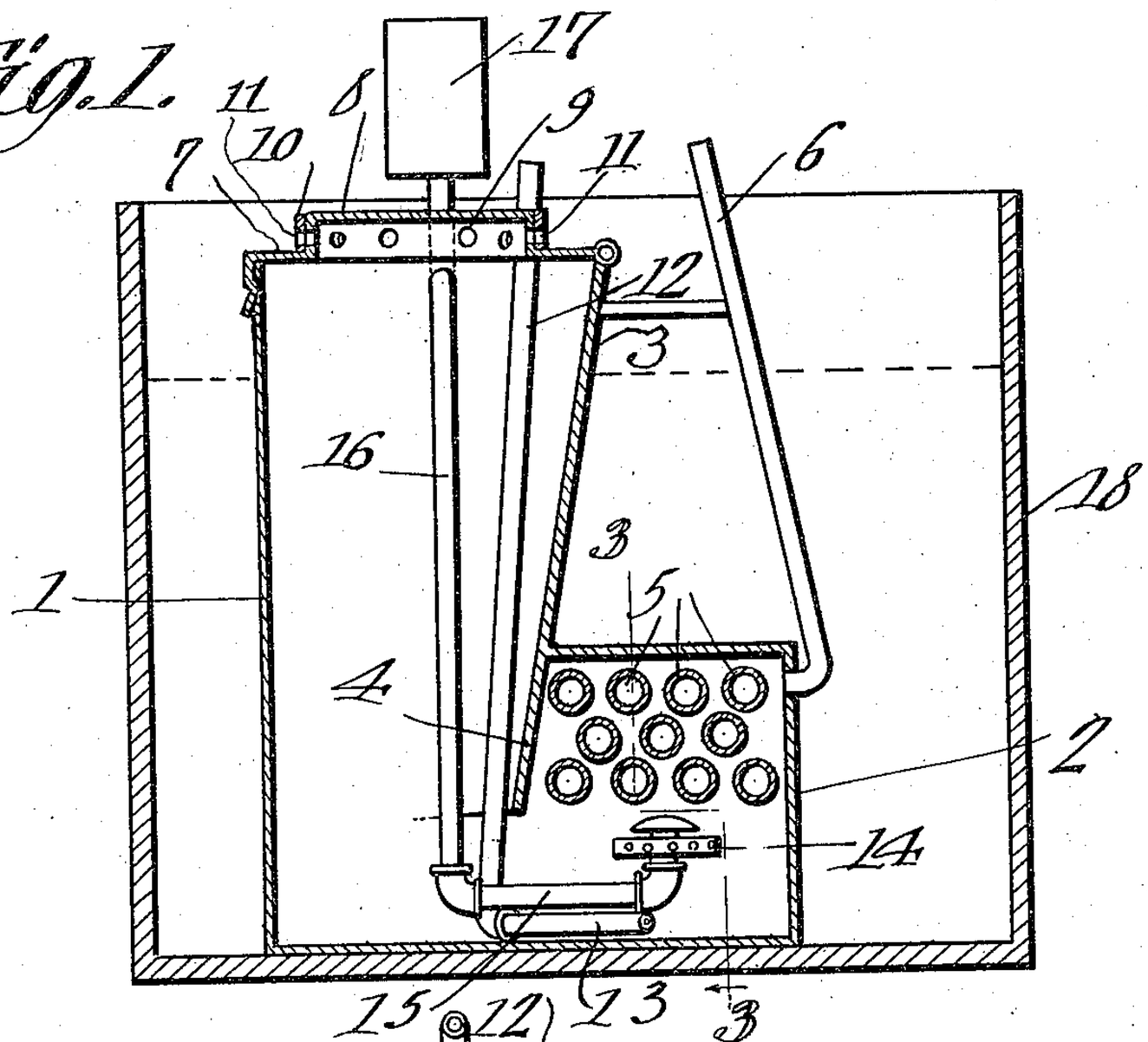
L. V. FELDMAN.

TANK HEATER.

APPLICATION FILED APR. 13, 1915.

1,166,585. Patented Jan. 4, 1916.

Fig. 1.



