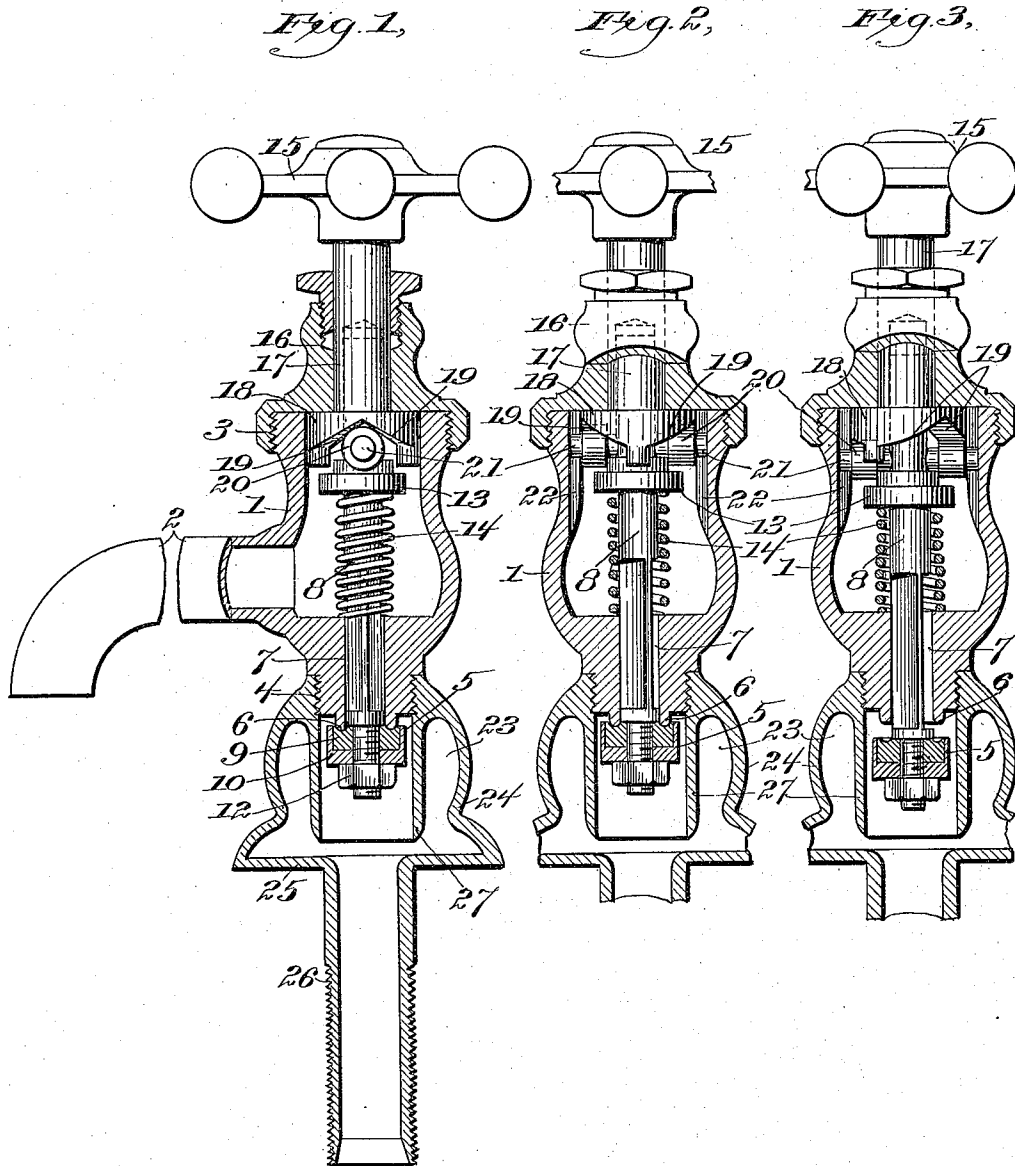


T. H. KENNEY.
SELF CLOSING FAUCET.
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1,156,010.

Patented Oct. 5, 1915.



Witnesses:
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UNITED STATES PATENT OFFICE.

THOMAS H. KENNEY, OF BOSTON, MASSACHUSETTS.

SELF-CLOSING FAUCET.

1,156,010.

Specification of Letters Patent.

Patented Oct. 5, 1915.

Application filed November 20, 1913. Serial No. 802,060.

To all whom it may concern:

Be it known that I, THOMAS H. KENNEY, a citizen of the United States, residing in Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Self-Closing Faucets, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

The present invention relates to an automatic or self closing faucet, and is embodied in a novel construction and arrangement whereby the valve is drawn to its seat by means of a spring; and held on its seat by the said spring and by water pressure, the actuator or faucet handle being arranged to push the valve away from its seat against the spring and the pressure to open the faucet.

The valve is further provided with an air trap or chamber which is incorporated in the structure itself for the purpose of preventing water hammer.

