

J. OGG.
VALVE.

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1,013,806.

Patented Jan. 2, 1912.

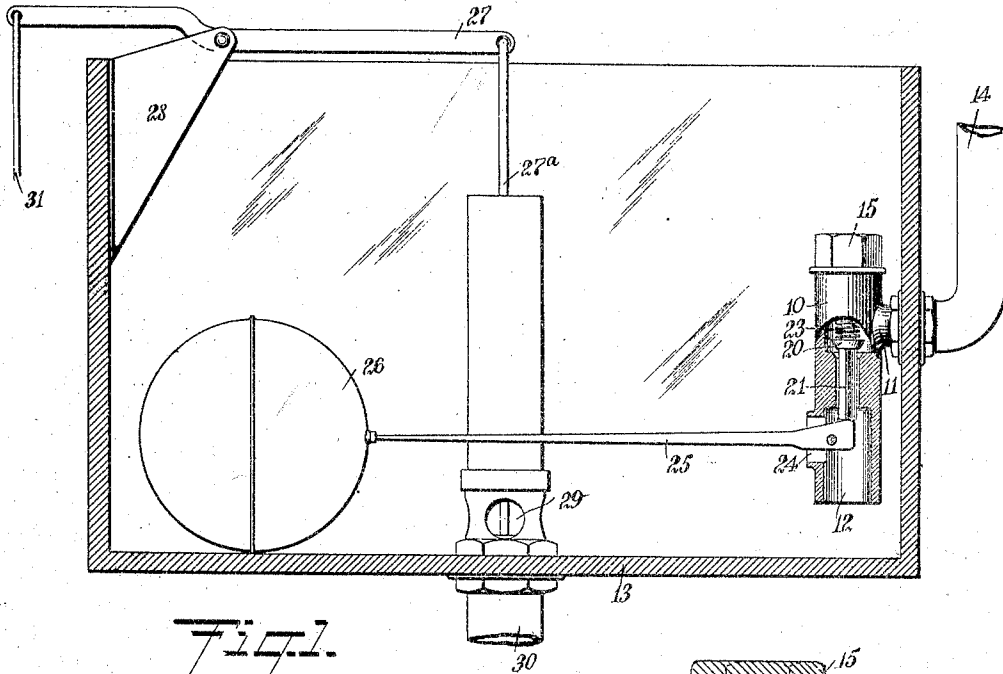


Fig. 1.

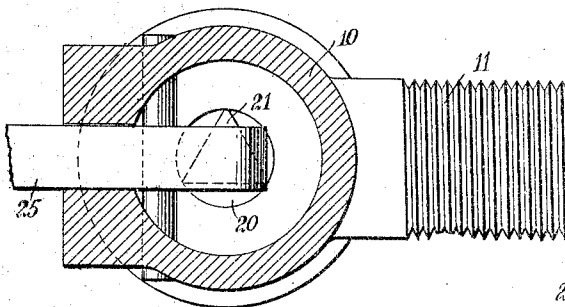


Fig. 3.

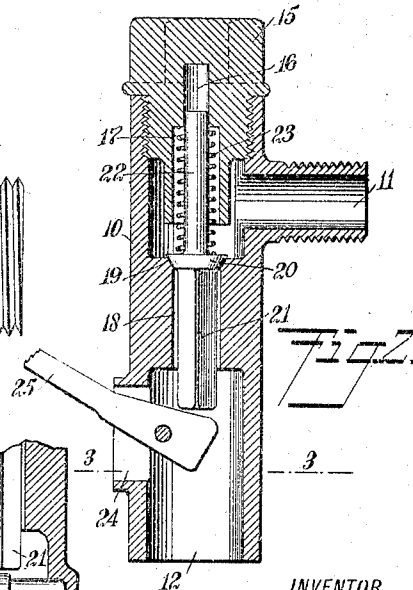


Fig. 2.

