Dec. 8, 1931. J. T. STANGL 1,835,352

STOCK FOUNTAIN

Filed July 20, 1927

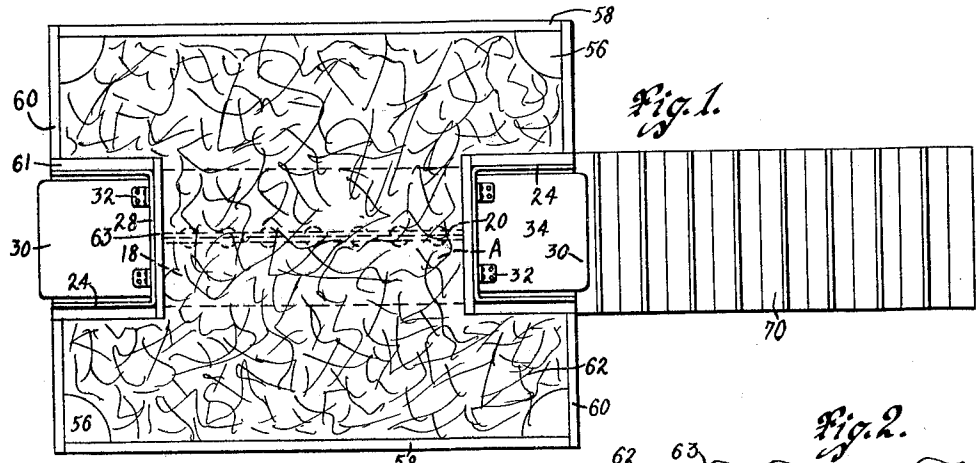


Fig. 1.

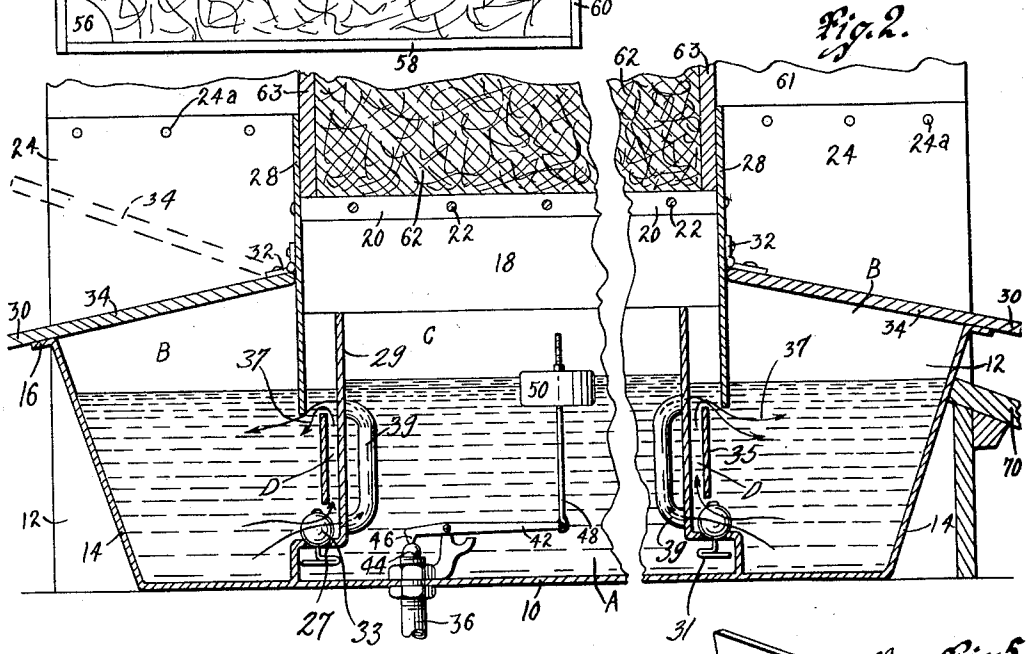


Fig. 2.

