

No. 839,202.

PATENTED DEC. 25, 1906.

C. A. RICKARD.
WATERING TROUGH.
APPLICATION FILED NOV. 20, 1905.

Fig. 1.

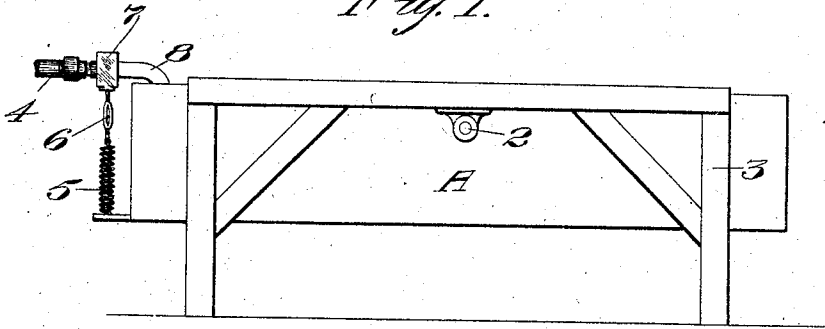


Fig. 2.

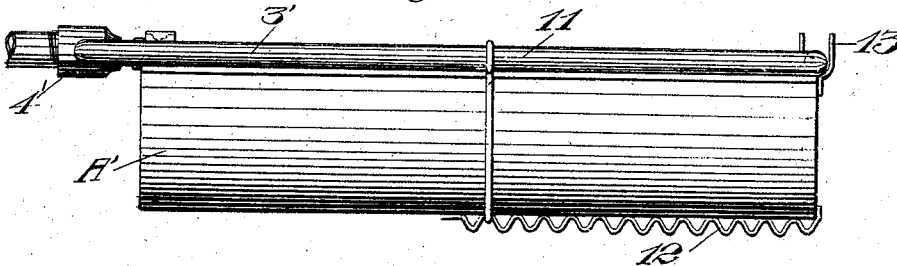


Fig. 3.

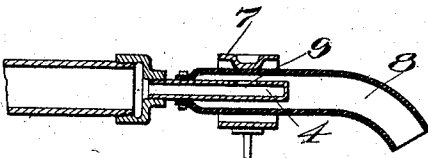
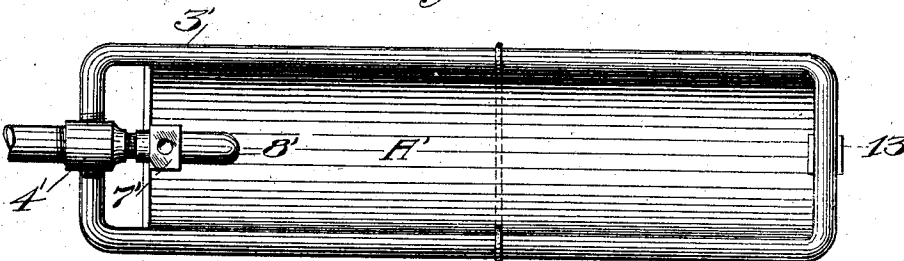


Fig. 4.

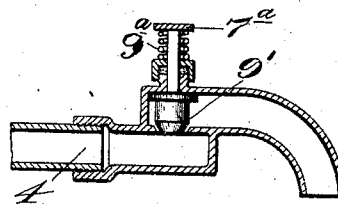


Fig. 5.

Witnesses.
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By Geo. H. Strong, Atty

UNITED STATES PATENT OFFICE.

CLYDE A. RICKARD, OF WATSONVILLE, CALIFORNIA, ASSIGNOR OF ONE-HALF TO E. E. BRIGGS, OF WATSONVILLE, CALIFORNIA.

WATERING-TROUGH.

No. 839,202.

Specification of Letters Patent.

Patented Dec. 25, 1906.

Application filed November 20, 1905. Serial No. 288,289.

To all whom it may concern:

Be it known that I, CLYDE A. RICKARD, a citizen of the United States, residing at Watsonville, in the county of Santa Cruz and State of California, have invented new and useful Improvements in Watering-Troughs, of which the following is a specification.

My invention relates to a trough for watering stock and poultry. Its object is to provide a cheap, simple, practical, and durable means for automatically filling a trough or tank or maintaining its contents at a uniform or approximately uniform level.

The invention consists of the parts and the construction and the combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a side elevation of a stock-watering trough showing the application of my automatic filling-regulator. Fig. 2 is a side elevation of the poultry-watering trough. Fig. 3 is a plan view of same. Fig. 4 is an enlarged longitudinal section of the valve. Fig. 5 shows a modified form of valve suitable for use with heavy tanks like that in Fig. 1.

A represents a trough of considerable size, such as is used for watering stock and the like, pivoted to one side of its center, as at 2, to a suitable frame 3. The end of the trough on the other side of its center from pivot 2 is connected with a valve or gate controlling the feed of water to the trough from the supply-pipe or conduit 4, so that this end of the trough may be raised more or less to vary the difference in weight of the water on the two sides of pivot 2, the opening and closing of the valve being governed by such difference in weight. As shown in this type of the apparatus, a coil-spring 5 has one end connected to the end of the trough farthest removed from the fulcrum 2, and the other end of the spring connects to a bolt or turnbuckle 6. The latter connects with a bail or stirrup 7, which lies over and embraces a short piece of hose or rubber tubing 8, which is slipped over and secured at one end to the pipe 4, Fig. 4.

