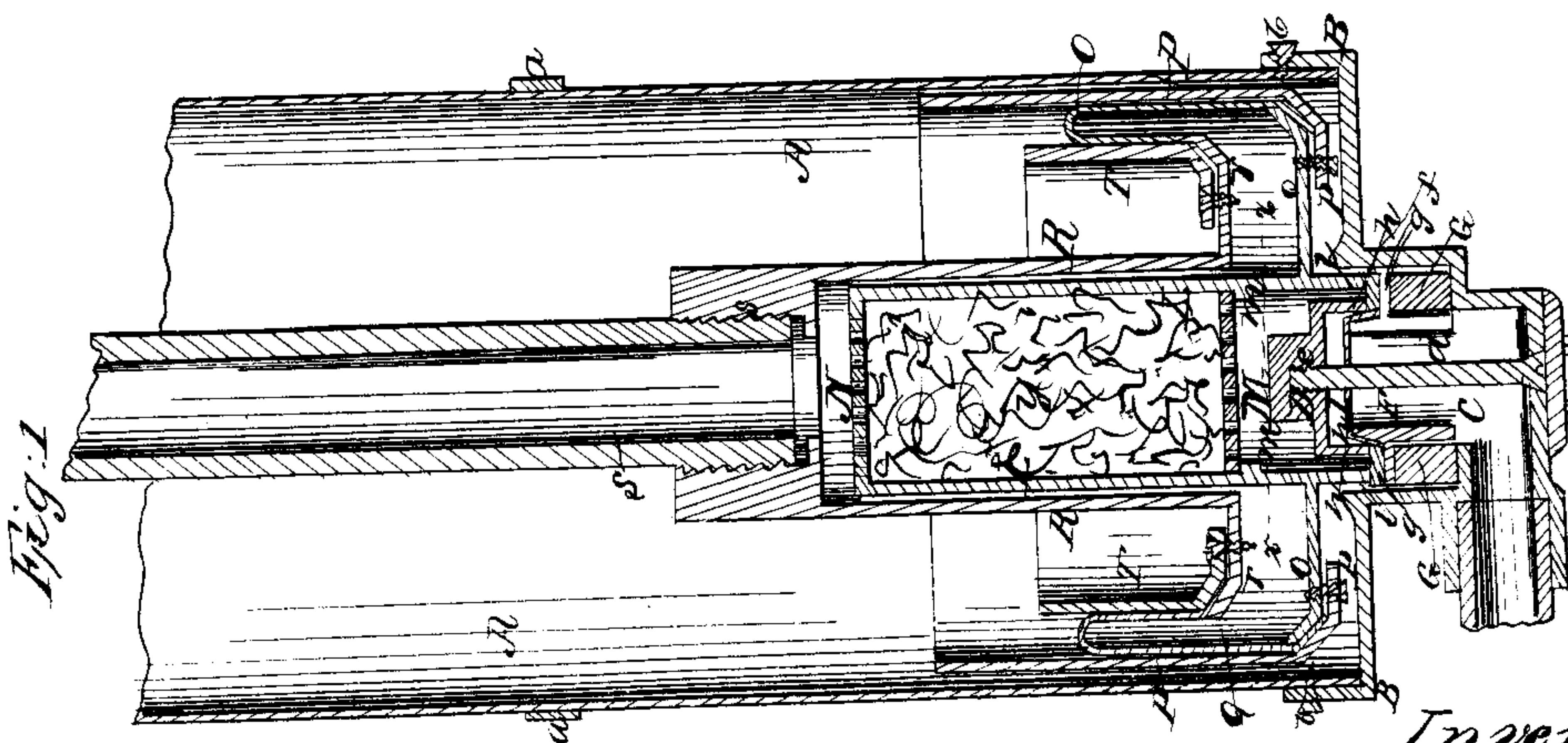