WITNESSES:
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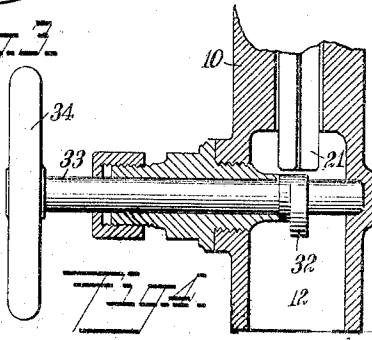


Fig. 4.

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1,013,806. VALVE. JAMES OGG, Pahala, Hawaii. Filed Apr. 22, 1910. Serial No. 556,921.

To all whom it may concern:

Be it known that I, JAMES OGG, a subject of the King of Great Britain, and a resident of Pahala, Kau, Territory of Hawaii, have invented a certain new and useful Valve, of which the following is a full, clear, and exact description.

My invention relates to fluid pressure regulators, and has for an object to provide a valve to regulate the flow of liquids and more particularly to regulate the flow of water from one reservoir to another.

For the purpose mentioned use is made of a casing having an inlet and an outlet and provided with means engaging the casing to regulate the flow of water passed through the casing, the said means being preferably spring controlled and so constructed that when the valve is in operation the water or other liquid will at all times act against the said means to hold the valve in closed position.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference denote corresponding parts in all the views, and in which—

Figure 1 is a sectional side view of a flushing apparatus equipped with my valve, parts of the same being broken away to disclose the underlying structure; Fig. 2 is a sectional side view of my valve showing the same in normal or closed position. Fig. 3 is a sectional view taken on the line 3—3 in Fig. 2; and Fig. 4 is a fragmentary sectional view showing a modified form of controlling means to open or close the valve.

Before proceeding to a more detailed description of my valve, I wish it understood that my valve possesses several features in the construction and operation of valves, not shown or applied to valves most generally used at the present time. In the ordinary type of valve the water in most cases acts with the valve or means for operating the valve, to open the same. In my improved type of valve, the water pressure is utilized to act against the valve or controlling means, so that when the valve is to be opened it must be opened against the water pressure. In this manner leaky valves are avoided; and the pressure against the valve can be still further increased by the addition of a spring adapted to press the valve more closely against the valve seat.

Referring more particularly to the various views, I provide a casing 10, having an inlet opening 11, at right angles to the casing 10, and an outlet opening 12 at one end of the casing. For the purpose of more

fully describing the operation of my valve I have shown the same disposed in a flush tank 13, and having the inlet 11 connected with a supply pipe 14, as will be seen by referring to Fig. 1. Screw-threadedly secured to the upper end of the casing 10 is a hexagonal cap 15, having formed therein centrally disposed chambers 16 and 17. A valve chamber 18 is provided in the casing 10, and at the upper end thereof is formed a valve seat 19. Normally disposed on the valve seat 19 is a valve 20, provided with a valve stem 21, preferably triangular in shape and extending downwardly through the valve chamber 18. A guiding valve stem 22 is also provided on the valve 20 and extends upwardly into the chamber 16 of the cap 15, and a spring 23, is disposed to encircle the guiding stem 22 and extends into the chamber 17 of the cap 15. An opening 24, is provided at the lower end of the casing 10, and pivotally mounted in the casing 10 and adapted to extend outwardly through the opening 24, is a lever 25, adapted to engage the valve stem 21 when the valve 20 is to be opened. A ball or float 26, is secured to an end of the lever 25, the size of the float 26 or the length of the lever 25, being proportional to the amount of pressure acting against the valve 20, or proportional to the force required to lift the valve 20 from the valve seat 19. Connected to suitable levers 27 and 27^a, mounted by means of a hanger 28, on the tank 13, is a valve 29, controlling an outlet pipe 30, and the valve 29 is operated by pulling or releasing a cord 31 depending from the lever 27.

