G. H. DORMON.

NON-FREEZING HYDRANT.

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1,172,959. Patented Feb. 22, 1916.

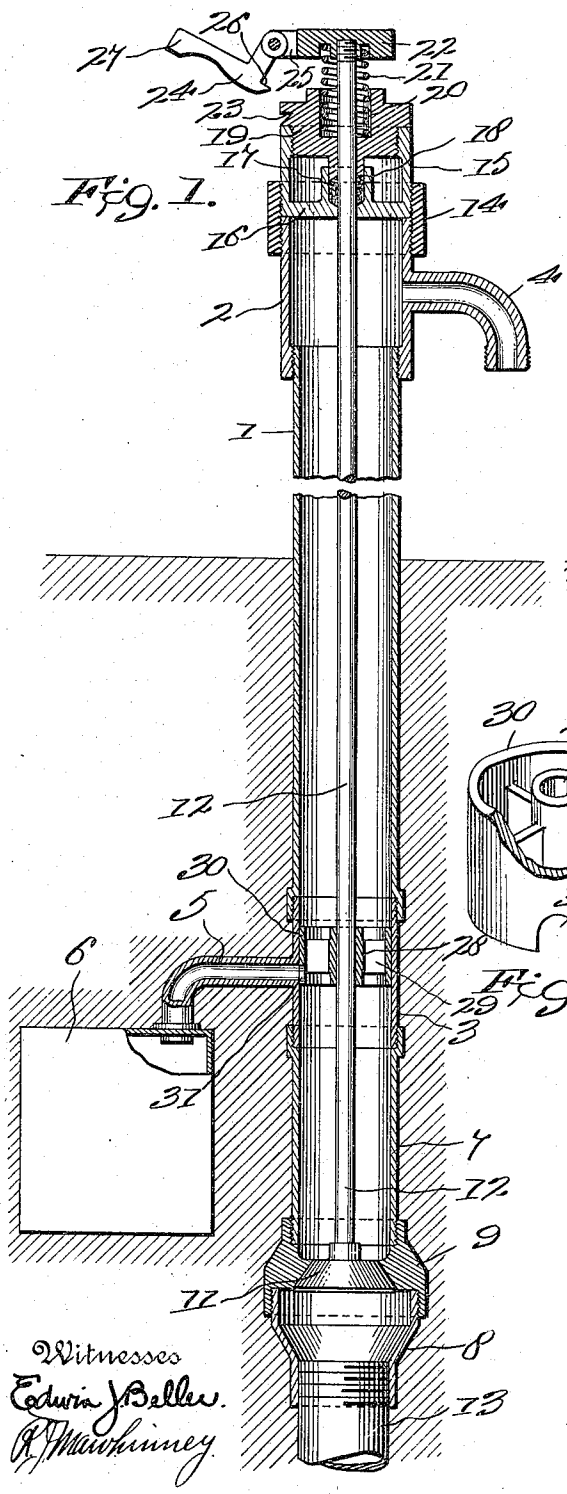


Fig. 1.

