

No. 659,285.

Patented Oct. 9, 1900.

P. F. BOYLE.
FAUCET.

(Application filed Oct. 20, 1899.)

(No Model.)

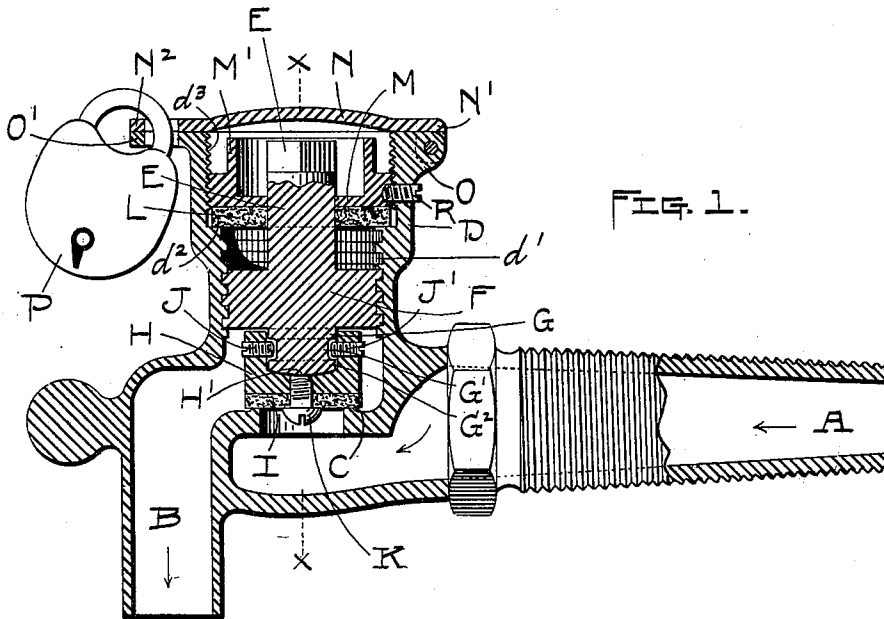


FIG. 1.

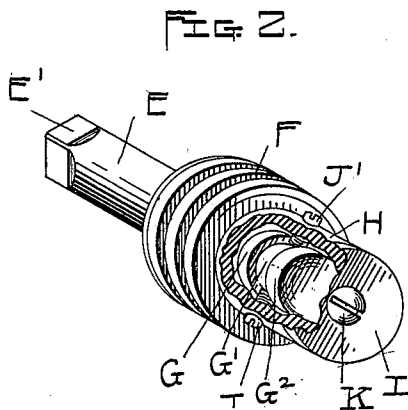


FIG. 2.

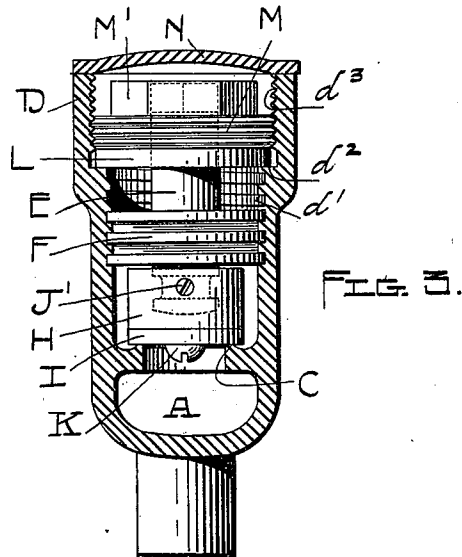


FIG. 3.

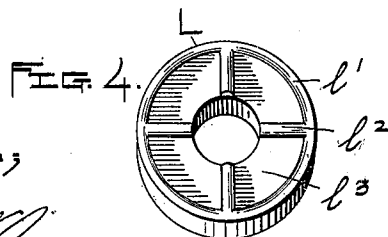


FIG. 4.

Witnesses;

G. Forrest Messing
John A. Coulter

INVENTOR,
PATRICK F. BOYLE.

By *Michael J. Lyden* Atty.

UNITED STATES PATENT OFFICE.

PATRICK F. BOYLE, OF WORCESTER, MASSACHUSETTS.

FAUCET.

SPECIFICATION forming part of Letters Patent No. 659,285, dated October 9, 1900.

Application filed October 20, 1899. Serial No. 734,273. (No model.)

To all whom it may concern:

Be it known that I, PATRICK F. BOYLE, a citizen of the United States, and a resident of Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Faucets, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention relates to improvements in faucets, and while designed more particularly for use in connection with oils and wines it may be advantageously used on any pipe for drawing any liquid.

My invention has for one object to provide a faucet that may be locked when not in use, so that all tampering with the liquid may be effectually prevented.

A further object is to prolong the life of the wearing parts and to thereby reduce the leakage of the fluid to a minimum.

In the drawings, Figure 1 is a longitudinal section of my improved faucet, showing the locking devices. Fig. 2 is a sectional perspective view showing the valve mechanism. Fig. 3 is a sectional elevation taken on the plane indicated by X X'. Fig. 4 is a perspective view of the rubber packing L.

