

(No Model.)

W. KAISER.

HYDRANT.

No. 304,204.

Patented Aug. 26, 1884.

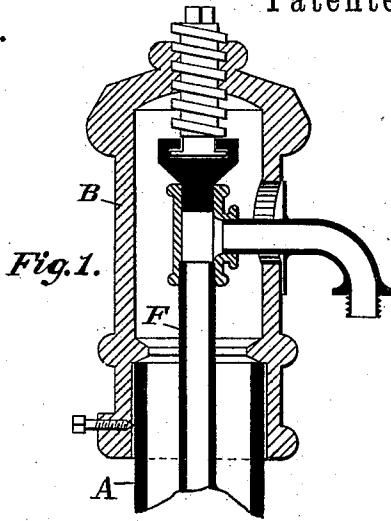


Fig. 1.

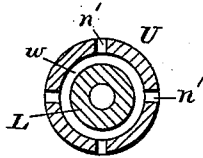


Fig. 3.

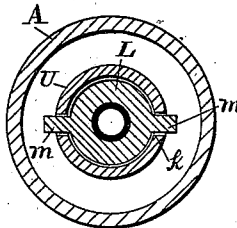


Fig. 4.

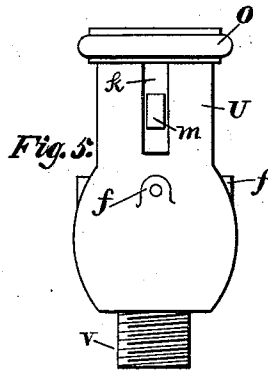
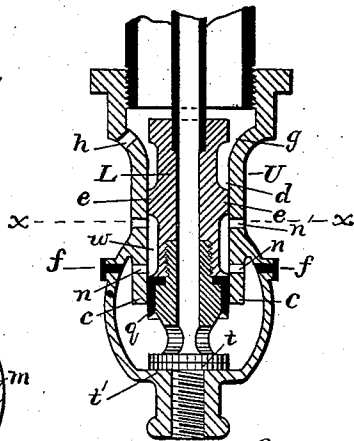


Fig. 5.

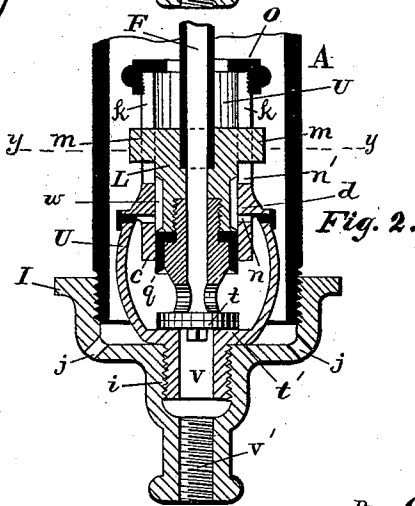


Fig. 2.

Witnesses:  
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 By Chas B. Mann  
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# UNITED STATES PATENT OFFICE.

WILLIAM KAISER, OF WILKES-BARRÉ, PENNSYLVANIA.

## HYDRANT.

SPECIFICATION forming part of Letters Patent No. 304,204, dated August 26, 1884.

Application filed January 9, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM KAISER, a citizen of the United States, residing at Wilkes-Barré, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Hydrants, of which the following is a specification.

This invention has reference to valve mechanism for hydrants, and embraces certain improvements in that class of hydrant to which my Letters Patent of the United States No. 284,021, dated August 28, 1883, relate.

The present invention will first be described, and then designated in the claims.

Referring to the drawings which illustrate the invention, Figure 1 is a vertical section of a hydrant illustrating a portion of my improvements, the valve being closed. Fig. 2 is a vertical section of the valve mechanism only, illustrating some additional features, and also showing the valve closed. Fig. 3 is a cross-section on the horizontal line *x x*, showing the circumferential waste-water channel *w*. (Seen in both Figs. 1 and 2.) Fig. 4 is a cross-section on the horizontal line *y y*, Fig. 2. Fig. 5 is an exterior view of the valve-case shown in Fig. 2.

The hydrant-stock A, cap B, the construction of the upper parts, and pipe F are the same as shown in my patent above referred to; but they may be of any suitable construction.

Cast integral with the valve-case U is an interior downward-projecting rim, *c*, which is bored or finished round in a vertical direction, (indicated by *d*), and the movable water-way L is exteriorly finished at *e*, forming a shoulder to fit close and yet move easily within the said bored part *d*. Below the close-fitting shoulder *e* the water-way has an exterior washer, *g*, to fill the bored vertical part *d*, and between the said close-fitting shoulder and the washer is an exterior circumferential groove or depression which forms the waste-water channel *w*, for the escape of water from pipe F after the valve has been closed. The downward-projecting rim *c* has one or more perforations, *n*, which allow the waste water to rise into the circumferential channel, and the bored vertical part of the valve-case above the said rim has one or more perforations, *n'*, through which the waste water escapes from the channel.

