(No Model.) 2 Sheets—Sheet 1.

H. H. HALLEY & R. I. McCULLEY.

VALVE.

No. 574,540. Patented Jan. 5, 1897.

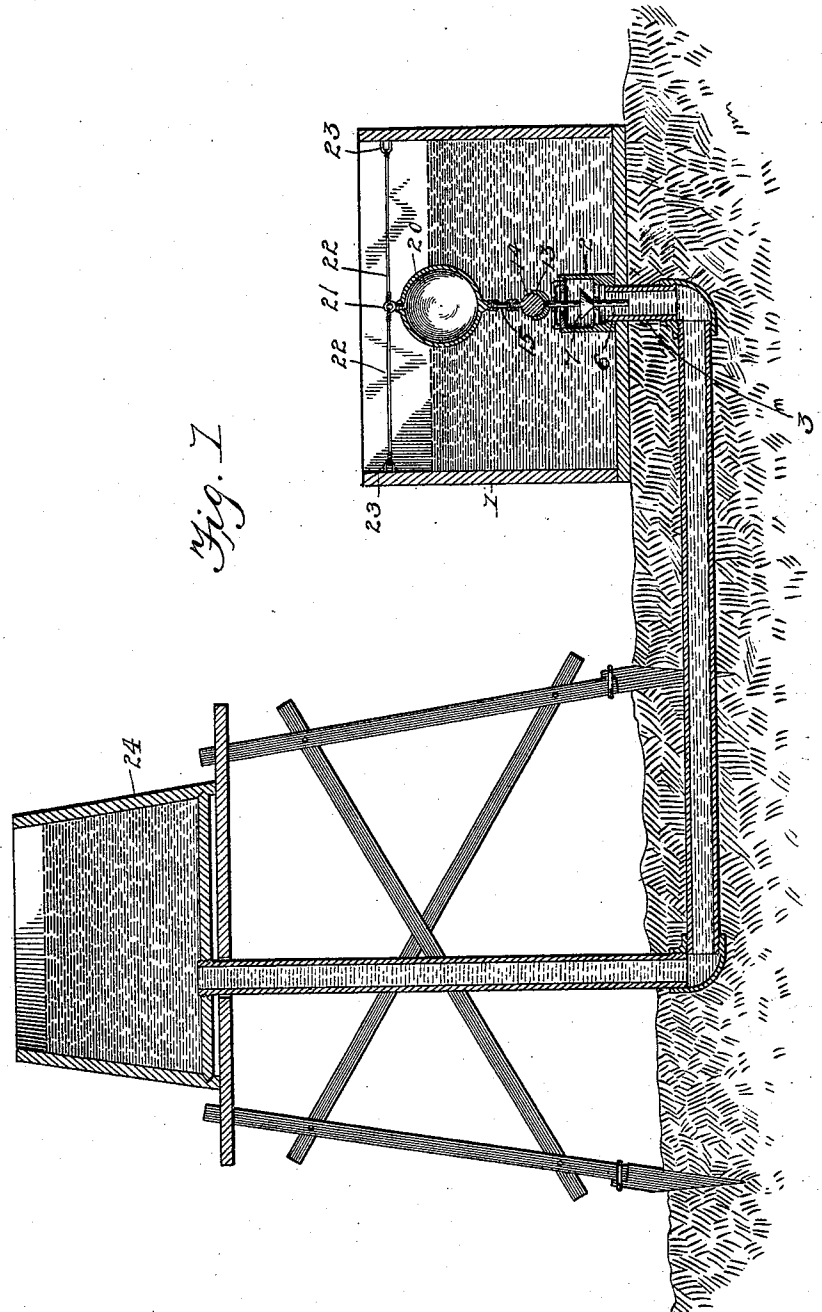

Fig. 1

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(No Model.) 2 Sheets—Sheet 2.

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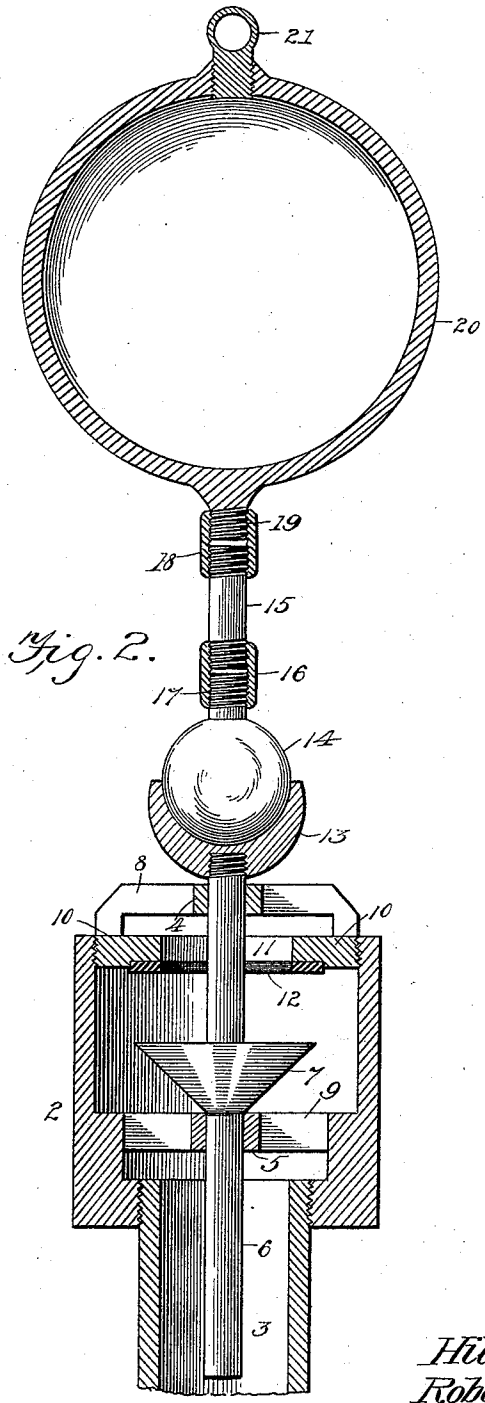

Fig. 2.

