

No. 606,906.

Patented July 5, 1898.

E. ZERTUCHE.
VALVE.

(Application filed July 28, 1897.)

(No Model.)

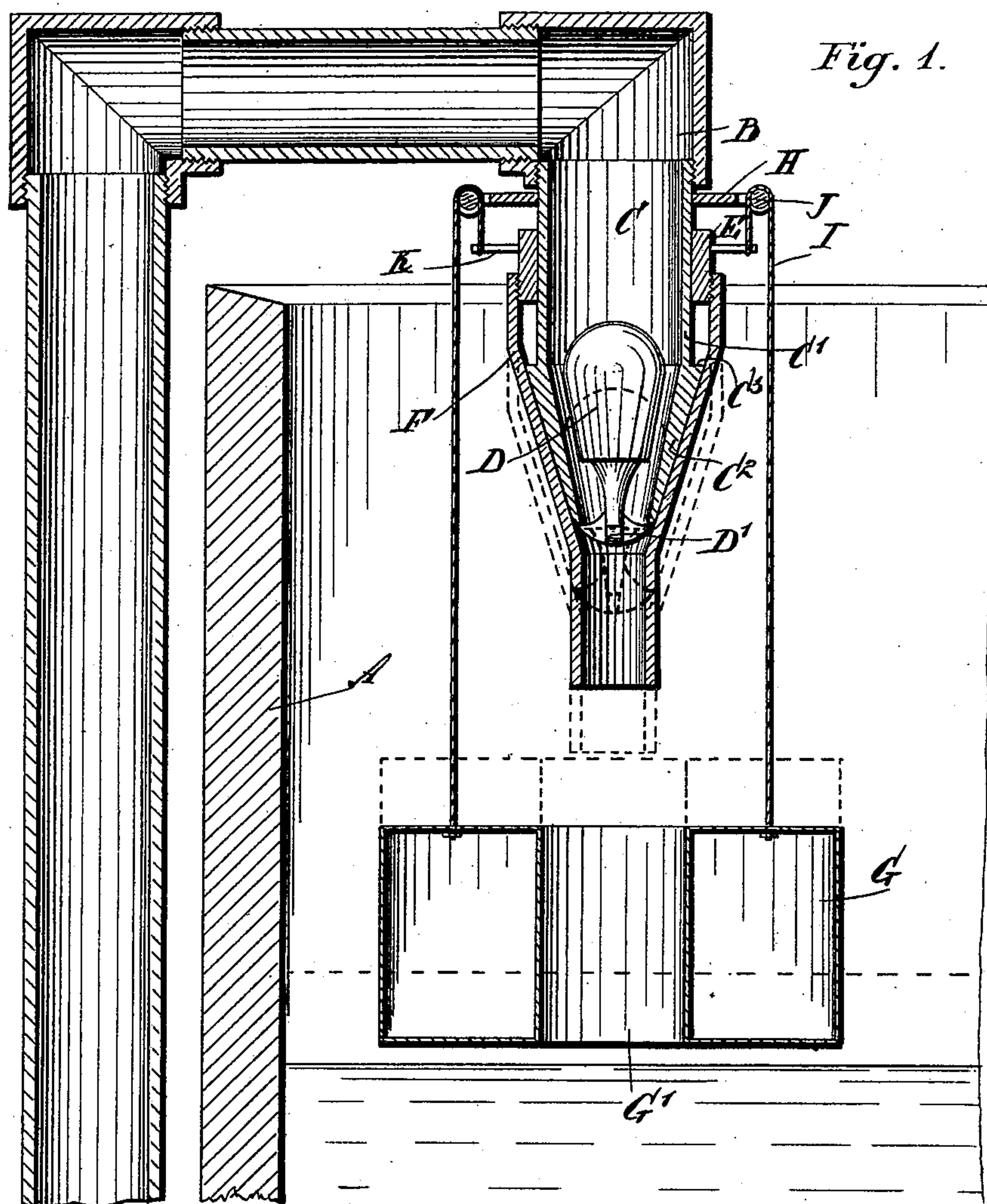
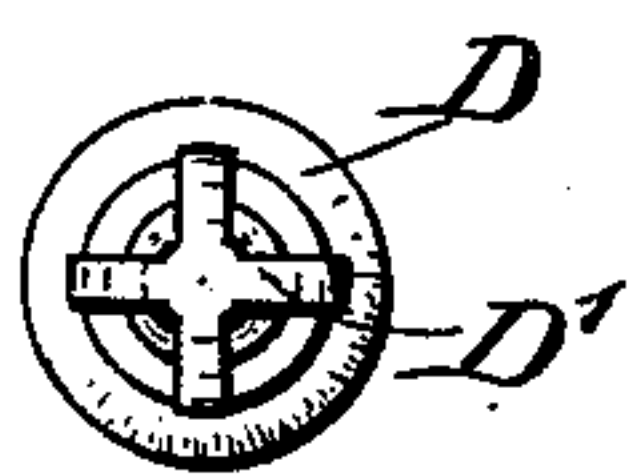


Fig. 2.



