(No Model.)

# P. WHITE.

## WATER CLOSET VALVE.

No. 398,680. Patented Feb. 26, 1889.

*Fig. 1.*

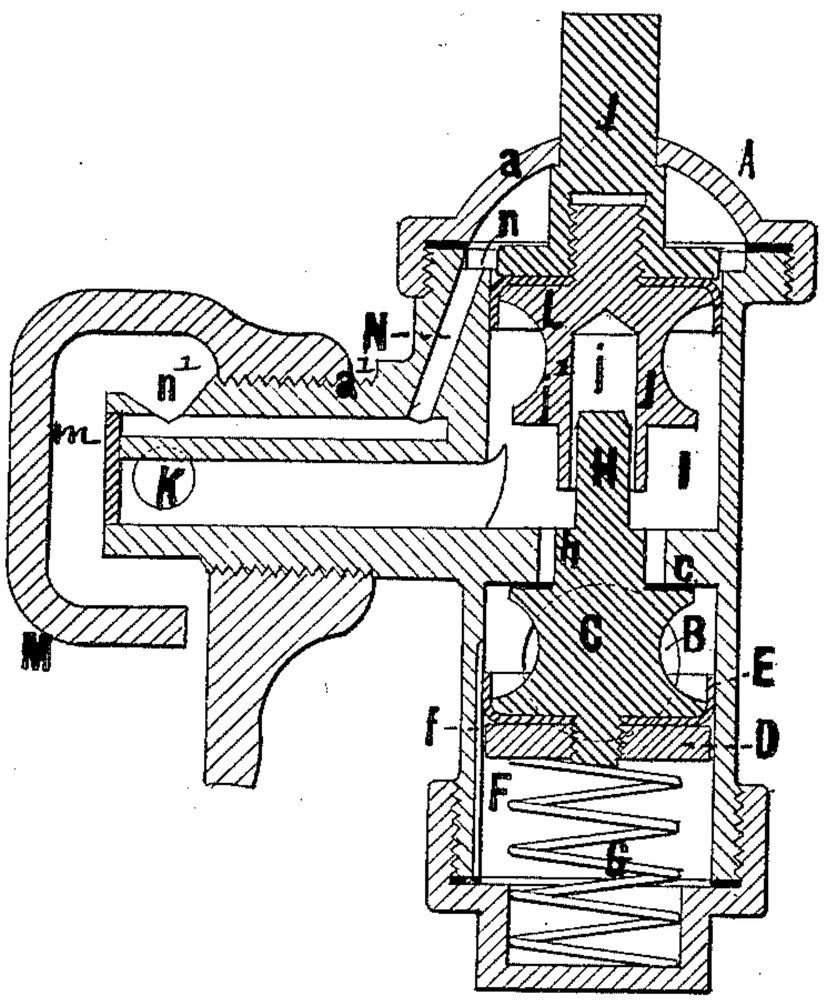



*Fig. 3.*

*Fig. 2.*

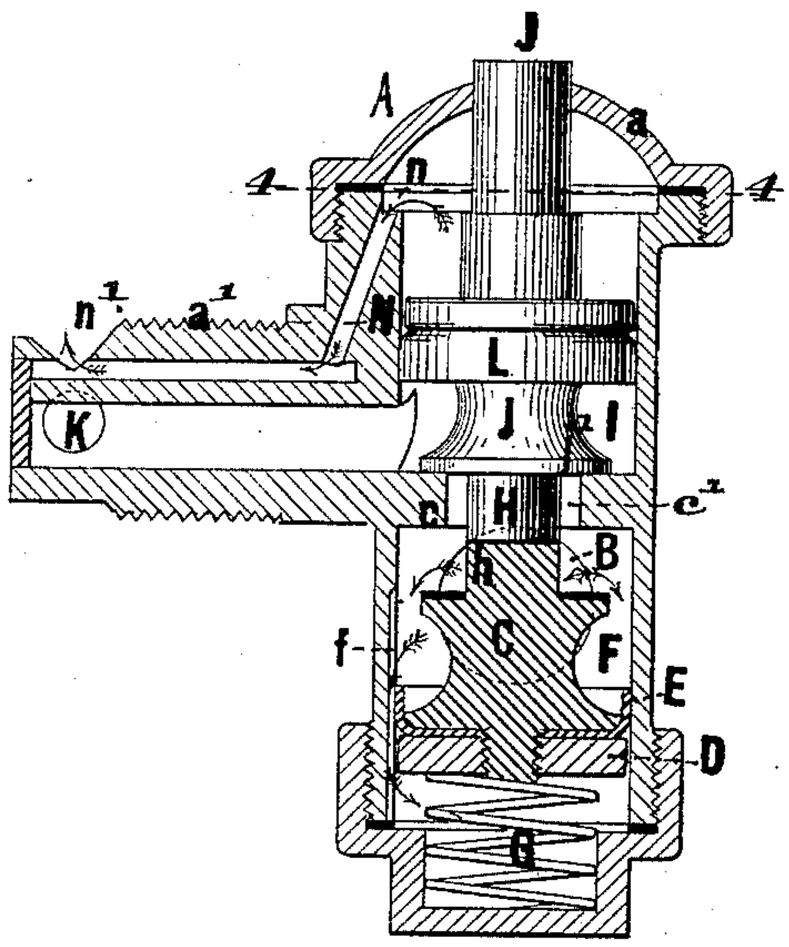
