

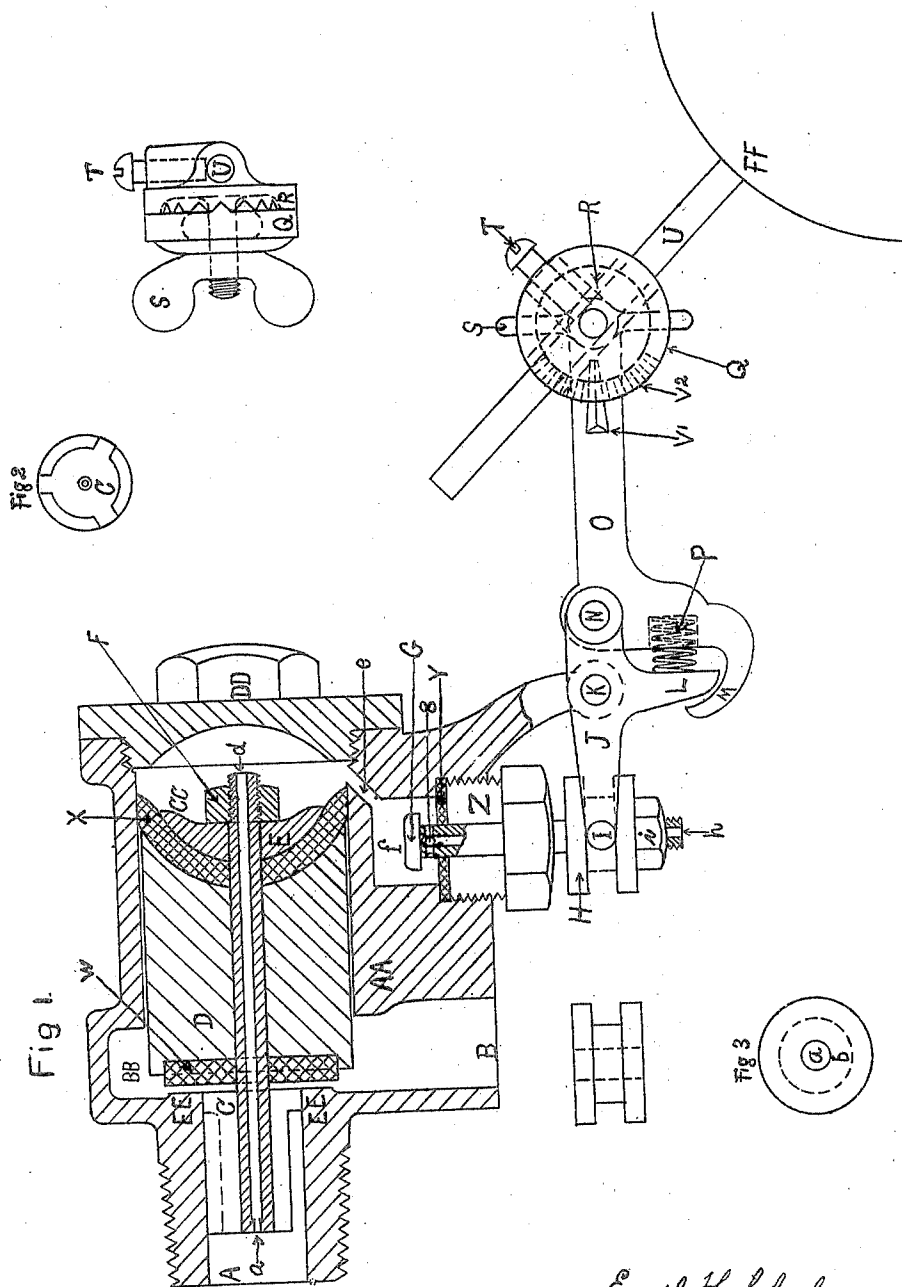
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E. H. SCHULZE.

VALVE.

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UNITED STATES PATENT OFFICE.

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VALVE.

No. 802,330.

Specification of Letters Patent.

Patented Oct. 17, 1905.

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To all whom it may concern:

Be it known that I, EMIL HERMAN SCHULZE, a citizen of the United States, residing at Drownville, in the county of Bristol and State of Rhode Island, have invented a new and useful Improvement in Valves, of which the following is a specification.

The invention relates particularly to automatic valves used in flushing tanks under control of a ball or other float.

