

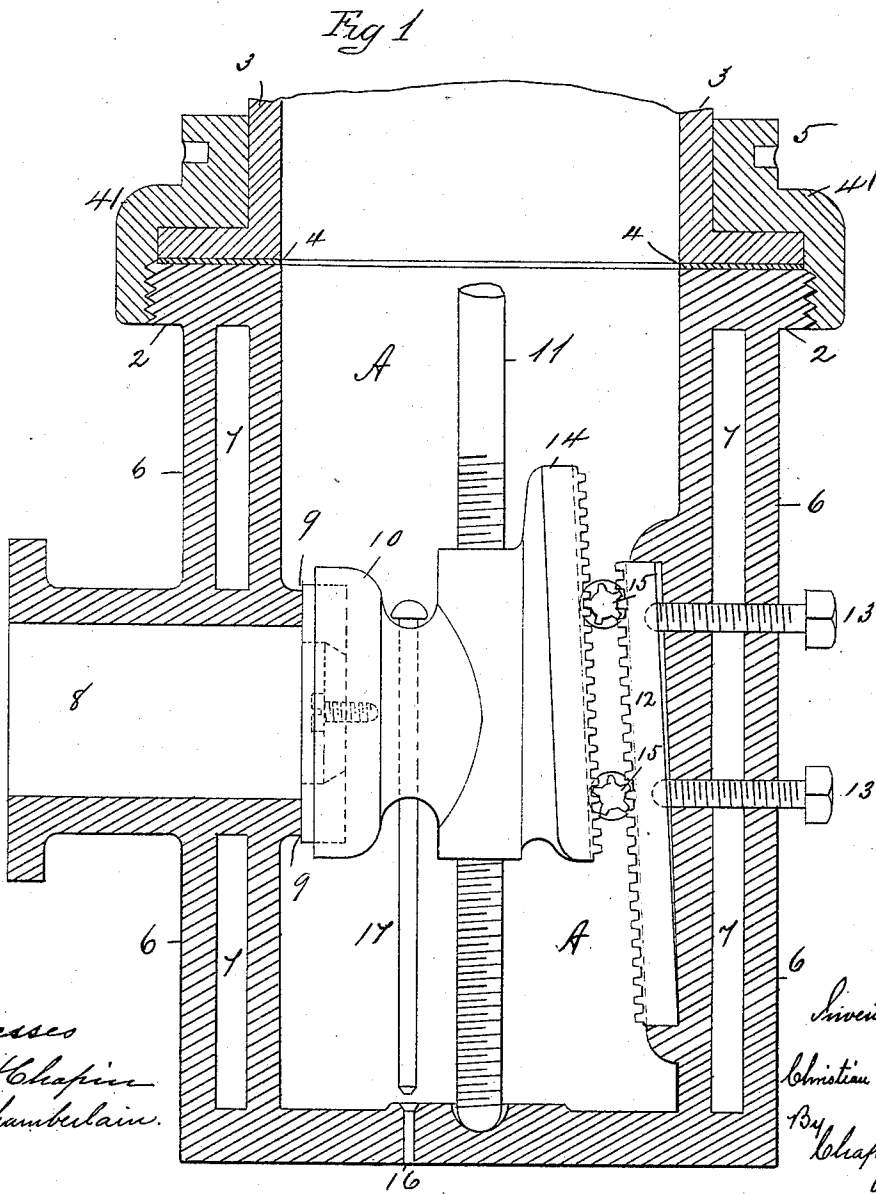
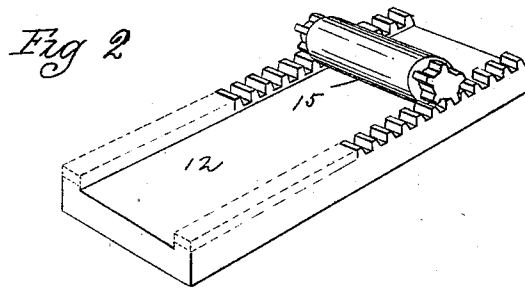
(No Model.)

C. H. BAUSH.

HYDRANT:

No. 358,719.

Patented Mar. 1, 1887.



Witnesses
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UNITED STATES PATENT OFFICE.

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HYDRANT.

SPECIFICATION forming part of Letters Patent No. 358,719, dated March 1, 1887.

Application filed October 11, 1886. Serial No. 215,868. (No model.)

To all whom it may concern:

Be it known that I, CHRISTIAN H. BAUSH, a citizen of the United States, residing at Holyoke, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Hydrants, of which the following is a specification.

This invention relates to improvements in hydrants, and to that class of the latter having a valve-case provided with a valve or gate adapted to be moved vertically to open and close the inlet to the hydrant; and the invention consists in the peculiar construction and arrangement of the gate and means for causing it to bear against and to recede from its seat on the valve-case when it is moved, all as hereinafter fully described, and set forth in the claim.

In the drawings forming part of this specification, Figure 1 is a vertical section of the valve-case of a hydrant and of a portion of its upper tubular part, showing in side elevation a valve and devices for guiding it relative to its seat constructed according to my invention, said figure showing also means for attaching the upper part of the hydrant to the case. Fig. 2 is a perspective view of the adjustable gate-shoe and one of the friction-rolls between the latter and the gate.

