G. S. WILSON.

SELF CLOSING FAUCET.

APPLICATION FILED JULY 17, 1911.

1,012,779.

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Fig. 1.

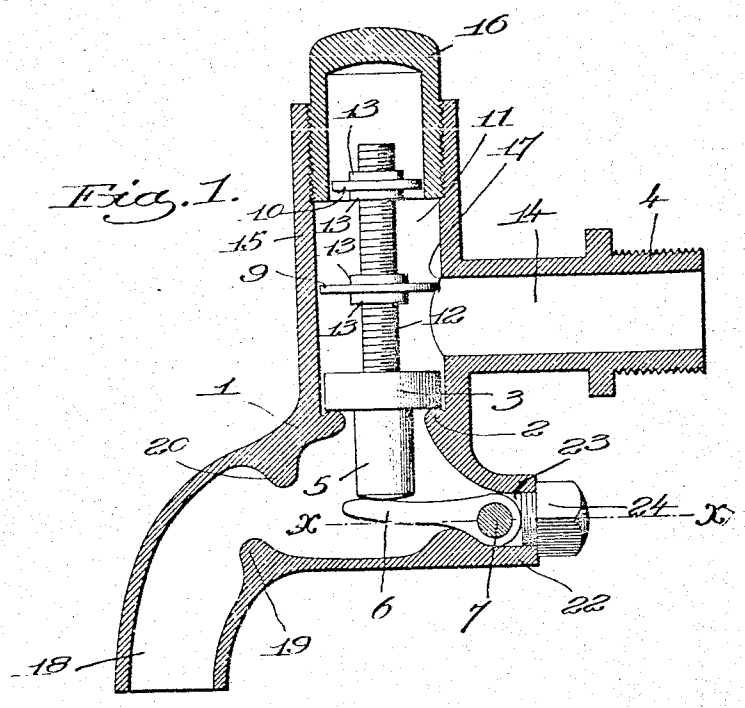
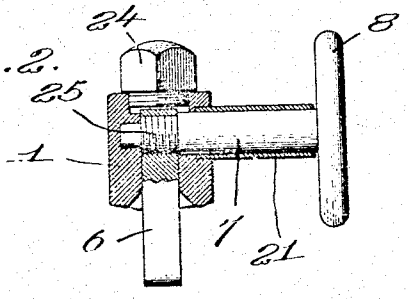


Fig. 2.



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UNITED STATES PATENT OFFICE.

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SELF-CLOSING FAUCET.

1,012,779. Specification of Letters Patent. Patented Dec. 26, 1911.

Application filed July 17, 1911. Serial No. 638,817.

To all whom it may concern:

Be it known that I, GEORGE S. WILSON, a citizen of the United States, residing at Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Self-Closing Faucets, of which the following description, in connection with the accompanying drawing, is a specification, like characters on the drawing representing like parts.

This invention relates to self-closing faucets and it has for its object to provide a novel faucet of this nature which will be non-leakable and which will automatically close itself whenever it is released by the action of the water and gravity and without the use of springs.

Another object of my invention is to provide a faucet of this nature which requires no packing and which has few parts to wear or become injured.

Another and important object is to provide a self-closing faucet which can not be easily tampered with so as to prevent it from automatically closing when it is released.

My improved faucet is especially designed for use where the water which is supplied to houses is metered, and it will prevent the waste of water by tenants. It thus is of economical benefit in all locations where it is desirable to conserve the water supply.

The features wherein my invention resides will be first described in connection with the accompanying drawings and then pointed out in the appended claim.

Referring to the drawings wherein I have illustrated a preferred embodiment of my invention Figure 1 is a vertical sectional view through a faucet embodying my invention; Fig. 2 is a section on the line *x*—*x*, Fig. 1.

The faucet comprises a body 1 having a valve seat 2 on which the valve 3 is adapted to be seated, said faucet having the usual screw-threaded connection 4 by means of which it may be screwed to a pipe or other connection. The valve 3 is provided with a projection 5 which extends downwardly through the valve seat and which is acted upon by an arm 6 carried by a rock shaft 7 that is journaled in the body of the faucet, said rock-shaft extending beyond the faucet and having on the end thereof a hand wheel 8 by which it may be turned. When the hand wheel 8 is thus turned the finger 6 is lifted and acting against the projection 5 will lift the valve from its seat.

