

(No Model.)

F. C. VINEY & J. M. DALTON.
FIRE HYDRANT.

No. 428,578.

Patented May 20, 1890.

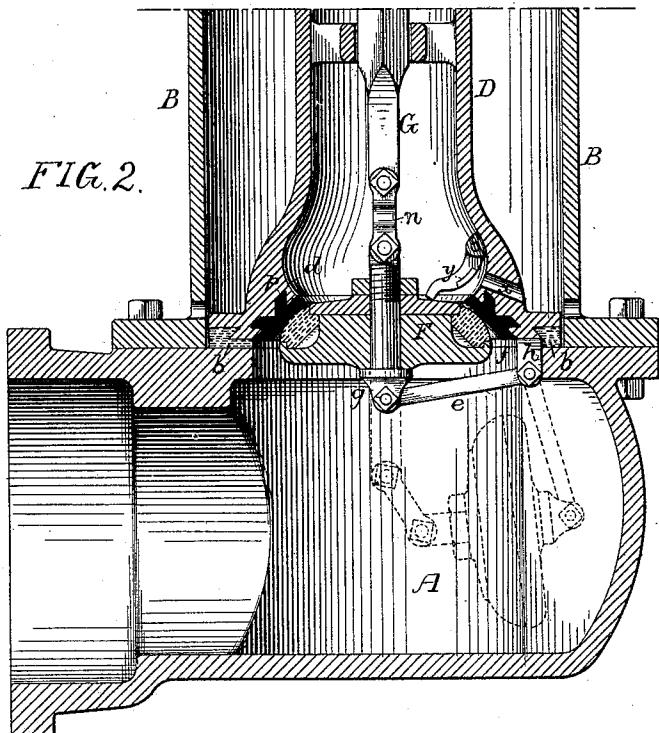


FIG. 3.

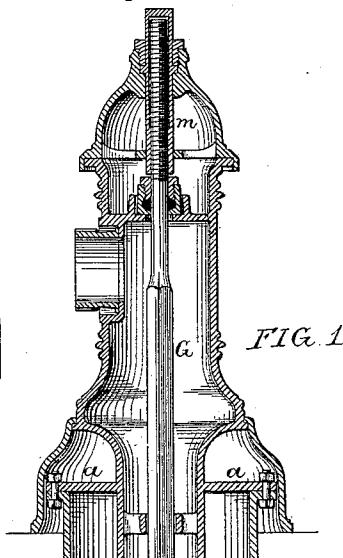
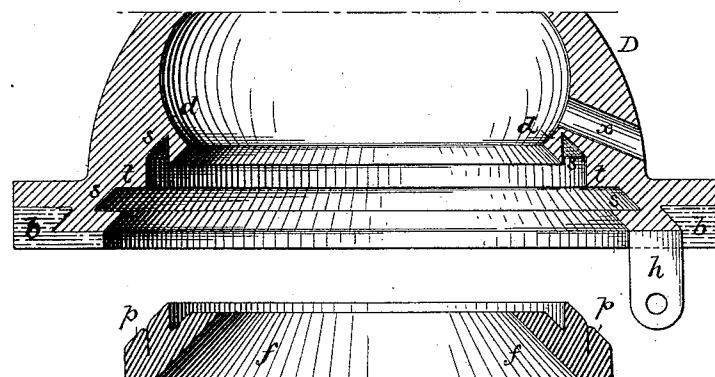


FIG. 1.



Witnesses:

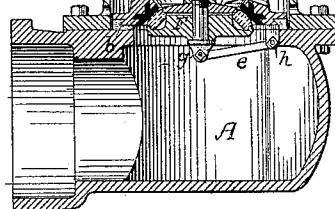
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by their Attorneys

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UNITED STATES PATENT OFFICE.

FREDERICK C. VINEY AND JAMES M. DALTON, OF PHILADELPHIA,
PENNSYLVANIA.

FIRE-HYDRANT.

SPECIFICATION forming part of Letters Patent No. 428,578, dated May 20, 1890.

Application filed July 18, 1889. Serial No. 317,913. (No model.)

To all whom it may concern.

Be it known that we, FREDERICK C. VINEY and JAMES M. DALTON, citizens of the United States, and residents of Philadelphia, Pennsylvania, have invented certain Improvements in Fire-Hydrants, of which the following is a specification.

One object of our invention is to so construct and so hang the valve of a fire-hydrant that said valve when open will swing completely out of the water-way and will therefore not offer any obstruction to the free flow of the water from the service-pipe through the goose-neck and up into the stand-pipe of the hydrant, a further object being to provide for the ready fitting of the soft-metal valve-seat to its bearing on the stand-pipe of the hydrant. These objects we attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical section of a fire-hydrant constructed in accordance with our invention. Fig. 2 is an enlarged sectional view of the lower portion of the hydrant, illustrating our improved device for hanging the valve; and Fig. 3 is a sectional view, on a still larger scale, illustrating the method of applying the soft-metal valve-seat to the flange at the bottom of the stand-pipe of the hydrant.

