(No Model.)

T. LONG.

FAUCET.

No. 333,139. Patented Dec. 29, 1885.

Fig. 1.

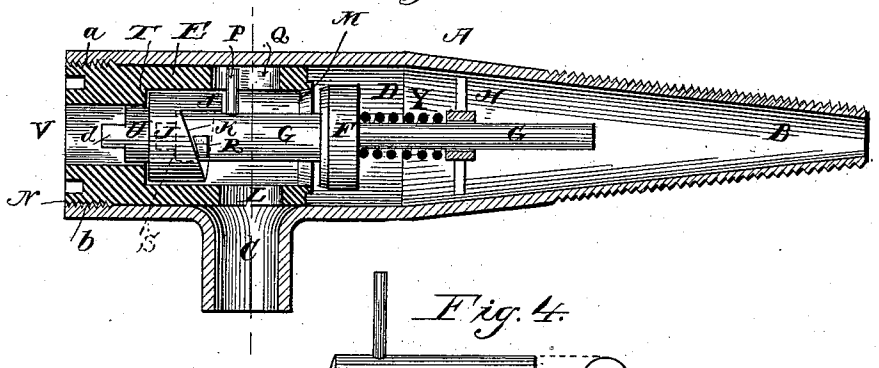


Fig. 4.

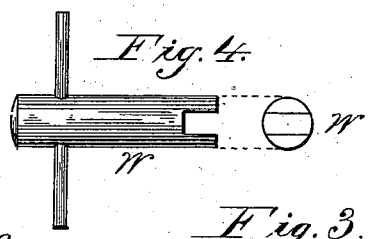


Fig. 2.

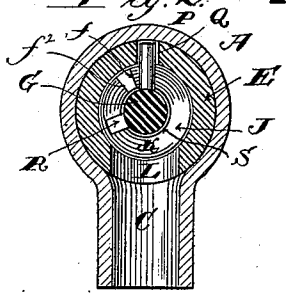
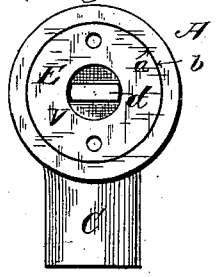


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

THOMAS LONG, OF BOSTON, MASSACHUSETTS.

FAUCET.

SPECIFICATION forming part of Letters Patent No. 333,139, dated December 29, 1885.

Application filed May 25, 1885. Serial No. 166,627. (No model.)

To all whom it may concern:

Be it known that I, THOMAS LONG, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Faucets, of which the following is a full, clear, and exact description.

This improved faucet, adapted for liquids of all kinds, is composed of a casing which has inlet and outlet passages, and its inlet suitably adapted to be secured in position for use, and of a stationary shell or cage which is located in, closely fitting, said casing, and is provided with an open passage through it, making communication between the inlet and outlet passages of said casing, in combination with a valve adapted to open and close the communication of said shell or cage with the inlet-passage of the faucet-casing, and carried by a stem that passes through a suitable guideway of the casing and extends into said shell, and therein is provided with a side arm or pin projecting into a longitudinal slot or groove of said shell, and also with a shoulder or bearing in position to rest against a cam-shaped edge of a block adapted to be turned in said shell, and to be so turned from the outside of the faucet-casing, and all in a manner from the turning or rotation of said cam-block in one direction to secure an opening of said valve, and thus a communication between the inlet and outlet passages of the faucet-casing, and in the other direction to permit of a seating and closing of said valve, and thus of a closing of said communication, and in both the opening and closing of the valve to have the valve move substantially in a direct and straight line and with no rotation.

In the accompanying drawings a faucet of the present improved construction is illustrated, and Figure 1 is a central longitudinal section. Fig. 2 is a cross-section on line 2 2, Fig. 1. Fig. 3 is an end view of the faucet, and Fig. 4 is a perspective view of a key for opening and closing the faucet shown in the preceding figures.

In the drawings, A is the casing of the faucet. The faucet-casing has an inlet-passage, B, and an outlet-passage, C, both open to and in communication with the chamber D of the casing, and in this chamber are placed a shell or cage, E, valve F, with its stem G, and guide-collar H therefor, and a block, J, having a cam-shaped edge, K, constructed and arranged as hereinafter described.

The inlet-passage B of the faucet-casing may be adapted as shown, or in any other suitable manner, for its attachment for being used.

