

No. 672,265.

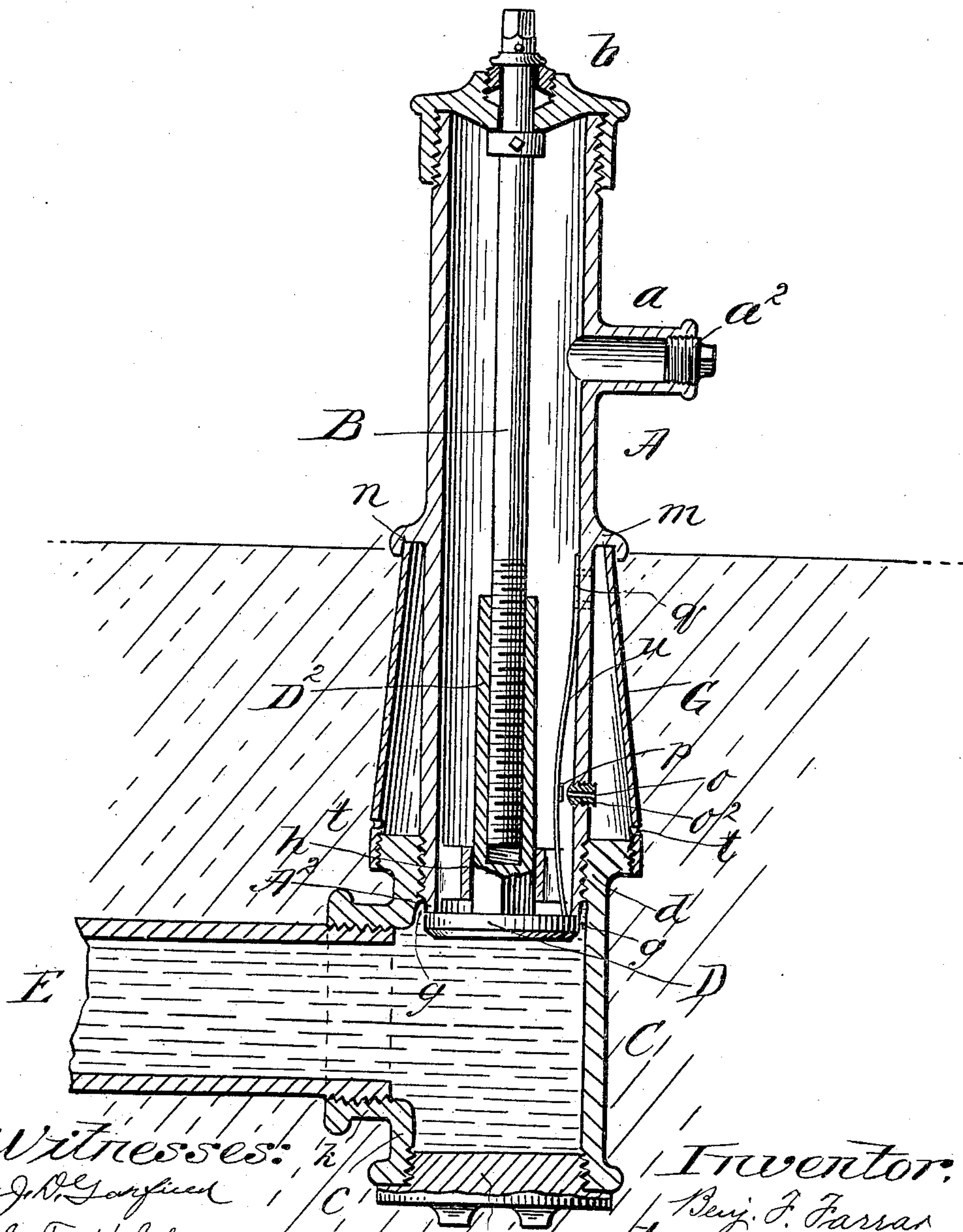
Patented Apr. 16, 1901.

B. F. FARRAR.

HYDRANT.

(Application filed Dec. 7, 1900.)

(No Model.)



Witnesses:

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UNITED STATES PATENT OFFICE.

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HYDRANT.

SPECIFICATION forming part of Letters Patent No. 672,265, dated April 16, 1901.

Application filed December 7, 1900. Serial No. 38,997. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN F. FARRAR, a citizen of the United States of America, and a resident of Springfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Hydrants, of which the following is a full, clear, and exact description.

This invention relates to improvements in hydrants, and has for its object to improve the hydrant in respect of simplified constructions conducing to advantages, as hereinafter explained; and the invention consists in the construction and combination or arrangement of the parts, all substantially as herein-after described in connection with the accompanying drawing and set forth in the claims.

In the drawing the figure is substantially a central sectional view of the improved hydrant.