In order to assist the valve to close automatically when the handle 8 is released and also to prevent water hammer, I have associated with the valve two refraction disks which will now be described. The body of the faucet has extending upwardly therefrom above the valve seat 2 a chamber 11, and the valve is provided with a screw-threaded stem 12 which enters the chamber 11. On this stem 12 are sustained two disks 9 and 10, said disks being preferably adjustable on the stem 12 and held in place by lock nuts 13. The disk 9 will preferably be so positioned on the stem that when the valve is closed said disk will stand just below the lower end of the chamber 11 and in line with the passage 14 leading to the valve seat. The disk 10 is preferably placed considerably above the disk 9 and both disks are of a size to permit the water to pass around them as they move up and down. The chamber 11 is closed at its upper end by means of a cap piece 16 which is screw-threaded into the extension 15 in which the chamber is formed. This is a convenient construction because when the cap 16 is removed the valve 3 and disks 9 and 10 are easily accessible and can be readily taken out or replaced, and when the cap 16 is screwed into the extension 15 a closed chamber 11 is formed. In the particular embodiment shown the disk 10 is located within the cap 16 and is, therefore, somewhat smaller than the disk 9.

In the operation of the device the valve is opened by turning the handle 8 thereby to lift the finger 6, and during this upward movement of the valve the water above the disks 9 and 10 will flow around the disks as the disks move upwardly. When the handle 8 is released the valve will close by the action of gravity and the disks 9 and 10 prevent any sudden movement of the valve and thus prevent water hammer. Moreover, as the valve moves downwardly so as to bring the disk 9 below the point 17 a portion of the water current will be deflected by said disk 9 upwardly and thus the final seating movement of the valve will be an easy one and without any hammering action.

In order to prevent any person from inserting a wire or other implement up through the delivery passage 18 of the faucet and under the valve to keep the latter

open so as to prevent the valve from closing when the handle is released, I have provided the deflecting projections 19 and 20 which are formed on the interior of the discharge passage 18. The deflecting projection 19 is on the lower side of said passage and the deflecting projection 20 on the upper side. These two projections are so situated relative to each other that it is not possible to insert a wire or other implement through the discharge passage 18 so as to make it engage the valve and lift the latter from the seat and thus hold the valve open. By making the disks 9 and 10 adjustable on the stem it is possible to place them relative to each other and relative to the lower end 17 of the passage 11 so that they will operate to prevent water hammer and to cushion the downward movement of the valve as above described. I will preferably construct my faucet so that when the valve is fully open the disk 9 will rest against the lower edge of the cap 16, said cap thus forming a stop to limit the opening movement of the valve.

In order to prevent anyone from applying a clamp, wrench or other tool to the projecting portion of the shaft 7 and thereby holding the valve open, I provide the body of the faucet with a protecting tube 21 through which the shaft extends and which tube reaches from the faucet to the wheel 8, as clearly seen in Fig. 2. This tube being stationary prevents anyone from holding the faucet open by applying a tool to the shaft 7.

In order to facilitate the assembling of the parts I propose to make the portion 22 of the faucet in which the shaft 7 is journaled with an aperture 23 through which the finger 6 may be inserted, this aperture being closed by a plug 24. In assembling the parts the finger 6 is inserted through the aperture 23 until the hole in the finger is in alinement with the shaft 7 and then the shaft may be screwed into the finger, said shaft being provided with a screw-threaded portion 25 for this purpose. The finger is thus firmly held to the shaft.

An important feature of my invention relates to the refraction disks 9 and 10 which break, refract and diverge the force of the water so as to check the gravitation of the valve and the water pressure and allow the valve to seat slowly, thus preventing water hammer and straining of the pipes. Leakage around the shaft 7 and through the tube 21 is prevented by siphonage.

The adjustability of the disks 9 and 10 permits the device to be adjusted to suit different conditions of water pressure.

While I have illustrated one embodiment of my invention I do not wish to be limited to the constructional details shown.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent is:—

In a faucet, the combination with a faucet body having a valve seat and a chamber above said valve seat, of a valve having a screw-threaded stem extending into said chamber, and two refraction disks adjustably carried by said stem, the lower disk being situated on the stem so that it is located just below the lower end of said chamber when the valve is seated.

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

GEO. S. WILSON.

Witnesses:
LOUIS C. SMITH,
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