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T. BLEIN & E. SALLÉ.
AUTOMATICALLY CLOSING COCK OR VALVE.
APPLICATION FILED MAR. 7, 1905.

FIG. 1

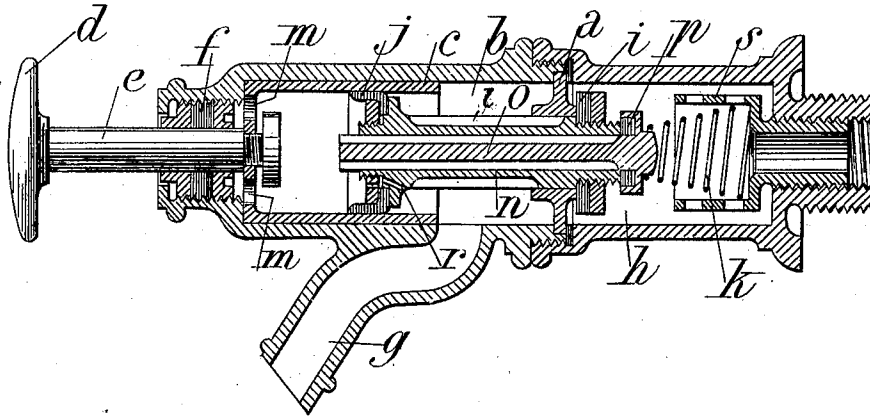


FIG. 2

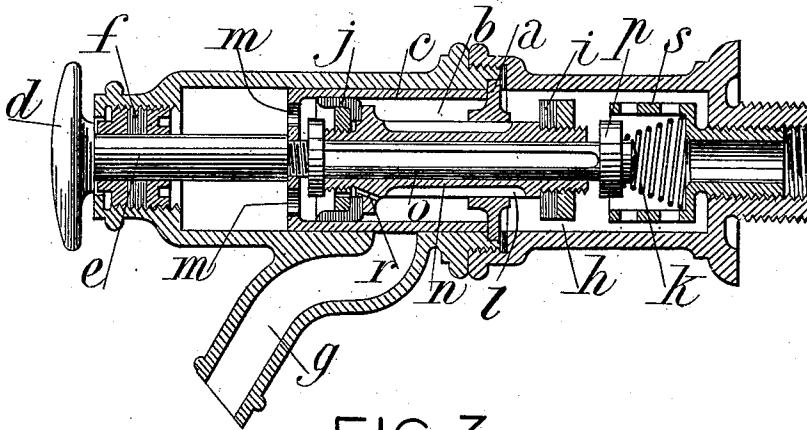
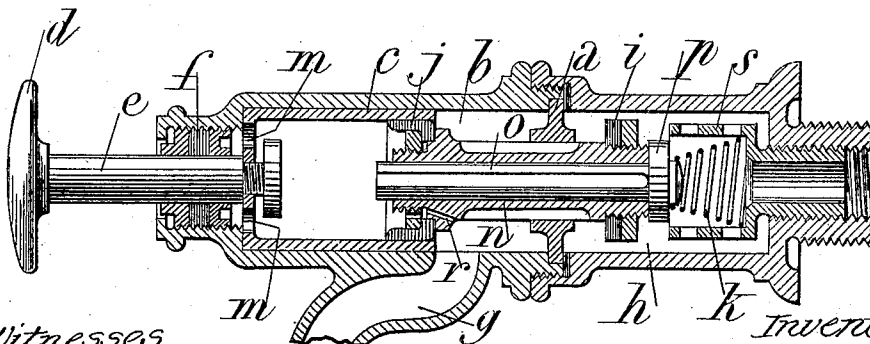


FIG. 3



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TONY BLEIN AND EDOUARD SALLÉ, OF LYON, FRANCE.

AUTOMATICALLY-CLOSING COCK OR VALVE.

No. 828,374.

Specification of Letters Patent.

Patented Aug. 14, 1906.

Application filed March 7, 1905. Serial No. 243,816.

To all whom it may concern:

Be it known that we, TONY BLEIN and EDOUARD SALLÉ, citizens of France, residing at Lyon, France, have invented new and useful Improvements in Automatically-Closing Cocks or Valves, of which the following is a specification.

This cock or valve is devised for the distribution of water to the public by domestic, industrial, or other cocks or valves. It is of the kind of those which close automatically after a predetermined delivery. It is characterized by the impossibility of preventing this closing either by fixing the operating mechanism, whether pusher, handle, &c., or by any other means. With this object the cock or valve is arranged so that the primary action exerted upon the operating mechanism while permitting the entry of water into the cock or valve prevents its exit through the outlet-nozzle. It is therefore necessary to return the operating mechanism to its primitive position to obtain the flow of the quantity of water for which the cock or valve is regulated.

