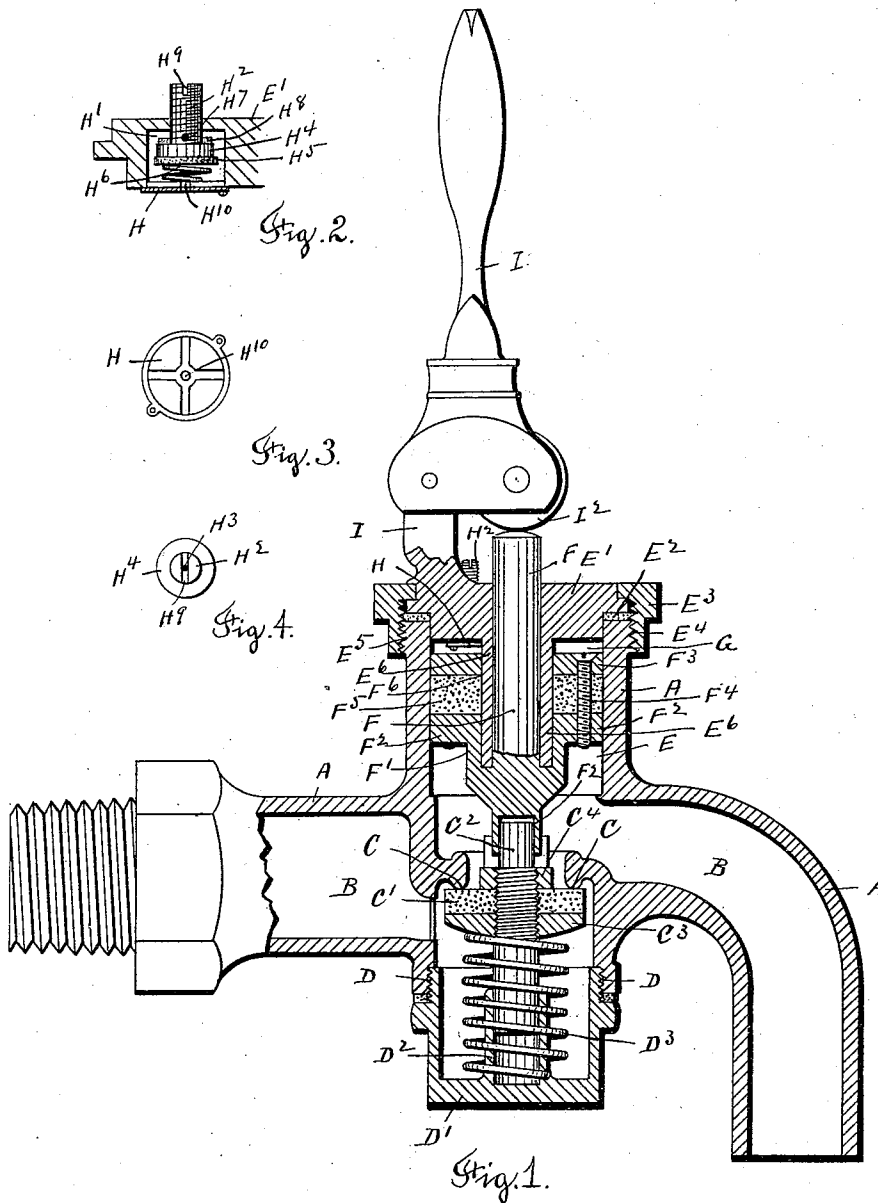


(No Model.)

W. A. TURNER.
SLOW CLOSING FAUCET.

No. 557,292.

Patented Mar. 31, 1896.



Witnesses
Al Whiting.
Emma Foster

Inventor
William A. Turner.
By his Attorney
Rufus B. Fowler.

UNITED STATES PATENT OFFICE.

WILLIAM A. TURNER, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO
EDMUND CONVERSE, OF SAME PLACE.

SLOW-CLOSING FAUCET.

SPECIFICATION forming part of Letters Patent No. 557,292, dated March 31, 1896.

Application filed March 30, 1894. Serial No. 505,761. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. TURNER, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Slow-Closing Faucets, of which the following is a specification, accompanied by drawings representing a part of the same, and in which—

Figure 1 represents a central vertical sectional view of a slow-closing faucet embodying my invention. Fig. 2 represents an enlarged view of the adjusting screw or valve by which the air-passage communicating with the piston-chamber is varied, the cap in which the adjusting-screw is held being shown in sectional view. Fig. 3 is a top view of the cap by which the air-valve chamber is closed; and Fig. 4 is a central sectional view of the adjusting-screw, the parts shown in Figs. 2, 3, and 4 being represented on a larger scale than in Fig. 1.

Similar letters refer to similar parts in the different figures.

Referring to the drawings, A denotes a shell forming the body of the faucet and containing a waterway or passage B.

C represents an annular valve-seat to receive a valve-disk C', which is carried upon a valve-stem C² and held between the washer C³ and nut C⁴.

Upon the lower side of the shell A is a circular opening provided with a screw-thread D to receive a screw-threaded circular cap D', provided on its inner side with a hollow boss D², having its axis in alinement with the axis of the annular valve C and forming a bearing for the lower end of the valve-stem C', which is capable of a vertical sliding motion within the hollow boss D². Resting upon the end of the circular cap D' and bearing against the under side of the washer C³ is a spiral spring D³, by which the valve-disk C' is held in contact with the annular valve-seat C.

