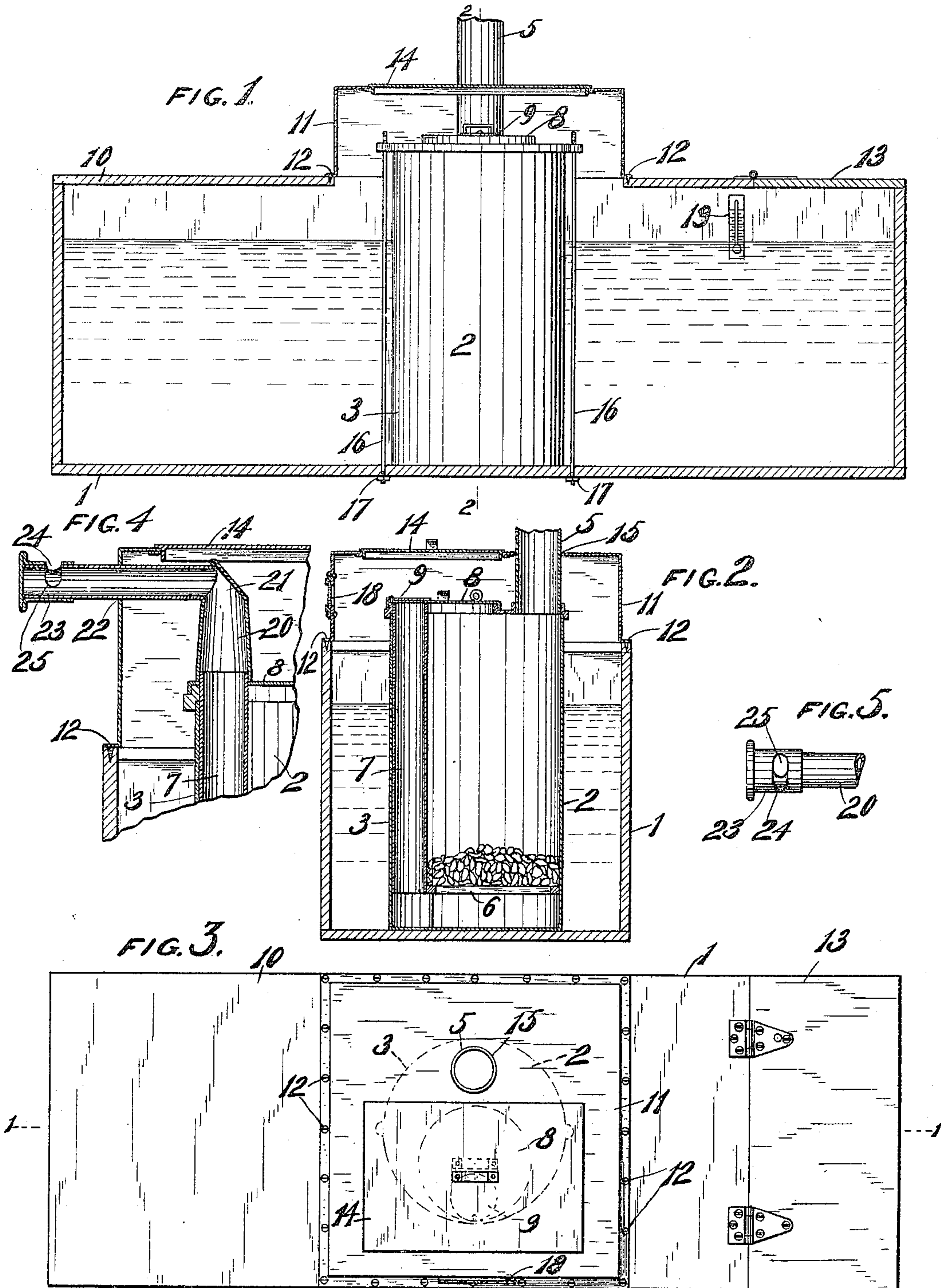


H. G. MILLER.
TANK HEATER COVER.
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962,449.

Patented June 28, 1910.



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TANK-HEATER COVER.

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To all whom it may concern:

Be it known that I, HERMAN G. MILLER, residing in Foxlake, in the county of Dodge and State of Wisconsin, have invented new and useful Improvements in Tank-Heater Covers, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

This invention relates to improvements in tank heater covers particularly adapted for use in heating water tanks for supplying stock with water.

It is customary in supplying stock with water during the winter months to provide the water tank with a heater in the form of a stove which is partly submerged in the water of the tank to prevent the water from freezing. As the water tank is usually open at the top immediately above the stove the arrangement is very wasteful as a large percentage of the heat is lost by radiation and only a small amount of water directly surrounding the heater is warmed, as most of the heat rises directly from the top of the stove and escapes in the open.

It is one of the objects of this invention to provide a construction which is more economical in the use of fuel and in which all of the water in the tank is warmed by the heater.

A further object of the invention is to provide a cover for the tank and heater which will serve to hold the heat directly in contact with the surface of the water and at the same time provide a means whereby the heater may be easily replenished with fuel or the ashes removed from the heater.

A further object of the invention is to provide a tank heater which is simple in construction and operation and is inexpensive to manufacture and maintain.

