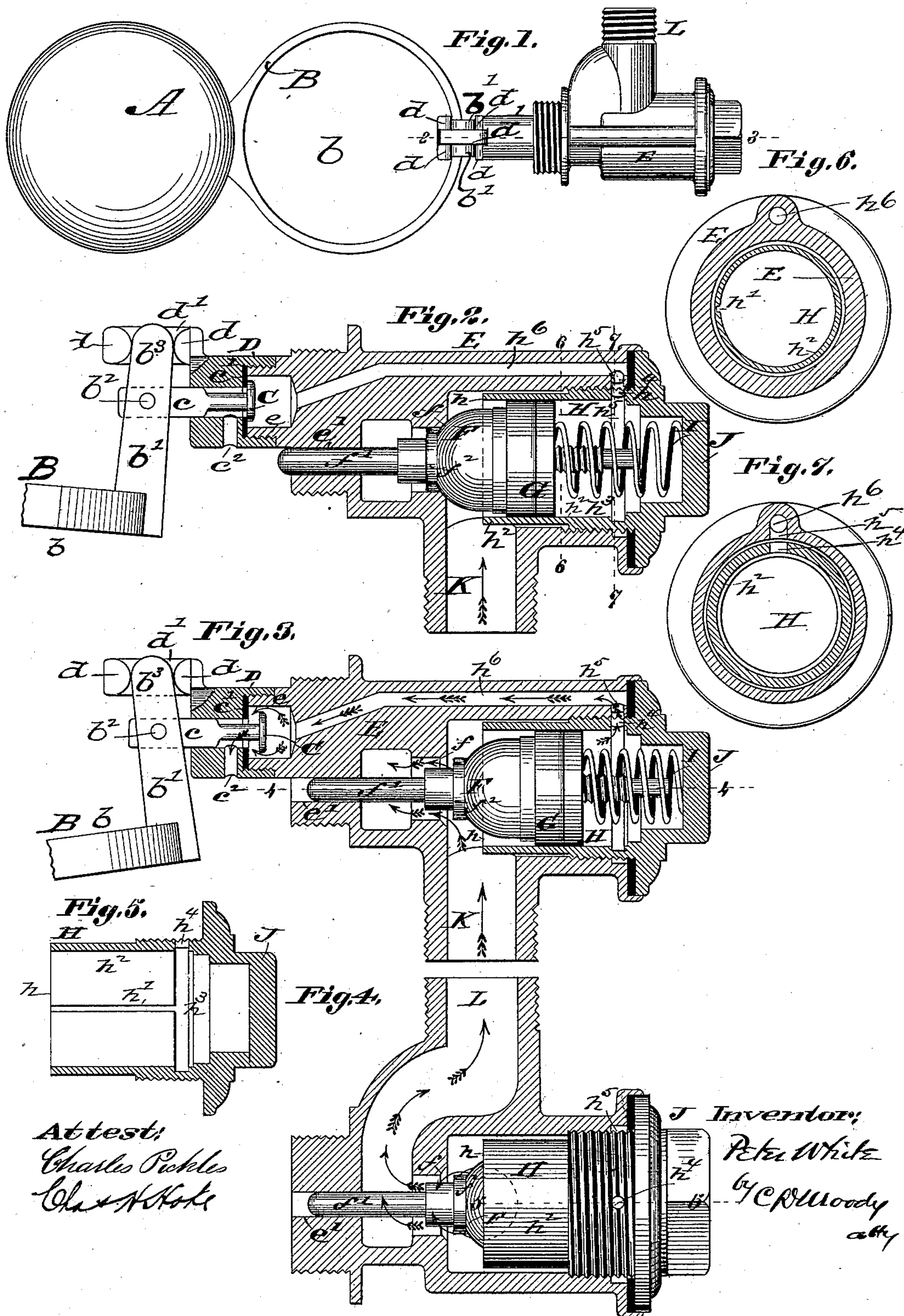


(No Model.)

P. WHITE.
WATER CLOSET VALVE.

No. 299,888.

Patented June 3, 1884.



Attest:
Charles Pickles
Chas. H. Koke

J. Inventor;
Peter White
by C. R. Moody
att'y

UNITED STATES PATENT OFFICE.

PETER WHITE, OF ST. LOUIS, MISSOURI.

WATER-CLOSET VALVE.

SPECIFICATION forming part of Letters Patent No. 299,888, dated June 3, 1884.

Application filed June 19, 1883. (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, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a plan of the improved valve; Fig. 2, a vertical longitudinal section, the main and the relief valve being closed; Fig. 3, a similar section, the valves being unseated; Fig. 4, a section on the line 4 4 of Fig. 3; Fig. 5, a section on the line 5 5 of Fig. 4; Fig. 6, a section on the line 6 6 of Fig. 2, and Fig. 7 a section on the line 7 7 of Fig. 2.

