

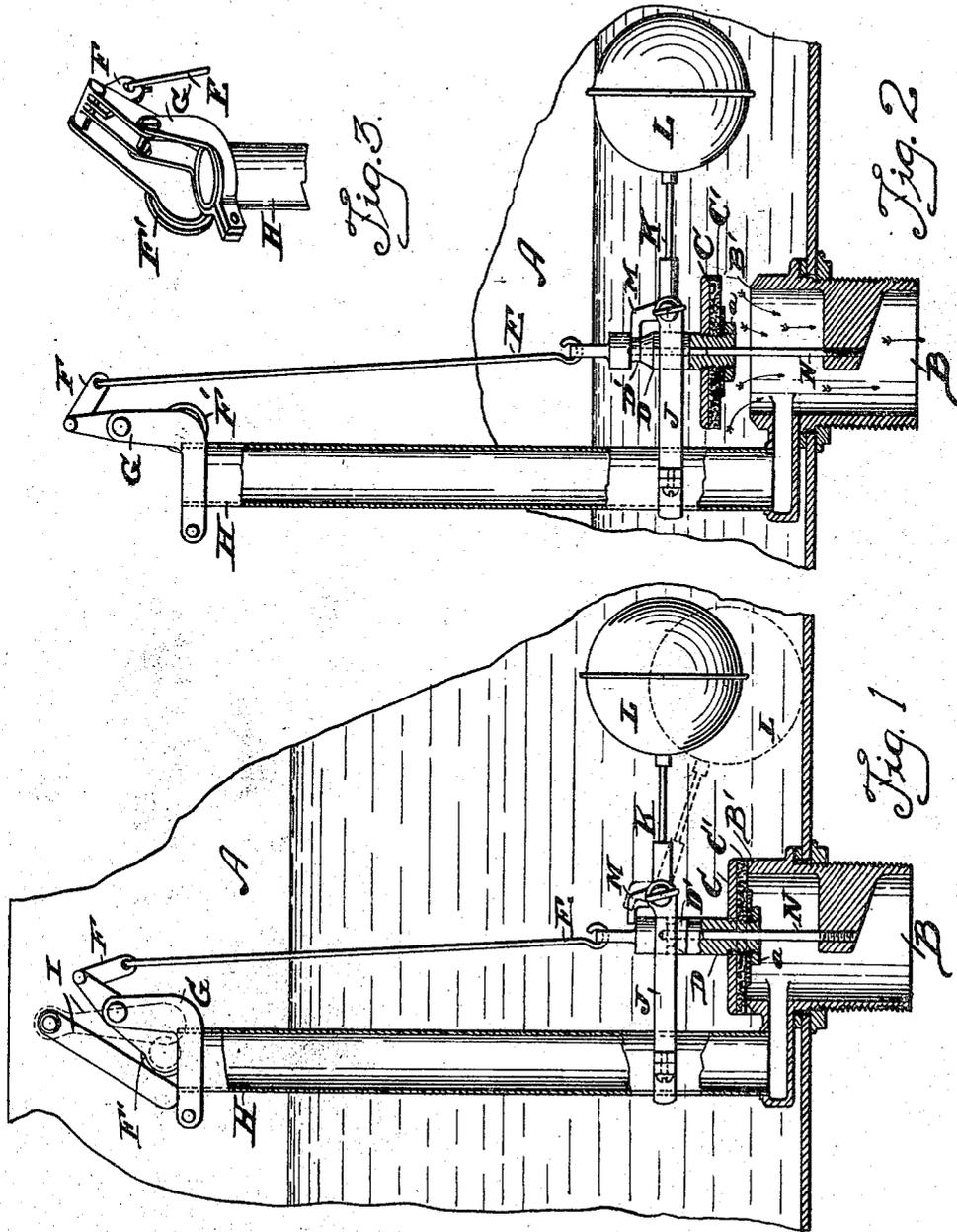
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FLUSH VALVE

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UNITED STATES PATENT OFFICE.

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FLUSH VALVE.

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To all whom it may concern:

Be it known that I, WILLIAM SHERWOOD, citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Flush Valves, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to flush valves, as shown in the accompanying drawings and more particularly described in the following specification and claims.

