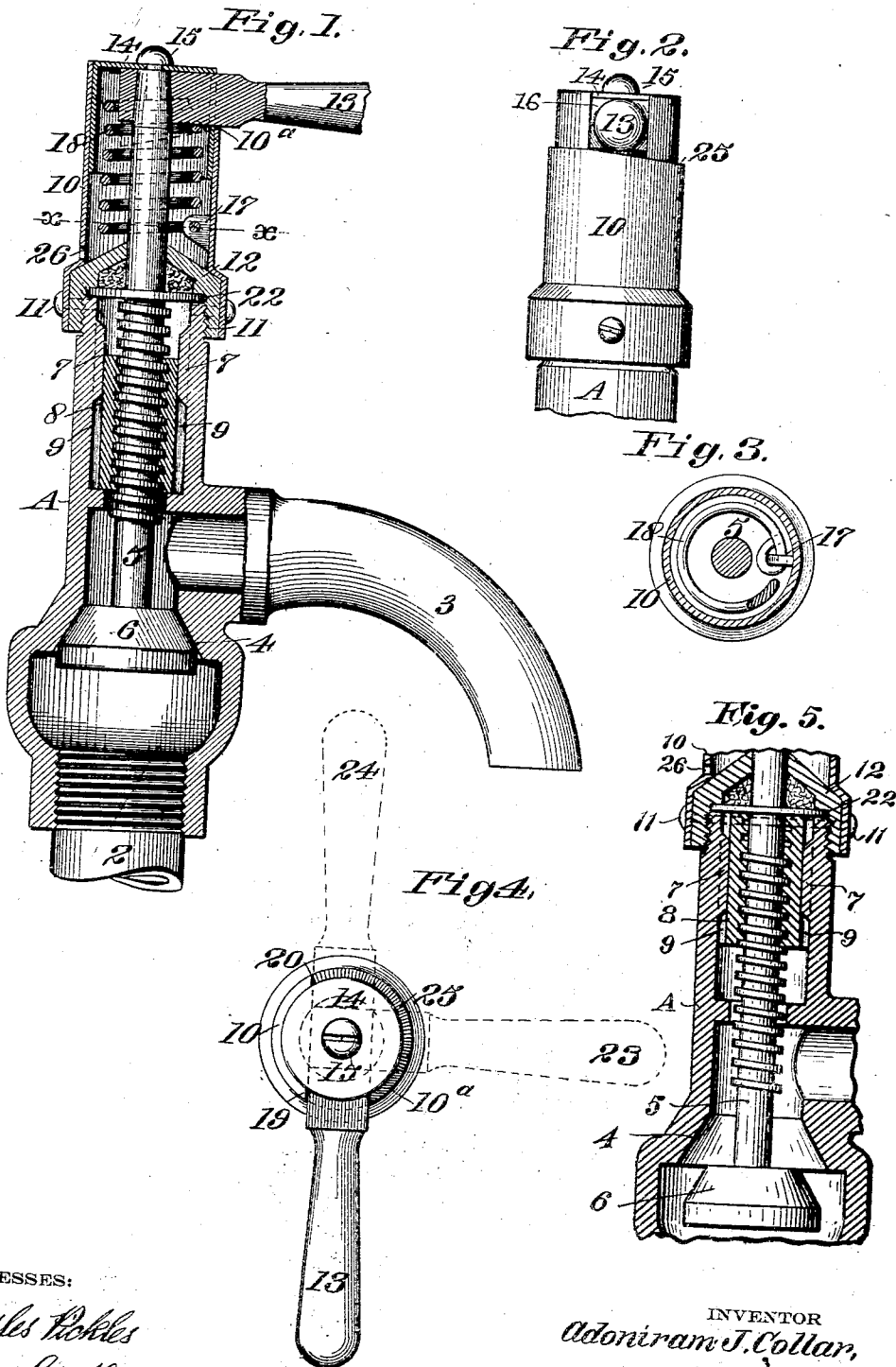


A. J. COLLAR,
 SELF CLOSING ATTACHMENT FOR FAUCETS.
 APPLICATION FILED AUG. 12, 1913.

1,142,145.

Patented June 8, 1915.