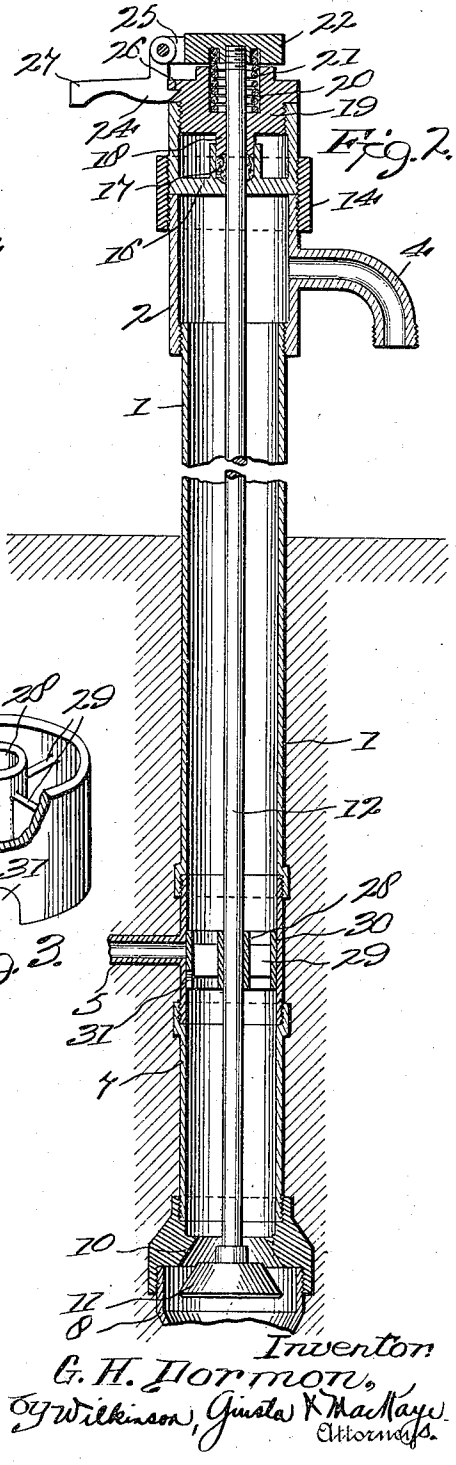


Fig. 2.

Fig. 3.

Witnesses
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NON-FREEZING HYDRANT.

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To all whom it may concern:

Be it known that I, GREEN H. DORMON, a citizen of the United States, residing at Bastrop, in the parish of Morehouse and State of Louisiana, have invented certain new and useful Improvements in Non-Freezing Hydrants; and I do hereby 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.

The present invention relates to improvements in non-freezing hydrants, and has for an object to provide an improved hydrant having an outlet for discharging the water therefrom after the main valve has been closed.

Another object of the present invention resides in providing an improved hydrant of the above described character which will be furnished with a secondary valve for controlling the discharge orifice in the stock of the hydrant, and which will preferably be connected to the main valve stem and move to close the discharge orifice when the main valve is opened.

It is a further object of the present invention to provide an improved hydrant and operating mechanism for the valves embodying means for normally maintaining the main valve closed and the secondary valve open, and automatic means for maintaining the valve stem in depressed condition.

With these and other objects in view the invention consists in the novel details of construction and combinations of parts more fully hereinafter disclosed and particularly pointed out in the claims.

In the accompanying drawings forming a part of this application, and in which similar reference symbols indicate corresponding parts in the several views: Figure 1 is a vertical sectional view of an improved hydrant constructed in accordance with the present invention and shown with the main valve closed. Fig. 2 is a similar view illustrating the main valve in open position; and Fig. 3 is a fragmentary perspective view of the secondary valve.

Referring more particularly to the drawings, wherein one embodiment of the present invention is illustrated, the stock of the improved hydrant is preferably built up of a plurality of sections including a relatively elongated section 1 threaded or otherwise formed at its ends to receive short sections 2 and 3, on the former of which is provided a discharge nozzle 4 and on the latter an eduction pipe 5, leading to and connected in the upper end of a box or receptacle 6 located beneath the surface and which may, if desired, communicate with a sewer or the like. Beneath the section 3 the stock is continued downward by sections 7 and 8 connected together by a reducing coupling 9, formed with an interior valve seat 10 with which coöperates a valve 11 on a stem 12 mounted centrally within the stock for vertical reciprocation. A section 13 is threaded or otherwise connected to the section 8, and is adapted to place the stock in communication with the main or other source of fluid supply. Above the section 2 carrying the nozzle 4, is connected by a coupling nut 14 a head 15 formed with a diaphragm 16 perforated for the passage of the valve stem 12, and providing a bearing in which the valve stem reciprocates. The diaphragm 16 is constructed with a stuffing box 17 operating in conjunction with a plunger 18 formed on a plug 19, threaded or otherwise secured in the head 15. The plug 19 is recessed, as indicated at 20, for receiving a coil spring 21 confined between said plug and a cap 22 threaded on the upper end of the valve stem 12, and normally operating to maintain said valve stem in the elevated position illustrated in Fig. 1. The plug 19 is further provided with a notch 23 coöperating with a catch 24 pivoted in ears 25 on the cap 22, and formed with a beveled under edge 26 for encountering the upper edge of the plug 19 and moving said catch outwardly to clear the same when the cap and valve stem are depressed, as clearly shown in Fig. 2. The catch 24 is also advantageously provided with a weighted outer end 27 for automatically moving the same to engage the notch 23 when the parts are moved to depressed condition, and maintain the same therein until manually lifted to disengage the same.

