W. KAISER.

HYDRANT.

No. 192,336. Patented June 26, 1877.

Fig. 1.

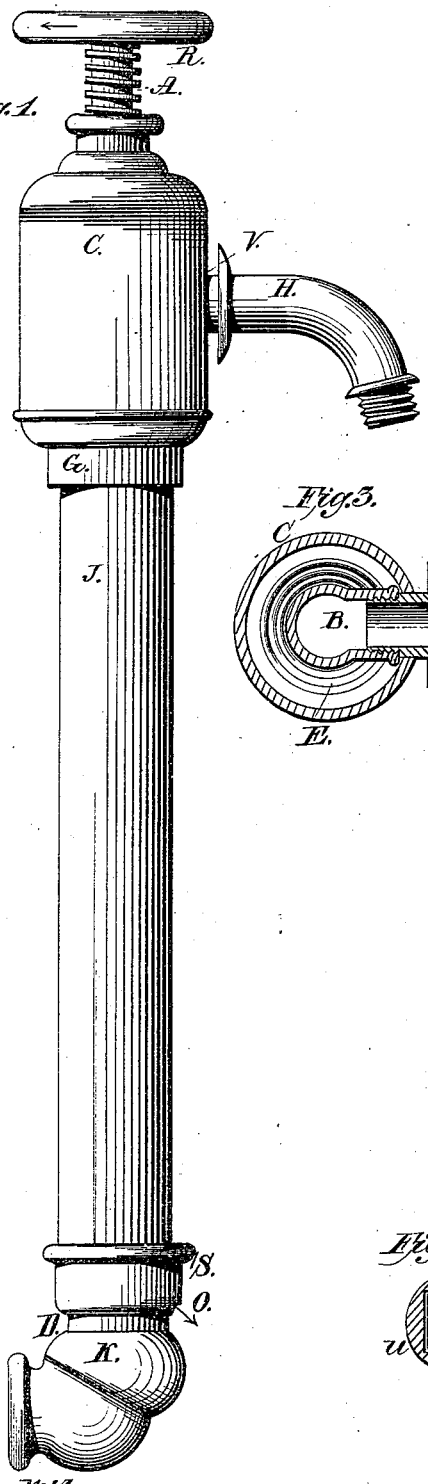

Fig. 3.

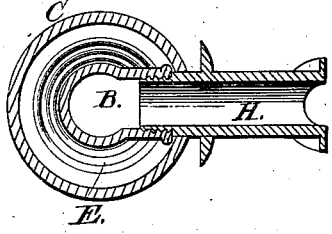

Fig. 2.

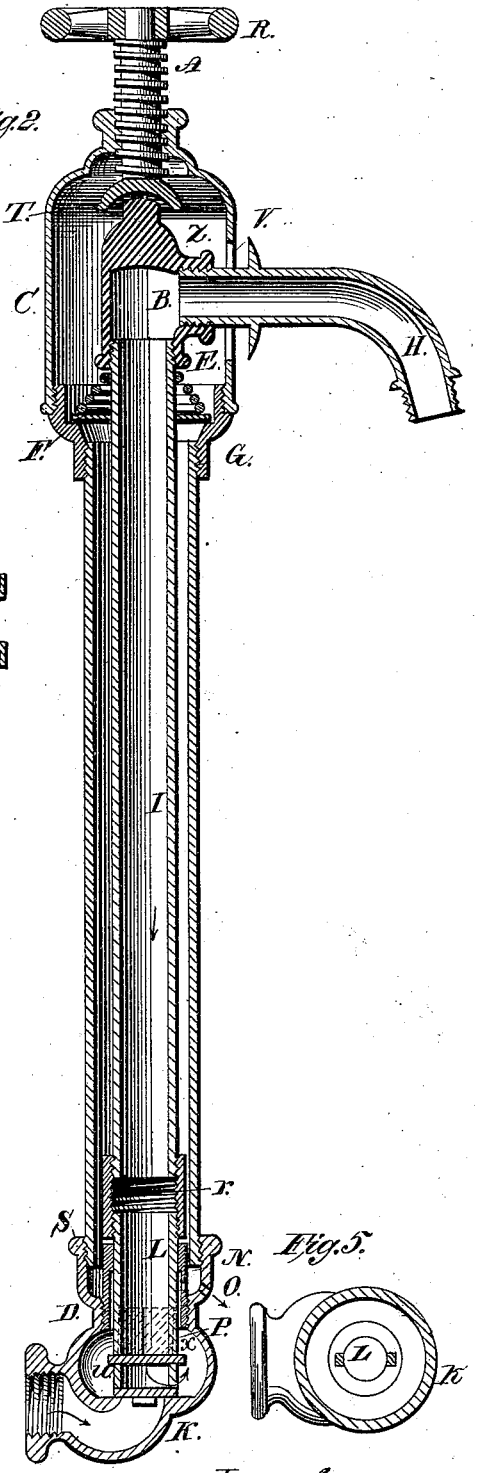

Fig. 4.

Fig. 5.

Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM KAISER, OF WILKESBARRE, PENNSYLVANIA.

IMPROVEMENT IN HYDRANTS.

Specification forming part of Letters Patent No. **192,336**, dated June 26, 1877; application filed August 16, 1876.