WITNESSES:

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ADONIRAM J. COLLAR, OF YREKA, CALIFORNIA.

SELF-CLOSING ATTACHMENT FOR FAUCETS

1,142,145.

Specification of Letters Patent.

Patented June 8, 1915.

Application filed August 12, 1913. Serial No. 784,350.

To all whom it may concern:

Be it known that I, ADONIRAM J. COLLAR, a citizen of the United States, residing at Yreka, in the county of Siskiyou and State of California, have invented new and useful Improvements in Self-Closing Attachments for Faucets, of which the following is a specification.

This invention relates to a self-closing faucet attachment which is particularly constructed for application to a faucet, patent for which was issued to me October 8, 1912, No. 1,040,624.

The object of the present invention is to provide a self-closing attachment for this faucet which can be cheaply manufactured, easily attached, and which will automatically return the handle to close the valve after it has been opened.

Another object of the invention is to provide means which will permit the valve to turn and grind upon the seat before the valve is opened and after it is closed, thus insuring a perfect water-tight seat at all times.

Further objects will appear hereinafter.

The invention further consists of the parts and the construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a central vertical section showing the application of the self-closing attachment to a faucet. Fig. 2 is a front elevation of the attachment. Fig. 3 is a section of same on the line X—X, Fig. 1. Fig. 4 is a plan view showing the different positions of the valve handle. Fig. 5 is a view similar to Fig. 1, showing the position of the parts when the valve handle is in the dotted line position indicated at 24 in Fig. 4.

Referring to the drawings: A indicates a faucet casing provided with an inlet opening 2 and a suitable form of discharge bib 3, between which and the inlet opening 2 a suitable valve seat 4 is formed.

5 indicates a threaded valve stem which projects through the upper end of the casing, while the other end is provided with a valve 6 which is so positioned as to engage with the seat 4.

Slidably mounted within the upper portion of the casing, between projecting lugs 7, is a nut 8 which is externally grooved, as indicated at 9, to fit the projections 7; the grooves and projections being provided for

the purpose of preventing the nut from turning.

The novelty of the present invention resides in the self-closing attachment which is here shown as consisting of a cylindrical-shaped casing 10, appropriately secured, as at 11, to the faucet casing cap 12. The upper end of the valve stem is provided with a handle 13 which projects through a cut-away portion 10^a formed on the upper end of the casing 10.

Mounted upon the handle 13 and valve stem 5 is a cap 14 which extends into the casing 10 and which is suitably secured in position upon the stem and handle by a screw 15. The forward face of the cap 14 is provided with an opening 16 through which the handle 13 extends and will thus be movable in unison with the stem and handle of the valve.

The lower portion of the casing 10 is provided with an inwardly projecting lug 17, and surrounding the upper end of the stem 5, within the casing 10 in a position where one end is secured by the lug 17 and the other by the handle 13, is a coil spring 18, which is so positioned as to normally hold the valve handle in the full line position indicated in Fig. 4, which position is limited by a shoulder 19 formed by cutting away the upper portion of the casing 10 to produce the cutaway portion 10^a previously mentioned. The extreme opposite position of the handle 13 is limited by a shoulder 20 similarly formed.

The operation of the self-closing and grinding attachment here shown will be as follows: When the valve handle is standing in the full line position, indicated in Fig. 4, the valve 6 will be entirely seated to close the flow of water through the faucet. The top end of the sliding nut 8 will, when the valve 6 is seated, be a distance below a packing ring 22, which is held by the faucet casing cap 12 as shown in Fig. 1. By turning the handle 13 from the full line position, shown in Fig. 4, to the dotted line position, indicated at 23, it will be seen that the nut will be elevated where it engages with the packing ring 22 which latter acts as a stop; at the same time the valve 6 is permitted to turn and grind against the seat, as no movement of the valve stem in a downward direction has taken place. Furthermore, the tension of the spring 18 interposed between the faucet cap 12 and the handle 13, together

with the water pressure upon the lower face of the valve, will have a tendency to force the valve with sufficient pressure against the seat to cause the desired grinding or wearing action as the valve is turned. However, the moment the nut 8 has reached the upper position, and when the handle is turned from the position indicated at 23 to the dotted line position indicated at 24, it will be seen as shown in Fig. 5 that the stem will be moved in a downward direction by the action of the threads in the nut, as the nut is stopped against any further movement by the packing ring 22. The valve will thus open sufficiently to permit a suitable flow of water through the discharge bib.

