Jan. 6, 1925.

1,521,804

T. W. DOUGHERTY

HOG WATERER

Filed May 27, 1924 2 Sheets-Sheet 1

Fig. 1.

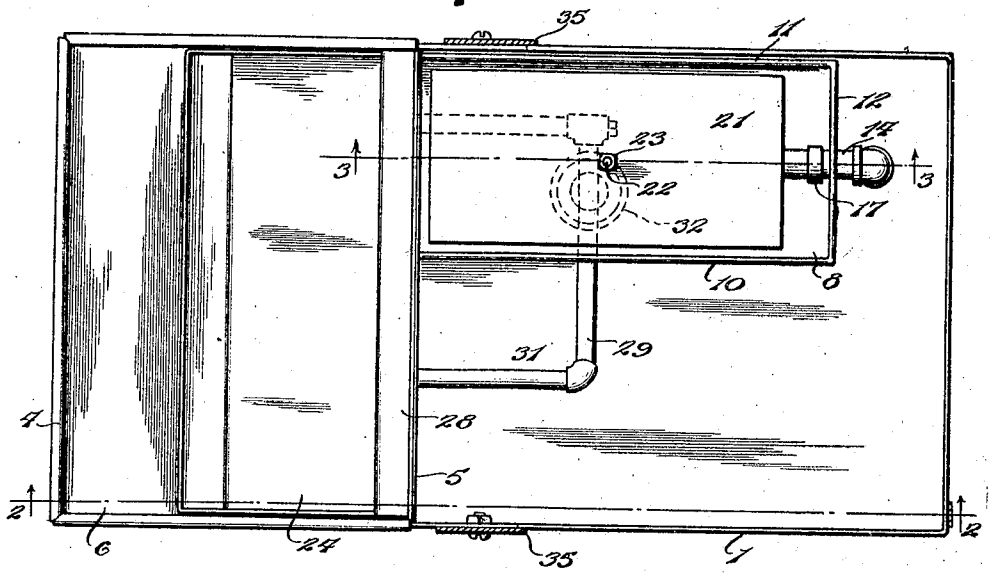
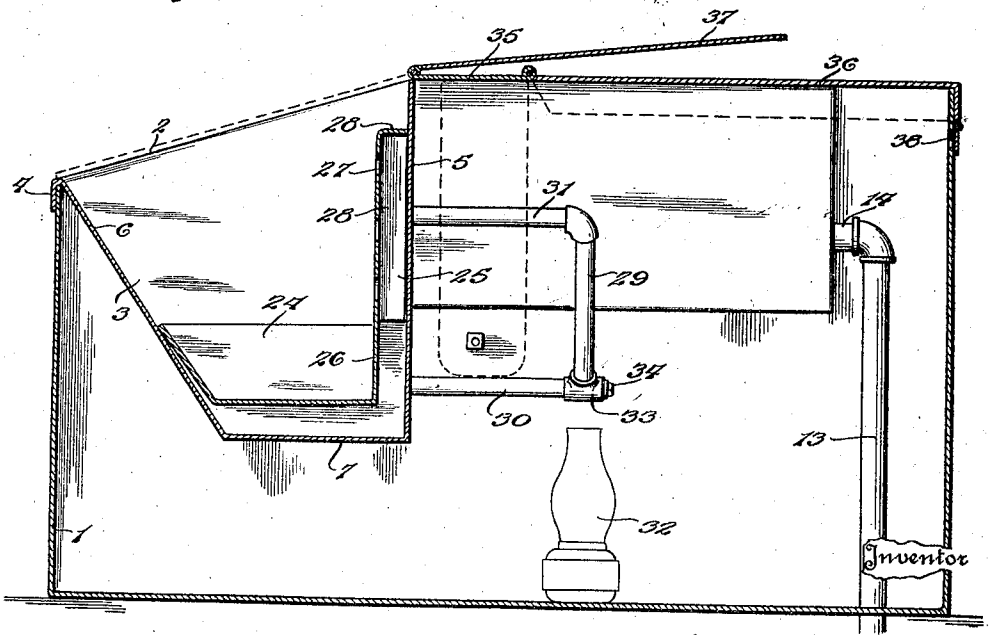


Fig. 2.