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UNITED STATES PATENT OFFICE.

HILLARY H. HALLEY AND ROBERT I. McCULLEY, OF STILES, TEXAS.

VALVE.

SPECIFICATION forming part of Letters Patent No. 574,540, dated January 5, 1897.

Application filed January 31, 1896. Serial No. 577,592. (No model.)

To all whom it may concern:

Be it known that we, HILLARY H. HALLEY and ROBERT I. McCULLEY, citizens of the United States, residing at Stiles, in the county of Tom Green and State of Texas, have invented a new and useful Valve, of which the following is a specification.

Our invention relates to valves, and particularly to float-valves employed in connection with receptacles in which it is desirable to retain the liquid, as water, at a uniform depth, such as water-troughs for cattle, the construction of the device being such as to close the valve when the surface of the water reaches the desired point and allow the valve to open when the surface of the water falls below said point.

The object of the invention is to provide means whereby in case the float is disarranged by the cattle the valve will be automatically closed to prevent waste of water, the disarrangement being such as not to permanently injure the valve mechanism or connections.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a sectional view showing a trough or receptacle containing a valve mechanism embodying our invention arranged in connection with an elevated tank. Fig. 2 is a detail view, partly in section, of the valve mechanism.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates a receptacle in connection with which the valve mechanism embodying our invention is employed, said valve mechanism comprising, essentially, a valve-casing 2 in communication with a supply-pipe 3 and provided with upper and lower guides 4 and 5 for the stem 6 of the valve 7. Said guides are formed in spiders 8 and 9, respectively, the upper spider 8 being formed integral with a cap 10, having a central outlet-opening 11, through which the liquid escapes from the interior of the casing. The valve-seat 12 is formed around said outlet-opening, and in the construction illustrated consists of an annular cushion of suitable yielding or elastic material, such as rubber or leather. The valve 1 is preferably of conical form, whereby the water or other liquid entering through the supply-pipe 3 is deflected by the beveled under surface thereof to avoid the closing of the valve until relieved of the weight of the float.

Secured to the upper end of the valve-stem is an approximately semispherical cup 13, in which is seated a spherical head 14 on the lower end of the float-stem 15. This float-stem is coupled, by means of the union 16, to a projection 17 on the head 14, and is also coupled, by means of a union 18, to a projection 19 on the spherical float 20. The float is provided at a point opposite the projection 19 with an eye 21, to which are attached the inner ends of limiting or guy wires 22, said wires being preferably attached at their outer ends to the sides of the receptacle by means of staples 23. In case of attack by cattle the wires 22 will be encountered, and the vibration of the float caused thereby will dismount the head 14 from the cup 13.

The weight of the float is sufficient when the level of the water is lowered to unseat the valve, but when the weight of the float is removed from the valve the pressure of the water within the valve-casing is sufficient to seat the valve irrespective of the level of the water in the receptacle. Hence in case of injury to the means employed for protecting the valve mechanism the valve will be automatically seated to prevent the escape and waste of water which would result if the valve were allowed to remain open.

In Fig. 1 we have shown the receptacle in communication, through the improved valve and the supply-pipe 3, with an elevated tank 24, this being a common arrangement of devices employed for supplying cattle continuously with water.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having described our invention, what we claim is—

1. The combination of a valve adapted to be seated by internal pressure in the valve-

casing, and a float loosely seated on the stem of the valve and held by gravity in operative relation therewith whereby when vibrated it is unseated, the weight of the float being sufficient to open the valve when the level of the liquid falls below a predetermined point, substantially as specified.

2. The combination of a valve adapted to be seated by internal pressure in the valve-casing, a cup carried by the stem of said valve, and a float provided with a head removably seated in said cup and held in place therein by gravity, substantially as specified.

3. The combination of a valve adapted to be seated by internal pressure in the valve-casing and carrying a cup, a float provided with a head removably seated in said cup, and exposed means connected to the float and adapted when vibrated to dismount the head from the cup and thus disconnect the float from the valve, substantially as specified.

4. The combination of a valve adapted to be seated by internal pressure in the valve-casing, a cup carried by the valve, a float having a head seated in said cup, and limiting or guy wires attached to the float and arranged in exposed positions, vibration of the wires being adapted to cause the disconnection of the float from the valve, substantially as specified.

5. The combination of a valve adapted to be seated by internal pressure in the valve-casing, a float having a loose detachable connection with the stem of the valve and adapted to be disconnected by vibration or jarring, an eye attached to the float, and radially-disposed limiting or guy wires attached at their inner ends to said eye and at their outer ends to fixed objects, substantially as specified.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

HILLARY H. HALLEY.
ROBERT I. McCULLEY.

Witnesses:
S. S. RUNKLES,
ALVIN CAMPBELL.