Within the upper portion of the shell is a circular chamber E, communicating at its lower end with the waterway B and having its upper end closed by a cap E', which rests upon a packing E², so as to form an air-tight joint with the shell A. The cap E' is held in

place by a ring E³, having an internal screw-thread E⁴, by which the ring E³ is screwed upon the screw-threaded section E⁵ of the shell A.

Depending from the under side of the cap E' is a boss E⁶, having a concentric opening extending throughout its length and through the cap E' to receive a sliding piston-rod F, to which is attached a piston F', consisting of a lower head F², attached to the piston-rod F, and an upper head F³, attached to the lower head F² by screws F⁴. Between the heads F² and F³ is a packing-ring F⁵.

Within the piston F' and surrounding the piston-rod F is an annular chamber F⁶ to receive the hollow boss E⁶. The packing-ring F⁵ has its outer edge bearing against the inner wall of the chamber E and its inner edge bearing against the hollow boss E⁶, in order to form an air-tight packing for the piston F' and prevent the passage of water or air from the waterway B to the air-chamber G, inclosed between the piston F' and the cap E'.

An air-passage is made through the cap E' communicating with the air-chamber G, as shown in Fig. 2 of the drawings. Upon the under side of the cap E' is a circular recess closed by a cap H forming a chamber H'. Held in the cap E' is a screw H², having a central hole H³ extending throughout its length. A head H⁴ is formed upon the lower side of the screw, against which a valve-disk H⁵ is held by the tension of a light spring H⁶. A hole H⁷ in the side of the screw H² communicates with the central hole H³, and a packing-ring H⁸ is placed on the head of the screw and between it and the cap E'.

The upper end of the screw H² is provided with a slot H⁹ to receive a screw-driver, in order to enable the screw to be adjusted within the cap E'. The cap H is provided with a hole H¹⁰, directly beneath the valve-disk H⁵, forming a communication between the chamber H' and the air-chamber G. Extending upward from the cap E' is a lug I, to which is pivoted a lever I', carrying a friction-roll I² bearing upon the upper end of the piston-rod F. The lower end of the piston-rod F is hollow for a short distance, as at F², and incloses the upper end of the valve-stem C²,

which is brought into contact with the piston-rod when the valve-disk C is raised against the valve-seat, as shown in Fig. 1.

The operation of the faucet is as follows:
 5 The piston-rod F is depressed by the angular movement of the lever-handle I', pushing the valve-stem C² downward against the tension of the spiral spring D³, thereby carrying the valve-disk C' off the valve-seat C and opening
 10 the faucet. As the piston F' is moved downward in the operation of opening the faucet, a partial vacuum is formed in the air-chamber G, causing air to pass through the central hole H³ in the screw H² with sufficient
 15 pressure to carry the valve-disk H⁵ out of contact with the screw-head H⁴, compressing the spring H⁶, which possesses only sufficient tension to balance the weight of the valve-disk and hold it normally in contact with the
 20 screw-head. The air entering the valve-chamber H' passes through the hole H¹⁰ into the air-chamber G.

When the lever-handle I' is released, the tension of the spiral spring D³ is exerted to
 25 raise the valve-stem and piston F' against the pressure of the air, which becomes compressed in the air-chamber G, and the valve-disk H⁵ is lifted into contact with the screw-head H⁴ by the tension of the spring H⁶, thereby closing
 30 the lower end of the central hole H³ and allowing the air to escape from the air-chamber G only through the small side hole H⁷. As the area of the hole H⁷ is restricted, the upward movement of the valve-stem will be
 35 retarded by the pressure of the air in the air-chamber G, causing the faucet to be closed slowly and with a speed which can be varied by the adjustment of the screw H² in the cap
 40 E', so as to vary the area of the air-passage through the hole H⁷.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a slow-closing faucet, the combina-

tion of a shell A, provided with a waterway, or passage, a valve-disk by which said water- 45 way is closed, a spring applied to close said valve, a piston-rod sliding in a hollow sleeve, a piston carried by said piston-rod and inclosed in a chamber, an annular packing-ring by which said piston is packed against the 50 sides of the chamber and said hollow sleeve and a restricted air-passage communicating with the piston-chamber, substantially as described.

2. In a slow-closing faucet, the combina- 55 tion with the shell A, provided with a waterway, or passage, and a reciprocating valve-disk by which said waterway, or passage, is closed, of a piston-chamber E closed at one end by a cap E', a hollow sleeve E⁶ depend- 60 ing from said cap, a piston-rod F in contact with the stem of said valve-disk, a piston F', an annular packing-ring F⁶ arranged to bear against the side of the piston-chamber and said hollow sleeve, a restricted air-passage in 65 said cap E', and an adjusting-screw H² held in said cap, by which said air-passage is varied, substantially as described.

3. In a slow-closing faucet, the combina- 70 tion of a reciprocating valve by which the faucet is closed, a piston inclosed within a piston-chamber and operatively connected with said valve, an adjusting-screw held in the walls of said piston-chamber and provided with a central air-passage extending 75 through said screw and communicating with said piston-chamber and a valve-disk arranged to close said air-passage, said screw having a restricted hole H⁷ communicating with said piston-chamber and said air-pas- 80 sage, substantially as described.

Dated this 20th day of March, 1894.

WILLIAM A. TURNER.

Witnesses:

E. CONVERSE,

RUFUS B. FOWLER.