

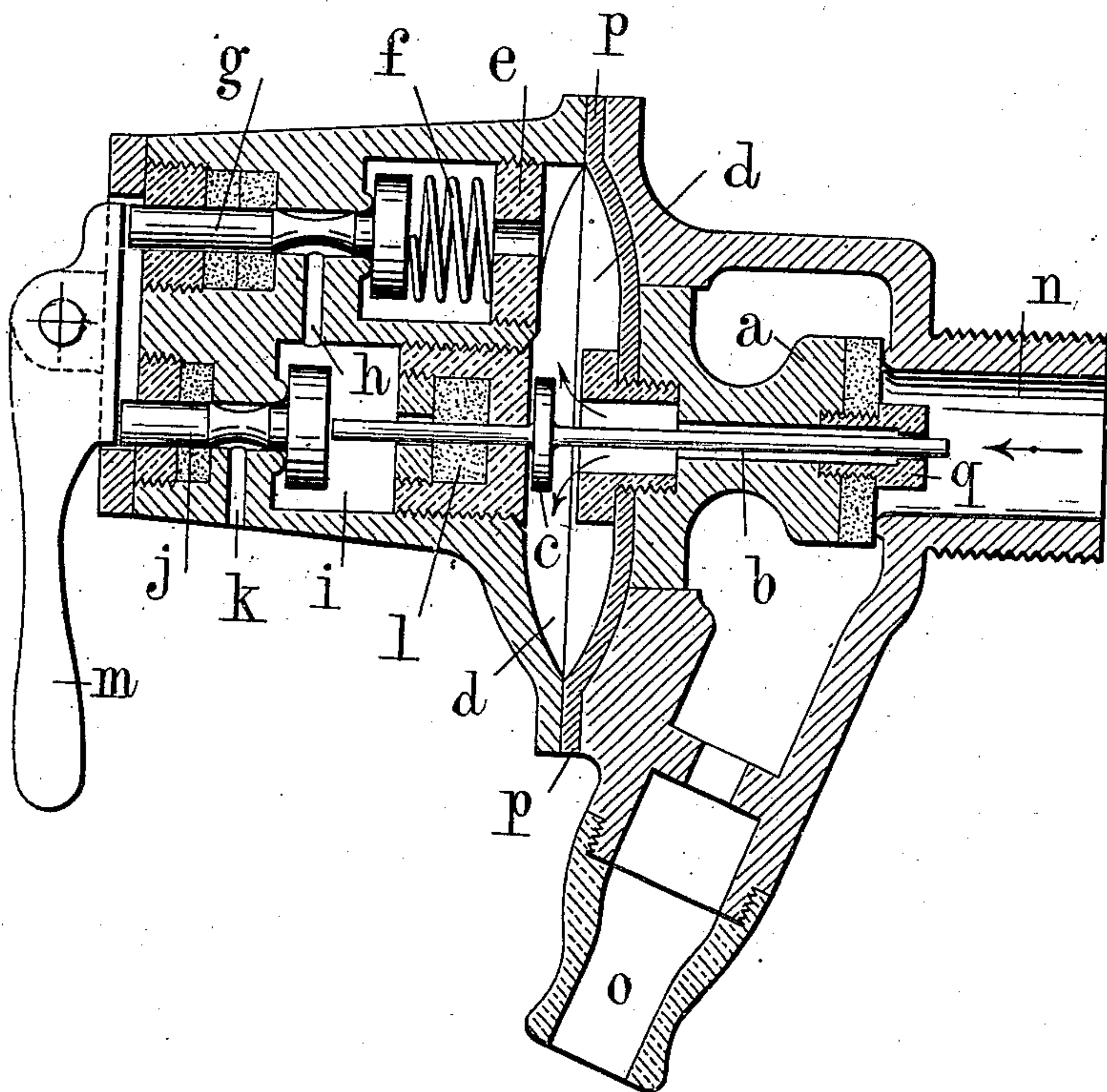
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C. DOUËNNE.
AUTOMATICALLY CLOSING COCK OR FAUCET.

APPLICATION FILED OCT. 5, 1903.

NO MODEL.



Witnesses

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CHARLES DOUËNNE, OF LYONS, FRANCE.

AUTOMATICALLY-CLOSING COCK OR FAUCET.

SPECIFICATION forming part of Letters Patent No. 753,964, dated March 8, 1904.

Application filed October 5, 1903. Serial No. 175,839. (No model.)

To all whom it may concern:

Be it known that I, CHARLES DOUËNNE, a citizen of the French Republic, residing at Lyons, France, have invented certain new and useful Improvements in Automatically-Closing Cocks or Faucets, of which the following is a specification.

This invention relates to improvements in automatically-closing cocks or faucets with determined flow.

One form of the improved cock or faucet is shown in the annexed drawing, which represents the cock in the position of rest.