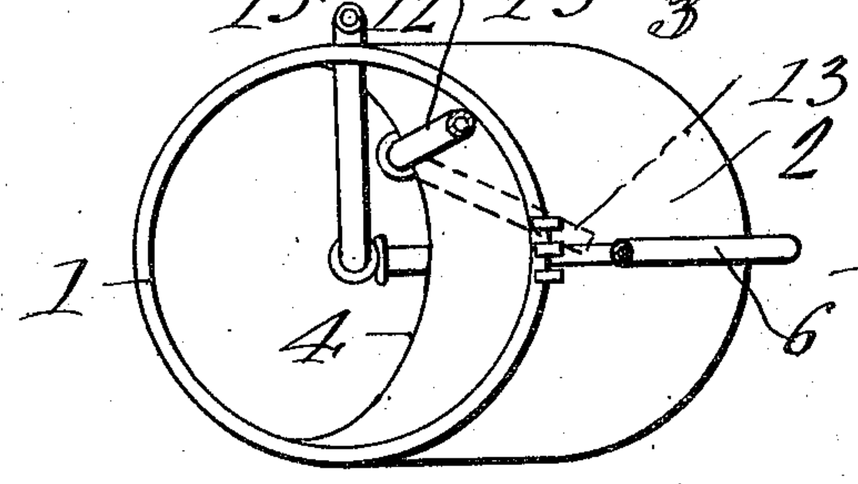
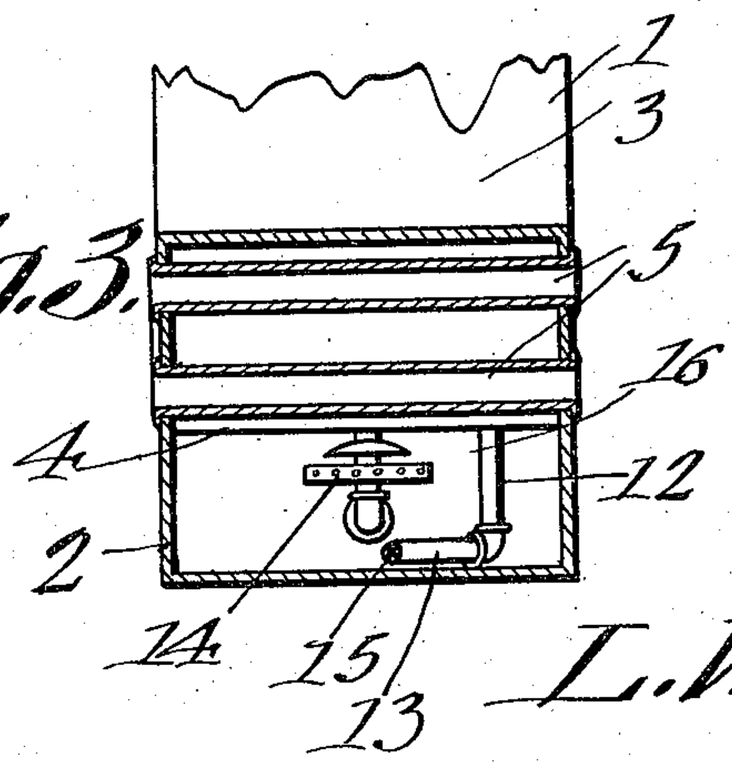


Fig. 2.

Fig. 3.



Witnesses

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TANK-HEATER.

1,166,585. Specification of Letters Patent. Patented Jan. 4, 1916.

Application filed April 13, 1915. Serial No. 21,087.

To all whom it may concern:

Be it known that I, LEWIS V. FELDMAN, a citizen of the United States, residing at Trosky, in the county of Pipestone and State of Minnesota, have invented a new and useful Tank-Heater, of which the following is a specification.

The present invention appertains to a tank heater, and more particularly to a device adapted to be submerged in the water contained in a tank, trough or other receptacle, and designed for heating the water, the device being intended for heating the drinking water supplied to farm stock although it may be employed for other purposes as well.

The object of the invention is the provision of a tank heater of novel and improved construction, whereby it will effectively serve its intended purpose, the present device having improved features of construction to enhance the utility and efficiency thereof.