In the drawings, A is the valve or gate case of the hydrant, constructed of cast-iron in the usual manner, of which 2 is the flange on its upper end, against which is secured the lower end of the upper or stand-pipe portion, 3, of the hydrant, the usual packing-gasket, 4, being interposed between the lower end of said stand-pipe and said flange 2, a coupling-ring, 4, being placed on said pipe 3, and bearing against a flange on its lower end and screwing on the periphery of said flange 2, thereby securing said stand-pipe to the gate-case A in such manner that when the hydrant is set the delivery-nozzle thereof, on the upper end of said stand-pipe, can be conveniently set to point in any required direction without taking out and replacing any connecting-bolts, as heretofore practiced. Said coupling-ring 4 is provided with spanner-holes 5, whereby provision is made for turning it, as may be required with a common spanner.

The valve-case A is constructed with a jacket, 6, which surrounds it, leaving a space, 7, between said jacket and the valve-case, whereby an air-space is provided which prevents the cold from easily penetrating the interior of the hydrant, thereby obviating the danger of freezing. The valve-case A is provided with the usual inlet-pipe, 8, around the end of which, on the inner side of said case, is formed the valve-seat 9. The valve or gate 10 is hung upon the usual screw-rod, 11, the lower end of which is seated in the bottom of the case A, and its upper end passes through the stand-pipe 3 in the ordinary way, and is turned by a suitable wrench or crank to operate said valve. The face of said valve may be of metal, like the valve itself, properly faced off to fit closely against the valve-seat 9; or it may be provided, as shown, with a face or packing of suitable form to fit against said seat, made of wood, vulcanized rubber, leather, or other suitable yielding material, secured to the valve by a central washer and screw, as shown in dotted lines in Fig. 1.

In order to provide means for insuring an absolutely close contact of the face of the valve with its seat when the inlet to the hydrant is to be closed, and for quickly relieving the valve of the resisting effect of said pressure against its seat against the movement thereof in a line with the seat-face, the valve-case is provided with a gate-shoe, 12, which is located in a recess formed on the inner side of the case A, opposite the rear side of the valve 10, and two screws, 13, pass through said case against the rear side of said shoe to provide means for adjusting it toward and from the rear side of said valve, more or less, as may be desired. The said gate-shoe is constructed, preferably, of metal and with two parallel racks on its side opposite the valve 10, which racks project somewhat above the side of said shoe, as shown in Fig. 2, thereby forming a species of groove therebetween. The rear side of the valve 10 is provided with an inclined projection, 14, the face of which, opposite the shoe 12, is of a form corresponding to the contiguous face of said shoe—that is to say, with corresponding racks thereon and the aforesaid groove between the latter. The shoe 12 occupies a position normally on

the inner side of the valve-case A, at an incline, as shown, corresponding to the degree of incline of said projection 14 on the rear side of the valve 10; and between said shoe and said rear side of the valve are interposed two friction-rollers, 15, whose peripheries have a bearing against the opposite surfaces of said shoe and the rear side of the valve between the racks thereon, and on each end of said rolls are pinions which engage with the racks, and whereby said rolls are kept in proper position between the shoe and the valve or gate during the movement of the latter either down to open the hydrant or up to close it. The degree of incline which is given to the rear side of the valve 10 and to the adjoining shoe 12 is one which is sufficient to cause the face of the inclined rear side of the valve to slightly recede from the adjoining face of the shoe when the valve is moved downward to open the hydrant, thereby relieving the valve-face of any pressure against the seat 9, and facilitating its movement when the screw-rod 11 is turned to move the valve in the above-named direction, and the teeth of said pinions on the ends of the friction-rollers 15 are of suitable length to permit of said receding movement of the rear side of the valve from the shoe without permitting said teeth to become disengaged thereby from the racks. When the valve is moved from a lower to its upper position, or to that shown in Fig. 1, the space between the rear side of the valve 10 and the shoe becomes gradually reduced in width, and hence the rollers 15 become compressed between the valve and the shoe, thereby forcing the valve toward its seat and closing the inlet 8 tightly. The adjustable feature of the shoe 12, by means of the screws 13, provides for giving to said shoe such degree of incline as will cause

the valve, when brought opposite the seat 9, to come to a perfectly-tight bearing against the latter, whatever may be the water-pressure in the supply-pipe 8; and, furthermore, said shoe can be adjusted to a limited degree toward the valve 10 to compensate for any wear on the face of the valve. To provide for a slight lateral movement of the valve 10 between the seat 9 and the shoe 12, consequent upon its operation, as above described, the lower end of the screw-rod 11 is loosely seated in the bottom of the case A, as shown.

A drip-hole, 16, is made in the bottom of the valve-case, through which any water remaining in the hydrant after the valve is shut may escape; and to close said drip-hole when the hydrant is open a rod, 17, is hung in the valve 10, having a free vertical movement in the latter and supported by a head on its upper end, as shown. When the valve 10 is moved downward to open the hydrant, the lower end of the rod 17 enters and closes the drip-hole 16, and when the valve is moved upward to shut the inlet to the hydrant the rod 17 is lifted by it away from the drip-hole, as shown in Fig. 1.

What I claim as my invention is—

The valve 10, provided with a rack bearing inclined projection 14, on its rear side combined with a rack bearing shoe, 12, adjustable between the side of the valve-case A and said valve, and friction-rollers located between said valve and shoe, having pinions thereon engaging with said racks, substantially as set forth.

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Witnesses:

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