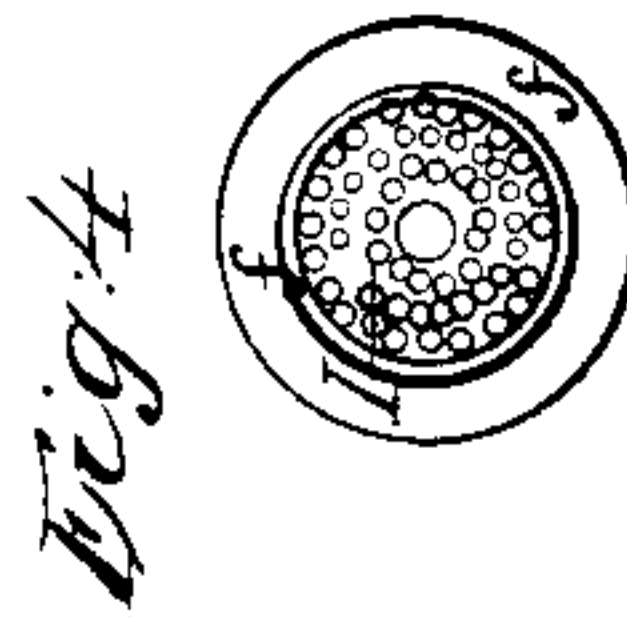
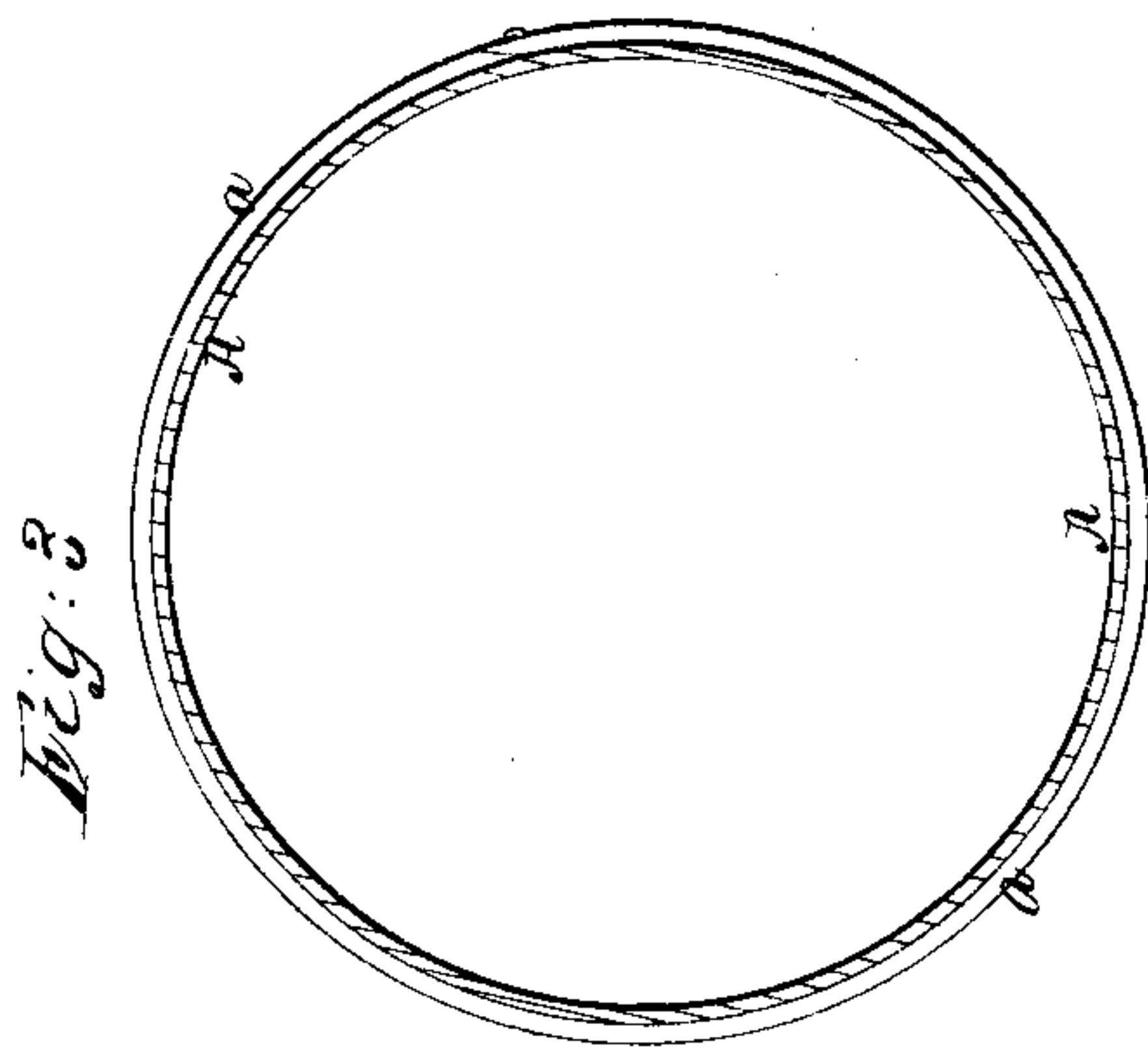
