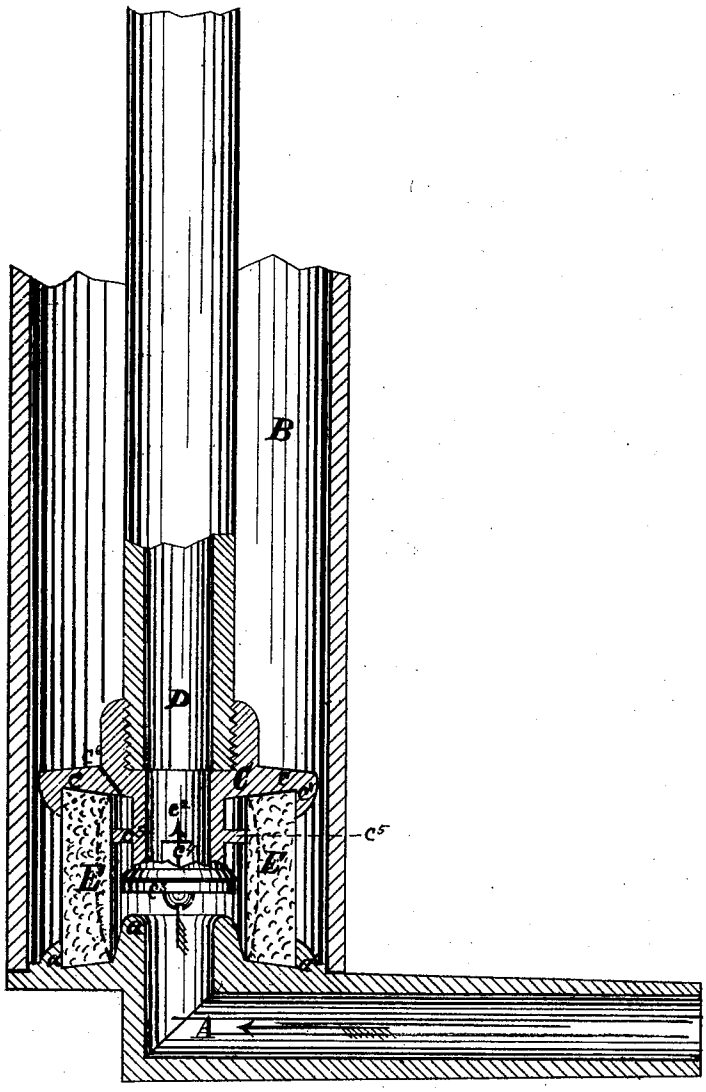
T. VAN KANNEL & G. ELZENHOEFER.

Hydrants.

No. 145,768. Patented Dec. 23, 1873.



Witnesses
C. A. Riter
Veltus Radspinner.

Inventors
T. Van Kannel.
Geo. Elzenhoefer

UNITED STATES PATENT OFFICE.

THEOPHILUS VAN KANNEL AND GEORGE ELZENHOEFER, OF CINCINNATI, OHIO; SAID VAN KANNEL ASSIGNOR TO SAID ELZENHOEFER.

IMPROVEMENT IN HYDRANTS.

Specification forming part of Letters Patent No. **145,768**, dated December 23, 1873; application filed September 17, 1873.

To all whom it may concern:

Be it known that we, T. VAN KANNEL and GEORGE ELZENHOEFER, both of Cincinnati, Hamilton county, Ohio, have invented a new and Improved Hydrant; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawing, representing a cross-section of our invention, and making a part of this specification.

The nature of our invention relates to that class of hydrants in which a valve closes down upon a smooth seat, thus closing off the water, either against or with the pressure. Our invention has for its object a new and improved device for joining that part on which the movable valve is attached with the fixed seat, whereby the possibility of leaking shall be wholly prevented; also, in combination with such junction, a simple yet efficient water-waste.

In construction, our invention is as follows: A is the elbow, to which the supply-pipe is attached in the usual way. The same is provided with a rim and wings to allow its being fastened to the stock B by means of bolts. The part A has also the seat *a* and bead *a'* on its horizontal face, inside the stock B. C is the movable member, into which the iron pipe D is screwed above. It has a large flat brim, *c*, and a bead, c^1, corresponding in size and shape to bead *a'*. Below it terminates in the stem c^2, faced by the leather or other suitable washer, c^3, fitting snugly on the valve-seat *a*. The part C is hollow in the center just below the bore of the discharge-pipe D, which cavity opens out at c^4, to admit and conduct the water through the pipe D. The movable member C of the structure is connected to the fixed member A by an elastic collar, E, which is preferably made of rubber, of sufficient length that its capacity as a spring may be durable, and thick enough to resist the pressure of the water. The bore of collar E is of such dimension as to give some space between itself and the leather washer c^3. At c^5 is a flange on the stem c^2, which flange is situated just above parts c^4, and fits tightly within the bore of collar E. The bearings of the metal for the face of collar E are slightly conical, as shown in the drawing, whereby the inner part of the same is compressed more than the outer, which has the effect of bringing the inside of the collar out of contact with flange c^5, when the valve is closed. This allows the water in pipe D to flow to and out through the waste-hole c^6.

From the above, the operation of our invention becomes obvious. When water is to be drawn, a screw or other suitable device on the top of the stock (not shown in the drawing) is loosened, whereby the valve is raised from the seat by the action of the spring-collar E. In doing so, the walls of the collar assume nearly a straight vertical line, whereby its inner surface will close tightly against the flange c^5.

The water then flows in the direction indicated by the arrows, being prevented from reaching the waste-hole c^6 by the flange c^5 coming in contact with the collar.

When the valve is closed on the seat, the collar assumes the shape indicated by the dotted lines, leaving a very small space for the water in pipe D to pass between its interior surface and flange c^5, escaping through the waste-hole, as above described.

This construction forms a valve-hydrant in which there is no friction whatever, and hence durable, as it is also cheap and simple.

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

1. In combination, the fixed member A, moving member C, and elastic collar E, to constitute a frictionless valve, substantially in the manner set forth.

2. The valve and its seat, and the elastic collar E, combined with the moving member C, provided with the waste-hole c^6, substantially as set forth.

T. VAN KANNEL.
GEO. ELZENHOEFER.

Attest:
CHAS. A. RITER,
VERTUS RADSPINNER.