M. M. EMERSON.

FIRE HYDRANT.

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1,126,431.

Patented Jan. 26, 1915.

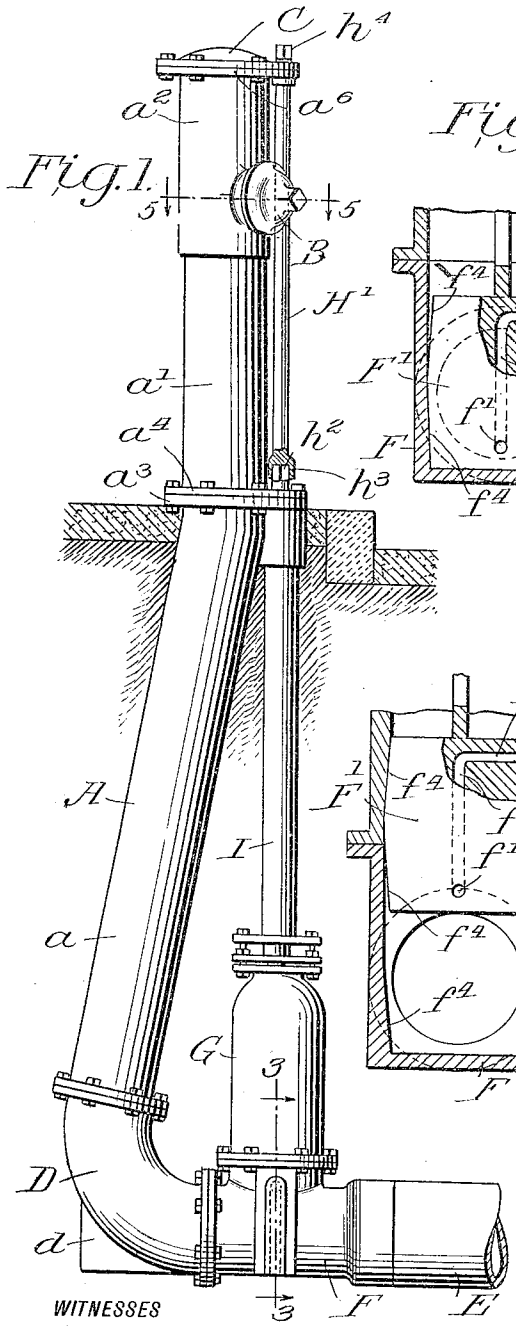

Fig. 1.

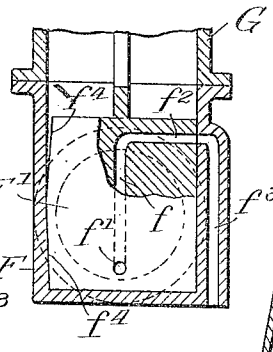

Fig. 3.

Fig. 4.

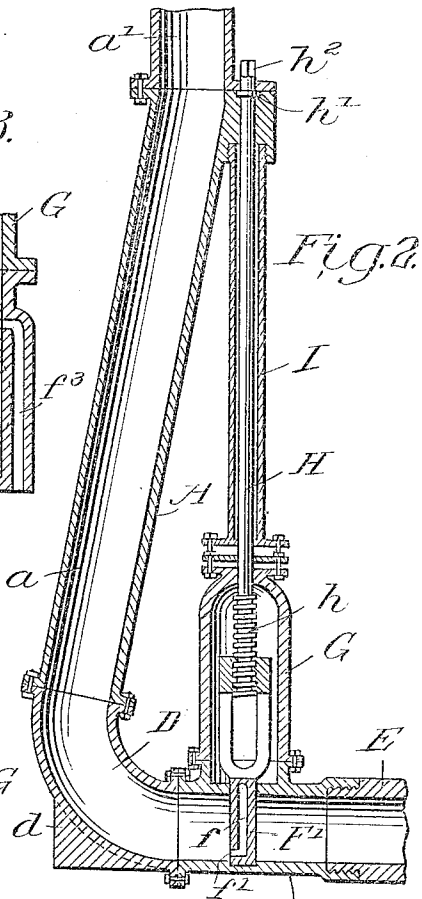

Fig. 2.

