No. 731,271. PATENTED JUNE 16, 1903.

E. D. BOOZ.

GAS COCK.

APPLICATION FILED FEB. 21, 1903.

NO MODEL.

Fig. 1.

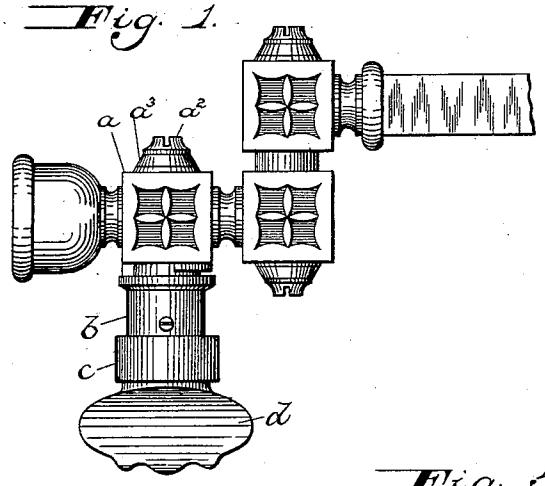


Fig. 2.

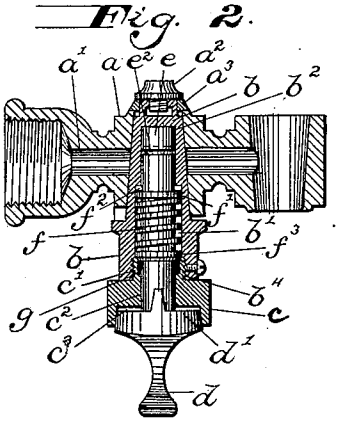


Fig. 5.

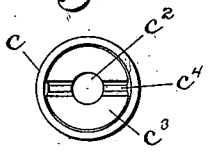


Fig. 3.

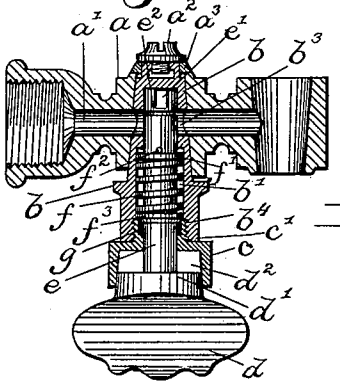


Fig. 6.

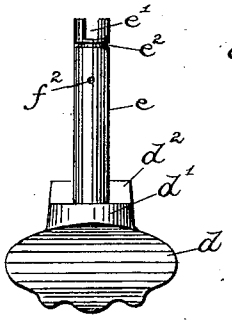
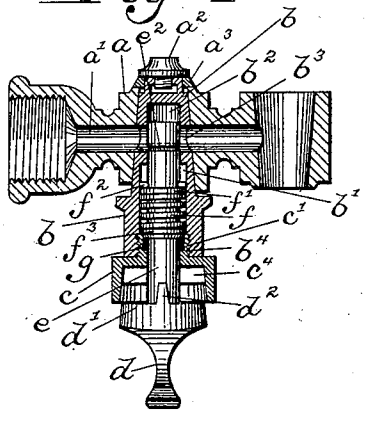


Fig. 4.



Witnesses.

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No. 731,271. Patented June 16, 1903.

UNITED STATES PATENT OFFICE.

EDWARD D. BOOZ, OF BALTIMORE, MARYLAND.

GAS-COCK.

SPECIFICATION forming part of Letters Patent No. 731,271, dated June 16, 1903.

Application filed February 21, 1903. Serial No. 144,477. (No model.)

To all whom it may concern:

Be it known that I, EDWARD D. BOOZ, a citizen of the United States, residing at Baltimore, State of Maryland, have invented certain new and useful Improvements in Gas-Cocks, of which the following is a specification.

My invention relates to improvements in gas-cocks.

One of the objects of the invention is to provide a device of such construction that in case the cock by accident is not turned entirely to the cut-off position or after turning off is accidentally turned on again the amount of gas allowed to escape will be so slight that it will be harmless.

Another object of the invention is to provide a cock with two separate passages for the escape of gas, one of which may be made to register with the supply-pipe and permit the gas to pass freely for illuminating or other purposes, and the other passage to restrict or retard the flow of gas sufficiently to merely maintain a flame for night purposes, and when the gas is turned off both passages are out of communication with the supply-passage.

Another object of the invention is to provide a construction whereby when the gas is burning low, as when used as a night-burner, it will not be accidentally turned off when it is desired to turn the gas on full, and thereby avoid the inconvenience of groping around in the dark for a match to relight the gas.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 illustrates a side view of an ordinary gas-bracket provided with my improved device. Fig. 2 is a vertical longitudinal section through the cock, showing the latter in the cut-off position. Fig. 3 is a vertical section and shows the restricted passage in register with the supply-passage. Fig. 4 is a vertical section showing the cock in the wide-open position. Fig. 5 is a detail view of the plug-cap, and Fig. 6 a detail of the key-stem.