To all whom it may concern:

Be it known that I, WM. KAISER, of the city of Wilkesbarre, county of Luzerne, State of Pennsylvania, have invented a new and useful Improvement in Hydrants, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings.

The object of my invention is the construction of a hydrant at a low price, simple and durable in construction, which is also susceptible of all possibly needed repairs without the necessity of digging up the same.

In the accompanying drawings, forming part of this specification, Figure 1 is a perspective view of a hydrant embodying my invention. Fig. 2 is a longitudinal section of it. Fig. 3 is a transverse section of top part, through nozzle, showing guide-ring F with cone-spring E resting thereon. Fig. 4 is a transverse section of quadrilateral part of valve-stem L, also corresponding cavity in screw-nipple N. Fig. 5 is a top-plan view of valve-seat and stem.

The construction is as follows: The case K, which, to all outward appearances, is a right-angled elbow, has a globe-shaped expansion, at the base of which is formed the valve-seat, as shown in Fig. 2, and over the vertex of said expansion the screw-thread D is cut to receive the screw-nipple N. There is also a thread cut on the expanded part S directly above, to receive a one and a quarter inch or larger tube, said tube constituting part of the hydrant and casing, and which may be cut to any required length, and the same is also threaded on its upper end to receive the contracted end G of conical cap C, which has a screw-threaded perforation at its vertex, in which revolves screw-bolt A, said bolt having an enlargement, T, at its lower end, to prevent its extraction and loss. On its upper end R is a crank or hand wheel, as shown in Figs. 1 and 2.

Having described the exterior, I will now proceed with the interior construction.

Hollow valve-stem L has one or more perforations on its circumference at its base, with bolt and burr on the end to receive and hold a washer of leather or other material. On projecting ring or flange *x* is also a washer. The exterior quadrilateral portion P of valve-stem L rests inside of the corresponding cavity in nipple N, as shown in Figs. 2 and 4, the said valve-stem L having a free perpendicular movement, sufficient to admit a full head of water when the same is opened. The said stem L is, at all positions, a wrench or key, which, if revolved horizontally, will either screw or unscrew nipple N from valve-casing K, as shown in Figs. 2 and 4. The upper end of valve-stem L is turned to closely fit in the corresponding upper half of nipple N, consistent with free vertical movement, thereby preventing leakage of water in that direction when valve L is only half open or closed, as shown in Fig. 2. The extreme upper end of valve-stem L is screw-threaded, on which is screwed an ordinary pipe-socket, which forms a shoulder, against which screw-nipple N may rest, to prevent said nipple from sliding beyond the control of valve-stem L, as shown in Fig. 2. Pipe I is also screwed or otherwise connected to pipe-socket, as shown, which pipe is cut and threaded to the proper length to receive the elbow B, having circular bolt-shaped extension Z, said bolt end resting in concave cavity of screw-bolt A, as shown in Fig. 2.

F is a metal washer or ring, through the perforation of which passes pipe I, serving as a guide to said pipe in its vertical movements, and also a seat for cone-spring E, the upper end of which presses against elbow B, as shown in Fig. 2. Conical cap C is made of such diameter as will allow its free revolution around elbow B, as shown in Figs. 2 and 3. Cap C has also one or more oblong perforations, V, through which nozzle H is inserted, and the same screwed into elbow B, as shown.

Its operation is as follows: Fig. 2 shows the hydrant in the process of clearing itself of the water remaining in pipe I, after being closed, through perforation O in screw-nipple N and casing K, valve L being now closed against the ingress of water from the main, and, by turning hand-wheel R in the direction of the arrows, will release the pressure of bolt A from elbow B, thereby allowing cone-spring E to perform its function in raising pipe I and valve-stem L perpendicularly from valve-seat in case K until flange X, having on its upper

side a washer of leather or other material, up to and against nipple N, thereby firmly closing the waste-conduit, and allowing the free ingress of water from the main into and through valve-case K, stem L, pipe I, and nozzle H.

In making any and all possibly needed repairs, the operation is to turn off the water at the usual stop-cock, unscrew nozzle H, then cap C from its base G, then rescrew nozzle H to elbow B, use it as a wrench, and turn the same as you would unscrew any pipe, which will have the effect of unscrewing nipple N from case K; then draw the whole interior arrangement up and out of tube J, and, after making the necessary repairs, reinsert pipe I, with valve-stem L, into tube or casing J, and screw the same in reverse order from the beginning, and turn on water from the main.

Having thus fully described my invention in the foregoing specification, I claim as new and desire to secure by Letters Patent of the United States—

1. The quadrilateral portion P and projecting flange *x* of a hollow valve-stem, L, screw-nipple N, its quadrilateral cavity *u* and perforation O, in combination with a valve-casing, K, and pipe-socket *r*, as shown, for the purpose set forth.

2. The combination, in a valve-casing, K, having contracted portion, and screw-thread D, of enlarged portion S, with a screw-nipple or socket, N, and hydrant casing or tube J, as shown and described, for the purpose set forth.

3. The guide-ring F, cone-spring E, concave cavity Z on bolt A, in combination with the conical casing or cap C, its base G, elbow B, discharge-pipe I, and nozzle H, all arranged as shown and described, for the purpose set forth.

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Witnesses:
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