(No Model.)

2 Sheets—Sheet 1.

T. & J. GALVIN.

GATE HYDRANT.

No. 458,733. Patented Sept. 1, 1891.

Fig. 1.

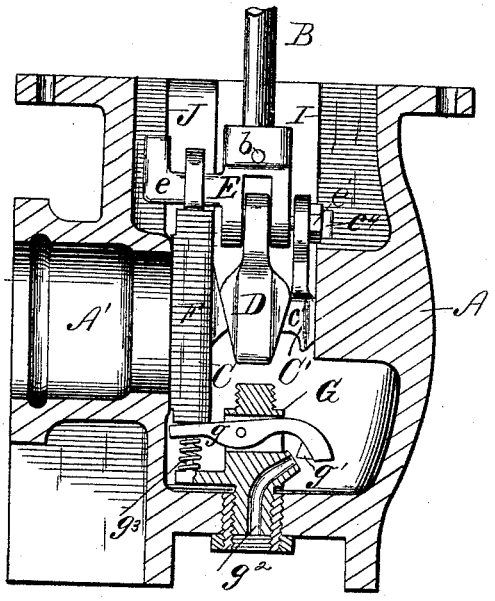


Fig. 2.

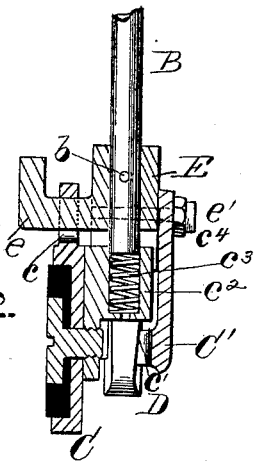
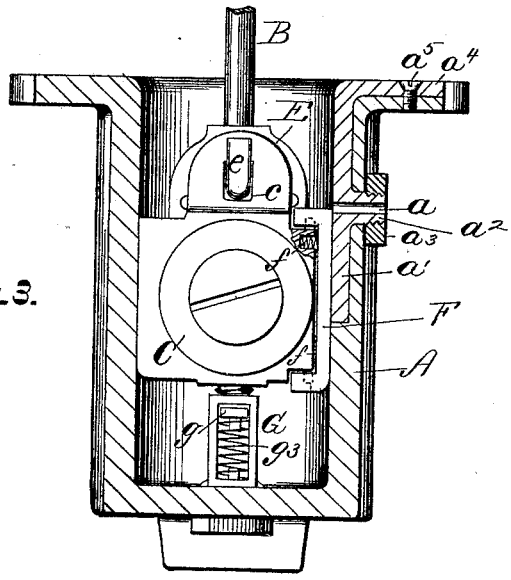


Fig. 3.



WITNESSES

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Fig. 4.

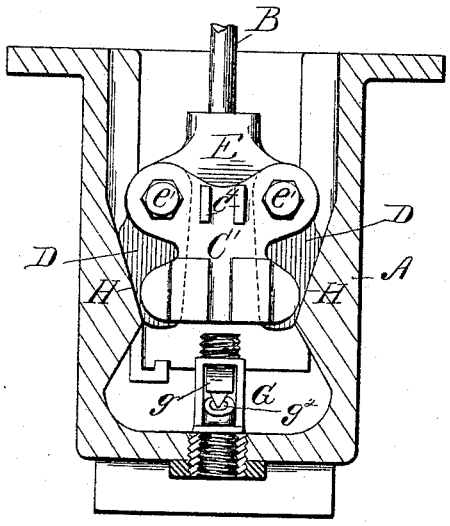
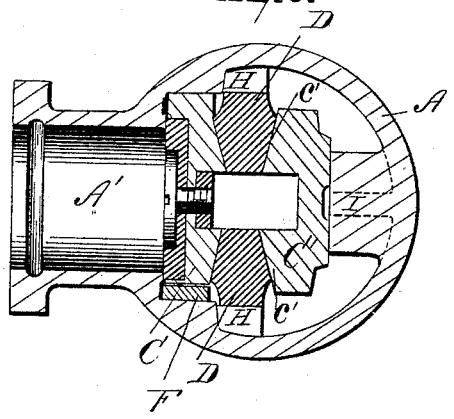


Fig. 5.



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UNITED STATES PATENT OFFICE.

THADDEUS GALVIN AND JOHN GALVIN, OF DETROIT, MICHIGAN.

GATE-HYDRANT.

SPECIFICATION forming part of Letters Patent No. 458,733, dated September 1, 1891.

Application filed October 20, 1888. Serial No. 288,647. (No model.)

To all whom it may concern:

Be it known that we, THADDEUS GALVIN and JOHN GALVIN, citizens of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Gate-Hydrants; and we declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a longitudinal section showing parts in elevation. Fig. 2 is a longitudinal section of the valve mechanism. Fig. 3 is a front elevation of the valve mechanism with adjacent part of case in section. Fig. 4 is a rear elevation of the valve mechanism, showing adjacent portion of the case in section. Fig. 5 is a horizontal section through the inlet-port with the valve closed.

It is the object of our invention to combine in a hydrant both a bottom and a side drip and an effective gate-valve that will tightly close the inlet-port when desired.

To this end A represents the casing of our hydrant, and A′ the inlet-port of the same.

B is the stem for operating the gate-valve.