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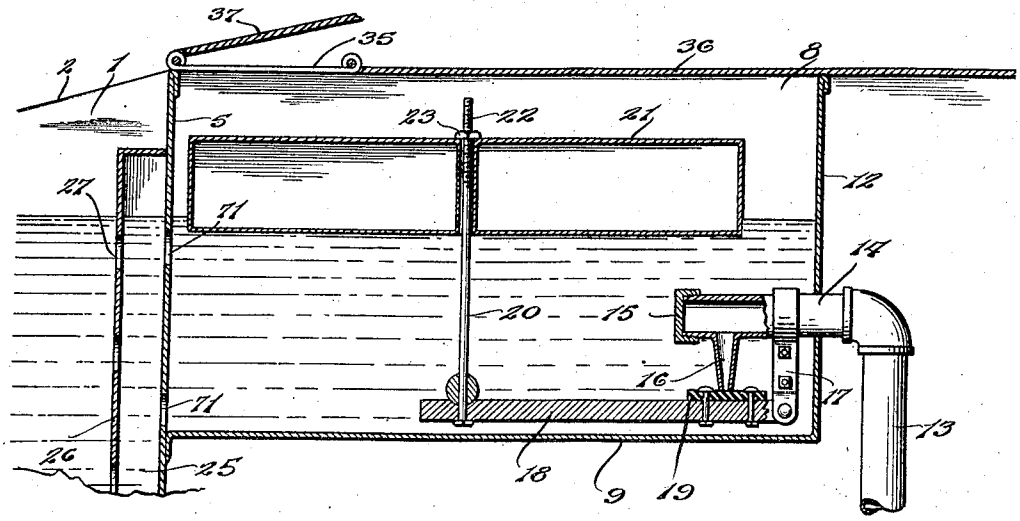


Fig. 3.

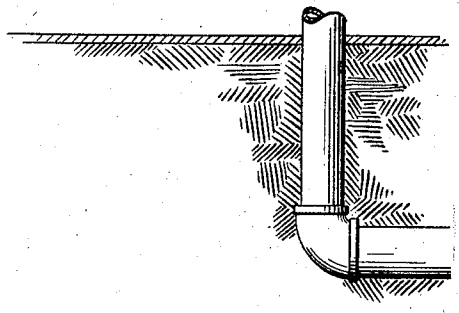
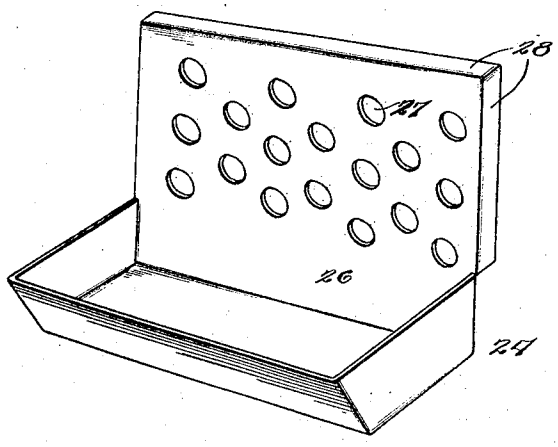


Fig. 4.



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Patented Jan. 6, 1925. 1,521,804

UNITED STATES PATENT OFFICE.

THOMAS W. DOUGHERTY, OF BURCHARD, NEBRASKA.

HOG WATERER.

Application filed May 27, 1924. Serial No. 716,144.

To all whom it may concern:

Be it known that I, THOMAS W. DOUGHERTY, a citizen of the United States, residing at Burchard, in the county of Pawnee and State of Nebraska, have invented certain new and useful Improvements in Hog Waterers, of which the following is a specification.

My present invention is an apparatus for watering hogs and other live stock and has for its object the provision of a compact and inexpensive apparatus whereby the water will be automatically maintained at a drinking level in the drinking chamber, and also to provide means whereby the water may be kept in circulation and maintained at a proper drinking temperature in cold weather. The invention also seeks to provide a device which will be durable and simple in the construction and arrangement of its parts so that it is not apt to get out of order. The invention is illustrated in the accompanying drawings and will be hereafter fully set forth.

In the drawings:

Figure 1 is a plan view of my improved stock waterer, the top being removed;

Fig. 2 is a longitudinal section on the line 2—2 of Fig. 1;

Fig. 3 is an enlarged longitudinal section on the line 3—3 of Fig. 1, and

Fig. 4 is a detail perspective view of the drinking pan employed in the drinking chamber.

