(No Model.)

P. WHITE.

TANK VALVE.

No. 398,681. Patented Feb. 26, 1889.

Fig. I.

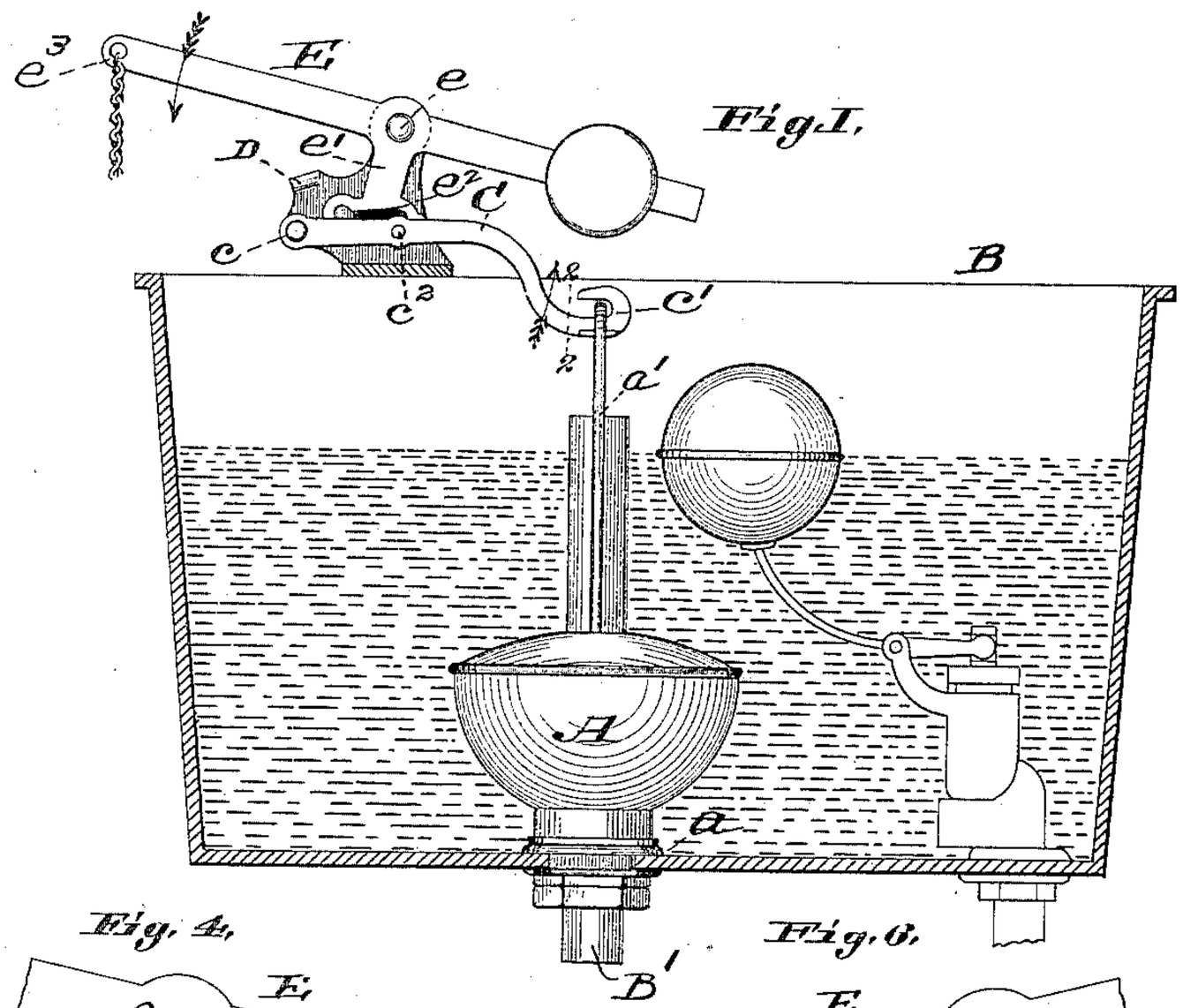


Fig. 4.