Pipe 4 is closed at the end, but is perforated along the top, as at 9, to provide an outlet for the water. The hose-section 8 is slipped over the pipe so as to cover the outlet-port 9, the latter being intermediate of

the ends of the hose, with the inner end of the hose secured tight all around to the pipe by means of a wire or other fastening and with the opposite end of the hose projecting more or less beyond the end of the pipe. As the interior diameter of the hose is a little larger than the exterior diameter of the closed end of the pipe, it is possible for the water to flow through port 9 into the trough when the hose is not pressed down over the hole 4.

The under side of the top of the bail has a downwardly-projecting boss arranged in line with the port, so that when the bail is pressed with sufficient weight down onto the hose the port 9 will be closed and the further flow of water into the tank from pipe 4 will be checked. Lifting the bail releases the pressure of the hose over the hole and allows the flow of water to be resumed.

The spring and turnbuckle or equivalent connections between the hose and bail are for the purpose of changing the inclination of the trough relative to a horizontal plane, so as to affect the difference in weight of the water on the two sides of the pivots 2 to vary the level at which the water in the tank will automatically close the valve. Thus if the turnbuckle is operated to lift that end of the tank it will tend to equalize the quantity of water in the two ends of the tank. Consequently it will require the admission of more water into the tank to create a sufficient pressure on the bail to close the valve; or if the turnbuckle is turned in the opposite direction to depress that end of the tank a less quantity of water will be required in the tank to operate the valve. The purpose of thus varying the normal level of the water in the tank is to enable the stockman to keep practically only fresh water in the tank, leaving only a comparatively small quantity in the tank to become heated by the sun or to become contaminated.

The frame which supports the trough is preferably arranged low, so as not to interfere with the animals having access to the trough.

In Figs. 2, 3 I have shown a modification of the invention adapted more especially for the watering of poultry, in which case a smaller, lighter, and shallower trough A' is used. In this case a support 3' for the trough is employed, which is composed of a piece of pipe meant to correspond approxi-

mately with the length and breadth of the trough and connected direct to the supply-pipe 4'. The same sort of a valve is used in this device as that shown and described in connection with Fig. 1, and the flow of the water through the valve is controlled by a bail 7', connected with one end of the trough. The opposite end of the trough is pivotally supported more or less proximate to the center of the trough by a shiftable bail 11, which has its ends bent inward over the frame 3' and extends beneath the trough and is engageable in corrugations 12 on the bottom of the trough. Suitable guides 13, carried by the end of the trough opposite the feed-pipe, are adapted to engage the end of the frame 3' so as to prevent longitudinal movement of the trough and to insure the bail 7' exerting pressure in the proper manner on the hose-section 8' to control the flow of water into the trough. The bail 11 may be shifted back and forth on the top of the frame and on the bottom of the trough to engage any one or the other of the corrugations 12 to vary the difference in weight of the water on the two sides of the pivot-support 11. If a greater pressure is needed to close the valve or if it is desired to have the trough contain a less amount of water, the bail 11 is shifted away from the feed end of the trough, and vice versa.

In both forms of the apparatus shown one end of the trough is supported by the valve and the other end has a suitable pivotal support, the principle of operation and of the regulation of the flow of water being the same in each case.

While I have described a special form of valve which is very simple and the parts of which can be easily obtained almost anywhere, I do not wish to be considered as limiting myself to this special form of valve, since there is a great variety of valves capable of performing the same functions as this one.

It is possible that various other changes may be made in my invention without departing from the principle thereof, and I do not wish to be understood as limiting myself beyond the reasonable construction of my claims. Thus in Fig. 5 is shown a modified form of valve mechanism especially adapted for large tanks such as are used for watering stock. In this case a form of globe and angle-valve is used in which the valve 9' is normally held open by a spring 9^a. The bail 7^a bears on the valve and supports the tank.

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

1. The combination with a trough pivotally mounted between its ends, of a supply-pipe having a lateral discharge-port, a compressible tube inclosing the delivery end of the supply-pipe and adapted to extend over

the trough, a bail embracing the compressible tube, and means connecting the bail with the trough whereby upon the tilting of the trough the bail compresses the exterior tube over the delivery-port of the supply-pipe.

2. The combination with a trough pivotally mounted between its ends, of a supply-pipe having a lateral discharge-port, a tube of compressible material fitted over the end of the supply-pipe and having a diameter in excess of that of the end of the supply-pipe, said compressible tube extending over the trough, a bail inclosing the exterior of the compressible tube, and means connecting the bail with the trough whereby as the trough is tilted the bail is operated to compress the exterior tube over the port of the discharge end of the supply-pipe.

3. The combination with a trough pivotally mounted between its ends, of a supply-pipe having a lateral discharge-port, a tube extending over said port and beyond the end of the supply-pipe and over said trough, a vertically-operable valve, a bail fitting over the valve and exterior of the tube, and a spring connected with the bail, said spring connecting with the trough, and means connecting with the spring for changing the inclination of the trough relative to a horizontal plane.

4. The combination with a trough pivotally mounted between its ends, of a supply-pipe having a lateral port, a compressible tube inclosing the end of the discharge-pipe, and extending beyond said pipe, a bail substantially inclosing the compressible pipe and having a boss arranged in line above said port, and means connecting the bail to the trough whereby when the latter is tilted said boss compresses the tube over said lateral port.

5. The combination with a tilting trough and valve-controlled means for supplying water thereto, said means being controlled by the movements of the trough, of a stationary frame extending around the sides and ends of the trough, and a guide on the trough adapted to engage an end bar of the frame to prevent longitudinal movement of the trough.

6. The combination with a trough and valve-controlled means for supplying water thereto, said means being controlled by the trough, of a frame including bars extending along the upper sides of the trough, a bail shiftable on said bars, and a rack-surface on the trough with which the bail engages to shift the fulcrum-point of said trough.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CLYDE A. RICKARD.

Witnesses:

D. B. RICHARDS,
J. RAPHAEL.