT OFFICE.

JOHN F. OTT, OF WARREN, PENNSYLVANIA, ASSIGNOR TO THE BASHLIN COMPANY, OF WARREN, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

FAUCET.

No. 807,309.

Specification of Letters Patent.

Patented Dec. 12, 1905.

Application filed August 11, 1904. Serial No. 220,388.

To all whom it may concern:

Be it known that I, JOHN F. OTT, a citizen of the United States, residing at Warren, in the county of Warren and State of Pennsylvania, have invented new and useful Improvements in Faucets, of which the following is a specification.

This invention relates to faucets, the improvements being directed particularly to that class thereof known as "self-closing" faucets; and the object of the invention is to provide a device of this character which is simple in construction, quick in action, and wherein the possibility of leakage is avoided.

Other objects and advantages of the invention will be set forth at length in the following description, while what I consider to be the novelty thereof will be embraced in the claims succeeding said description.

In the drawings accompanying and forming a part of this specification I have illustrated one simple adaptation of the invention, which will be fully set forth in the description; but I do not limit myself to the disclosure thus made, for certain variations may be adopted within the scope of my claims.

Referring to the drawings, Figure 1 is a sectional elevation of a faucet including my invention. Fig. 2 is a detail in elevation of the valve-opening spindle. Fig. 3 is a sectional elevation of a sleeve, packing-gland, and cage separated. Figs. 4 and 5 are top plan and bottom plan views, respectively, of the sleeve represented in Figs. 1 and 3; and Fig. 6 is an elevation of the valve.

The shell of the improved faucet is designated by 2, and it comprehends the usual inlet and discharge portions communicating with the intermediate chamber 3, in which the valve, hereinafter described, operates. Interiorly of the said chamber is an annular flange 4, against the upper side of which a seat-ring 16, hereinafter described, is rigidly held, said valve being adapted to close against said ring. The valve is adapted also to seat automatically against the under side of said flange when the ring 16 is removed for repairs. The valve is designated by 5, and it is represented as being of the disk form and as having a depending stem 6. The valve is arranged to be closed by the water-pressure, augmented by a coiled spring, as 7, surrounding said stem, bearing at its upper end against the under face of the valve and at its lower

end against the bottom of the hollow boss 8, in which boss the lower end of said stem 6 is disposed. The boss 8 is formed upon the nut 9, threaded into the under side of the intermediate portion or chamber 3 of the shell 2. The delivery end of the inlet portion of the shell opens into the chamber 3 under the annular flange 4, so that it will be apparent that the pressure of the water is against the under side of the valve 5 to hold the same seated, such action being aided by the spring 7. When the valve is pressed downward, as will hereinafter appear, it is moved away from its seat against the under side of the ring 16 in order to permit the passage of water into the entering end of the discharge portion of the faucet, which entering end, it will be seen, is located above the said flange 4.

The valve-opening spindle is designated by 10, and it is arranged to be moved downward against the tension of a spring and by hand, whereby when the same is released the spring by reacting will return the spindle to its original position to permit closure of the valve. Said stem has at its upper end a handle of a familiar type by which it can be readily manipulated, and it extends through the sleeve 11, to the upper end of which is connected the stuffing-box 12. Said 11 sleeve is surrounded, near its lower end, by the cap-nut 13, threaded onto the upper side of the intermediate portion of the shell 2. Surrounding the lower portion of the spindle 10 is a cage 14, the upper end of which is in threaded engagement with the sleeve 11, a packing-ring 15 being disposed between the two parts. Between the lower end of the cage 14 and the annular flange 4 a similar packing-ring 16 is disposed. These packing-rings may be of any desired material, and they are adapted to engage tightly against the inner face of the intermediate portion of the shell 2 at superposed points, so as to prevent turning movement of the cage 14, and hence of the sleeve 11 when the parts are assembled. The cage 14 has a peripheral groove in which the perforations 17 open.

When it becomes necessary to repair the faucet, the cap-nut 13 is unscrewed and the parts 11 and 14 are removed, the packing or seating ring 16 being withdrawn with the part or cage 14. On the removal of said parts the water-pressure, aided by the spring 7, closes the valve 5 against the annular flange

4. It will therefore be apparent that said flange 4 is only used as a seat for shutting off the water while a worm seat-ring 16 is being replaced by a new one or while other repairs are being made. The ring 16, as stated, forms a seat for the valve 5, while the ring 15 prevents leakage from the port 3 to the outside of the shell 2 when the faucet is open.

Surrounding the spindle 10 within the sleeve 11 is a gland 18, the lower portion of which is disposed within the upper portion of the cage 14. Said gland is held in place by the conjoint action of the sleeve 11 and cage 14.