Suppose the tank 13 to be filled with water; the float 26 will tend to move toward the surface of the water and the lever 25 will be in the position shown in Fig. 2, and out of engagement with the valve stem 21. Now by pulling the cord 31 the valve 29 is opened and the water rushes out through the pipe 30. As the water level in the tank 13 becomes lower, the float 26 moves downwardly and the lever 25 is caused to engage the valve stem 21, as will be seen by referring to Fig. 1. When all the water is drawn from the tank 13, the weight of the float 26 will carry the same to the floor of the tank and the valve 20 will be raised from the valve seat 19, as can also be clearly seen by referring to Fig. 1. Now the supply pipe 14 is filled with water and opens into the casing 10, so that when the valve 20 is raised against the water pressure in the supply pipe and the pressure of the spring 23, the water in the supply pipe rushes through the valve opening and the outlet 12 into the tank 13. As the water enters the tank 13 and commences to fill the same, the float 26 rises with the water, and when the tank is full the height of the float causes the lever

25 to be tilted at an angle and release the valve stem 21, thus returning the valve 20 to closed position. The valve 29 in the tank 13 operates partly by the water pressure in the tank, so that when the valve is opened the water in the tank holds it open until the water has left the tank 13, when the weight of the valve causes the same to return to closed position and the valve can only be re-opened by pulling the cord 31.

In Fig. 4 is shown a modified form of my device, the valve in this casing being the same as hereinbefore described, but operated by a cam 32 mounted on a controlling stem 33, provided with a handle 34. This modified form is preferably adapted for faucets, especially for faucets where a heavy water pressure is to be controlled, and by turning the handle 34 the cam 32 will be made to operate to engage the valve stem 21 and raise the valve 20 in the same manner as hereinbefore described and shown.

It will be distinctly understood that, although I have shown and described my valve mainly as applied to flush tanks, the valve can be conveniently applied to various devices designed to be operated by valves, and that I do not limit myself to the precise construction shown, the scope of my invention being fully disclosed in the appended claims.

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

1. A valve comprising a valve casing body having its bore reduced intermediate of the ends thereof and provided with a valve seat at the upper end of the reduced bore, a lateral inlet above the valve seat and an outlet at its lower end, a cap screwing into the upper end of the casing body and having its inner end reduced and terminating a short distance above the valve seat, said cap being provided with two chambers of unequal size, the larger chamber leading out through the inner reduced end of the cap, a valve adapted to seat on said valve seat and having stems on its upper and lower faces, the stem on the lower face of the valve being triangular in cross section and projecting through the reduced bore of the casing body and the stem on the upper face extending through the larger chamber of the cap into the smaller chamber thereof, a spring surrounding the upper valve stem with one end engaging the valve and its other end engaging the upper end of the larger chamber of the cap, and a member mounted in the lower end of the casing body below this lower valve stem and engaging the same to raise the valve from its seat.

2. A valve, comprising a valve casing body having its bore reduced intermediate of the ends thereof and provided with a valve seat at the upper end of the reduced bore, a lat-

eral inlet above the valve seat, and an outlet at the lower end of the body, a cap screwing into the upper end of the casing body and provided with two chambers of unequal size, a valve adapted to seat on the valve seat and having stems on its upper and lower faces, the stem on the lower face being polygonal in cross section and projecting through the reduced bore of the casing body and the stem on the upper face extending through the larger chamber of the cap into the smaller chamber, a spring in the larger chamber of the cap and surrounding the upper valve stem, and a stem mounted in the lower end of the casing body and provided with an eccentric engaging the lower end of the polygonal valve stem.

3. A valve comprising a casing having an inlet and an outlet, a valve seat intermediate the inlet and the outlet, a valve chamber at one end of which is the said valve seat, a valve in the said casing and adapted to normally engage the said valve seat, a triangular valve stem secured to one face of the said valve and extending through the said valve chamber, manually-controlled eccentric means mounted on the said casing and adapted to engage the said valve stem to operate the same, a guiding valve stem secured to the other face of the said valve, a spring encircling the said guiding valve stem and adapted to control the said valve, a cap removably secured to the said casing, a chamber in the cap for the reception of the said guiding stem, and a second chamber in the cap for the reception of the said spring.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES OGG.

Witnesses:

HENRY GLASS,
JAMES CAMPBELL.