One of the objects of the present invention is to provide a device of simple and inexpensive construction which is adapted to automatically hold the valve upon its seat until manually raised and then to automatically maintain the valve off its seat until the water contained in the tank is substantially discharged, whereupon the valve is automatically seated and held upon its seat that the tank may be filled or until again manually raised to discharge the water in the tank.

A further object of the invention is to provide a device of few parts which are readily accessible for examination or repairs when required.

A further object of this invention is the elimination of springs or other like devices to force the valve to its seat and to maintain it thereon.

Other features of this invention are the means for manually controlling the raising of the valve from its seat, and for guiding the valve back to its seat.

With the foregoing and other objects in view which will appear as the description proceeds, the invention further resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes may be made in the precise embodiment of the invention herein disclosed without departing from the spirit of the same.

In the drawings accompanying this specification;—

Figure 1 is a sectional view through a fragment of a flush tank showing the flush valve closed and in dotted lines the position

of the float upon manually raising the valve by the operation of the controlling lever.

Figure 2 is a similar view, showing the valve as it would appear when supported by the action of the float, following the manual raising of the valve to discharge the water from the tank.

Figure 3 is a perspective view of the lever mechanism,—mounted on the upper end of the overflow pipe—for manually raising the flush valve.

Referring now to the letters of reference placed upon the drawings:—

A, denotes a flush tank; B the discharge outlet provided with a valve seat B' to receive the flush valve C, fitted on its underside with a leather or other suitable disc C'.

D indicates a stem, threaded to receive a nut *a*, extending up through the valve with an aperture at its upper end to receive the end of a wire link E, connected with one arm of a bell-crank lever F, pivoted to a casting G, clamped upon the upper end of the overflow pipe H;—which is supported in an extension of the fitting B forming the discharge outlet. I, denotes a manually operated rocker arm journaled in the wall of the tank;—the arm on the inner wall of the tank being adapted to bear upon a roller F' on one arm of the bell-crank lever F for operating the latter to lift the flush valve.

J, designates a bracket, clamped to the lower portion of the overflow pipe, to which is pivoted a lever K, fitted at one end with a float L and at the other with a hook shaped casting M adapted to enter a peripheral groove D' in the valve stem D to support the valve off its seat when manually raised (see Fig. 2) until the altitude of the water in the tank has been sufficiently lowered to cause the float at the end of the lever to release the valve by tripping the valve supporting hook M.

When seated the valve is held thereon (until manually raised) by the combined action of the float and the hook-shaped casting M, (see Figure 1).

N denotes a rod, supported in a bracket projecting from the inner wall of the discharge outlet casting, extending upwardly into a bore provided in the stem D, for guiding the valve to its seat.

Having indicated the several parts by reference letters the construction and operation of the device will be readily understood.

To discharge the water from the tank the rocking arm I is manually operated thereby actuating the bell-crank lever F, which in turn, through the link connection E, serves to lift the flush valve C. Upon the valve being raised to discharge the water the float L forces the hook M to enter the groove D' in the valve stem D, thereby maintaining the valve in its elevated position until the float is no longer effective to maintain the hook M in the groove D' to support the valve in its elevated position.

The valve being thus released drops to its seat whereupon the hook M closes over the end of the valve stem as shown in Figure 1, the float serving to hold the valve to its seat while the tank is filling and until the valve is again manually raised as previously explained.

Having thus described my invention what I claim is:—

1. In a device of the character described an overflow pipe carrying spaced brackets thereon composed of laterally extending arms, a substantially inverted V-shaped bell

crank having one arm pivoted to the said bracket and carrying a link on the other arm, a lever carrying a roller at one end connected to the bell crank at the point of intersection of the said arms and extending below the pivot point of the same to the bracket, a vertically sliding valve carried by the lower bracket and connected to said link, and a rocker arm contacting with the lever whereby the valve is elevated.

2. In a device of the class described, a flush valve having an upstanding stem provided with a flat bearing surface on its upper end, a pivoted lever carrying a float on one end and a substantially Z-shaped hook on the other so positioned that the hook engages the said flat bearing surface of the valve stem whereby the valve is held closed and means for raising and lowering the valve.

In testimony whereof, I sign this specification in the presence of two witnesses.

WILLIAM SHERWOOD.

Witnesses:

L. E. THOMAS,
MAURICE WOLF.