Encircling the spindle 10 is a coiled spring 19, connected in some suitable way to said spindle and also with the sleeve 11, interiorly thereof. Rigidly connected with the spindle is a cam 20, the working face of which is arranged to engage a projection 21 in the sleeve

11. The lower end of the spindle 10 fits within the circumferentially-perforated hollow boss 22, rising from the valve 5 substantially centrally thereof and against the upper face of said valve, so that when the said spindle is moved down the valve will be moved in a corresponding direction in order to unseat the same and permit the discharge of water from the faucet. Normally the spindle 10 is held up, the consequence being that the valve 5 is held seated by the pressure of the water against the under side of the same, aided by the spring 7. By turning said spindle what is in the present instance toward the left the working face of the cam 20 will be caused to ride against the fixed projection 21, so as to cause the downward movement of the spindle 10 and by said spindle a corresponding movement of the valve 5, whereby the latter will be moved away from its seat against the ring 16 in order to permit the flow of water past the valve upward and through the circumferential perforations in the boss 22, from thence into the cage 14 through the perforations 17 in the latter and into the peripheral groove thereof, and then into the delivery portion of the faucet. When the spindle was turned in the manner just indicated, the spring 19 of course was tensioned, so that when the spindle is released by the user the said spring by reacting can return the spindle promptly to its initial position, consequently permitting the quick closure of the valve by the water-pressure under the same in connection with the spring 7.

It will be evident from the foregoing description, taken in connection with the accompanying drawings, that the valve is provided on its upper side with an annular closing portion which seats against the packing or ring 16. The lower edges of the holes or perforations in the boss are above the annular closing portion of the valve which seats against the ring. The groove between said annular portion and holes serves to receive fluid which passes through the valve, so that

the latter can close with a dash-pot action, thereby preventing water-hammer so prevalent in self-closing faucets of other designs. When the handle shown in Fig. 1 is rotated in a direction to open the valve—in the present instance toward the left—said valve is moved away from said seat of the ring, permitting the fluid to force its way between the boss and the cage until the valve is further depressed to permit the said perforations or holes to be uncovered, at which time the water has a free flow through said holes, and those in the cage 14 to the outlet of the faucet body or casing 2. To effect the closure of the valve, the handle is released, whereby the spring instantly returns the stem to its original position and away from the valve, allowing the water-pressure and spring 7 to thrust the valve upward, during which motion the holes or perforations in the cylindrical boss will be covered. The water is then forced between the boss and cage into the annular groove in the upper side of the valve, so that the water in said groove will cushion the latter as it seats and prevent water-hammer.

It will be apparent that my faucet involves a valve arranged to close with the pressure, a spindle mounted for turning movement, means for causing endwise movement of the spindle in a direction to open said valve, and a spring connected with the spindle and adapted to be tensioned on the valve-opening movement thereof and to return the same by reaction to its original position when released independently of said valve.

Having thus described my invention, what I claim is—

1. A faucet having a chamber provided internally with an annular flange and with inlet and outlet portions opening into said chamber at opposite sides of said flange, a cage having a packing in its bottom arranged to seat against the upper side of the flange and peripherally perforated for the passage of water, a removable sleeve fitted into the upper side of the faucet and removably united with the upper portion of the cage, a packing-ring between the sleeve and cage and in engagement with the body of the faucet, a cap-nut threaded onto the upper side of the faucet and engaging said sleeve, a packing fitted in the upper side of the cage, means actuated by the sleeve for holding the last-mentioned packing in place, a spindle extending through the sleeve, gasket and cage, and a valve arranged to be opened by the spindle and having two seating portions, one to normally fit against the first-mentioned packing and the other to fit against the under side of said flange when the cage is removed.

2. A faucet having a chamber provided internally with an annular flange and with inlet and outlet portions opening into said chamber at opposite sides of said flange, a cage having a packing in its bottom arranged to seat

against the upper side of the flange and per-
ipherally perforated for the passage of wa-
ter, a removable sleeve fitted into the upper
side of the faucet and removably united with
5 the upper portion of the cage, a packing-ring
between the sleeve and cage and in engagement
with the body of the faucet, a cap-nut threaded
onto the upper side of the faucet and engag-
ing said sleeve, a packing fitted in the upper
10 side of the cage, means actuated by the sleeve
for holding said last-mentioned packing in
place, a spindle extending through the sleeve,
gasket and cage, and a valve having two seat-
ing portions, one to normally fit against the

first-mentioned packing and the other to seat 15
against the under side of said flange when the
cage and packing carried thereby are removed,
and said valve having a perforated boss ex-
tending freely into the cage for receiving the
lower end of said spindle. 20

In testimony whereof I have hereunto set
my hand in presence of two subscribing wit-
nesses.

JOHN F. OTT.

Witnesses:

N. DITZ,

D. W. AMES.