In the drawing, A represents the main up-standing hydrant-pipe and casing, having the laterally-extending nozzle or limb *a*, provided with the plug or stopper, as usual, and said pipe or hydrant-body A has at its top the closing-cap *b*, as common, through which is fitted for rotation without endwise motion the valve-operating rod or shaft B. At the bottom the hydrant comprises the T-coupling C, the limbs thereof, *d* and *c*, which are in line and arranged vertically, being internally screw-threaded, the lower one, *c*, receiving the stopper or plug *f*, while the upper one, *d*, receives therein the lower end portion of the hydrant-pipe A. The lower open end of the hydrant-pipe constitutes the valve-seat, and, as shown, there is outside of the depending valve-seat the annular space *g* to give free space for occupancy of the valve D, which closes upwardly with the pressure against the valve-seat constituted by the lower end of the hydrant-pipe A. The upwardly-protruding stem *D*² of the valve is formed tubular and internally screw-threaded, and said stem is preferably externally of squared cross-sectional form and plays without turning through the squared opening in the spider-frame *h*, cast within the lower portion of the hydrant-pipe.

The laterally-extended limb *k* of the coupling C is connected by screw-thread engagement with the water-main or water-supply pipe E. The upwardly-extending limb of the

said coupling C is formed externally flanged, receiving thereover with a screw-thread engagement or close fitting otherwise the lower open end of the shell or jacket G, which extends to the top of the ground, but which is only partially as high as the hydrant-pipe which extends above the ground. The hydrant is cast or constructed with the annular flange *m*, having the annular groove *n* in its under side, into which the upper end of the said tubular jacket or shell fits.

Through the side of the hydrant-pipe A is a relief-aperture *o*, covering which when the hydrant-valve D is open is the secondary valve *p*, such secondary valve being forced open automatically by the hydrant-valve in its action of closing. As specifically shown, the said aperture *o* is comprised in the screw-plug *o*², which is entered through the hydrant-pipe with a thread engagement. The secondary valve is comprised in a flat metallic spring *u*, the valve proper being a piece of rubber or like suitable material secured on the face thereof, and said spring has its upper end portion *q* riveted or otherwise secured to the internal wall of the hydrant-pipe, while its length is sufficient to protrude down below the valve-seat A², and when the valve is open and has its position below the plane of the valve-seat the spring reacts and straightens and bears against the inner end of the plug *o*² and closes the aperture *o*, so there can be no escape of the water in pressure within the hydrant through the said aperture; but the valve in its closing action contacts by its upper surface against the lower end of the said spring and causes it to assume the bowed form shown in the drawing, opening the said relief-aperture and permitting the water remaining in the hydrant after the closure of the valve D to escape to the exterior of the hydrant-pipe, the aperture or apertures *t* in the jacket or shell G permitting the same to pass away from the hydrant into the ground. The said jacket is formed, preferably, upwardly tapering, as shown, and it is made thus to defeat the action of frost in the ground, which would impart to the ground the tendency to lift the jacket.

From the foregoing it will be apparent that the hydrant is constructed of a minimum of parts, which may be produced mainly by cast-

ing and requiring comparatively little machine-finishing. The parts, moreover, are capable of easy assemblage and disconnection, and the hydrant-pipe, comprising the valve-seat, together with the valve and the valve-operating means, may be readily disconnected and lifted away from within the upwardly-opening threaded socket therefor in the upstanding limb of the coupling C for the purpose of repairing the seat or valve or for renewing the latter, and of course when the said parts are removed the jacket G, extending to above the top of the ground, prevents dirt, pebbles, or other undesirable matter from falling down into the base of the hydrant.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a hydrant, the combination with the hydrant-pipe having a relief-aperture through its side and the upwardly-closing hydrant-pipe valve, of a spring, which constitutes a valve, and which spring is normally operative to close said relief-opening, and is extended to a point adjacent the valve-seat and adapted to be opened by the hydrant-valve upon the closing of the latter, for the purpose set forth.

2. In a hydrant, the combination with the hydrant-pipe having through its side a screw-plug with a passage leading from its inner end outwardly, the hydrant-pipe valve, a flat spring having by a portion thereof a supporting confinement to occupy a facewise position over the inner end of the said screw-plug, and

having an arrangement relatively to the valve to be forced from against the said plug upon the closing of the valve.

3. In a hydrant the combination with a coupling D having the horizontal limb *d*, by which to connect to the water-supply, and an upstanding upwardly open internally-screw-threaded limb *d*, of the hydrant-pipe A the lower open end of which constitutes the valve-seat, having the lower portion externally threaded, and screwing into said upstanding limb of the coupling and constructed with the flange *m* and relief-apertured plug *o*² the tubular jacket G having its lower portion fitted about the exterior of the said coupling-limb *d* and extending upwardly to contact under said flange *m* and having the outlet-aperture *t*, the valve D having its location within the said coupling below the lower valve-seat end of the hydrant-pipe, A, having a stem upwardly extending within said pipe, means for operating the valve, the flat spring secured to the exterior of the hydrant-pipe and projecting downwardly below the bottom of the hydrant-pipe to have coactive relation to the hydrant-valve, to be operated by the closing of the latter to automatically open the aperture through said plug *o*², substantially as described.

Signed by me at Springfield, Massachusetts, this 5th day of December, 1900.

BENJAMIN F. FARRAR.

Witnesses:

WM. S. BELLOWS,
C. F. WHITE.