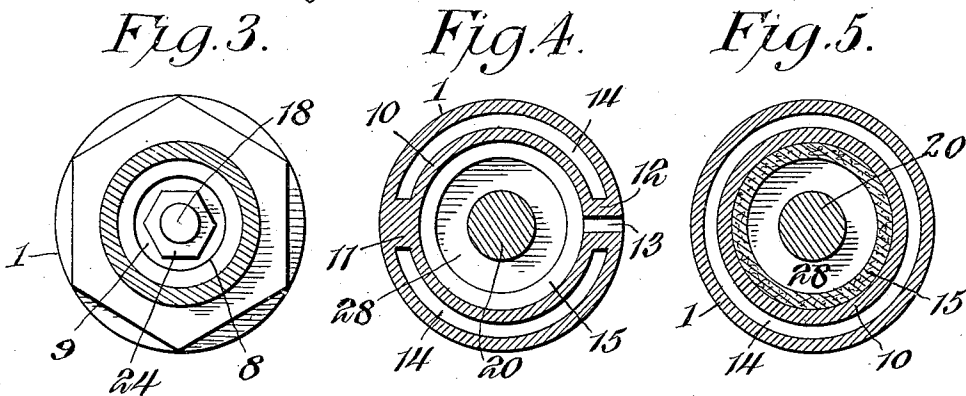
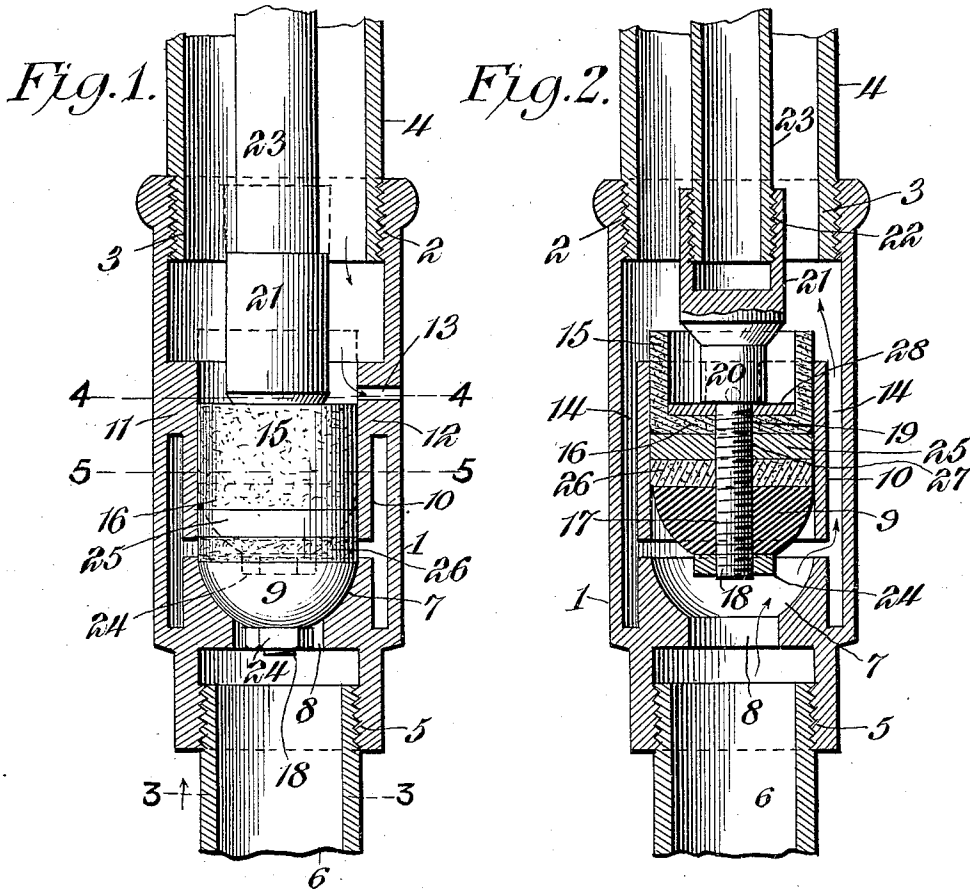


J. D. MARTIN.
FROST PROOF HYDRANT.
APPLICATION FILED OCT. 16, 1911.

1,050,033.

Patented Jan. 7, 1913.



James D. Martin, Inventor

Witnesses
Jas. E. McLaughlin
H. F. Riley

By *E. G. Siggers*
Attorney

UNITED STATES PATENT OFFICE.

JAMES D. MARTIN, OF OSKALOOSA, IOWA, ASSIGNOR TO WESTERN MANUFACTURING CO., OF OSKALOOSA, IOWA.

FROST-PROOF HYDRANT.

1,050,033.

Specification of Letters Patent.

Patented Jan. 7, 1913.

Application filed October 16, 1911. Serial No. 654,919.

To all whom it may concern:

Be it known that I, JAMES D. MARTIN, a citizen of the United States, residing at Oskaloosa, in the county of Mahaska and State of Iowa, have invented a new and useful Frost-Proof Hydrant, of which the following is a specification.

The invention relates to improvements in hydrants.

The object of the present invention is to improve the construction of hydrants, more especially that shown and described in Patent, No. 934,082, granted to me Sept. 14, 1909, and to provide a simple, efficient and comparatively inexpensive valve structure, capable of effectually shutting off the flow of water by a sliding movement, and equipped with means for permitting the water in the stand pipe of the hydrant to drain into the ground after the valve is closed, whereby freezing of water within the hydrant is prevented.