Referring to the drawing, *a* is a supply or inlet valve; *b*, a pin passing through the body of said valve; *c*, a disk or plate fixed to said pin; *d*, a counter-pressure chamber, and *e* a perforated disk serving as a seat for a spring *f*, which is arranged between the said disk and a discharge-valve *g* and adapted to hold the latter against its seat.

h is a duct leading to a chamber *i*; *j*, a valve adapted to close a discharge-opening *k*, and *l* a stuffing-box arranged between the chambers *d* and *i*; *m*, a lever or handle; *n*, a water or other liquid pipe; *o*, a discharge-nozzle; *p*, a flexible india-rubber membrane, and *q* a screw-threaded ring or plug for regulating the rate of flow.

The action of the improved cock is as follows: When the lever *m* bears on the valve *j*, communication is made between the duct *h* and the discharge-duct *k*. If the lever is thereupon caused to bear on the valve *g*, liquid contained in the chamber *d* flows through duct *h* and discharge-duct *k*. The valve *j* having been opened, as described, remains in its open position until closed by rod *b*, as hereinafter described. The pressure in the chamber *d* now falls below that in the supply-pipe *n*, owing to the fact that the sectional area of the ducts *h* and *k* is larger than the space surrounding the pin *b*, and the supply-valve *a* moves under the pressure of the liquid in the pipe *n* until the rear end abuts against the disk *c*, which causes pin *b* to be displaced. Said pin then bearing on the valve *j* presses the said valve against its seat and the discharge-duct *k* is closed. The liquid being thus deprived of an outlet at *k*, the back pres-

sure is reproduced in the chamber *d*, and the excess of pressure causes the inlet-valve *a* to return to its seat, and the flow of liquid between *n* and *o* is thus interrupted. The higher the pressure the more effective the closing of the cock. Tightness is insured by means of the flexible india-rubber membrane *p*. If the lever *m* continues to bear on the discharge-valve *g*, the back pressure nevertheless continues to exist in the chamber *d*, for the reason that the valve *j* prevents the flow of liquid through the duct *k*, and the cock remains closed. If, on the other hand, pressure continues to be exerted on the valve *j*, the flow of liquid from the back-pressure chamber still remains interrupted, since the discharge-valve *g* is pressed against its seat by the spring *f* and the counter-pressure continues in the chamber *d*, and the supply-valve continuing to bear on its seat the cock is closed. It is thus physically impossible to obtain from the cock a continuous flow.

To regulate the quantity of liquid discharged by the cock, it is only necessary to alter the width of the narrow channel of the ring *q*, through which the pin *b* passes. By this means the period required by the liquid to fill the back-pressure chamber *d* is increased or reduced.

To immediately check the flow of water, it is only necessary to bear powerfully on the valve *j* by means of the lever *m*, so that the said valve will bear against the pin *b* and the disk or collar *c*, fixed to the latter, will press the inlet-valve *a* against its seat. At this moment the liquid will find no other outlet but the longitudinal channel in the supply-valve *a* and will very rapidly fill the back-pressure chamber *d*, whereupon the cock will be immediately closed.

I declare that what I claim is—

1. In an automatically-closing cock or faucet, the combination with a supply-pipe and a discharge-nozzle, of a longitudinally-perforated supply-valve, a spindle passing through said valve, an expansible counter-pressure chamber in communication with said supply-valve, means of communication between said counter-pressure chamber and the atmosphere, valves adapted to open and close said means

of communication, one of said valves being closed by spring and liquid pressure and the other by the aforesaid valve-spindle, external means for opening said valves and means for
5 regulating the discharge, substantially as described.

2. In an automatically-closing cock or faucet, the combination with a supply-pipe and a discharge - nozzle of a longitudinally - perforated supply-valve, a spindle passing through
10 said valve, an expansible counter - pressure chamber in communication with said supply-valve, means of communication between said counter-pressure chamber and the atmosphere,
15 valves adapted to open and close said means of communication, one of said valves being closed by spring and liquid pressure and the other by the aforesaid spindle, external means
20 for opening said valves means on said spindle for forcing the supply-valve against its seat, and means for regulating the flow of liquid to said back-pressure chamber, substantially as described.

3. In an automatically-closing cock or faucet,

the combination with a supply-pipe and a 25 discharge - nozzle of a longitudinally - perforated supply-valve, a spindle passing through said valve, a counter-pressure chamber in communication with said supply-valve, a flexible membrane connected to said valve and forming a wall of said chamber, means of communication between said counter-pressure chamber and the atmosphere, valves adapted to open and close said means of communication, one
30 of said valves being closed by spring and liquid pressure and the other by the aforesaid spindle, an exterior lever adapted to open said valves, a disk on said spindle for forcing the supply - valve against its seat and a screw-threaded plug for regulating the flow of liquid
40 to said back-pressure chamber for the purpose set forth.

In witness whereof I have signed this specification in the presence of two witnesses.

CHARLES DOUËNNE.

Witnesses:

JEAN GERMAIN,

GUILLAUME PIOCHE.