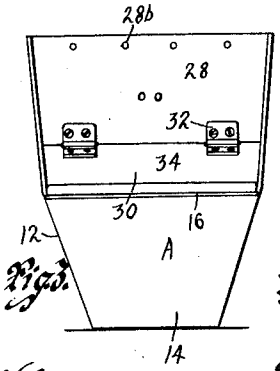


Fig. 3.

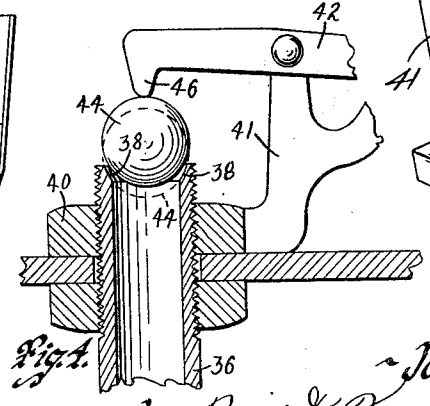


Fig. 4.

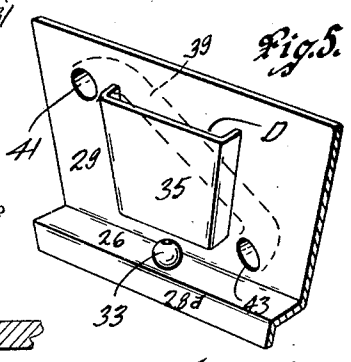


Fig. 5.

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Patented Dec. 8, 1931 1,835,352

UNITED STATES PATENT OFFICE

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STOCK FOUNTAIN

Application filed July 20, 1927. Serial No. 207,125.

The object of my invention is to provide a stock fountain of simple, durable and inexpensive construction.

More particularly, it is my purpose to provide a stock fountain, especially constructed and arranged to be covered by manure, so that it may be heated without the need for a heating lamp or other artificial heater.

With these and other objects in view, my invention consists in the construction, arrangement and combination of the various parts of my stock fountain, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which:

Figure 1 is a plan view of a stock waterer embodying my invention installed in position for use.

Figure 2 is a longitudinal, central, sectional view of my stock waterer.

Figure 3 is an end elevation of the trough itself.

Figure 4 is an enlarged sectional view of a float valve used in my waterer; and

Figure 5 is a perspective view, of a partition member of the waterer.

It has been found that by burying a stock fountain in a bed of manure, sufficient heat will be generated in the bed to keep the water in the fountain above the freezing point.

It is my purpose therefore in the present instance to make a fountain peculiarly adapted for such use.

I have therefore provided a fountain comprising a trough or tank indicated generally at A, consisting of a bottom 10, preferably rectangular in outline and substantially longer than it is wide.

The trough or tank A has upwardly and outwardly inclined side walls 12 and upwardly and outwardly inclined end walls 14 terminating in horizontal flanges 16 at their upper edges.

Extending upwardly and toward each other from the central portions of the side walls 12 are inclined top members 18, which terminate in vertical flanges 20 which are riveted or bolted together as at 22.

The top members 18 terminate at their ends substantially short of the ends of the trough or tank A.

At the opposite ends of the tank A, I provide raised compartment members B for covering the ends of the tank which in themselves form drinking troughs proper.

The members B comprise side walls 24 extending upwardly from the side walls 12 between the ends of the top members 18 and the respective end members 14.

At their inner edges the side walls 24 are connected by cross wall members 28, which project downwardly into the trough or tank A and terminate just below the water level as shown in Figures 2 and 5 of the drawings.

Partition walls 29 are mounted just inside the members 28 and have offset portions whereby shelves 26 are formed. The walls 29 then extend down as at 28*a* and are connected to the bottom 10 of the trough A. Openings 27 are formed in the shelves 26 and balls 33, larger in diameter than the openings, normally rest in position to cover the openings 27 whereby check valves are provided to allow water to flow freely from the central compartment C into the compartments B but prevent the return of the water to the compartment C. T headed pins 31 are secured to the balls 33 to prevent their displacement from the openings 27.