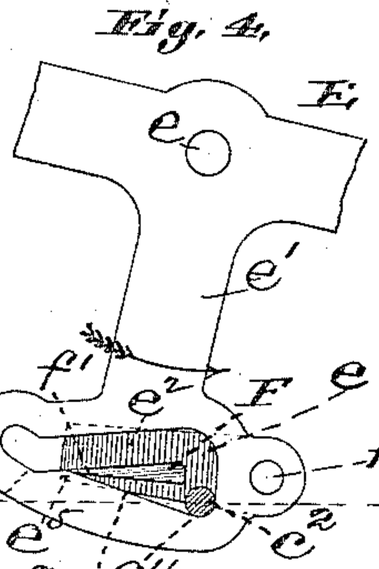


Fig. 6.

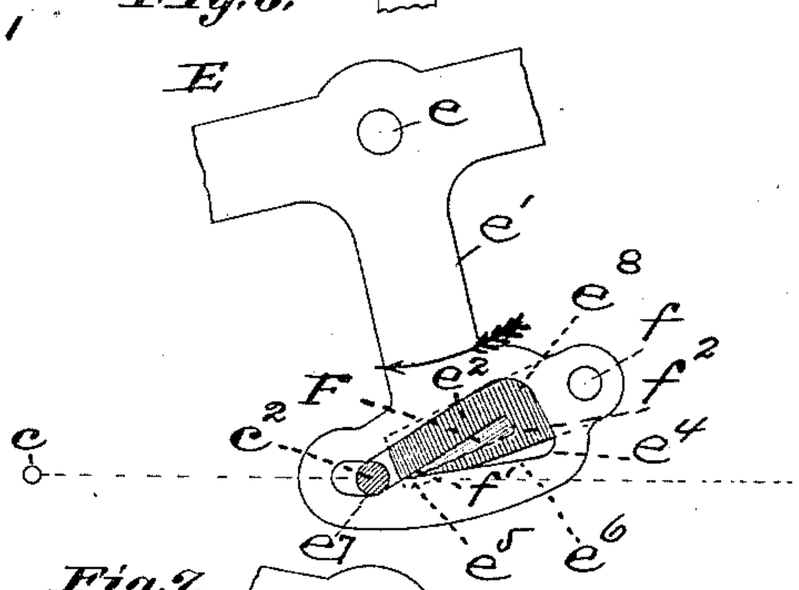


Fig. 5.

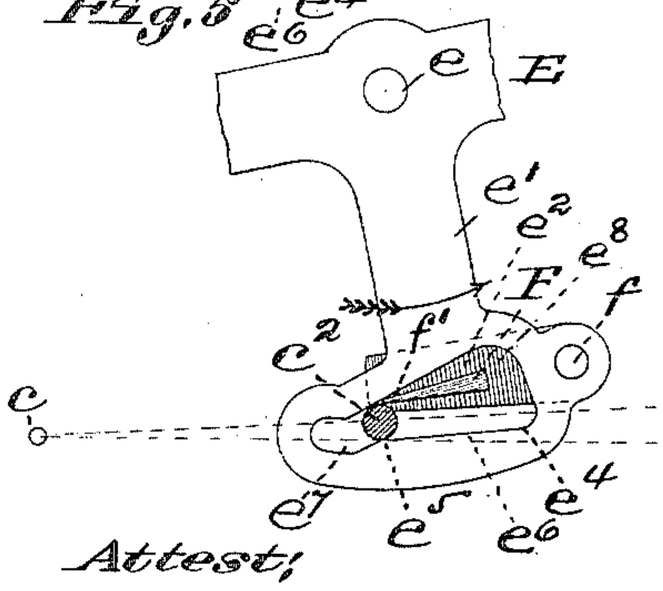


Fig. 2.

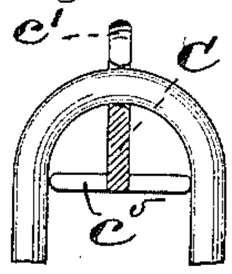


Fig. 7.