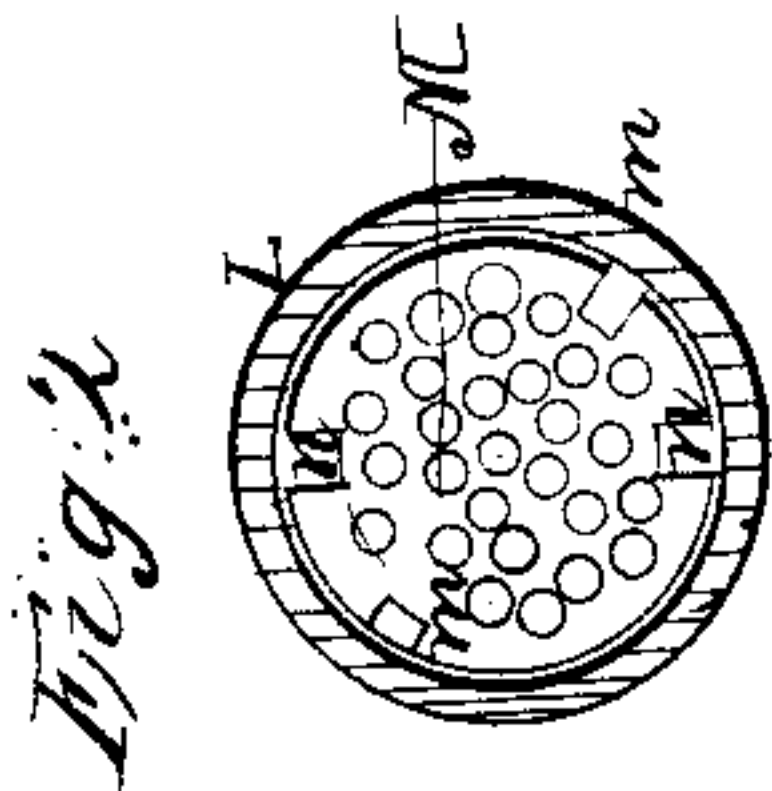


