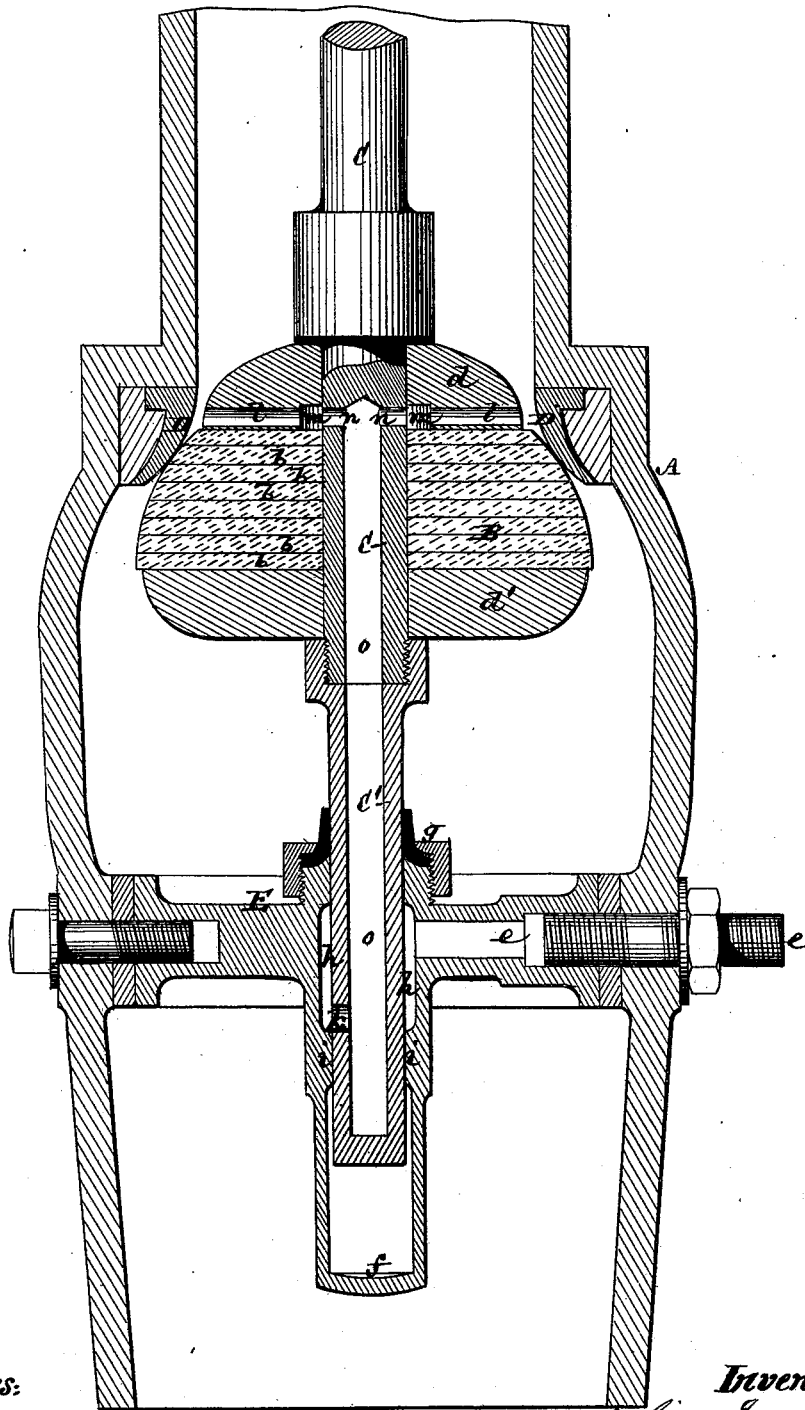


J. JONSON.
Hydrants.

No. 214,922.

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Witnesses:
Fred. Haynie
Edw. A. Jessup.

Inventor:
Julius Jonson
By his Attorneys
Rowland Brown

UNITED STATES PATENT OFFICE.

JULIUS JONSON, OF NEW YORK, N. Y.

IMPROVEMENT IN HYDRANTS.

Specification forming part of Letters Patent No. **214,922**, dated April 29, 1879; application filed December 10, 1878.