In carriyng out my invention, I employ a casing 1 which may conveniently be of sheet metal and is to be set upon the ground at the point desired for the watering place. The casing is preferably of rectangular form in plan view and its upper side edges are inclined at one end, as shown at 2, to facilitate the access of animals to the drinking chamber. Supported upon the walls of the casing at the end having the inclined edges is a box-like member 3 which constitutes the drinking chamber. This member is preferably supported directly upon the edges of the casing walls by having reentrant flanges 4 formed at its upper edges to engage over the upper edges of the walls, as shown in Figs. 1 and 2. The back wall of this drinking chamber, indicated at 5, is vertical and extends across the full width of the casing while the front wall 6 is inclined downwardly and inwardly from the front wall of the casing, as shown clearly in Fig. 2. A horizontal bottom 7 connects the lower edges of the walls 5 and 6 and the said bottom may well be integral with the walls, the drinking chamber being preferably formed from sheet metal. Openings 7′ are provided through the back wall 5 of the drinking chamber to establish communication between the said chamber and the float chamber 8, the float chamber being defined by a bottom plate 9 riveted, soldered, or otherwise secured to the back wall 5 of the drinking chamber. A side wall 10 is also secured at its front end to the back wall 5 and disposed parallel with the sides of the casing. There may be a side wall 11 parallel with the wall 10, although obviously the side wall of the casing may be utilized as the side of the float chamber. A back wall 12 connects the walls 10 and 11 and also is connected with the bottom, these several walls and the bottom 9 being preferably integrally constructed of sheet metal. The back wall 12 of the float chamber is spaced from the back wall of the casing so as to provide a space in which the supply pipe 13 may be accommodated. This supply pipe extends through the bottom of the casing into the ground and should be buried at such a depth as will place it below the average freezing line in the locality where the device is used. The supply pipe 13, of course, may be connected with a reservoir or any convenient source of supply. The upper end of the supply pipe 13 is carried laterally through the back wall 12 of the float chamber, as shown at 14, and within the said float chamber its extremity is closed by a cap or equivalent device 15 and also is constructed with a downwardly extending nozzle or spout 16. A bracket hanger 17 is secured about the laterally extending portion of the supply pipe and to the lower end of this bracket is pivoted the float lever 18. The float lever extends below the spout 16 and upon the upper side of the lever is secured a valve disk 19 of rubber, leather, or other similar material which, when the lever is raised, will seat closely against the end of the spout and close the same so as to cut off the flow of water. At the free end of the float lever is a rod 20 which rises therefrom and extends through a float 21 which may be of any preferred

form. The upper portion of the float rod 20 is threaded, as shown at 22, and a nut 23 is mounted thereon above the float to bear against the top of the float and by its position upon the rod determine the normal level of the water in the float chamber.

Within the drinking chamber 3, I provide a pan 24 which is of a contour conforming to the drinking chamber but of less extent longitudinally of the apparatus than the drinking chamber so that a circulating space 25 will be provided between the back wall 5 of the drinking chamber and the back wall 26 of the pan. The said back wall 26 is extended above the pan and through the extended portion are provided the openings 27 to permit flow of water. Along the top and side edges of the extended portion of the back wall 26 are flanges 28 which, by bearing against the back wall 5 of the drinking chamber, serve to maintain the spaced relation between the walls 5 and 26, and it will be noted that the front wall of the pan is adapted to rest upon the front wall of the chamber so that the pan will be supported within the chamber without the employment of extraneous supporting elements and may be easily lifted out when cleaning of the apparatus is desirable. A circulating pipe 29 is provided within the casing at the back of the drinking chamber and the said pipe has one branch 30 secured in the back wall 5 at a point under the float chamber 8, while another branch 31 is secured in the said back wall between the side of the float chamber and the side of the casing and at a point near the top of the drinking chamber. A lamp, indicated at 32, is to be placed within the casing so that the heat therefrom will play upon the circulating pipe 29 at the outer end of the lower branch 30 and thereby heat the water in said pipe. As the water in the pipe 29 and the branch 30 thereof become heated, it will flow upwardly and into and through the upper branch 31 into the drinking chamber, colder water being thereby caused to flow from the drinking chamber into and through the branch 30 so that a circulation of the water in the drinking chamber is effected and the water kept at the proper drinking temperature. To permit cleaning of the circulating pipe when necessary, a T-coupling 33 is provided at the inner end of the branch 30, and this T-coupling is equipped with a plug 34 which may be easily removed when access to the pipe is necessary.

