(No Model.)

G. A. WARNER.

HYDRANT.

No. 313,265. Patented Mar. 3, 1885.

Fig. 1.

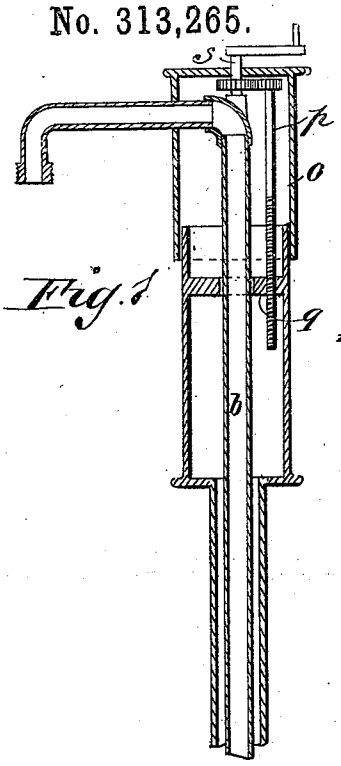


Fig. 2.

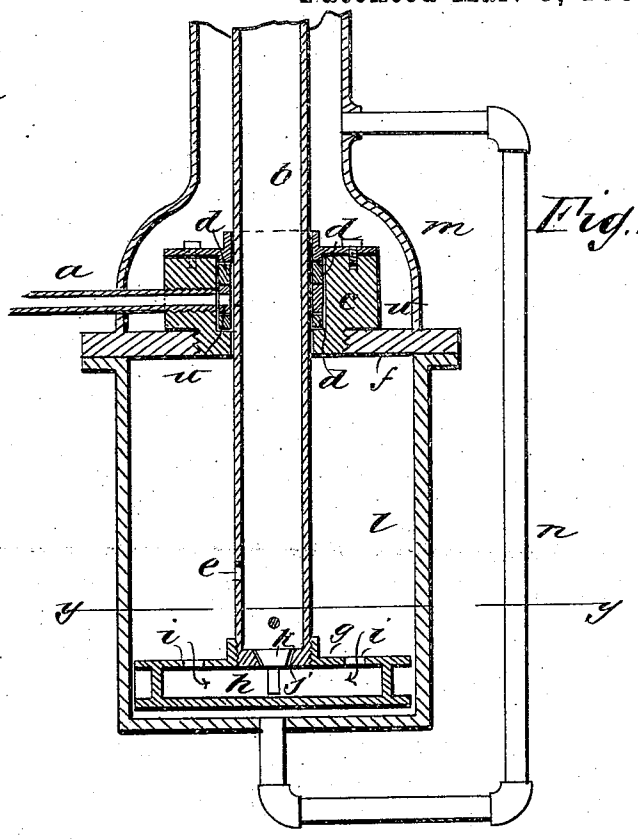
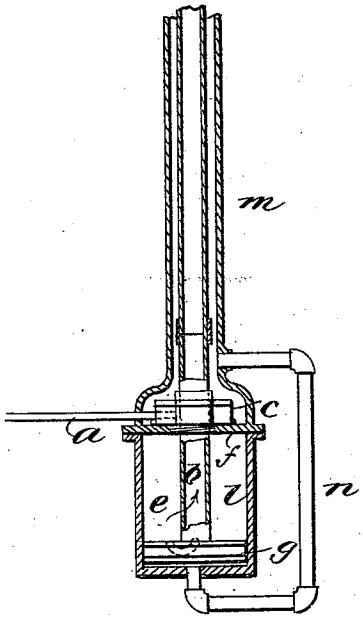
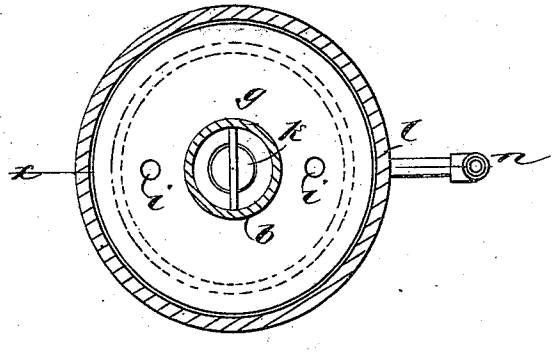


Fig. 3.