By turning the valve handle from the full line position, indicated in Fig. 4, to the dotted line position, indicated at 24, sufficient torsion strain or twist is transmitted to the spring 18 to immediately return the handle 13 to its normal position, indicated by full lines in Fig. 4; the first quarter of the return movement acting to close the valve, while the last quarter movement from the position indicated at 23, causes the valve to turn and grind on the seat. A grinding or turning movement is thus imparted to the valve both when opening and closing the valve and a perfect water-tight seat will constantly be maintained until the valve casing is completely worn.

One side of the cut-away upper end of the casing 10 is sufficiently inclined, as indicated at 25, to permit the handle with connected stem to move in a downward direction to open the valve when the handle is turned from the dotted line position, indicated at 23, to the full open position indicated at 24. Any leakage which might take place through the faucet cap 12 is instantly drained off through an opening 26 formed in the lower portion of the casing 10. A steel spring may thus be employed for the purpose of returning the valve to the closed position without undue exposure to moisture. Any suitable packing, of course, may be provided between the ring 22 and the faucet cap 12 to reduce this leakage, if any, as much as possible.

The attachment here shown is simple in construction, neat in appearance, and positive and reliable in action. The grinding movement imparted to the valve at each turn of the handle produces a perfect contact between the valve and seat, and leakage through the valve is thus entirely obviated.

The materials and finish of the several parts of the attachment are such as experience and judgment of the manufacturer may dictate.

Having thus described my invention, what I claim and desire to secure by Letters Patent, is:

1. The combination with a faucet body,

of a turnable valve stem, a casing secured to the faucet body surrounding the upper end of the stem, a handle secured to the stem, there being a cut-away part formed in the upper end of the casing through which the handle extends and by which the movement of the handle is limited, a coil spring in the casing surrounding the valve stem one end of which is secured to the handle, a lug in the casing to which the other end of the spring is secured, and a cap secured to the handle closing the upper end of the casing, said casing having a drainage opening formed in the lower end.

2. In combination with a faucet body, a valve stem, a casing connected to the faucet body and having an edge which has a horizontal and a downwardly inclined part, a handle on the stem which rides on said edge, a stop, and means operatively connected to the stem which when the handle rides on said horizontal part of said edge will be moved to engage said stop, and whereby when the handle rides on the inclined part of said edge the valve stem will be given movement to unseat the valve.

3. In combination with a faucet body, a threaded valve stem, a casing secured to the faucet body and surrounding the upper end of the stem, the upper end of the casing having a cutaway part which provides an edge having a horizontal and a downwardly inclined part, a cap closing the upper end of the casing, a handle connected to the stem and to the cap, said handle being movably engaged with said edge, a coil spring connected to the handle and casing and tending to turn the handle, a slidable nut engaged with the valve stem threads, and a stop which limits the upward movement of the nut prior to the handle engaging the downwardly inclined part of said edge.

4. In combination with a faucet body, a valve stem, a member connected to said stem, an element connected to the faucet body and having an abutment which has a horizontal and an inclined part, on which the member rides, and means whereby when said member rides on the inclined part of the abutment the valve stem will be actuated to unseat the valve, said member when riding on the horizontal part of the abutment effecting grinding of the valve on its seat.

5. In combination with a faucet body, a threaded valve stem and a member connected to said stem, a slidable nut on the stem, a stop to engage the nut to limit upward movement thereof, and means which engages said member and which holds the valve stem against lengthwise movement until the nut engages the stop.

6. In combination with a faucet body, a turnable valve stem and a member connected to said stem, means to engage said member so as to hold the stem against lengthwise

movement throughout a predetermined turning period of the stem and to then allow said stem to move lengthwise to unseat the valve, and means between the stem and faucet whereby the stem is positively moved lengthwise after the stem has been turned through said predetermined period.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ADONIRAM J. COLLAR.

Witnesses:

C. J. LUTTRELL,
MARGARET McLANE.