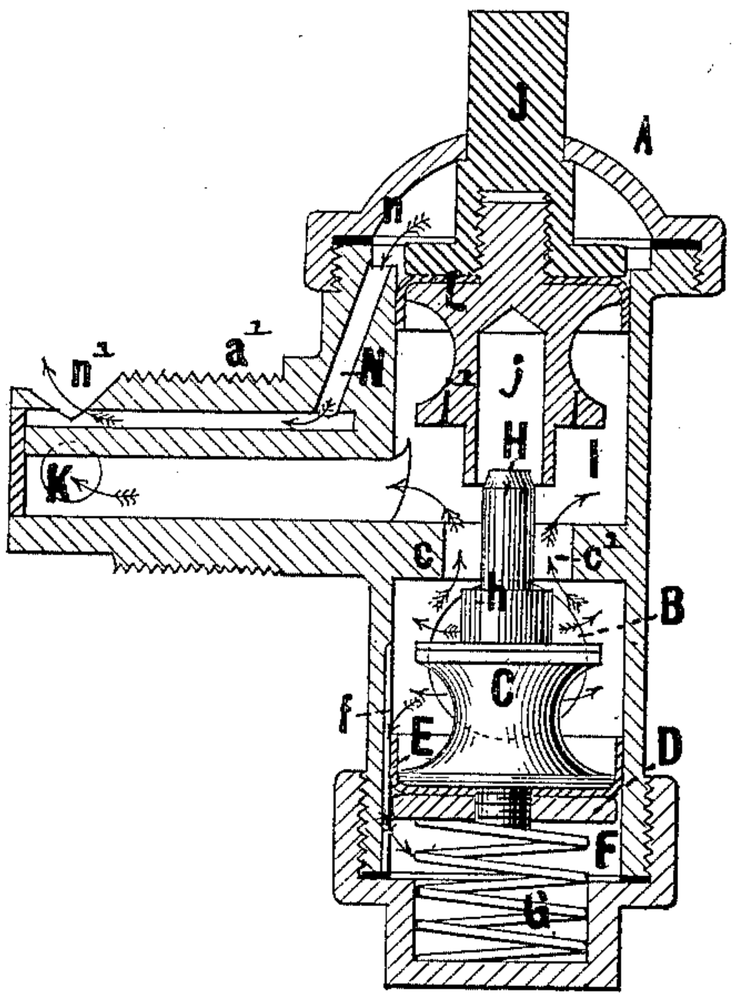
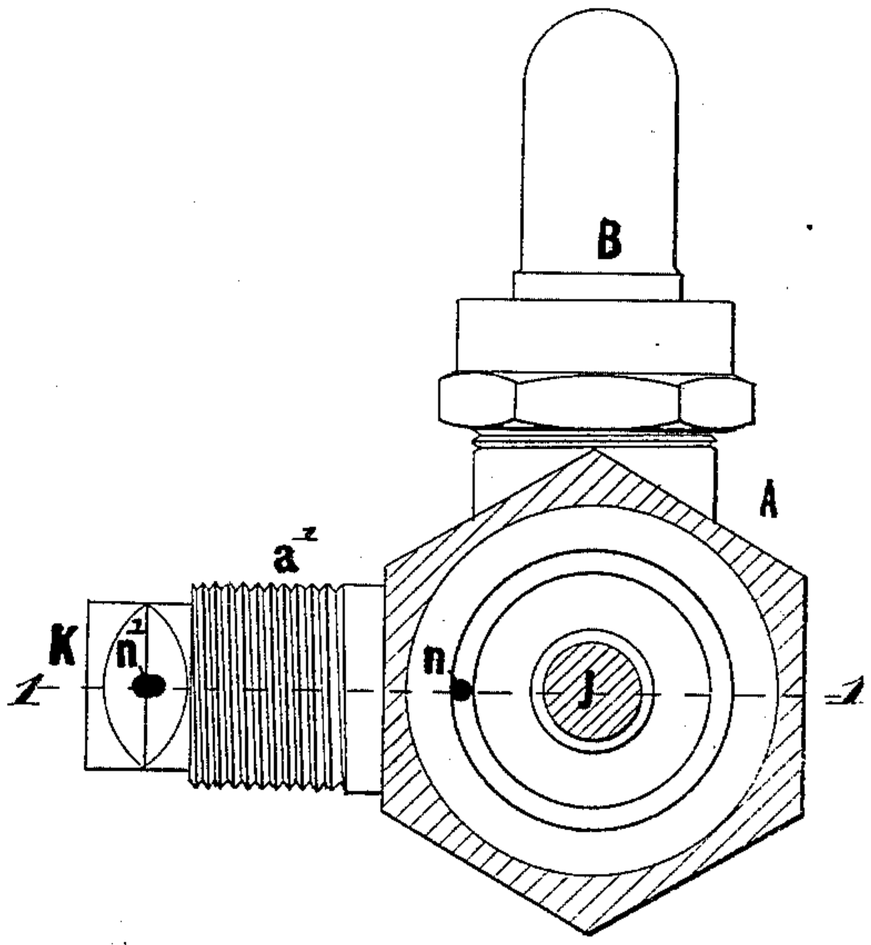



*Fig. 4.*

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# UNITED STATES PATENT OFFICE.