A indicates the inlet and B the outlet or nozzle of my improved faucet. These parts are in outline of the same general appearance as similar parts in faucets generally used. Between A and B a partition is cast to form a valve-seat C, centrally bored to form a port, as shown in the drawings. Integral with parts A and B and rising perpendicularly therefrom is the tubular valve-inclosing chamber D. The interior of the lower portion of D is screw-tapped, as indicated by d' . The upper portion of d' is greater in diameter than d' and is also screw-threaded. A shouldered part or seat d^2 is interposed between d' and d^3 for the reception of a packing-gland L. The valve mechanism, preferably of brass, comprises a cylindrical stem E, provided with a key-post E', an externally-screw-threaded follower F, and a spindle G, centrally disposed relatively to F and provided with a peripheral groove G' to receive the set-screws J J' of a substantially cup-shaped valve-head H. A washer I, made of "composition" or of any suitable packing material, is secured to the bottom of H by a screw

K. The valve-head H is swiveled upon the spindle G by means of the set-screws J J', which project into the groove G', permitting H to have a slight vertical or longitudinal movement and an unimpeded rotary movement about G as an axis. The spindle G enters the cup-shaped aperture and bears against the concave bottom H' of the valve-head H. H' and the contacting end G are smoothed to diminish friction. When in this position, the set-screws J J' are substantially in the center of the groove G', which is greater in width than the diameter of the set-screws. The packing-gland L is made, preferably, of rubber, and instead of being a disk with two plane surfaces its lower face only is plane. Its upper face is provided with a peripheral flange l' and with substantially diametrical ribs l², forming recesses or depressions l³ intermediate of the ribs l². The ribs l² and flange l' project but slightly above the surface of L. They are made with comparatively broad bearing-surfaces, whereby on the application of pressure they will not be laterally distorted. Superposed upon the upper face of L is a metallic screw-threaded washer M, provided with an integral apertured hexagonal nut M', whereby M may be affixed or removed by means of a wrench. When the valve is seated, E' lies wholly within M', the top surfaces being substantially in that same horizontal plane.

The operation of my invention may now be explained. The valve mechanism is inserted in D, the threads of F meshing with the threads d' . The improved packing L is then pressed into place and the washer is screwed down tightly upon it. With the parts so arranged a key is applied to the post E', and the swiveled head H is raised or lowered at the will of the operator. Since the spindle G is perfectly free to rotate within H, bearing upon H', only and since the friction between the composition or rubber washer I and the valve-seat C is greater than the friction between the smoothed metallic surfaces H' and G², the tendency of the valve-head H to rotate is substantially prevented after I contacts with C. When the follower is operated to stop the flow of the liquid and I is forced upon C, the continued rotation of E, F, and G results in pressing I tighter upon C, but with-

out imparting any effective rotary movement to H or its washer I. In all other faucets in common use a washer analogous to I is affixed directly to the valve-stem, and as the stem is rotated to close the outlet the washer is pressed upon the valve-seat with a continued circular rubbing movement until a closure has been effected. This causes rapid wear of the washer and a consequent early leaking of the faucet.

10 In my invention the packing contacts with the valve-seat, and then any rotary motion it may have had practically ceases, the continued rotation of E imparting only a perpendicular motion to H. Thus while the material of I is greatly compressed it is not ground off, as in other constructions.

The longer the faucet is in use the smoother are G² and H' worn, thus decreasing the friction between them and also the tendency of H to rotate after contact of I and C.

The peculiar construction of packing L prevents it from sticking upon the bottom of M. It is found in practice that because the depressed portions l³ of the packing are separated from the washer M by a layer of air by reason of the flange l' and the ribs l² the washer M may be screwed tightly into position without occasioning the slightest adhesion of the rubber. This construction effectually prevents the tearing of the packing-gland.

30 When the pressure of the washer M is removed from L, the resiliency of l' and l² also tends to separate the washer from packing L.

Another feature of my invention consists of a construction whereby the mechanism of the faucet may be locked, and thus all thefts of the fluid prevented. A lip O integral with and projected from D is embraced by a bifurcation N' integral with a cover N, which substantially fits the top of valve inclosing chamber D. N terminates in a lip N², juxtaposed upon a corresponding lip O' integral with D. A hole in O' registers with a similar hole in N² for the purpose of receiving the bow of an ordinary padlock P. It will be seen that to draw any liquid through the faucet it is necessary first to open the padlock and then to manipulate stem E by means of a key adapted to engage E', which is inclosed by N. Thus my faucet is doubly locked, and hence were lock P to be broken off it would be impossible to draw any of the liquid until means for turning E had been found. Set-screw R prevents removal of M.

I do not wish to be understood as confining myself to the specific construction of locking mechanism set forth, since this construction may be altered in many different ways without varying the spirit of my invention.

The parts of my improved faucet are durable and compact in form. There is no member of the construction which cannot be quickly and easily put in order or replaced should circumstances require.

Having thus described my invention, what I claim is—

1. In a faucet, the combination of inlet and outlet pipes, an apertured valve-seat separating said inlet and outlet pipes, a valve for said valve-seat, a valve-stem in connection with said valve-seat, a resilient packing-gland bored to embrace the valve-stem and having one of its surfaces provided with an upturned flange, and with a plurality of upturned ribs, a seat for said packing-gland, a washer to securely hold the packing-gland in its seat, and means applied to the valve-stem and adapted to raise or lower the valve, substantially as described.

2. The combination with a valve-stem of a resilient packing-gland bored to embrace said valve-stem, a seat for said packing-gland, a washer to force the gland into place, said packing-gland having that surface in contact with the washer, provided with comparatively-broad upturned edges and ribs projecting slightly above the surface of the packing-gland whereby the adhesion of the packing to the washer will be prevented, substantially as described.

3. In a faucet, the combination of inlet and outlet pipes, valve mechanism, an operating-stem for said valve mechanism, a resilient packing-gland bored to embrace said stem and having one of its surfaces provided with an upturned flange and with a plurality of upturned ribs, a washer to hold the gland in place, locking means for said washer, locking means to close over and conceal the valve mechanism, substantially as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 17th day of October, A. D. 1899.

PATRICK F. BOYLE.

Witnesses:

PETER A. CONLIN,
MICHAEL J. LYDEN.