The objects of the invention are to improve the construction and effectiveness of the tank-supply valve and to relieve the strain upon the working parts intermediate the valve and the float, as will be more fully set forth hereinafter and pointed out in the claims.

Figure 1 is a sectional view of the valve embodying my invention. Fig. 2 is an end view of the guide, showing the wings or supports. Fig. 3 is a view of the opposite end of the guide.

In the drawings, AA indicate the valve-casing; BB, the outlet-chamber; CC, the compression-chamber; DD, a plug for closing the end of the compression-chamber; EE, the valve-seat, and FF the ball or other float.

A is the water-inlet; B, the outlet.

C is a three-winged guide supported on a tube *a*, which passes through the piston D and operatively secures the guide to the piston D. The packing W is secured in the piston D next to the inlet, and X is a cupped packing, which is secured in the opposite end of the piston by means of the compressor E and the nut F, which is screw-threaded onto the tube *a*.

The auxiliary chamber *f* connects with the compression-chamber CC by the passage *e* and is closed by the plug Z and the packing *y*. The auxiliary valve G is reciprocally supported in the plug Z and has the hollow stem *h* and the side inlet *g*. The lower end of the stem *h* is screw-threaded and is provided with the double-flanged fitting H and the nut *i*.

The operating-lever consists of two parts. The auxiliary-valve arm J is supported on the pivot K to the depending arm of the valve-body and has the depending finger L and bifurcated end I meshing with the fitting H. The arm O of the lever is pivoted to the arm J on the pivot N and has the upwardly-extending finger M and the socket formed in the side next to the finger L in which the coiled spring P is supported. At the outer end of the arm O is the disk Q. The disk R

has the recesses V², which mesh with the fixed tooth V' and holds the parts in the adjusted position. When the thumb-screw S is screwed up, the float-rod U passes through a hole in a lug formed on the side of the disk R and is held in place by the screw T.

The operation of the device is as follows: The valve being properly secured to a tank and connected up with the water-pressure and the water now being drawn from the tank, the ball-float will descend with the same, compressing the spring P until the arm O is in contact with the finger L, when the bifurcated end of the arm J, pivoted at K, will be lifted, carrying with it the fitting H and lifting the valve G from its seat, allowing the water to escape through the hollow stem and relieving the pressure from behind the piston D. The excess of pressure then being on the guide and its flange in the inlet will cause them to move inward with the piston D, allowing a free passage of the water through the inlet A and outlet B into the tank. As the water rises in the tank the ball-float is lifted until the finger M comes in contact with the finger L of the arm J, depressing the bifurcated end, which carries with it the valve G, until the same is seated and the outlet through the stem closed, when the water passing through the hole *d* in the tube *a* will accumulate in the compression-chamber CC, and by reason of the greater area of that end of the piston the piston will be forced against the inlet-pressure of water, closing the valve and stopping the flow of water.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a valve, the combination with a casing having inlet and outlet openings and an auxiliary chamber, a piston located within the casing, a guide, and a tube passing through the guide and piston, of an auxiliary valve, a two-part lever, the auxiliary-valve arm of which is pivotally supported on the casing and connects with the auxiliary valve, and the ball-float-carrying arm pivotally supported on the auxiliary-valve arm and a spring interposed between the two arms, as described.

2. In a tank-supply valve, the combination with the casing AA provided with inlet and outlet openings, a compression-chamber, and an auxiliary chamber, of a piston D, the guide C connected to and moving with the piston D, an auxiliary valve G, the arm J pivoted to the casing and connecting with the stem of the valve G, the arm O pivoted to the arm J,

the spring interposed between the arms J and O, and the ball-float adjustably secured to the free end of the arm O, as described.

3. In a valve of the nature described the
5 combination with the auxiliary valve, of a two-part lever, one arm of which connects with the auxiliary valve and the other arm of which carries the ball-float, and a spring interposed between the two arms, as described.

10 4. In a pressure-operated valve of the nature described, the combination with the auxiliary valve G having the stem *h*, and the fit-

ting H, of the two-part lever consisting of the arm J which connects with the fitting H and has the finger L, and the arm O pivotally 15 supported on the arm J and provided with the finger M, the spring P interposed between the finger L and the heel of the arm O, and a ball-float adjustably secured to the free end of the arm O, as described.

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