WITNESSES:

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UNITED STATES PATENT OFFICE.

GEORGE A. WARNER, OF DES MOINES, IOWA.

HYDRANT.

SPECIFICATION forming part of Letters Patent No. 313,265, dated March 3, 1885.

Application filed May 23, 1884. (No model.)

To all whom it may concern:

Be it known that I, GEORGE A. WARNER, of Des Moines, county of Polk, Iowa, have invented a new and Improved Hydrant, of which the following is a full, clear, and exact description.

My invention consists in the construction and arrangement of parts, as will be hereinafter fully described and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional elevation of my improved hydrant. Fig. 2 is a sectional elevation of the lower portion on a larger scale on line *x x*, Fig. 3; and Fig. 3 is a horizontal section of Fig 2 on line *y y*.

I make the valve for opening and closing the passage from the service-pipe *a* to the hydrant-pipe *b* to consist of a stuffing-box, *c*, surrounding the hydrant-pipe *b* with packing-rings *d* of suitable flexible material above and below the mouth of the service-pipe *a*, to prevent the escape of the water along the pipe *b*, and fit the pipe *b* to slide up and down through said stuffing-box, and with an opening, *e*, through the side near the lower end, which, when raised up to the level of the pipe *a*, opens the passage for the flow of the water, and when shifted down below said pipe *a*, closes said passage. This stuffing box is attached to the base-plate *f* of the hydrant-case *m*, below which I arrange a hollow cylinder, *l*, closed at both ends and containing a piston, *g*, attached to the lower end of the hydrant-pipe *b*, and working up and down therein as the pipe *b* is shifted up or down to open and close the valve. This piston has an internal chamber, *h*, with passages *i* opening to the upper side, and a passage, *j*, opening into the lower end of pipe *b*, with a valve, *k*, closing downward thereon. The bottom of the cylinder is connected by a vent-pipe, *n*, with the hydrant-case *m* for admitting air under the piston to prevent the suction of a vacuum when raising the piston. The hydrant-pipe *b* is suspended from a cap, *o*, of the top of the hydrant-case to be raised and lowered by a screw, *p*, which works in a tapped hole of the head *q* of said case, and is geared with a cranked pivot, *s*, swiveled to the elbow at the top of the pipe.

It will be seen that when the hydrant-pipe is raised up to bring opening *e* to pipe *a*, any water in cylinder *l* will be forced up through the opening *e* and the hydrant-pipe until opening *e* passes above base-plate *f*, when the rest will be forced up through valve *k*, thus nearly emptying the cylinder, and when the pipe *a* is cut off by shifting the hydrant-pipe down, the water remaining in the hydrant-pipe *b* will escape through opening *e* into the empty cylinder to empty the pipe and protect it from frost. The valve *k* prevents the water from flowing into the cylinder above the piston and exerting the pressure of the main downward thereon when the hydrant is open.

I prefer to make the opening from the pipe *a* to the hydrant-pipe *b* through a metallic ring, *u*, for a means of protecting said opening from the elastic packing-rings *d*, which might close it.

Any other desired approved device may be used for raising and lowering the hydrant-pipe.

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

1. The combination of the metallic ring *u* with the pipes *a* and *b*, stuffing-box *c*, and the elastic packing-rings *d*, said ring having an opening through it coincident with the pipe *a*, substantially as described.

2. The piston *g*, having a chamber *h*, passages *i* and *j*, and valve *k*, in combination with cylinder *l* and pipe *b*, having passage *e*, and fitted in the stuffing-box *c*, having the service-pipe *a* attached, substantially as described.

3. The combination of the adjusting-screw *p*, swiveled and cranked pivot *s*, and the shifting cap *o*, with the hydrant-pipe *b*, and the hydrant-case *m*, having a head, *q*, provided with a threaded bearing for the screw *p*, said pipe *b* being arranged in the stuffing-box *c*, having the service-pipe *a* attached for opening and closing the water-passage, substantially as described.

GEORGE A. WARNER.

Witnesses:
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JOHN MITCHELL.