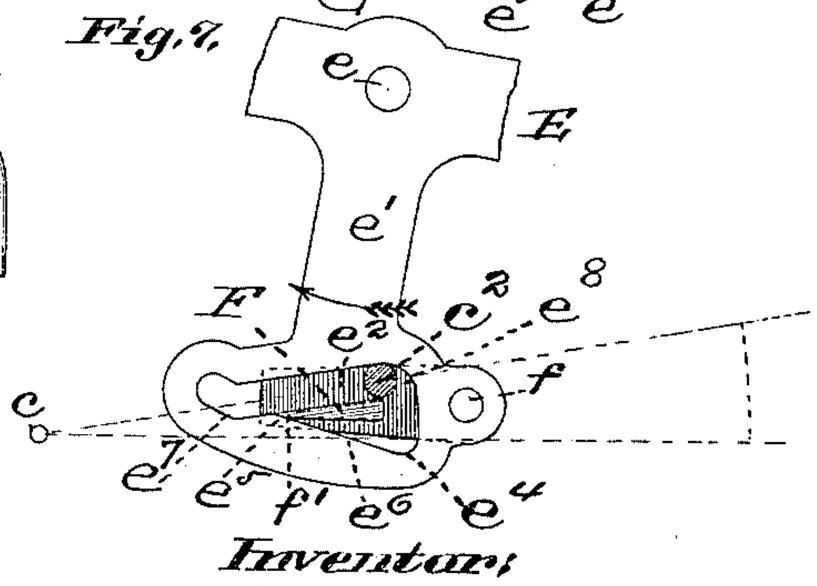
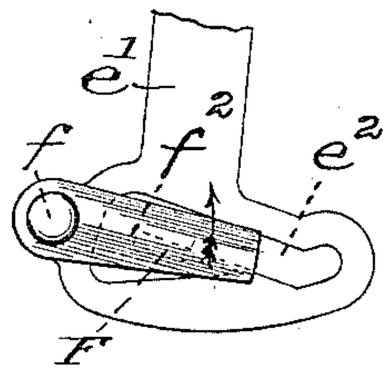


Fig. 3.



Attest;

G. A. Hinchman Jr.

G. W. Lansford

Inventor;

Peter White

by C. D. Moody

atty

UNITED STATES PATENT OFFICE.

PETER WHITE, OF ST. LOUIS, MISSOURI.

TANK-VALVE.

SPECIFICATION forming part of Letters Patent No. 398,681, dated February 26, 1889.

Application filed September 8, 1888. Serial No. 284,923. (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 Tank-Valves, of which the following is a full, clear, and exact description.

This improvement is more especially, but not exclusively, adapted to such tanks as are used in water-closet mechanisms, and particularly those closets in which what is styled a "fore" and "after" wash is employed. Its object is to provide means for obtaining a comparatively slight forewash and a more prolonged afterwash, substantially as is hereinafter set forth and claimed, aided by the annexed drawings, making part of this specification, in which—

Figure 1 is a view showing the improvement in side elevation in position in a tank, which is shown in vertical section. Fig. 2 is a section on the line 2 2 of Fig. 1; and Figs. 3 to 7 side elevations, partly in section, illustrating the operation of the improvement, Figs. 4, 5, 6, and 7 being views looking in the direction of Fig. 1, and Fig. 3 a view looking in the opposite direction. In Figs. 4, 5, 6, and 7 the lever which lifts the tank-valve is not shown; but the pin which connects it with the vertical arm of the weighted or ball lever is shown in section, and in Fig. 3 the lower portion of the ball-lever arm is shown, and also the pivoted inclined plane.

The same letters of reference denote the same parts.

A, Fig. 1, represents a float tank-valve adapted to seat at *a* in the tank B. It is lifted from its seat by means of the lever C, which at *c* is pivoted to some fixed bearing—such as the bracket D—and whose free end *c'* is in engagement with the stem *a'* of the valve. The lever C in turn is lifted by means of the ball-lever E, which is pivoted at *e* to the bracket D, and is provided with a vertical arm, *e'*, Figs. 1 to 7, which engages with the lever C, and so that by vibrating the ball-lever E vertically upon its pivot the lever C is raised and lowered and the valve unseated and seated. As thus far described, the construction is substantially a familiar one.