J. N. Smith.

Hydrant,

No 61,366,

Patented Jan. 22, 1867.



Witnesses:
Thos. J. Parker
W. D. O. Smith

Inventor:
J. Nottingham Smith
By his atty.
J. S. Brown.

United States Patent Office.

JOSEPH NOTTINGHAM SMITH, OF JERSEY CITY, NEW JERSEY.

Letters Patent No. 61,366, dated January 22, 1867.

IMPROVEMENT IN HYDRANTS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, JOSEPH NOTTINGHAM SMITH, of Jersey City, in the county of Hudson, and State of New Jersey, have invented certain Improvements in Hydrants; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification—

Figure 1 being a central vertical section of the lower part of a hydrant provided with my improvements.

Figure 2, a transverse section of one part in a plane indicated by the line *x x*, fig. 1.

Figure 3, a transverse section of the body or case.

Figure 4, a top view of the valve-seat and valve.

Like letters designate corresponding parts in all of the figures.

I make the hydrant body, or case A, of boiler plate or thick sheet metal, simply bent round into cylindrical form, and bound just below the surface of the ground with a hoop, *a*. This makes a cheaper body and less liable to damage from violence or frost than a cast-iron body. The lower end of the body is attached by screws *b b*, or otherwise, to a cast-iron base, B, which is buried beneath the surface of the ground, and has a chamber, C, below, that receives the water pipe *c*. The chamber C is closed at top by a tubular valve, E, having an annular flange, *g*, which is pressed upward against an inverted, cup-shaped seat, D, both by the pressure of the water and by an annular India-rubber spring, G, which also may serve as a packing to prevent the escape of water below and outside of the valve, all substantially as shown in fig. 1. But other kinds of springs (as coiled springs) may be used instead of the India-rubber spring G, and other means of packing may be employed. The valve-seat D may be held in place by a central rod, *d*, projecting upward from the base below and holding the cup-seat by a screw, *e*, substantially as shown. By this screw the position of the valve-seat may be adjusted; and it may be removed readily to get at the valve below. The valve has an annular, leather, cork, India-rubber, or other equivalent material of packing, *f*, resting upon its upper surface, and pressed upward against the lower annular edge *h* of the valve-seat D, by which the water is excluded from passing upward unless the water is lowered away from the valve-seat. The central tubular portion of the valve extends some distance above its packing *f* into the inverted cup-shaped seat D; and the upper edge of this tubular portion (through which the water all passes) is covered by a wire-gauze (or perforated) partition, I, so as to form a strainer, to prevent all obstructions from going up into the hydrant, and to exclude any insects, fishes, or other vermin that may chance to get into the water pipe, so as neither to come out at the hydrant nor get into it, and, dying there, render it foul. And if there should ever be accumulated in the chamber C any impurities whatever the hydrant is so constructed in all its parts that access can readily be had thereto to clean it out. This is an important feature in the hydrant. The strainer I is stretched down over the top of the valve and is held in its place beneath the packing *f*. It can readily be removed and renewed. The water, after passing through the valve, enters a filter-tube or chamber, L, the lower edge *l* of which rests on the valve F, and is packed thereby so as to prevent the escape of water outside of it. In the upper part of this chamber I place suitable filtering material or materials *y* to purify all the water coming from the hydrant. The top N of the chamber is perforated to allow the water to pass, and a perforated, removable bottom, M, is inserted below the filtering material so as to allow facilities for removing and renewing the filtering material. This bottom is held in place by projections *m m* from the inner surface of the chamber L, on which it rests, and by which it can pass on bringing corresponding notches *n n* (fig. 2) in its edge opposite to the projections. Above and around the filter-chamber L, a plunger-cap, R, is located, substantially as represented, the discharge pipe S being attached to it at the top by a screw, *s*, or otherwise. This plunger-cap is large enough to allow a free circulation of water up and down around the filter-chamber. Its lower end terminates in a broad projecting flange, *r*, substantially of the form shown; and a similar, broader flange, *o*, projects outward from the filter-chamber L below, substantially as and of the form shown. To these two flanges, respectively, the two ends of a short tube, Q, of India rubber, or other suitable flexible material, are secured water-tight, the attachment being well effected by means of two metallic cups, P and T, respectively secured to the flanges *o* and *r* by screws *p p* and *t t* so as to clamp the ends of the flexible tube between them, all substantially as shown in fig. 1. These caps serve as guides to the flexible tube Q, which forms a frictionless, perfectly tight packing or enclosing-joint for the reservoir between the flanges *o* and *r*.

There is sufficient room between the cups P and T to allow the tube Q to double freely at any part when the plunger moves up and down.

Thus constructed, the working of the hydrant is obvious, being effected by moving the discharge pipe S and plunger R down and up by means of any suitable device at the top of the hydrant. As the plunger is forced down, first the water which is in the reservoir, between the flanges *o* and *r*, is nearly all forced up into the discharge pipe. Then the plunger strikes the top of the filter-tube *L*, which rests on the valve *F*, so that, as the plunger continues to descend, it causes the filter-tube to depress the valve *F* and allow the water to flow; then, on raising the plunger, the valve is forced by the pressure below up to its seat and stops the flow of water; and the further rise of the plunger causes the reservoir's space between the flanges *o* and *r* to enlarge and receive all the surplus water from the discharge pipe S, there to be retained beneath the surface of the ground, out of the way of the effect of the sun and frost.

What I claim as my invention, and desire to secure by Letters Patent, is—

The tubular flanged valve *F*, operating substantially as herein specified.

I also claim the inverted, cup-shaped valve-seat *D*, in combination with the valve *F*, substantially as herein described.

I also claim the filter *L*, arranged in the hydrant as herein set forth.

I also claim the combination of the filter-tube *L*, with the valve *F*, substantially as and for the purpose herein set forth.

I also claim the flexible packing *Q*, in combination with the cups *P* and *T*, substantially in the manner and for the purpose herein specified.

The above specification of my improved hydrant signed by me this day of October, 1866.

J. NOTTINGHAM SMITH.

Witnesses:

H. A. ESTES,

WILLIAM ALLEN.