C C′ are sliding disks, the former operating to close the inlet-port and the latter acting as an abutment-plate, against which to force the wedges D, used to set the valve-disk C firmly against the face of the inlet-port A′. These wedges D, are suspended from the yoke E. This yoke is provided with a hook *e*, on which the disk C is hung by means of the elongated opening *c* on its upper end. The bolts *e*′, used to suspend the wedges from the yoke, may also be utilized to fasten the abutment-disk C′ to the yoke.

c′ are beveled ridges on the inner faces of the disks C C′, against which the beveled sides of the wedges rest.

c^2 is a lug located on the inner face of the valve-disk C and bored to receive the spring c^3. The end of the stem B, passing through the yoke E and fastened thereto by the pin *b*, may rest on this spring and partially compress the same.

F is a yielding shoe or runner engaged to the edge of the valve-disk C by pins on the valve-disk entering corresponding grooves in the shoe or runner, as shown in dotted lines in Fig. 3, and held snugly against the face of the casing by a spring or springs *f*. The grooves in the shoe are closed at one end, so as to admit of the shoe being slipped on from the front of the disk and prevent it from slipping off at the back of the disk. This shoe F forms a valve for opening or closing the side drip *a*. When the casing is made of iron, as it generally is, the inner face of the casing against which the shoe F rests may be lined with a strip of brass or equivalent material *a*′, the same being fastened to the casing by a threaded lug a^2, adapted to pass through the casing and secured at the exterior by a nut a^3, run into the lug. The lug may be bored and thus serve as the drip *a*. The strip or seat *a*′ may be additionally secured to the casing by providing the upper end with a flange a^4 and passing a screw a^5 through it and into the casing.

G is the shank of the bottom drip, and is provided at its upper end with a right-hand thread and at its lower end with a left-hand thread, or vice versa, the latter adapted to be screwed through the bottom of the casing. It will be readily seen that the threading of the shank in this way is an advantage in removing the drip for cleansing or repairing, since a piece of pipe or a tool may be screwed onto the top until it comes to a seat, and its further revolution will unscrew the drip-valve and it may be returned in like manner.

g is a lever forming the drip-valve stem and fulcrumed in the shank G and provided at one end with a cap or plug *g*′, composed of rubber, lead, or other suitable packing adapted to enter in or otherwise close the drip-orifice g^2, which passes through the shank. By locating the opposite end of the valve-stem *g* slightly below and adjacent to the inlet-port it will be seen that when the main valve-disk C descends to its seat opposite the inlet-port the end of the valve-stem will be pressed down and the drip-orifice opened. Any suitable means—such as a small spring g^3, located underneath this end of the valve-stem—may be used for closing the opening when the pressure is removed by the raising of the valve-disk C.

H are inclined faces on the face of the cas-

ing, against which the backs of the wedges D are adapted to slide, and thus force the wedges toward the center of the gate.

I is a guide on which the abutment-disk C′ is adapted to slide and against which it is adapted to rest, being held firmly by the lugs c^4, and J is a groove in which the hook *e* is guided and which prevents the valve-disk C from disengaging from its hook.

The operation of the mechanism will now be understood. The valve mechanism guided by the lugs c^4, embracing the guide I and the hook *e*, traveling in the groove J, is lowered, the spring c^3, compressed by the stem B, serving to keep the valve-disk C at its lowermost position. When the wedges D reach the beveled ridges H on the casing, they will be gradually forced in, and their beveled sides bearing on the beveled faces of the disks will crowd the valve-disk out to a firm seat against the inlet-port, the abutment-disk bearing against the guide I. The valve-disk C as it comes to its seat will bear on the bottom-drip valve stem *g* and open the bottom-drip orifice, and this orifice will remain open until the valve-disk C is raised, when the spring g^3 will operate the drip-valve stem and close the valve. The side-drip orifice *a* is so located relative to the yielding shoe F that the said shoe will cover the end of the orifice, except when the valve-disk C has reached its seat, when it will leave the orifice open and allow the drip to operate. As will be seen, the use of both the bottom and side drips in connection with the valve-disk provides double security against freezing; but either the bottom or the side drip may be used alone in connection with the valve-disk. It will be observed that the end of the lower-drip orifice is located above the bottom of the casing and on an incline, thus preventing stones or sediment from collecting thereon.

It will be observed that the spring does not exert its action at the upper edge of the disk, which would serve to tilt the disk outward into contact with the valve-seat as it descends, but the spring is pocketed in a deep recess in the lug back of the valve-disk, so as to act upon the valve well down toward the middle of the same, and at the same time the valve-stem enters the top of said spring-cavity and holds the disk against tilting toward and so rubbing upon the valve-seat as it descends. It will also be observed that the arrangement whereby the valve-seat or water-inlet orifice and the drip-orifice are located contiguous to each other, so that both may be operated by the valve-disk itself, greatly simplifies the construction. It does away with the necessity of facing up two parts of the hydrant and obviates the necessity of shaping and fitting and attaching to the valve-stem some special valve or shoe for closing the drip-orifice.

What we claim is—

1. In a gate-hydrant, a valve-disk provided at its back with a projecting lug, said lug having a vertical cavity extending down nearly to the middle of the disk, and a spring located in said cavity, in combination with a valve-stem entering the top of said cavity and bearing on the spring, the construction being such that the disk is held to its lowest position by the spring and is by the stem held vertically free from contact with the valve-seat as it descends, substantially as described.

2. The combination, with a hydrant-case having a lateral water-inlet, of a valve-gate adapted to be slid down and close said orifice, and in connection therewith a removable faced plate secured to the case by a hub passing through the case and provided with an exterior nut, a drip-orifice through said hub, and a spring-actuated shoe engaged upon the side of the gate and adapted to open and close the said drip-orifice by sliding in contact with said face-plate, substantially as described.

In testimony whereof we sign this specification in the presence of two witnesses.

THADDEUS GALVIN.
JOHN GALVIN.

Witnesses:
M. B. O'DOGHERTY,
SAMUEL E. THOMAS.