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EMILIO ZERTUCHE, OF PUEBLA, MEXICO.

VALVE.

SPECIFICATION forming part of Letters Patent No. 606,906, dated July 5, 1898.

Application filed July 28, 1897. Serial No. 646,195. (No model.)

To all whom it may concern:

Be it known that I, EMILIO ZERTUCHE, of Puebla, Mexico, have invented certain new and useful Improvements in Valves, of which the following is a full, clear, and exact description.

My invention relates to valves designed to control the flow of a liquid and to arrest such flow at a predetermined period.

The invention embraces certain novel features in valves of the above-indicated class, as will appear from the description and claims following hereinafter.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in both the figures.

Figure 1 shows my invention applied to a tank or like receptacle, and Fig. 2 is an inverted plan of the valve proper.

A denotes the tank or the like, and B the supply-tube from which water is discharged into the tank. On the outlet of the tube screws the valve-casing C, cylindrical in its upper portion C' and conical in its lower or seating portion C².

D is the valve, having a tapering body in the casing C and radial arms D' below the mouth of the casing, said arms being of such length that they cannot enter the said mouth. On the casing C is adapted to slide vertically a sleeve E, connected to a valve-operating tube F. Said tube is conical where it engages the part C² of the valve-casing and cylindrical, or approximately so, at its lower end. The upward movement of the tube F is limited by its engagement with the valve-casing C in the position shown in full lines in Fig. 1. The downward movement of the tube F is limited by a shoulder C³ on the casing C engaging the sleeve E.

The apparatus is fully operative even when it consists only of the parts hereinbefore described. The valve-operating tube F will assume its lowermost position by gravity. (See dotted lines in Fig. 1.) The valve D then rests on its seat C² by gravity, and the liquid cannot flow into the tank. When it is desired to open the valve, the tube F is raised manually, and by its engagement with the arms D' of the valve D it lifts the valve off its seat C², so that the liquid can pass out of the tube B,

past the body of the valve, and between the arms D' thereof. As soon as the operator releases the tube F said tube and the valve D will return to their initial position by gravity, the return movement being also assisted by the pressure of the water. In fact, the pressure of the water in many cases will be sufficient to force the valve down on its seat as soon as released, so that it will not be necessary to have the outlet facing downward, as shown.

In some cases a manual operation of the tube is undesirable, and for this purpose I may apply the automatic arrangement shown in the drawings. In this construction the valve is open as soon as the receptacle or tank requires a supply of water, and the valve closes when the water reaches a predetermined level.

The automatic arrangement comprises the following parts in addition to those described hereinbefore: a float G, which is suspended from a holder H, secured to the valve-casing C or some other stationary part by means of cords I, pulleys, rods, or guides J, over which pass said cords, and projections, such as K, for securing the ends of the cords I to the sleeve E or to the tube F. The float is somewhat heavier than the tube F, sleeve E, and valve D, so that said parts will be raised by the float when the tank A is empty. This will open the valve D and cause the liquid to flow into the tank. When the liquid reaches the float, the lifting action of the float will be gradually neutralized, and finally when the weight of the float is borne by the liquid entirely gravity or liquid pressure will seat the valve, as hereinbefore described, thus interrupting the flow of the liquid. Whenever the float sinks on account of water being withdrawn from the tank, the valve will be opened automatically and will remain open until the former level is restored.

In the construction shown the float G is arranged directly below the outlet of the tube F, and in this case I prefer to make the float with a liquid-passage G', so that the stream of outflowing water will not affect the operation of the float by impact.

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

1. The combination of the outlet-tube having a valve-casing at its end, said casing being tapered toward its outer end, a valve within said casing, and a valve-operating device movable longitudinally of the outlet and arranged to engage the valve, said operating device being also arranged to engage the tapering surface of the casing, whereby the said surface will form a stop for the valve-operating device, substantially as described.

2. The combination of the outlet-tube having a valve-casing at its end, said casing having a tapered outer surface, a valve within the casing, and a valve-operating tube movable longitudinally of the outlet and having a tapered inner surface arranged to engage the tapered outer surface of the valve-casing, substantially as described.

3. The combination of the outlet-tube having a tapered end forming a valve-casing, and a portion of uniform cross-section adjacent to said tapered end, a valve in said casing, and a valve-operating device comprising a sleeve fitted to slide on said portion of uniform cross-section, and a tapered tube adapted

ed to engage the valve and the tapered valve-casing, substantially as described.

4. The combination of the tubular casing, the valve located therein and having an end portion with spaced radial arms located exteriorly of the outlet of the casing and of greater length radially than the radius or half-width of the outlet, whereby that surface of said arms which is toward the valve is adapted to engage the casing at the outlet thereof, and the longitudinally-movable valve-operating device adapted to engage said arms, substantially as described.

5. The combination of the valve-casing, the valve movable therein, the longitudinally-movable valve-operating device and the counterbalancing float connected to said valve-operating device, said float being apertured in line with the liquid-outlet, substantially as described.

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Witnesses:

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