On the valve stem 12 is mounted a sleeve 28, from which radiate a plurality of spider-arms 29 carrying on their outer ends an open cylinder 30 snugly fitting the interior of the stock so as to provide a bearing for said valve stem 12. The cylinder 30 is formed along its lower edge with a notch 31, adapted to register with the eduction pipe 5 when the valve stem 12 is in elevated position and the valve 11 closed, whereby to permit

the water or other fluid in the stock above said eduction pipe to pass out therethrough and discharge into the receptacle 6.

When it is desired to draw fluid through the nozzle 4, the cap 22 is depressed against the influence of the coil spring 21 from the position shown in Fig. 1 to that shown in Fig. 2, and will move the valve 11 from the seat 10 and permit passage of fluid from the main below up through the several sections of the stock and past the secondary valve or cylinder 30, which will be in the position shown in Fig. 2, obstructing passage to the eduction pipe 5. During the downward movement of the valve stem 12, the beveled under surface 26 will engage the upper edge of the plug 19 and cause the pivoted catch 24 to ride thereover; and as soon as the cap 22 has been sufficiently depressed to bring the catch opposite the notch 23, the weighted end 27 will operate to move the catch into engagement with the notch and the several parts will be maintained in depressed position until the catch is manually grasped and released. After the catch has been released the spring coil 21 will come into operation and move the cap 22 upwardly, carrying the stem 12 and seating the valve 11 to prevent further admission of water to the stock. Similarly, the secondary valve or cylinder 30 will be carried upwardly with the valve stem 12, until, when the main valve has been fully seated, said cylinder will have arrived at the position shown in Fig. 1, with the notch 31 in registry with the eduction pipe 5. Through the notch 31 and eduction pipe 5 the fluid in the stock above will have free passage to the receptacle 6 or other outlet provided for the purpose, and after the same has been discharged the relatively slight amount of liquid left in the stock below the eduction pipe 5 will have ample room to expand under the action of freezing without likelihood of injury to any of the parts.

It is obvious that those skilled in the art may vary the details of construction and arrangements of parts without departing from the spirit of my invention, and therefore I do not wish to be limited to such features except as may be required by the claims.

I claim:

1. In a hydrant, the combination of a stock built up of an elongated section, relatively short upper and lower sections connected thereto, and other sections arranged between the lower short section and the main and including a coupling providing a valve seat, a valve coöperating with said seat, a receptacle independent of said stock and situated to one side thereof, a pipe connecting said receptacle and the interior of the stock through said lower short section, a secondary valve controlling passage to said receptacle and fitted to reciprocate in said lower short section, said secondary valve comprising a hub, spider arms radiating from said hub, and an open cylinder carried by said arms and having a notch in the lower edge thereof adapted to register with the opening to said pipe, and a stem connected to actuate said valves, substantially as described.

2. In a hydrant, the combination of a stock, a valve controlling passage to said stock, a stem carrying said valve, a head on said stock, a stuffing box on said head for receiving said stem, a plug provided with a recess and a notch, a plunger formed on said plug and fitting said stuffing box, a cap on the upper end of said stem, a spring confined between said cap and plug and occupying the recess in the latter, and a catch pivoted on said cap and coöperating with the notch on said plug to maintain the stem depressed, substantially as described.

3. In a hydrant, the combination of a stock built up of an elongated section, relatively short upper and lower sections connected thereto, and other sections arranged between the lower short section and the main and including a coupling providing a valve seat, a valve coöperating with said seat, a receptacle independent of said stock and located to one side thereof, a pipe connecting said receptacle and the interior of the stock through said lower short section, a secondary valve controlling passage to said receptacle and fitted to reciprocate in said lower short section, said secondary valve comprising a hub, arms radiating from said hub, and an open cylinder carried by said arms and having a notch in the lower edge thereof adapted to register with the opening to said pipe, a stem fitted to reciprocate in said stock and carrying said valves, a head on said stock, a stuffing box on said head for receiving the stem, a perforated plug fitted on said head and provided with a recess and a notch, a plunger formed on said plug and fitting said stuffing box, a cap on the upper end of said stem, a spring fitted in the recess in said plug and operating against said cap to raise the same, a catch pivoted on said cap and adapted to snap into the notch in said plug for holding the parts depressed, and a weighted arm on said catch for automatically operating the same, substantially as described.

In testimony whereof, I affix my signature.

GREEN HUNTER DORMON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."