To all whom it may concern:

Be it known that I, JULIUS JONSON, of the city and State of New York, have invented certain new and useful Improvements in Hydrants, of which the following is a description, reference being had to the accompanying drawings, forming part of this specification.

This invention consists in certain novel combinations of devices, in which the main valve of the hydrant has connected with it a combined guide and waste-valve, arranged below the main valve, whereby increased efficiency is obtained with little or no liability of the water freezing.

In the accompanying drawing, which represents a vertical section of a hydrant, in part, having my invention applied, A is the barrel or case of a hydrant, and B its main valve, which opens in a downward direction against the pressure of water in the main, and is operated from above by any suitable means applied to its stem C. Said valve is or may be formed of a series of disks, *b*, of leather or other flexible material, clamped between upper and lower plates or washers, *d d'*, and sits, when closed, up against a valve-seat, D, and so that its upper plate or washer, *d*, freely enters the space above the valve-seat.

The portion of the stem C which passes through the main valve is made hollow, and has connected with it below a like hollow extension, C', of said stem. This hollow stem-extension projects down within a fixed guide, E, from which the waste-water outlet *e* of the hydrant branches, and which guide may either be closed at its lower end, *f*, or be provided with a stuffing-box below, as well as with a stuffing-box, *g*, above, through which the stem-extension C' works. Said guide E, up, past, or outside of which the supply-water is free to pass to the main valve, is of enlarged interior dimensions for a portion of its depth, as at *h*, to form a space or chamber around the stem-extension C' for the waste water to pass to the outlet *e*; but below said chamber *h*, as also preferably above it, the guide E is constructed internally to form a close tubular fit around the stem-extension C'. These close-fitting tubular portions not only serve to guide or steady the main valve by or through its

stem or stem-extension C', but the lower one, *i*, of said portions virtually constitutes a seat for the waste-water valve, which latter is formed by the stem-extension C', having one or more lateral apertures, *k*, in it, said apertures being so arranged that when the main valve B is closed they are in free communication with the waste-water-escape chamber *h*, but when the main valve is opened, by lowering it, then said apertures are brought under cover of the close-fitting tubular portion *i* of the fixed guide E.

The upper plate or washer, *d*, of the main valve is provided with one or more grooves or passages, *l*, arranged to extend from the exterior of said plate to an annular groove, *m*, in its center surrounding lateral apertures *n* in the hollow or tubular lower portion of the main valve-stem. By reason of the annular groove *m* the main valve B may be turned on its stem without interrupting the communication between the passages *l* and *n*.

The discharge-passages *l* are always in communication with the interior of the space in the hydrant-case or stand-pipe, which is exterior to the main valve, and so that when the latter is closed they communicate with the space above the valve-seat, thus passing off water left in the hydrant above the main valve down to and through the passage *o* of the valve-stem and its extension, and out by the aperture or apertures *k* and chamber *h* to the waste-water-escape outlet *e*. When the main valve B, however, is lowered and opened then the apertures *k* are closed by the close-fitting tubular portion *i* of the guide E, so that supply-water passing up through the hydrant is prevented from escaping by the waste-water outlet.

The escape aperture or apertures *k* it is preferred to arrange low down in the chamber *h* to provide for change in its position by wear of the main valve. Thus the guide E, in connection with the hollow stem or its extension of the main valve, operates as a combined guide and waste-valve below the main valve, and there is little or no liability of waste water collecting about the main valve or freezing in the hydrant.

I claim—

1. The combination, with the main valve, of

a tubular stem, C C', attached to said main valve for movement with it, a main valve-seat, D, and a stationary guide below said seat, constructed to receive the moving stem of the main valve through it, and forming, in connection with said stem or extension thereof, a lateral escape for the waste water, substantially as specified.

2. The combination of the main valve B, having one or more passages in its upper portion for the discharge of surplus water remaining above it, a hollow lower valve-stem or stem-extension, C C', in communication above with

said discharge-passages, and provided below with one or more lateral outlets, k, and a guide, E, for the main valve, constructed to steady and direct the movement of said valve, and, in connection with the stem portion C' and its one or more outlets, k, to operate as a waste-valve when the main valve is closed, essentially as described.

JULIUS JONSON.

Witnesses:

T. J. KEANE,

E. P. JESSUP.