The shell or cage E closely fits within the chamber D of the faucet-casing, crossing its outlet-passage C, and it has communication with said passage C through its side port, L, and with the inlet-passage B at its inner open end, M, and, as shown, it is secured in the faucet-casing by screwing it by its male-screw-threaded portion *a* into the female-screw-threaded portion of the open end N of the faucet-casing.

The valve F is a disk adapted to have a seat upon the inner open end, M, of the shell E, above referred to, and thus to close said open end, and the stem G of the valve extends in one direction loosely through a fixed guide-collar, H, of the faucet-casing located in the inlet-passage B thereof, and in the other direction into the shell E, and therein it is provided with a side pin or arm, P, projecting into a longitudinal slot or groove, Q, of said shell, and with a side shoulder or rest, R, in position to bear against the cam-shaped edge K of the block J, hereinbefore referred to.

The block J fits closely within the shell, and by its socket S, of suitable shape therefor, it sets over the valve-stem G and makes close bearing against the inner face of the outer head, T, of the shell, projecting by its stud U through an opening, V, in said head to the outside of the faucet-casing A. This stud is suitably adapted, as at *d*, for a key, W, of suitable shape to be attached to and detached from it.

The arrangement of the block J within the shell E, as above described, is such as with the key W applied to it, as stated, to allow it to be turned or rotated therein in either direction, and at the same time prevent leakage between its bearing-surfaces and those of the shell in which it turns. The cam-edge K of said block J is of such shape that when the block, as above stated, is turned in one direction it will, working by said cam-edge upon the side shoulder, R, of the valve-stem G, move and force the valve from its seat, and thus open the inner end of the shell E, coming finally to

a stop by the abutment of its shoulder *f* against the side shoulder, R, of the valve-stem, and that when the block J, as above stated, is turned in the other direction it will allow the valve to close upon its seat, either from the pressure of the liquid from behind it alone or from it combined with the action of a coiled spring, Y, which surrounds the valve-stem and is confined between its guide-collar H and the valve F, and which, in the opening of the valve, was compressed, coming finally to a stop by the abutment of its shoulder f^2 against the side shoulder, R, of the valve-stem.

The opening of the valve, as above described, establishes through the shell or cage E a communication between the inlet and outlet passages B C of the faucet-casing, and the closing of the valve closes and shuts off said communication.

The opening and closing of the valve of the faucet herein described is in a direct and straight line, and without rotation thereof, as in both of said movements the pin P of the valve-stem, and which is engaged with the longitudinal slot Q of the shell E, holds it securely against turning under the action of the rotating cam-block, while at the same time it offers no obstruction to the opening and closing of the valve.

The seating-face of the valve, or of its seat, or of both, may have any suitable packing applied to them, as also the bearing surfaces or faces between the cam-block and the end of shell E, in which it turns; but if said faces are properly ground such packing will not be required.

Although the valve as herein described is adapted to be opened with a key, W, it may be otherwise adapted to be operated—as, for instance, it may have a handle permanently attached to it—and it is not intended to limit the invention in that relation.

Having thus described my invention, I claim—

1. A faucet-casing, A, having inlet and outlet passages B C, in combination with a cage or shell, E, fixed in said casing, and having an open end, M, longitudinal groove or slot Q, and side port, L, a valve, F, to said shell, having stem G moving through a fixed guide, H, of said casing A and entering said shell and its groove or slot Q, shoulder R on said valve-stem, and cam-block J, having cam-edge K, with shoulders $f f^2$, located in said shell and arranged in relation to said shouldered valve-stem and adapted to be turned from the outside of the faucet-casing, substantially as described, for the purpose specified.

2. A faucet-casing having inlet and outlet passages B C, in combination with a cage or shell, E, fixed in said casing, and having an open end, M, longitudinal groove or slot Q, and side port, L, a valve, F, to said shell, having stem G moving through a fixed guide, H, of said casing A and entering said shell and its groove or slot Q, shoulder R on said valve-stem, and cam-block J, having cam-edge K, with shoulders $f f^2$, located in said shell and arranged in relation to said shouldered valve-stem, and adapted to be turned from the outside of the faucet-casing and to receive a key, W, therefor, substantially as described, for the purpose specified.

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

THOMAS LONG.

Witnesses:
WM. S. BELLOWS,
ALBERT W. BROWN.