It is also within the scope of the invention to provide a tank heater having the above mentioned features, and which is comparatively simple and inexpensive in construction, as well as being convenient, serviceable and practical in use.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

The invention is illustrated in the accompanying drawing, wherein:—

Figure 1 is a vertical section of the improved heater. Fig. 2 is a plan view thereof, the cover and burner being removed. Fig. 3 is a sectional view taken on the line 3—3 of Fig. 1, portions being broken away.

In carrying out the invention, there is provided an upright casing 1, having an angularly projecting extension 2 at its lower end, the casing 1 and its extension 2 having a common bottom. That wall, designated 3, of the casing 1 adjacent the extension 2 projects downwardly below the top of the extension to provide an apron or partition 4 between the chambers within the casing 1 and its extension 2, and the apron 4 terminates above the bottom of the casing to establish communication between the lower portions of the casing and extension chambers.

Transverse flues 5 are terminally secured through the sides of the extension 2 immediately below the top of the extension, and above the horizontal plane in which the lower edge of the apron or partition 4 lies, and an upwardly projecting discharge pipe 6 is attached to the extension 2 adjacent its top and projects to a point adjacent or above the upper end of the casing 1.

The upper end of the casing 1 is provided with a hinged cap or cover 7, which has a central raised portion 8 provided in its side walls or periphery with apertures or openings 9, and an annular damper 10 is mounted for rotation upon the raised portion 8, and is provided with apertures or openings 11 adapted to be brought into and out of registration with the apertures 9.

An air inlet pipe 12 extends upwardly within the casing 1 adjacent the wall 3 thereof, and its upper end passes through the cover or cap 7, while its lower end is extended angularly along the bottom of the casing to a point centrally of the extension 2, as at 13.

The numeral 14 designates the gasolene or kerosene burner, which is carried by the lower angularly extending arm 15 of the vertical gasolene or fuel pipe 16 which is connected at its upper end to the fuel tank or reservoir 17. The pipe 16 preferably extends through one wall of the casing.

In use, the casing 1 and its extension 2 are submerged in the water contained in the tank, trough or other receptacle 18, and are held submerged upon the bottom of the tank or trough in any suitable manner. The casing 1 extends above the level of the water, and the water cannot therefore enter the casing or its extension, although the water is free to flow through the flues 5 and around the casing and its extension. The burner 14 may be readily moved downwardly within the casing and may then be swung or moved under the apron 4 into the extension 2 below the flues 5. The burner 14 being ignited or lighted, will heat the flues 5 and water contained therein, and the heated water will then flow upwardly out of the flues, which will draw cooler water into the flues which

will in turn be heated by the burner. The water is thus effectively and quickly heated, and furthermore, the air within the extension and casing will be heated and the water adjacent the casing and extension will thus receive heat from the heated air within the casing and extension. Fresh air enters the pipe 12 and is supplied to or underneath the burner 14 by the lower angularly extending discharge portion 13 of the air pipe 12, whereby the combustion is supported, and the products of combustion will pass upwardly around the flues 5 and out through the discharge pipe 6. The cover or cap 7 closes the upper end of the casing 1, but the damper 10 may be controlled for either opening or closing the apertures 9, for purpose of ventilation.

It is evident that the products of combustion are confined within the upper portion of the extension 2 by means of the apron or partition 4, whereby the flues 5 will be properly heated by the flames and heated gases, and the apron 4 will reduce to a minimum, the liability of the products of combustion passing directly upward within the casing 1 from the burner which would deprive the flues 5 of considerable heat.

From the foregoing, taken in connection with the drawing, it is believed that the advantages and capabilities of the invention are obvious to those skilled in the art, and will suggest themselves.

Having thus described the invention, what is claimed as new is:—

In a device of the character described, an upright casing having an angularly projecting extension at its lower end, and a depending apron between the chambers within the casing and extension, water circulating flues engaged through the sides of said extension above the plane of the lower edge of said apron, the extension being adapted to hold a burner below said flues, a discharge pipe projecting upwardly from the upper portion of said extension, a downwardly projecting fresh air pipe within the casing extended to a point within the lower portion of said extension, a cover for the upper end of the casing having a raised portion provided with apertures in its side walls, and an annular damper rotatable upon said raised portion and having apertures to be brought into and out of registration with the aforesaid apertures.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

LEWIS V. FELDMAN.

Witnesses:
H. J. F. JETTER,
ORZ HITE.