The same letters of reference denote the same parts.

A represents an ordinary float, such as used in water-closets. It is attached to the lever B, which is made open at *b* in the usual manner to receive the handle of the ordinary discharge-valve, which, as its construction is well understood, is not here shown. The lever is provided with an arm, *b'*, which at *b²* is pivoted to the stem *c* of the relief-valve C, and is extended at *b³* to pass and work between the lugs *d d*, that are upon an extension, *d'*, of the cap D, which incloses the relief-valve C. This valve C seats outwardly against the seat *c'*, which is a rubber washer held between the cap D and that part *e* of the main valve-chamber E, which forms the relief-valve chamber. The stem *c* works through the cap D, and such water as passes the relief-valve is discharged at *c²* into the closet-basin. (Not shown.)

F represents the main valve. It seats at *f*, and is attached to the stem *f'*, which is extended to work loosely through the valve-chamber E at *e'*, and, on the other side of the valve, is extended to receive and have attached to it the cup-leather G. The cup-leather works in the chamber H, which at its end *h* is open to the space in which the main valve F works, and at *h'* is grooved. The groove *h'* extends in the wall *h²* of the chamber from the end *h* through to the other end, *h³*, of the chamber H, or to beyond the limit of the movement in that direction of the cup-leather G. The chamber H at the end *h³* is closed, saving the outlet *h⁴*. Opposite the outlet *h⁴* is an annular groove, *h⁵*.

The groove *h'* leads into the groove *h⁵*. The outlet *h⁴* leads into a passage, *h⁶*, which in turn leads into the space in which the relief-valve works. A spring, I, encircles the stem *f'* and bears against the cap J, which incloses the valve-chamber at that end, and aids, by pressing against the cup-leather, to seat the main valve when the pressure is weak. The chamber H is preferably made in one piece with the cap J. The inlet to the valve is at K, and the water passing the main valve flows out and is discharged at L.

The action of the valve is as follows: When the contents of the closet-basin are discharged, the float A drops. This causes, as shown in Fig. 3, the relief-valve to unseat, whereupon the water that is confined within the chamber H beneath the cup-leather is discharged through the passage *h⁶*, past the relief-valve, and out through the outlet *c²*. The pressure beneath the cup-leather being thus relieved, the main pressure through the inlet K acts to open the main valve, and the water then flows past the main valve into and fills the closet-basin again. This elevates the float A again into the position shown in Fig. 2, causing the relief-valve to seat again. The water-pressure, on the seating of the relief-valve, forms again beneath the cup-leather, and the main valve thereby becomes balanced substantially. The water flowing past the main valve then acts to suck that valve to its seat, and the flow of water into the closet-basin ceases. The main valve, however, would not be sufficiently free to enable it to be thus seated were it not for the groove *h'*. Through this last-named groove a small amount of water flows beneath the cup-leather in the chamber H, and thus prevents a vacuum from forming beneath the cup-leather, and holding the cup-leather and main valve from moving toward the seat *f*.

It is obvious that when the cup-leather G rises to seat the main valve there would be a vacuum formed in the chamber H, if the groove *h'* were not provided to allow said chamber to be filled with water, which latter is expelled through side passage, *h⁶*, when the cup-leather and its valve descend to form a communication between the inlet K and outlet L.

By pivoting the float-lever directly to the relief-valve stem, the latter is more readily

moved. The lugs $d\ d$ serve as fulcrum for the lever-arm b' to bear against. The main valve stem is enlarged at f^2 to fit the opening in the valve-chamber. This serves to prevent the main valve from closing too suddenly.

I claim—

1. A water-closet valve having inlet and discharge passages above the main valve, and an outlet-passage leading from below this valve to a chamber, H, below the relief-valve, and also having a groove in the wall of chamber H, in combination with the main valve having its stem f' working loosely through the perforation e' , substantially as described.

2. The combination, in a water-closet valve, of the chamber H, the groove h' therein, the outlet h^4 , the valve F, and the stem f' , having the part f^2 , constructed substantially as described.

3. The combination of the chamber E, the passage h^6 , the chamber H, having the groove

h' and the outlet h^4 , with the inlet and discharge passages, and the main valve F, substantially as described.

4. In a water-closet valve having inlet and discharge passages above the main valve, a chamber with an outlet below this valve, a groove, h' , a passage, h^6 , a relief-valve, C, the extension d' , lugs $d\ d$, cap D, and a float-lever attached to the stem of the relief-valve, substantially as described.

5. In combination with a valve constructed with a side outlet-passage, h^5 , leading from a chamber below the main valve having a groove, h' , the relief-valve C, having a float-lever pivoted to its stem, substantially as described.

Witness my hand this 5th day of June, 1883.

PETER WHITE.

Witnesses:

C. D. MOODY,
PAUL SINNTSALD.