Mounted on the outer side of each partition wall 29 is a sheet of metal 35 spaced from the partition wall 29 whereby a compartment is formed open at its top and bottom. This compartment is provided for circulating the water in the drinking compartments B and does so in the following described manner. The water in the compartment C is always warmer than that in compartments D. Therefore the water in the compartment D closest to the partition wall 29 will become slightly heated. This causes it to rise and forms a circulation of water in the drinking compartment as indicated by the arrows 37.

To additionally provide means for circulating the drinking water whereby a dual circulation is had, I provide a tube 39. The tube 39 is positioned within the compartment C and has an upper end 41 and a lower end

43 opening through the partition wall 29. The water in this tube will be heated by the warmer water in the compartment C thereby aiding the circulating sheet 35 in causing a circulation of the drinking water.

Hinged as at 32 to each of the walls 28 is a door 34 of some suitable material, such as metal or wood, which is adapted to swing upwardly, as shown by dotted lines at the left-hand side of Figure 2. The outer ends of the doors 34 normally rest on the flanges 16 extending from the end walls 14 of the trough A.

The side walls 24 are inclined slightly inwardly and downwardly as clearly shown in Figure 3 of the drawings whereby the doors 34 have a tendency to wedge shut and thereby more effectually insure the exclusion of cold air from the water within my watering trough.

The tank is taken to the place where it is to be installed, and a water inlet pipe 36 is extended into the bottom of the tank, preferably nearer one end than the other, and is secured therein by a lock nut and a fitting 40. Suitable gaskets may be provided to make a water tight joint.

The upper end of the pipe 36 is ground to form a valve seat 38. On the fitting 40 is an ear 41 to which is pivoted a float arm 42. A valve 44 is arranged on the valve seat 38 and is engaged by a projection on the arm 42. A link 48 is pivoted to the arm 42 and is adjustably secured to a suitable float 50.

The compartments B within the end portions of the tank A form drinking compartments when the doors 34 are raised. In this connection, the doors 34 have overhanging ends 30 which the stock soon learn to engage by their noses and lift so that they can drink from the compartments B.

In installing my fountain for use, I preferably place it on the ground and then arrange posts 56 at points spaced from the four corners of the tank.

The posts 56 on each side of the tank are connected by boards or the like 58 spaced substantially from the sides of the tank and extending substantially above the tank. The posts 56 at each end of the tank are connected by boards 60 to other boards 61. The boards 61 are secured to the walls 24 by driving nails through the openings 24*a* therein. The inner ends of the boards 61 are connected by boards 63 whereby the compartments B are walled up by the boards 61 and 63 so as to leave openings in the ends of the end fences for permitting free access to the doors 34. The boards 63 are secured to the wall 28 by driving nails through openings 28*b* therein. The fence structure just described forms as it were a cage for the tank. This cage is filled with manure 62, so that the top and sides of the waterer are covered with manure. The heat generated in the manure will keep the water in the fountain from freezing.

All of the metal parts, it will be noted, are covered, and the doors 34 are of metal or insulating material, such as wood, which is of some value as a heat insulator.

The device is so constructed as to facilitate the convenient covering of the fountain. Of course, the fountain may be used with a drinking compartment at one end only, but I preferably build it with two compartments B as shown.

The tank A is a little too high for hogs, and so I preferably arrange adjacent to the compartment E an approach 70 forming a drinking platform for hogs. A feature of great importance is found in the check valves 33. The fresh water from the float valve flows through the check valves so that the cattle and hogs will be given fresh water. The water supplied to the hogs, will be a little warmer, which is desirable. This is because of the float valve being located closer to the cattle compartment and the water to the hogs has to flow farther which causes it to get warmer. The check valves prevent the water which the hogs have dirtied from getting into the drinking compartment for the cattle. Furthermore, the check valves serve as means for protecting the float valve against dirt and sediment, which will get into the tank mainly from the end where the hogs drink.

