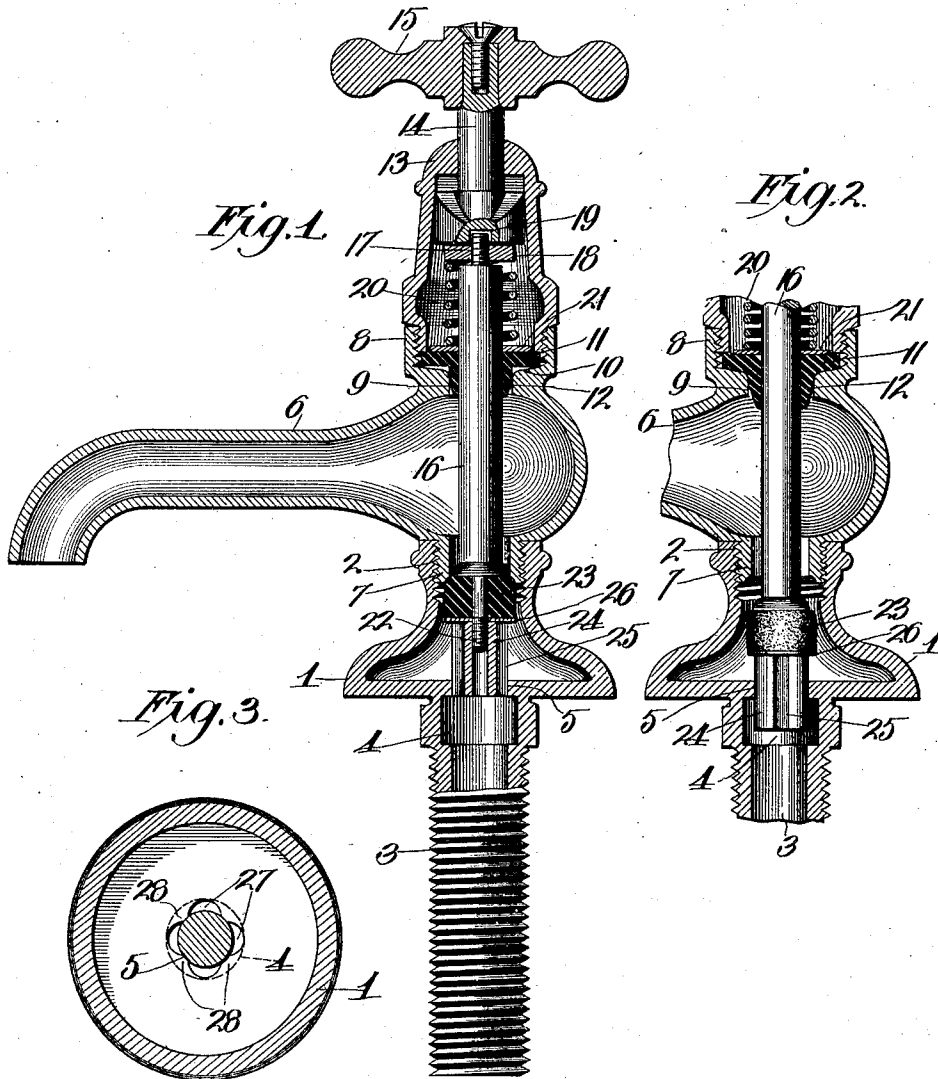


J. P. FARLEY.
 SELF CLOSING FAUCET.
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968,039.

Patented Aug. 23, 1910.



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UNITED STATES PATENT OFFICE.

JOHN P. FARLEY, OF KANSAS CITY, MISSOURI.

SELF-CLOSING FAUCET.

968,039.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN P. FARLEY, 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 Faucets, of which the following is a specification.

This invention relates to self-closing faucets and has for its object to produce a faucet of this character which cannot become easily clogged and in which the valve-stem is so guided as to practically eliminate water-hammering.

A further object is to produce a faucet wherein communication between the spout and cap is shut off by the pressure imposed in unseating the valve and also by the pressure of the water in the faucet.

A further object is to produce a faucet of simple, strong, durable and cheap construction which can be easily and quickly taken apart or put together.

With these objects in view and others as hereinafter appear, the invention consists in certain novel and peculiar features of construction and organization as hereinafter described and claimed; and in order that it may be fully understood reference is to be had to the accompanying drawing, in which—

Figure 1, is a central vertical section of a faucet embodying my invention. Fig. 2, is a similar view of a part of the faucet showing the valve unseated and communication between the cap and spout completely shut off. Fig. 3, is a horizontal section through the hollow base of the faucet and the lower part of the valve-stem to disclose waterways in the base as distinguished from the waterways in the stem as shown in Figs. 1 and 2.

In the said drawing, 1 indicates the hollow base of the faucet internally threaded at its upper end at 2, and provided with a depending externally-threaded tubular stem 3 having its bore or passage enlarged to constitute a chamber 4 communicating with the hollow base through the guide passage 5 of somewhat smaller diameter than said chamber.

6 indicates the spout provided at its closed end with a depending externally threaded nipple 7 engaging threads 2 of the base and forming a downwardly-disposed valve-seat. Vertically above the nipple, the spout is provided with an internally-threaded socket 8

and with a passage 9, leading to said socket, the passage 9 being of less diameter than the socket so as to provide an upwardly-disposed and preferably downwardly-tapering shoulder or seat 10 forming the bottom of the socket.