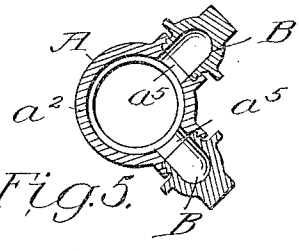

Fig. 5.

WITNESSES

Samuel E. Wade.

Myron J. Clear

INVENTOR

Moses M. Emerson

BY Munn & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE.

MOSES M. EMERSON, OF ELLENSBURG, WASHINGTON.

FIRE-HYDRANT.

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To all whom it may concern:

Be it known that I, MOSES M. EMERSON, a citizen of the United States, and a resident of Ellensburg, in the county of Kittitas and State of Washington, have invented a new and useful Improvement in Fire-Hydrants, of which the following is a specification.

My present invention relates to fire hydrants, and the object thereof is to provide a simple and efficient mechanism, wherein a free opening for the passage of water through the hydrant, unobstructed by internal mechanism, is constituted.

Further objects of my invention have to do with the detailed construction in certain respects to be hereinafter more fully described with reference to the accompanying drawing, forming part of the specification, and in which,

Figure 1 is a side elevation, Fig. 2 is a central vertical section through the lower portion including the valve. Fig. 3 is a detail vertical cross section through the valve, taken on the line 3—3 of Fig. 1 and illustrating the same in closed position. Fig. 4 is a similar view, illustrating the valve in open position, and Fig. 5 is a cross section through the upper portion of the standpipe, taken substantially on the line 5—5 of Fig. 1.

Referring now to these figures, the standpipe A of my improved hydrant may be of any required diameter and may be cast in one piece. It is preferably made or built up of sections a, a' and a^2, however, as I have shown in the several figures, the lower sections a and a' being provided at their abutting ends with flanges a^3 and a^4, respectively, which flanges abut one another and are secured together in order to join the sections a and a' at a point substantially level with the ground line. The upper sections a' and a^2 may be threadedly united or otherwise joined at their abutting ends and the latter section is preferably provided with a pair of laterally projecting outlets a^5 in each of which is normally threaded a closing plug B, as best shown in Fig. 5. The top of the upper section a^2 is also provided with a flange a^6, a top C being secured upon this flange in order to close the upper section and form an air chamber in the head of the standpipe above the outlets a^5 in order to relieve the water hammer. The lower end of the lower section a of the standpipe is connected, by means of an elbow D, with the horizontal feed pipe E, and between the elbow D and the adjacent end of the feed pipe E is a short valve section F in which a vertically reciprocatory gate valve F′ is disposed.

Projecting upwardly from the valve section F is a dome or casting G in which the upper portion of the valve F′ may work, this upper portion of the valve being threadedly engaged by the lower end h of an operating gate rod H extending upwardly along one side of the standpipe and through a surrounding tube or sleeve I to protect the same below the surface of the ground, the extreme upper end of the rod H being extended through portions of the connecting flanges a^3 and a^4 above mentioned and provided with a circular flange or collar h' seated between these flanges a^3 and a^4 in order to constitute a thrust bearing.

As seen in Figs. 1 and 2 the upper extremity of rod H which terminates slightly above the flanges a^3 and a^4 is squared to receive the similarly shaped socket h^3 of a rotatable rod H′ extending upwardly along the upper sections a' and a^2 above the surface of the ground and having its upper end journaled through the flange a^6 and cap C at one side and also provided with a squared upper extremity h^4. Thus the upper ends of the rods H and H′, being similarly squared, are each adapted to receive a wrench or like implement by which the lower rod H may be rotated to raise or lower the valve F′ as desired, so that in case of accident, should the upper portion of the hydrant be broken off, the valve F′ might still be operated by an implement in connection with the then exposed end rod H as will be seen by reference to Fig. 2.