A represents the usual goose-neck to be applied to the service-pipe of the hydrant, and B is the casing, usually termed the "frost-case," this casing being secured at its lower end to the goose-neck, and extending upward therefrom to a point above the level of the roadway or sidewalk, the upper end of the casing being flanged for the reception of a flange *a* upon the stand-pipe D of the hydrant, and this flange *a* being secured to the flange of the casing B, so as to cause a packing-ring *b*, carried by the lower end of the stand-pipe, to seat itself firmly upon the top of the goose-neck around the opening therein, and thus form a water-tight joint between the goose-neck and the stand-pipe. Around the lower portion of the stand-pipe is formed an inwardly-projecting flange *d*, which carries a soft-metal ring *f*, forming a seat for the valve F, the latter being constructed in any

desired manner, but being provided on the under side with lugs *g*, which are connected by a link *e* to lugs *h* on the lower end of the stand-pipe. The valve-operating rod G is suitably guided in cross-bars in the stand-pipe and is threaded at its upper end for adaptation to a nut *m*, which is vertically confined to the hood or cap at the top of the stand-pipe, but is free to turn therein, so as to effect the lowering or raising of the valve-rod and the opening or closing of the valve. Owing to the arc of a circle in which the valve swings in opening and closing it is necessary to have a laterally-yielding connection between the valve-rod and the valve; hence we connect the valve to the lower end of the valve-rod by means of a link *n*, which permits the swinging of the valve without imparting any side-thrust to the valve-operating rod. Owing to the swinging movement of the valve, the latter when open is entirely out of the way of the water passing through the goose-neck and into the stand-pipe, as shown by dotted lines in Fig. 2, the valve, however, closing inwardly or in the direction of the pressure of water, so as to form a tight joint with the valve-seat and prevent the passage of water when the valve is closed.

The valve-seat *f* has on its upper face a rib *p*, which is expanded into an undercut groove *s* in the inwardly-projecting flange *d* of the stand-pipe, so that said valve-seat is firmly confined to the flange.

In order to permit the ready application of the valve-seat to the flange, said valve-seat is in the first instance formed with the upwardly-projecting split rib *p*, and the groove *s* in the under face of the flange *d* has a central V-shaped tongue *t*, which as the valve-seat is moved vertically in order to apply it to the flange enters the slot in the rib *p* and expands the same into the undercut groove, as shown in Fig. 2.

It will be observed that the stand-pipe, with its valve, may on removing the bolts which connect the flange *a* on the stand-pipe to the flange at the upper end of the casing B be removed vertically from said casing without disturbing the latter or the goose-neck A, so that ready access may at any time be had to

the lower end of the stand-pipe and its valve without disturbing the fixed or permanent portion of the hydrant or necessitating any break in the pavement or digging up of the 5 street adjacent to the hydrant.

In order to provide for the escape from the stand-pipe of the water remaining therein when the valve has been closed, there is at one side of the stand-pipe and close to the 10 bottom of the same an opening *x*, which, when the valve *F* is open, is closed by means of a weighted and pendent valve *y*, a toe upon the latter being, however, struck by the valve *F* as it rises to its seat, so as to open said 15 valve *y*, as shown in Fig. 2, and thus permit the water in the stand-pipe to escape into the easing *B*, and thence through suitable openings in the latter into the earth surrounding the hydrant, so as to prevent freezing of the 20 water in the stand-pipe of the hydrant when the temperature is below the freezing-point.

While the use of the link *n* is preferred, it is not absolutely necessary, as there may in some cases be sufficient lateral spring in the 25 valve-rod *G* to permit of the jointing of the valve directly to the lower end of said rod, and in cases where it is not necessary to remove the stand-pipe and its valve together the link *e* may be hung to the goose-neck in- 30 stead of to the stand-pipe, if desired.

Having thus described our invention, we claim and desire to secure by Letters Patent—

1. The combination of the goose-neck and the stand-pipe of the hydrant, the latter hav-

ing a seat at its lower end, with a valve 35 adapted to said seat and closing upward against the same, a valve-operating rod extending up through the stand-pipe and connected to the top of the valve, and a link connected to the valve and extending laterally to a pivot-lug on the lower end of the stand-pipe at one side of the valve, substantially as specified.

2. The combination of the valve-seat bearing having a grooved flange and a wedge-shaped tongue projecting point first into the groove, with the valve-seat having a rib expanded into said groove by the tongue, substantially as specified.

3. The combination of the goose-neck, the 50 outer casing secured thereto at the bottom, the stand-pipe secured to said outer casing at the top and having at the bottom a packing-ring seated on the goose-neck, the valve adapted to a seat at the bottom of the stand- 55 pipe, and a laterally-projecting link carrying the valve and hung to a bearing on the stand-pipe at one side of the valve-seat, substantially as specified.

In testimony whereof we have signed our 60 names to this specification in the presence of two subscribing witnesses.

FREDERICK C. VINEY.
JAMES M. DALTON.

Witnesses:

WILLIAM D. CONNER,
HARRY SMITH.