The circulating sheet 35 and the circulating tube 39 serve at all times to cause circulation of the drinking water and also serve to impart some of the heat from the water in the compartment C to the drinking water itself so that drinking water will be maintained in a warm condition. I have found that this circulating system also serves to thaw out the drinking water if it should freeze during the night and the following day is somewhat warmer. The check valve 33, being located directly below the circulation wall 35, will cause the water flowing upwardly into the drinking compartment to aid the circulation of water between the wall 35 and the wall 29.

If found desirable the check valve for the cattle compartment can be omitted as they do not get their water dirty and there is therefore no danger of mud coming from their compartment back to the float valve.

It will be noted that even if the water in the outer part of the trough portion of the fountain should freeze this would tend to increase the speed of circulation upwardly through the compartment formed between the sheet 35 and the partition wall 29 because there would be less water to be circulated.

It will also be noted that I have provided a tube 39 for affording an additional circulation of water in the trough compartment. There is thus provided what I have called "a duplex thermo-heater". It may perhaps be

mentioned that I prefer to make the tube 39 of copper and to bend it to any suitable shape that may be desired.

It will be noted that the ends of the tube 39 are not only spaced vertically but also horizontally so that the tube is inclined diagonally between its ends as well as being provided with the curvature desired.

It may also be mentioned that where sheet metal is used in my fountain I may employ a galvanized sheet covered with asphalt. In covering the sheet with asphalt the metal is lowered into a boiling body of asphalt or other suitable coating material. The metal is allowed to remain in the asphalt for a sufficient time to permit it to become heated preferably to approximately the temperature of the boiling asphalt. It is then gradually and quite slowly withdrawn from the asphalt by such degrees that the asphalt will properly adhere and form a solid uniform coating.

While I have in my description, described specific materials which may be used in the making of my fountain and specific shapes and arrangements of parts, it is not my intention to limit myself to the exact materials, shapes or sizes herein disclosed but it is my intent to cover by the claims of my application and the patent to be issued thereon, any such materials, shapes or sizes and any such modifications of structure or use of mechanical equivalents which may be reasonably included within the scope of such claims.

I claim as my invention:

1. A stock fountain of the class described, comprising a tank, a cover therefor, a drinking compartment at each end of the tank, walls extending to the bottom of the tank, a shelf portion on each wall having an opening therein, a ball check valve associated with said opening and means for filling the tank with water between said walls whereby the water will flow into said compartments but will not return.

2. A stock fountain of the class described, comprising a tank, a cover therefor, a drinking compartment at each end of the tank, divider walls extending to the bottom of the tank, a shelf portion on each divider wall having an opening therein, a ball check valve associated with said opening, means for filling the tank with water between said divider walls whereby the water will flow in to said compartments but will not return, and means comprising false walls associated with said divider walls for causing circulation of the water in said compartments.

3. In a stock fountain of the class described, a tank portion and a drinking trough portion, a divider wall extending upwardly between said portions and terminating above the water level line, said divider wall having a check valve control and a false wall mounted adjacent said divider wall with its sides closed and having open ends communicating with the trough portion of the fountain at vertically spaced points below the water level line, said false wall being mounted above said check valve control whereby water flowing through the control will aid in circulating water between said divider wall and said false wall.

4. In a stock waterer, a trough having a float compartment and a drinking compartment, a divider wall between the two, said divider wall having an opening for allowing the passage of water from the float compartment, through the wall and into the drinking compartment, and a false wall adjacent said divider wall having sides connected therewith and open upper and lower ends both below the level of water in said waterer whereby warm water in the float compartment will cause circulation of comparatively cooler water in the drinking compartment by reason of said divider wall being warmed by the water in the float compartment.

5. In a stock waterer, a trough having a float compartment and a drinking compartment, a divider wall between the two, said divider wall having an opening for allowing the passage of water from the float compartment, through the wall and into the drinking compartment, a check valve associated with said opening and opening toward the drinking compartment, and a false wall adjacent said divider wall having sides and open upper and lower ends both below the level of water in said waterer whereby, by warming said divider wall warm water in the float compartment will cause circulation of comparatively cooler water in the drinking compartment.

Des Moines, Iowa, July 13, 1927.

JOSEPH T. STANGL.