Referring now to Figs. 2, 3 and 4, it will be seen that the valve F′ is provided with a vertical channel f, the lower end of which communicates with a branch port f' extending through one face of the valve in the direction of the elbow D and adjacent the lower edge of the valve, the upper end of the channel f communicating with a lateral branch f^2 extending through one side of the valve and adapted, when the valve is in closed position, to register and communicate with the upper lateral portion of a channel f^3 formed vertically in one side wall of the valve pipe section F and open at its

lower end. It will also be noted that the relatively opposite side edge of the valve F′ has inclined portions f^4, which coöperate with similar inclined inner faces of the valve pipe section F, so that the valve F′ will, along its side edges, be snugly seated in both the closed and opened positions thereof, respectively, shown in Figs. 3 and 4.

In operation with the valve F′ raised and open, water rushes under pressure through the feed pipe E and upwardly through the standpipe to the outlets a^5, but when the valve is lowered to closed position and the rush of water thereby checked, a quantity of the water will be left in the standpipe A and might, unless discharged, freeze therein in cold weather and cause bursting of the standpipe. With the channeled valve I employ, however, it will be seen that the water so held in the standpipe will find its way out through the channels f, f', f^2 and f^3 and inasmuch as the branch channel f' is located adjacent the lower edge of the valve, practically all of the water in the standpipe may be removed through siphon action when the head of the water falls below that point wherein gravity alone would cause its discharge.

The several parts otherwise than those particularly described, may be formed in any suitable manner although I preferably cast the elbow D with an angular blocking shoe d in order to prevent disconnection from the feed pipe resulting from main pressure.

My invention provides a hydrant which, from the foregoing, may be readily seen to be economical and highly efficient and in which no restrictions are imposed upon the free passage of liquid therethrough when the valve is open and the hydrant in use, there being no internal mechanism to occupy any portion of the area of the valve section or the standpipe in this position of the parts.

I claim:—

1. In a hydrant, the combination of a standpipe having a free unobstructed passage for the flow of liquid therethrough in use, a valve pipe section disposed adjacent the lower end of the standpipe and provided with a vertical channel in one side wall having a lateral port at its upper end opening into the interior of the pipe section, and a gate valve movable vertically in the said valve pipe section and having a vertical channel communicating at its lower end with a port opening through the face of the valve adjacent the standpipe and leading at its upper end to a lateral branch channel opening through one side edge of the valve and adapted to communicate with the lateral port of the wall channel when the valve is in closed position.

2. In a hydrant, the combination of a standpipe, a main, a valve pipe section disposed between the standpipe and the main, and a gate valve disposed transversely within and across the valve pipe section and movable vertically with respect thereto, said valve and said valve pipe section having channels therein adapted to register and communicate when the valve is in closed position and to form a continuous fluid passage, the inner end of which opens toward the standpipe at the lower end of the valve and the outer end of which opens exteriorly through one side wall of the valve pipe section laterally from the valve, all for the purpose described.

3. In a hydrant, the combination of a standpipe having a free unobstructed passage therethrough for the liquid in use and formed in sections certain of which have connecting flanges secured together substantially at the ground line, a valve for controlling the supply of liquid to the standpipe, a main valve operating rod rotatable to control movement of the valve and having a squared upper extremity projecting slightly above the said connecting flanges, a cap closing the upper end of the standpipe, and a supplemental valve operating rod having a squared socket at its lower end to fit the squared end of the main rod, said supplemental rod extending upwardly along the exposed portion of the standpipe and having its upper end journaled through the cap at one side and provided with a squared extremity, all for the purpose described.

MOSES M. EMERSON.

Witnesses:
A. L. Slemmons,
C. L. Collins.