The vertically-depending arm *e'* of the lever E is slotted at e^2. The slot receives from the front a pin, c^2, which projects rearwardly from the lever C, and from the back it receives what may be termed an "inclined plane," F, and the general direction of the slot may be said to be at right angles to the direction of the main part of the arm *e'*. Its special shape, however, and the direction in which the pin c^2 moves in it are essential features of the improvement. When the end e^3 of the lever E is drawn downward, the pin c^2, which has been resting at the right-hand lower corner, e^4, of the slot e^2 is, by the movement of the slot, transferred to the point e^5 therein, as shown in Fig. 5. The lower side, e^6, of the slot does not lie in a curve struck from the position of the pivot *e*. The point e^5 thereof is nearer to the pivot *e* than is the point e^4; hence by turning the lever E from the position of Figs. 1 and 4 into that of Fig. 5 the lever C is raised on its pivot and the valve A thereby unseated. This described movement of the levers and of the valve occurs at the commencement of the use of the closet and the desired forewash is caused. The pull upon the end e^3 of the lever E occurs either by reason of what is known as the "seat-action" or by means of any pull upon the lever end e^3. The water-closet is not shown, its construction in the respect named being well understood. The lifting of the valve, however, is but momentary, for after reaching the point e^5 in the slot the pin c^2, by reason of the downward slant at e^7 in the slot, is moved downward, whereupon the lever C drops, and, owing to the mode of uniting the lever C and the valve-stem, the valve is at once seated. This position is indicated in Fig. 6.

Prior to the movement of the arm *e'*, by which the pin c^2 is shifted along the bottom of the slot e^2, the inclined plane F, which at *f*, and by means of the arm f^2, is pivoted to the arm *e'*, Fig. 3, and whose point *f'* is capable of being raised and lowered, as indicated by the two positions of the plane, shown, respectively, in Figs. 5 and 4, has had its point *f'* resting upon the bottom of the slot e^2 at the point e^5; but when the pin c^2 is shifted, as described, the plane F is turned upward, as described, upon its pivot until the pin has passed from beneath it to the point e^7 of the slot, where-

upon the plane F turns by gravity downward again, and its point is again rested upon the slot at the point e^5, as shown in Fig. 6. The parts now remain in this position until it is desired to apply the afterwash, whereupon the lever E is moved, or is allowed to move, in the opposite direction—that is, its weighted end moving downward. The arm e' now shifts from the position of Fig. 6 into that of Fig. 7, and during this movement the pin c^2 rides upon the inclined plane F, and is at the end of the stroke of the arm e' brought to the point e^8 of the slot e^2. The slot is of the triangular shape shown, to provide for the described movement of the pin. Now, owing to the pin c^2 being thus lifted, the valve, through the lever C, is unseated to a higher elevation than when the pin is shifted to the point e^5, and hence when the valve is released at the point e^8 of the slot it has a greater distance to drop before it becomes seated again. The seating of the valve is therefore prolonged as the pin c^2 is dropping from its position of Fig. 7 into that of Fig. 4, and a longer afterwash is thereby obtained. The pin c^2 thus with every full vibration of the lever E travels entirely around the inclined plane F, and the inclined plane turns upward and downward upon its pivot, and the lever C is first raised, then dropped, again raised and upheld at a still higher level, and then allowed to drop.

The valve A is preferably one of the class which seat slowly when left to themselves to seat—such, for instance, as the hollow valve shown in the patent granted to me May 24, 1887. To cause the lever C and valve to move together, the point of the lever is turned back over the valve-stem, as shown, so that when the lever is moved downward the valve-stem is thereby forced downward. To steady the valve-stem laterally, the lever C is provided with a brace, c^5, Fig. 2, which comes between the two parts of the stem, as shown.

B′ represents the discharge-pipe of the tank.

I claim—

1. The combination of the pivoted lever E, having the slotted arm, as described, the pivoted inclined plane, and the pivoted lever C, having the pin c^2, said pin c^2 traveling around said inclined plane and within the slot in said lever-arm, substantially as described.

2. The combination of the pivoted lever E, having the arm e', slotted at e^2, as described, with the pivoted lever C, having the pin c^2, and the hooked end c', and the float valve and stem, said pin c^2 traveling around said inclined plane and within the slot in said lever-arm, substantially as described.

3. The combination of the tank, the float valve and stem, the bracket, the pivoted lever E, having the arm slotted, as described, the pivoted inclined plane, and the pivoted lever C, having the pin c^2 and hooked end c', said pin c^2 traveling around said inclined plane and within the slot in said lever-arm, substantially as described.

Witness my hand.

PETER WHITE.

Witnesses:

C. D. MOODY,

FRANCIS VALLÉ.