The accompanying drawings show the application of this system to a push cock or valve.

Figure 1 represents the cock or valve closed and at rest. Fig. 2 shows it at the moment when the pusher has just been driven in. Fig. 3 shows it during the outflow.

The body of the cock or valve is divided into two chambers by a transverse partition *a*. The cylindrical front chamber *b* is traversed by a sleeve *c*, connected to the pusher-knob *d* by a rod *e*, passing through a stuffing-box *f*. The end of this sleeve is provided with holes *m*, which enable it to be moved without other resistance than its friction. The opening through the chamber *b* into the outlet-nozzle *g* is closed by the sleeve *c* in its rearward motion. The rear chamber *h* communicates directly with the water-entrance conduit.

The partition *a* serves as a seat for a valve *i*, opening into a chamber *h*. To the hollow rod *n* of this valve is fixed a piston *j*, working within the interior of the sleeve *c*. The rod *n* is formed with several longitudinal grooves *l*, which afford passage to the liquid when the valve is opened and which terminate at different distances from the seat of the valve *i*. The channel formed by the hollow rod *n* is closed by a valve *p*, also opening into the chamber *h*. The rod *o* of this valve is

grooved to afford passage to the liquid when the valve is open. A spring *k* tends to keep this valve closed.

The apparatus operates in the following manner: The cock or valve being at rest in the position shown at Fig. 1, if the knob *d* is pushed to its extreme position, as shown at Fig. 2, the following three effects are successively produced: First, the sleeve *c* closes the opening into the exit-nozzle *g*; second, the end of the rod *e* comes against the rod *o* of the small valve *p* and opens the latter, placing the chambers *b* and *h* in communication and equalizing the pressure exerted on the large valve *i* by that which acts on the piston *j*; third, after having pushed in the rod *o* the end of the rod *e* comes against the piston *j* and opens the valve *i*, which requires no force, consequent on the previous opening of the valve *p*. The parts are then in the position shown at Fig. 2. The water can flow into all parts of the cock or valve, but cannot leave by the exit-nozzle *g*. To obtain the flow, it is necessary to pull out the knob *d* by hand or to allow it to be pressed out by a spring to its primitive position, as shown at Fig. 3, in order to uncover the orifice leading to the exit-nozzle *g*. During this movement the small valve *p* is reclosed by the action of its spring and by the pressure of the water; but the water imprisoned in front of the piston *j* prevents the immediate closure of the large valve *i*, and the water from the conduit passing through the grooves *l* passes out through the exit-nozzle *g*. Nevertheless the valve *i*, acted upon by the pressure and by the spring *k*, tends to close, driving out the water imprisoned in front of the piston *j*, and as this water escapes slowly by leakage and, if required, through a small hole *r*, made in this piston, the valve itself is slowly closed, and the flow is stopped after a delivery, the amount of which can be regulated by the dimensions of the orifice *r*. Sudden shock is prevented by the successive closing of the grooves *l*, which diminish gradually the delivery toward the end of the flow. The duration of the flow can also be varied by reducing the stroke of the valve *i*. For this purpose a collar *s*, screwed into the end of the chamber *h*, can be brought more or less near to the head of this valve and serve as stop to it.

The operation of the cock or valve being essentially obtained by the motion of the sleeve *c*, this motion may be obtained by

other suitable means than by the knob *d*—
for example, by a lever, a screw, a rack, &c.
The forms and details of construction of the
whole of the cock or valves may be also
5 modified according to its various applica-
tions.

Having fully described our invention, what
we claim, and desire to secure by Letters Pat-
ent, is—

- 10 An automatically-closing cock or valve for
the distribution of liquid comprising a casing,
a partition, having a valve opening therein,
dividing the casing into two chambers, a
valve closing said opening, a hollow rod con-
15 nected to said valve and extending through
the opening, a piston on the other end of said
rod, said rod having grooves of different
lengths on its outer surface, a second valve

closing the end of the hollow rod and having
its grooved stem entering said hollow rod, 20
said valves opening against the flow of liq-
uid, a sliding cylinder fitting in the forward
chamber and adapted to receive the piston,
an outlet-nozzle and a stud *d* having a stem *e*
connected to said sliding cylinder and a part 25
for engaging with the stem of both valves to
open the same, said valves being closed by
the pressure of the liquid.

In testimony whereof we have signed our
names to this specification in the presence of 30
two subscribing witnesses.

TONY BLEIN.
EDOUARD SALLÉ.

Witnesses:

GASTON JEAUNIAUX.
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