With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawing, and pointed out in the claims here-to appended; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawing:—Figure 1 is a vertical sectional view of the lower portion of a hydrant provided with valve mechanism constructed in accordance with this invention, the valve being closed. Fig. 2 is a similar view, taken at right angles to Fig. 1, the valve being open. Fig. 3 is a horizontal sectional view on the line 3—3 of Fig. 1. Fig. 4 is a similar view on the line 4—4 of Fig. 1. Fig. 5 is a horizontal sectional view on the line 5—5 of Fig. 1.

Like numerals of reference designate corresponding parts in all the figures of the drawing.

In the accompanying drawing in which is illustrated the preferred embodiment of the invention, 1 designates a lower reducing cap or casing interiorly threaded at its upper end 2 to screw on the lower threaded end 3

of the stand pipe 4 of a hydrant, similar to the reducer or reducing member shown in the said patent. The cap or casing 1 is also provided with a reduced interiorly threaded lower end 5 for the reception of the threaded end of a water supply pipe 6, designed to be connected with a water main, or other source of water supply.

The valve casing is provided in its lower portion with an annular valve seat 7 having a concave face surrounding an opening 8 and adapted to receive a half ball 9, which is received wholly within the concavity of the valve seat, whereby when the valve is closed, the half ball 9 will be effectually prevented from spreading or flattening out. The valve, which is reciprocated by the lever or handle, shown and described in the afore-said patent, is guided by an inner approximately cylindrical wall or shell 10, arranged in spaced relation with the outer wall or body of the lower cap or casing and connected with the same by opposite integral portions 11 and 12, one of which is provided with a drain or frost opening 13, adapted, after the valve is closed, to permit the water in the stand pipe 4 of the hydrant to drain off into the ground below the freezing line, so as to prevent the hydrant from freezing in cold weather. The spaces 14 between the integral connecting portions 11 and 12 provide water passages around the valve and permit the water from the service pipe 6 to pass upward around the valve and into the stand pipe of the hydrant when the valve is raised from its seat 7. The seating of the valve cuts off the flow of water and prevents the same from entering the upper portion of the lower cap or casing.

The vent or frost hole 13, which is located above the valve seat, is preferably horizontal, as clearly illustrated in Figs. 1 and 4 of the drawing, and in order to prevent leakage of water through the vent or frost hole when the valve is open, the valve is equipped with an approximately cup-shaped washer 15, constructed of leather, or other suitable material and consisting of a vertical cylindrical portion and a horizontal bottom portion 16. The vertical cylindrical portion snugly fits the cylindrical inner wall or lining, and it is open at the top so that when

the valve is opened the water pressure within the hydrant will operate interiorly of the cup-shaped washer and will force the cylindrical portion thereof outwardly and press the same tightly against the inner face of the inner cylindrical shell and thereby effectually cover or close the frost or drain hole. When the valve is seated, the upper edge of the cylindrical or cup-shaped washer lies below the plane of the frost or drain hole, as illustrated in full lines in Fig. 1 of the drawing, and when the valve is opened, the cup-shaped washer is carried upwardly to the position illustrated in full lines in Fig. 1 and caused to cover the frost or drain hole.

The rubber half ball 9 is provided with a central vertical opening 17, and is arranged on a vertical screw 18, which also passes through a central opening 19 in the bottom portion 16 of the cylindrical washer. The vertical screw is provided with a cylindrical head 20, having an enlarged cylindrical upper portion 21 forming a socket and interiorly threaded at 22 to receive the lower threaded end of a tubular valve rod 23. The half ball valve 9 is retained on the screw by a nut 24, and disks 25 and 26 are interposed between the cup-shaped washer and the half ball valve. The disks 25 and 26 are of a diameter to snugly fit the interior of the inner wall or shell and have their peripheral edges arranged in flush relation with the cup-shaped washer and the upper end of the half ball. The upper disk 25, which is preferably constructed of metal, is provided with a central threaded opening 27, and it operates as a nut to clamp the bottom 16 of the cup-shaped washer against a metallic washer 28, fitted against the shoulder formed by the head of the screw and arranged within the cup-shaped washer at the bottom thereof. The disk 26, which is interposed between the metallic disk 25 and the elastic half ball, is preferably constructed of leather, or other flexible material. By this construction the cup-shaped washer is securely clamped between two metallic surfaces and is securely connected with the valve rod.

Having thus fully described my inven-

tion, what I claim as new and desire to secure by Letters Patent, is:—

1. In a hydrant of the class described, the combination of a lower valve casing having an annular valve seat, a cylindrical shell located within the valve casing and spaced from the walls thereof to provide an intervening annular space, which entirely surrounds the said shell, the lower end of the latter being spaced from the valve seat to provide an annular entrance to the said space, an integral connecting portion arranged at the top of the annular space and connecting the shell with the valve casing and having a frost hole extending from the inner face of the shell to the outer face of the valve casing, a reciprocatory valve guided in the cylindrical shell and including a lower half ball movable to and from the valve seat, an approximately cup-shaped washer located above the ball and arranged to cover and uncover the frost or drain hole and open at the top, whereby the interior water pressure will force the washer outwardly and cause the same to form a tight closure for the frost hole, and means for connecting the half ball and cup-shaped washer with the valve rod.

2. In a hydrant of the class described, the combination with a valve casing having an annular valve seat, of a screw provided at its upper end with a head having means for connecting it to a valve rod, an elastic half ball arranged on the lower portion of the screw in position for engaging the valve seat, a cup-shaped washer arranged on the upper portion of the screw adjacent to the head thereof and having an open upper end, a metallic disk threaded on the screw and engaging the bottom of the cup-shaped washer, a flexible disk interposed between the metallic disk and the elastic half ball, and a nut arranged on the lower end of the screw and engaging the half ball.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JAMES D. MARTIN.

Witnesses:

J. M. BRYSON,

J. F. MOOTHART.