In the drawings, a designates the socket member of a gas-bracket which is attached to a supply-pipe in the usual manner and is provided with a passage-way a', and this socket member receives the conical plug b, which latter is secured in place in any desired way, but preferably by means of a screw a^2 and washer a^3. The plug b is hollow and has a lower chamber b' and an upper chamber b^2, which latter is smaller in diameter than said lower chamber, and the wall of said upper chamber is provided with ports b^3 at diametrically opposite sides, which when the plug is turned may be brought into registry with the passage-way a'. The lower chamber b' is provided with internal screw-threads b^4. A circular cap c closes the lower chamber b' of the plug, and said cap is provided with a screw-threaded neck c', which engages the threads b^4 on the lower end of the plug. A screw passes through the lower end of the plug and impinges against the threaded neck of the cap and rigidly secures the plug and cap against independent movement. The cap is provided with a central hole c^2 and a socket c^3, and the cap of the interior of said socket is also provided with one or more slots c^4, for a purpose to be presently described. A key d has a shoulder d' and a central stem e, which latter passes up through the central hole c^2 of the cap into the plug through the chamber b' and into the chamber b^2. This stem is provided at its upper end with a cross-slot e', which forms a passage-way, and below said slot the stem is also provided with a circumferential groove e^2, which forms an annular passage-way or by-passage. When the stem is in the normal position within the plug, the passage-way or circumferential groove e^2 has position in the upper chamber b^2 in a horizontal line with the passage-way a' of the socket member, as clearly seen in Fig. 3. A spiral spring f surrounds the stem and has position in the lower chamber b', and the upper end of said spring presses against a washer f', which surrounds the stem and which is held in position by a pin f^2, which passes through the stem, while the lower end of said spring presses against a washer f^3, which fits loosely around said stem and rests on the threaded neck c' of the cap c. This spring serves to keep the stem e pressed up. A suitable packing g is placed between the neck c' of the cap and the stem and prevents the leakage of gas. The key d is provided with one or more projecting lugs d^2, which take in the slots c^4 of the cap-socket c^3 when the stem is pressed up, as seen in Fig. 3.

The operation is as follows: When it is desired to permit the gas to escape at the burner,

the key d is given a quarter-turn. As the lugs d^2 of the key are seated in the slots c^4 of the cap and the cap and plug are secured together, when the key is turned the cap and plug also make a quarter-turn, and the ports b^3 in said plug are thereby brought into registry with the passage-way a' of the socket member, as shown in Fig. 3. Now by an examination of Fig. 3 it will be seen that the circumferential groove e^2 registers with the passage-way a', and as the said groove e^2 registers with the passage-way a' and as the said groove e^2 is small compared to the said passage-way a' only a small amount of gas is permitted to flow around the stem e^4 and through the port b^3 into the passage-way a' at the opposite side of the plug. Thus the gas that escapes at the burner will be only enough to maintain light—such, for example, as would be required as a night-light. Now in order to increase the flow of gas and permit enough to escape to maintain a bright light the key d is pulled down against the tension of the spring f and the lugs d^2 withdrawn from the slots c^4. The key is then given another quarter-turn, and this turn revolves the stem e within the plug b and causes the cross-slot e' to extend parallel and register with the ports b^3 and the passage-way a', and the gas can then pass freely to the burner, as shown in Fig. 4. When it is desired to cut down the flow of gas, the key is given a quarter-turn in either direction until the lugs d^2 register with the slots c^4, at which time the spring will draw the stem up into the chamber b^2 and cut off the flow of gas through the cross-slot e', and the light is reduced.

One of the advantages of this invention is that when the night-burner is in operation and it is desired to turn the gas on fully the liability and inconvenience caused by accidentally turning the key the wrong way and cutting the flow of gas off when grasping the key is reduced to a minimum, for the reason that the first movement is to pull the key down, and when the key is drawn down it may be turned in either direction to bring the cross-slot e' into registry with the passage-way a'.

Another advantage as the result of my construction is that after the key has been operated to turn the gas entirely off and by accident the key is again turned when the hand is removed the amount of gas that can escape will only be that which is able to pass through the circumferential groove e^2, and this quantity is so small that it would not be fatal to any one.

Another advantage is that in case the key and stem are accidentally pulled down by the weight of something hanging on the bracket or for any other reason the gas cannot escape, because the plug remains in the cut-off position.

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

1. In a gas-cock the combination of a socket member having a passage-way; a revoluble plug in said socket member and having a plurality of ports adapted to register with said passage-way; a stem in said plug, said stem having two passages of unequal size, and means whereby one or both of said passages may be brought into registry with the passages of said socket member.

2. In a gas-cock the combination of a socket member having a passage-way; a plug in said socket member and having a plurality of ports; said plug also having a chamber below said ports; a stem revoluble in said plug and provided at its end with a plurality of passages and a spring surrounding said stem and having position within said chamber whereby when the spring is contracted both passages in the stem will register with the ports of the plug and when the spring is expanded only one passage in the stem will register with said ports.

3. In a gas-cock the combination of a socket member having a passage-way; a plug in said socket member and having a plurality of ports, said plug having at one end a cap which is provided with one or more radial slots; a key having a stem which is provided with two passages of unequal size, and means on the key for engaging the radial slots of said cap.

In testimony whereof I affix my signature in the presence of two witnesses.

EDWARD D. BOOZ.

Witnesses:
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G. FERDINAND VOGT.