PETER WHITE, OF ST. LOUIS, MISSOURI.

## WATER-CLOSET VALVE.

SPECIFICATION forming part of Letters Patent No. 398,680, dated February 26, 1889.

Application filed March 7, 1887. Serial No. 229,933. (No model.)

*To all whom it may concern:*

Be it known that I, PETER WHITE, of St. Louis, Missouri, have made a new and useful Improvement in Water-Closet Valves, of which the following is a full, clear, and exact description.

The improvement relates to the means for disposing of the leakage at the valve-stem end of the valve-chamber.

In the annexed drawings, making part of this specification, Figure 1 is a vertical longitudinal section of the improved valve, taken on the line 1 1 of Fig. 4. Fig. 2 is a similar section, but showing the valve-stem depressed and the valve open. Fig. 3 is a similar section showing the valve-stem raised and the valve unseated, and Fig. 4 is a horizontal cross-section on the line 4 4 of Fig. 2.

The same letters of reference denote the same parts.

The inlet through which the water enters the valve-chest A is at B. The valve C seats with the pressure against the seat *c*. The valve at its lower end is provided with or has attached to it, as by means of the nut D, a cup-leather, E, which as the valve is opened and closed works in the chamber F, below the valve-seat *c*. Its function is to prevent the valve from closing too suddenly, the movement being regulated by the passage of the water through the groove *f*, downward past the cup-leather as the valve rises to its bearing against its seat. The valve is thus balanced, and the spring G acts to effect or to aid in effecting the seating of the valve when the pressure upon the valve-stem H is released, as shown in Fig. 1. The stem does not extend upward to without the valve-chest, but only through the valve-seat *c* and into the chamber I, above the valve-seat, where it is adapted to be operated by means of the stem J. This last-named part is recessed at *j* to admit the upper end of the stem H to enable the part J to serve as a guide for the part H as it rises and falls. The stem J, which is preferably made in two parts—an upper and a lower one—is extended upward to work through the cap *a* of the valve-chest and in connection with the seat (not shown) of the closet. When the seat is depressed, the stem J is pushed downward against the stem H at *h*, and the valve C is thereby depressed and unseated, as shown in Fig. 2. The stem J at *j'* is made large enough to cover the aperture *c'* in the valve-seat, and it thus serves to prevent the flow of the water to the outlet K until the pressure upon the stem J is removed, whereupon the water-pressure acts to lift the stem J, and the water then flows to the outlet K, as shown in Fig. 3; for, as stated, the valve C seats gradually, and until it is seated the water flows to the outlet.

By making the stem J separable from the stem H the cap *a* and stem J may be removed from the valve-chest without having to turn off the main, as the valve C remains seated against the seat *c*, the water-flow being thereby arrested.

The present valve is of the class which is attached to the outside of the bowl, as shown in Fig. 1. With such valves trouble is experienced from leakage at the upper end of the valve-chest. To obviate this a cup-leather, L, is attached to the stem J, between its two parts, which serves to fairly pack the valve-chest at its upper end, and thus provide for dispensing with a diaphragm construction at that point and permit of the upper end of the stem J working through the chest-cap *a*, as shown; but in case any water does leak past the cup-leather L it is conducted into the bowl M by means of the passage N, whose inlet is at *n*, beneath the chest-cap *a*, and extending thence into and along the tubular shank *a'* to the point *n'*, where it opens into the rim *m* of the bowl.

The main pressure must not be allowed in any way to enter the passage N or that portion of the interior of the valve-chest with which the passage N connects, for in such case leakage around the chest-cap and elsewhere occurs. Even with a cup-leather turned as is the cup-leather L the pressure, in case the passage N opens into the outlet K, causes the water to flow backward through the passage N and causes leakage. To this end the cup-leather L is turned toward the valve-seat *c*, as shown, to prevent the water from being forced past the cup-leather, and the outlet *n'* is independent of the outlet K.

I claim—

1. The combination of the valve-chest having the tubular shank $a'$, the passage N, and the cap $a$, with the cup-leather L and stem J, said cup-leather being turned toward the main valve and said passage N being wholly disconnected from all that portion of the construction through which the main pressure circulates and having an outlet independent of the main outlet K, substantially as described.

2. The combination of the valve-chest having the inlet, outlet, and valve-seat, as described, the grooved chamber, the stems H J, the spring, the cup-leathers E L, and the valve C, said cup-leather L being turned toward the valve-seat $c$, and said valve-chest having a passage, N, leading from the space beneath the chest-cap $a$, and being wholly disconnected from all that portion of the construction through which the main pressure circulates, and having an outlet independent of the outlet K, substantially as described.

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