11 indicates an elastic packing disk or ring resting upon the bottom of the socket and provided with a downwardly-tapering tubular stem 12, occupying passage 9 and securing said disk in place and screwed into said socket is a cap 13, in the upper end of which is journaled the valve-operating rod 14 surmounted by a handle 15, said rod being of the well-known type shown which will move downward when turned, or it may be of any other suitable type.

16 indicates the valve-stem extending vertically through the closed portion of the spout and up through the disk 11 and its stem into the cap and terminating in a reduced bolt-extension 17 engaged by a nut 18 and projecting by preference into a guide socket 19 in the lower end of rod 14, and interposed between the packing ring and said nut and surrounding the stem is a helical spring 20, and a metallic washer 21, the latter resting directly upon the packing ring. At its lower end the valve depends into nipple 7 and is provided with a reduced bolt-extension 22 upon which is mounted a rubber or other elastic valve 23 and a nut 24 provided with vertical waterways or grooves 25 in its outer side, said grooved end fitting snugly and slidingly in opening 5 hereinbefore referred to, it being also noticed that a thin metal washer 26 is interposed between the nut 24 and valve to protect the latter from the impact of the water and any foreign particles which the latter may contain. With the parts thus arranged, the water coöperating with the spring 20 holds the valve elevated and against its seat as shown in Fig. 1, it being also noticed that at such time the packing ring is not subjected to the pressure of spring 20. By turning the handle to impart downward movement to rod 14 the resistance of spring 20 is overcome and the same is caused to impose downward pressure on the washer 21 and hence force the packing ring downward to substantially the position shown in Fig. 2, in which figure it will be noticed that the lower end of its tapering stem will be subjected to the pressure of the water in the spout and be caused by such water to more

tightly hug or embrace the stem and thus prevent any possible chance of water finding its way up through the cap, and also check or retard the seating of the valve by the frictional grip which it maintains on the valve stem. By thus insuring a relatively slow closing movement of the valve, the period of service of the same is materially increased and water-hammering is reduced to the minimum. Incidental to the depression of the packing-ring is the depression of the valve though to a greater extent as shown in Fig. 2, it being noticed that when it is unseated a clear and unobstructed passage is provided between the valve and its seat so that any particles of foreign matter, such as scale from the pipes, which can pass through the water-ways 25 can also pass valve and be discharged from the spout. It will also be noticed that the water-hammering is practically eliminated not only because the cylindrical nut 24 fits snugly in guide-opening 5 in the extreme lower end of the valve but also because chamber 4 permits water to surround and thus equalize its lateral pressure on said stem and enter the water-ways from the sides as well as from their lower ends, this arrangement reducing to the minimum the impact of the water from the supply pipe, not shown, upwardly on the lower end of the valve. When the depressing means is released the pressure of the water assisted by the spring 20 reseats the valve, the packing ring incidentally reassuming its original position.

In the drawings the nut 24 forms in effect a part of the stem, which part in Figs. 1 and 2 is provided with the water-ways 25. In Fig. 3, this nut or part of the stem is shown without the water ways, the latter numbered 27, being shown in the bottom of the base, the relation between the stem or nut and the base as regards lateral movement of the former, being the same as in the preceding figures, that is, the stem or nut engages and is prevented from lateral movement in any direction by the inwardly-projecting portions or arms 28.

From the above description it will be apparent that I have produced a self-closing faucet possessing the features of advantage enumerated as desirable in the statement of invention and I wish it to be understood that I do not desire to be restricted to the exact details shown and described as obvious changes will suggest themselves to one skilled in the art.

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

1. A faucet comprising a spout, a tubular portion communicating with and depending from the base of the spout and forming at its lower end a downwardly-disposed valve-

seat and provided above said tubular portion with an upwardly-projecting tubular portion communicating with the spout, a valve-stem extending through said tubular portion and said spout and provided at its lower end with a reduced threaded portion, a valve fitting upon said reduced portion and against the lower end of the nonreduced portion and adapted for seating against said valve-seat, a hollow base screwed upon the first-named tubular portion and depending therefrom and provided with an opening in its bottom and with a tubular stem depending from said bottom around the opening therein and of greater internal diameter than said opening, a nut fitting snugly and slidingly in the opening in the bottom of said base and screwed upon said reduced portion of the valve-stem for clamping the valve firmly against the lower end of the nonreduced portion of the stem, and provided externally with one or more channels through which water may pass from said tubular stem into the hollow base, a cap secured to the upwardly-projecting tubular portion of the spout, a packing ring surrounding the stem and embracing the same with a water tight relation and provided with a depending portion closing communication between the base of the spout and said upwardly-projecting tubular portion, a nut mounted upon the upper end of the stem within the cap, a helical spring surrounding the stem and bearing at its opposite sides against said packing ring and said nut, and means movable in the cap for imposing downward pressure on the upper end of the stem to overcome the resistance of said spring and unseat said valve.

2. A faucet, comprising a spout, a socket having a downwardly and inwardly sloping bottom and a passage connecting the socket and the spout; a packing ring fitting snugly in the socket and resting on the outer portion of the bottom thereof and provided with a downwardly-tapering stem engaging the passage, a cap closing the socket and bearing upon the outer portion of the packing-ring, a washer resting on the packing-ring within the cap, a valve-stem extending slidingly through the packing-ring and washer, a spring surrounding the stem and resting upon the washer; and means for depressing the said stem and causing said spring to impose a yielding downward pressure on the washer to force the packing ring downward and the tapering lower end of the stem of the same into the spout.

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

JOHN P. FARLEY.

Witnesses:

M. A. O'DONNELL,
G. Y. THORPE.