Across the top of the casing at the rear of the drinking chamber, I secure a bridge piece 35 and to the edges of this bridge piece I attach the rear lid or cover 36 and the front lid or cover 37, the lid 36 extending from the bridge over the rear portion of the casing and the lid 37, when in its closed position, covering the drinkng chamber. The heat from the lamp 32 is thus effectually retained within the casing and to permit escape of the fumes and products of combustion a ventilating opening 38 is provided in the back wall of the casing near the top of the same, as shown in Fig. 2. In warm or mild weather, the lid 37 will be in open position, as shown in Figs. 2 and 3, being swung backwardly over the casing so that the drinking chamber will be accessible at all times. In freezing or cold weather, the drinking chamber will be normally covered and the lid may be turned back at intervals so that the animals may obtain a sufficient supply of water. The water within the apparatus may thus be prevented from freezing with a minimum consumption of fuel in the lamp 32.

In the normal operation of the device, the water flows in through the supply pipe and is discharged into the float chamber. As the level of the water rises, the float will be moved upwardly, of course, and eventually by contact with the nut 23 will pull upwardly on the rod 20 and swing the float lever upwardly so that the valve 19 will be caused to seat against the spout 16 and cut-off the further flow of water. As the water is withdrawn by the drinking animals, the float, of course, will drop with the level of the water and the float lever will then be permitted to swing downwardly and permit a fresh supply of water to enter. The water which enters the float chamber will, of course, at once flow through the openings 7' and 27 so that the level of the water in the drinking chamber will be the same as that in the float chamber and the animals may easily reach the water when they desire to drink. Any sand or other matter which may be in the water will settle at the bottom of the pan 24 and at the bottom of the drinking chamber and the animals will, consequently, be enabled to drink clear water at all times. When the accumulation of sediment makes it necessary to clean the drinking pan and the drinking chamber, the pan is simply lifted out and access can then be at once had to all the surfaces of the drinking chamber as well as the pan so that thorough cleaning thereof may be very easily accomplished. The apparatus is very simple and compact and may be produced and installed at a low cost.

Having thus described the invention, I claim:

1. A device for the purpose set forth comprising a casing, a drinking chamber at an end of the casing, a float chamber within the casing adjacent the drinking chamber, a supply pipe extending into the float chamber, float-controlled means within the float chamber for cutting off and permitting discharge from the supply pipe, means for

permitting circulation between the float chamber and the drinking chamber, a circulating pipe mounted upon the wall of the drinking chamber and in communication with said chamber, and a heating device adjacent said circulating pipe.

2. A device for the purpose set forth comprising a casing, a drinking chamber at an end of the casing, means for supplying water to said chamber, float-controlled means for regulating the supply of water, and a drinking pan arranged within the drinking chamber and having its back wall in spaced relation to the back wall of the drinking chamber and having openings therethrough whereby to permit circulation of water.

3. A device for the purpose set forth comprising a casing, a drinking chamber at one end of the casing having a back wall extending across the casing and provided with openings therethrough, a float chamber arranged against said wall and around the said openings, a supply pipe entering the float chamber, float controlled means within said chamber to regulate the discharge from said supply pipe, and a pan within the drinking chamber having its back wall in spaced relation to the back wall of the drinking chamber and provided with openings therethrough to permit circulation of the water.

4. A device for the purpose set forth comprising a casing, a drinking chamber at an end of the casing having an inclined front wall and a vertical back wall extending across the casing, a pan within the drinking chamber having its front side resting upon the front wall of the drinking chamber and having its back wall extending upwardly and provided with openings therethrough and flanges extending along the edges of the back wall of the pan to bear against the back wall of the drinking chamber and maintain the pan in spaced relation to the chamber, and means for supplying water to the drinking chamber.

5. A device for the purpose set forth comprising a casing, a drinking chamber, a float chamber within the casing adjacent the drinking chamber, a supply pipe extending into the float chamber, float-controlled means within the float chamber for cutting off and permitting discharge from the supply pipe, means for permitting circulation between the float chamber and the drinking chamber, and a circulating pipe in communication with said chamber.

In testimony whereof I affix my signature.

THOMAS W. DOUGHERTY.