With the above, and other objects in view, the invention consists of the tank heater cover and its parts and combinations as hereinafter set forth in the claims, and all equivalents thereof.

In the accompanying drawings in which the same reference characters indicate the same parts in all of the views, Figure 1 is a vertical longitudinal sectional view of the complete tank provided with the improved construction, taken on line 1—1 of Fig. 3; Fig. 2 is a transverse sectional view thereof taken on line 2—2 of Fig. 1; Fig. 3 is a plan

view of the complete tank and associated parts; Fig. 4 is a detail view in section of a modified form of air inlet; and Fig. 5 is a detail view of the end thereof.

In the drawing the numeral 1 indicates the water tank, which is of ordinary construction and is provided with a cylindrical heater or stove 2 positioned medially therein. This stove is also of ordinary construction and consists of the usual water tight casing 3, provided with a cover 4 and a stovepipe 5. A grate 6 is also provided near the bottom of the heater and an air inlet tube 7 leads the air for combustion to the bottom of the grate. The top of the stove is provided with a cover 8 which provides a means for placing fuel within the heater. This cover also covers the inlet air tube 7, and a separate cover or damper 9 is provided in order to regulate the draft of the fire.

A cover 10 extending over the top of the tank is provided medially with a dome 11 which is positioned some distance above the top of the stove. Usually the cover to the tank is of wood and the dome is formed of sheet metal which is flanged at its lower edge and fastened to the cover by means of screws or nails 12. One end of the cover is provided with a door 13 which is adapted to be opened when it is desired to permit the stock to drink the water within the tank. The top of the dome is provided with a cover or door 14 in order to feed fuel to the stove and to remove the ashes therefrom and otherwise regulate the stove. The stovepipe 5 of the stove extends through an opening 15 provided in the dome.

The heaters are usually securely fastened to the tank by means of rods 16 which extend through openings provided in the top of the stove and also through openings provided in the bottom of the tank, nuts 17 being threaded to the lower ends of the rods beneath the tank.

The dome is provided with a damper 18 to control the admission of air to the dome to supply the stove with the proper draft. A thermometer 19 is placed within the tank and attached thereto and positioned so that its bulb will be below the surface of the water in order that the temperature of the water may be seen at any time.

In the modified form of air inlet shown in Figs. 4 and 5 a tube 20 provided with an el-

bow 21 covers the upper end of the air inlet tube 7 and extends upwardly from said air inlet tube a short distance and then turns at right angles and passes through an opening 5 22 provided in the side of the dome 11. The end of this extension air inlet tube is provided with a damper in the form of a cap 23 having an air inlet opening 24 in its side which is adapted to be turned into register 10 with an opening 25 provided in the tube 20 so that the size of the opening may be regulated to control the draft to the stove.

While I have shown a cover for the top of the dome it is obvious that the cover may be 15 in the form of a hinged door without departing from the spirit and scope of the invention.

In operation the tank is provided with water to an amount so that its surface will 20 be below the tank cover. Fuel is placed in the heater through the dome cover and the door of the heater. The fuel is then ignited and the air inlet door arranged to give the proper draft and the dome door is then 25 closed. As the fire burns the heat radiating from the heater will circulate back and forth between the tank cover, the dome and the surface of the water, thus serving to warm the entire surface of the water and prevent 30 its freezing. The air supply for the fire will enter through the damper provided therefor. When it is desired to water the stock the tank door is opened and is left open until the stock have finished drinking. As the 35 dome is considerably higher than the tank cover the dome will serve to retain most of the heat during the period of time in which the tank door remains open. The thermometer will always indicate the temperature of 40 the water so that the fire may be regulated to warm the water to the desired degree.

In the modified form of cover the air damper to the stove may be regulated without opening the cover to the dome.

45 From the foregoing description it will be seen that the construction is very simple and easy to operate, and is also very efficient and economical in operation and use, as practically all of the heat radiating from the

heater is retained in the space above the surface of the water and very little is lost.

What I claim for my invention is:

1. A tank heater, comprising a tank provided with a heater having a stovepipe, a cover for said tank provided with a door 55 and with an opening above the heater, said cover positioned to form a heat retaining chamber between the surface of the water within the tank and the cover, a dome covering the opening and positioned above the 60 cover and also above the heater, said dome provided with a cover and with a stovepipe opening.

2. A tank heater, comprising a tank provided with a heater and with a cover having 65 an opening positioned immediately above the heater, a dome connected to the cover and closing the opening thereof and extending above the heater and provided with a covered opening, and means for regulating 70 the admission of air to said tank.

3. A tank heater, comprising a tank provided with a heater and with a cover having 75 an opening positioned immediately above the heater, a dome connected to the cover and closing the opening thereof and extending above the heater and provided with a covered opening, and a damper provided in said dome for controlling the admission of 80 air to the heater.

4. A tank heater, comprising a tank provided with a cover and with a heater extending through an opening formed in the said cover, said opening being of greater size 85 than the portion of the heater extending therethrough to form a space between said heater and said cover, a flanged dome connected to the cover and closing the opening thereof and extending above the heater and provided with a covered opening, and means 90 forming part of the dome for regulating the admission of air to the tank and heater.

In testimony whereof, I affix my signature, in presence of two witnesses.

HERMAN G. MILLER.

Witnesses:

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ALMA A. KLUG.