My arrangement of the circumferential channel *w* and two or more small waste-water perforations, *n*, affords a desired advantage—namely, two or more perforations are preferable to only one, (as employed in my patent before referred to,) because if several are used they may be much smaller than where only one is used, and being smaller, the washer *g* will close them much sooner when the water-way is raised to open the supply-valve; and, again, these waste-water perforations will remain closed longer during the lowering movement of the water-way to close the supply-valve. Therefore by this arrangement there will be less waste of water direct from the supply-pipe during the interval occupied by raising or lowering the supply-valve.

The perforations *n* in the downward-projecting rim *c* are made by forming bosses *f* on the exterior of the valve-case, then boring through each boss, and also through said rim *c*, thereby making the perforation *n*, and finally closing the bore in the valve-case by means of a plug or solder, or both. At the top of the bored vertical part *d* the valve-case flares internally, or gradually widens, as at *g*, whereby the movable water-way may readily be inserted after it has been withdrawn. A waste-hole, *h*, is made in the case at this part.

The construction shown in Figs. 2, 4, and 5 is contrived to permit the valve-seat *t'* to be removed with the entire valve mechanism from the stock, in order to grind the seat whenever it may need it.

By reference to Fig. 2 it will be seen the rim *c*, washer *g*, perforation *n*, circumferential channel *w*, and supply-valve *t* are the same as shown in Fig. 1.

In providing for the removal of the valve-seat, the stock A must be attached to a bottom cap or coupling, I, instead of to the valve-case U, as shown in Fig. 1. This bottom cap has a screw-thread, *i*, into which the nipple *v* on the lowermost part of the valve-case couples. It also has below another screw-thread, *v'*, for attachment to a service-pipe or other source of supply. Perforations *j* are made in the bottom to allow water to escape. By this arrangement the entire valve-case U, including the valve-seat *t*, may be removed from the stock by unscrewing the nipple *v* where it couples with the screw-thread *i*. To enable this to be

done, and to also allow for the vertical movement of the water-way L, the upper part of the valve-case is provided with two vertical slots, *k*, placed diametrically opposite each other, and the water-way L has two lateral lugs, *m*, cast integral therewith, which occupy the slots and slide vertically therein whenever the water-way is raised or lowered. The top end of the valve-case is screw-threaded, and an annular cap, *o*, is attached thereto. This prevents the water-way when moved vertically from lifting out of the valve-case, and also enables the valve-case to be withdrawn. It is obvious that other means than the annular cap may be used to serve this purpose. The opening in the annular cap allows the discharge-pipe F room to move up and down freely.

It will be seen that the slots *k* in the case and the lugs *m* on the water-way allow the necessary vertical movement to the supply-valve, and at the same time by turning the upper end of the discharge-pipe the valve-case, including the valve-seat, may be unscrewed from the bottom cap, I, and removed without disturbing the stock.

Having described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a hydrant, the valve-case U, having a bored vertical part, *d*, and an interior downward-projecting rim, *c*, provided with a perforation, *n*, and a perforation, *n'*, in the case above the said rim, in combination with a movable water-way, L, fitted within the bored vertical part, and having a circumferential waste-water

channel, *w*, adapted, when the valve is closed, to embrace both said lower and upper perforations, whereby the waste water from the discharge-pipe may escape without getting into the hydrant-stock, as set forth.

2. In a hydrant, the combination of the valve-case U, having a valve-seat, *t*, and a screw-nipple, *v*, about the inlet below the seat, a movable water-way with a valve-washer, *t*, at its lower extremity to rest on the valve-seat, means, substantially as described, for connecting the movable water-way with the said valve-case, which will allow the necessary vertical movement of the water-way without allowing either of said parts to turn independently of the other, and a supply bottom cap, I, to which the screw-nipple couples, whereby the water-way, valve, and valve-seat may all be removed to repair the parts or re-grind the seat, as set forth.

3. In a hydrant, the valve-case U, having at its upper part vertical slots *k* and at its lower part a valve-seat, with means below the valve-seat for coupling, and a movable water-way, L, provided with exterior lateral lugs, *m*, to slide in the vertical slots, and means to prevent the way from lifting out of the valve-case, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM KAISER.

Witnesses:

ERVIN MEIXELL,  
MARTIN KAISER.