In accordance with the invention, the valve seat is formed at the bottom of the outlet chamber of the faucet which has the spout or pipe, and the valve is guided in an opening through the said outlet chamber, said spring being mounted on a stem which extends through the said opening. The said stem is provided at its lower end with the valve, and at its upper end with a flange or shoulder, between which valve and shoulder is located a spring surrounding the stem, the said spring tending to hold the valve against its seat. The valve stem is further provided with one or more lateral projections, preferably having rollers mounted thereon, the said rollers being held by the valve-spring against the face of a cam which is connected with the valve actuating handle. The lower portion of the faucet contains an air cushioning chamber, the cushioning chamber being arranged to surround the tube which incloses the valve seat, so that the water flowing into the faucet will trap a certain amount of air in said chamber, thus giving the necessary cushioning effect to prevent water hammer, if the valve is suddenly closed.

Figure 1 is a vertical section of a faucet embodying the invention, showing the valve closed; Fig. 2 is a similar view, taken on a plane at a right angle to that of Fig. 1; and

Fig. 3 is a view, similar to Fig. 2, but showing the valve open.

The body or shell 1 of the valve is provided with an outlet pipe 2, and with external screw threads 3 and 4 at its upper and lower end, the interior of said valve-body forming the chamber through which the water flows when the valve 5 is open. The body is provided at its lower end with an annular valve seat 6 surrounding a passage 7 through which the water can flow when the valve is unseated, the valve being mounted on a stem 8 which is provided with ribs or feathers by which it is guided in the passage 7, without obstructing the flow of water therethrough.

The valve 5 is constructed in the usual way, and is shown as consisting of a washer 9 held in a cup 10 which is secured to the end of the stem 8 by means of a nut 12. The valve stem and valve are free to move longitudinally to seat and unseat the valve, the stem, however, being provided near its upper end with a shoulder 13 between which and the bottom of the chamber of the valve body 1 is interposed a spring 14 which tends to hold the valve seated, as shown in Figs. 1 and 2.

For the purpose of unseating the valve 5 against the stress of the spring 14, the valve actuator or handle 15 has a stem arranged to extend through a closing member into the valve body chamber. The closing member is provided with a stuffing box and is secured to the top of the casing 1 by means of the screw threads 3. The stem 17 of the actuator is provided with a cam 18, the said cam preferably having pairs of divergent cam surfaces 19 at opposite sides respectively which engage rollers 20 mounted on lateral projections 21 from the valve stem. These rollers normally lie at the juncture of the members of the pairs of cam surfaces, allowing the valve to remain seated, as shown in Figs. 1 and 2. By turning the handle 15 in either direction, however, it is obvious that the cam surfaces 19 will force the stem 8 downwardly against the stress of the spring 14, thus opening the valve 5, which however, will close through the action of the spring as soon as the handle is released.

The stem 8 is prevented from turning by means of guides 22 which are shown as channels formed in the valve casing 1, the

said channels receiving the ends of the projections 21.

Since the valve will close suddenly when released, it is necessary to prevent, if possible, the shock and jar due to water hammer, and for this purpose a cushioning chamber 23 is incorporated in the structure itself, the said cushioning chamber being herein shown as formed in the base 24, of the faucet, which constitutes the standard portion 25 and the coupling pipe 26 which is adapted to receive the supply pipe below the bowl on which the faucet is adapted to be mounted.

In the construction shown, the part 24 is provided with a tubular extension 27 projecting downwardly and surrounding the valve seat 6, thus forming, within the part 24, an annular chamber in which air is trapped, which provides for the necessary cushioning effect.

What I claim is:

A self-closing faucet, comprising a casing containing a chamber having an outlet therefrom, and being externally screw-threaded at opposite ends; an external valve seat at the lower end of said casing, there being an inlet duct leading therefrom to said chamber; a valve cooperating with said seat; a feathered valve stem projecting through the said inlet duct from said valve into the chamber and being provided with an an-

nular shoulder within the chamber; a spring located between said shoulder and the bottom of the chamber; lateral projections at the end of the stem above the said shoulder, said projections having rollers thereon; a closing member screw-threaded on the upper end of said casing, said closing member having a longitudinal bore and a stuffing box; a rotary valve actuator fitting and extending through said bore, and provided at its lower end with an enlargement adapted to fit within the upper end of said casing, said enlargement being provided at opposite sides respectively, with pairs of cam surfaces, the said pairs being separated by stops oppositely disposed and the members of each pair of cam surfaces being adapted to bear on one of the rollers aforesaid; an internally threaded inlet member screwed on the lower end of said casing and having an inlet pipe and enlarged chamber above said pipe; and a downwardly extended tube within the last named chamber, said tube surrounding the valve and being of larger diameter than the inlet passage.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

THOMAS H. KENNEY.

Witnesses:

JAS. J. MALONEY,
M. L. MALONEY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."