

No. 618,647.

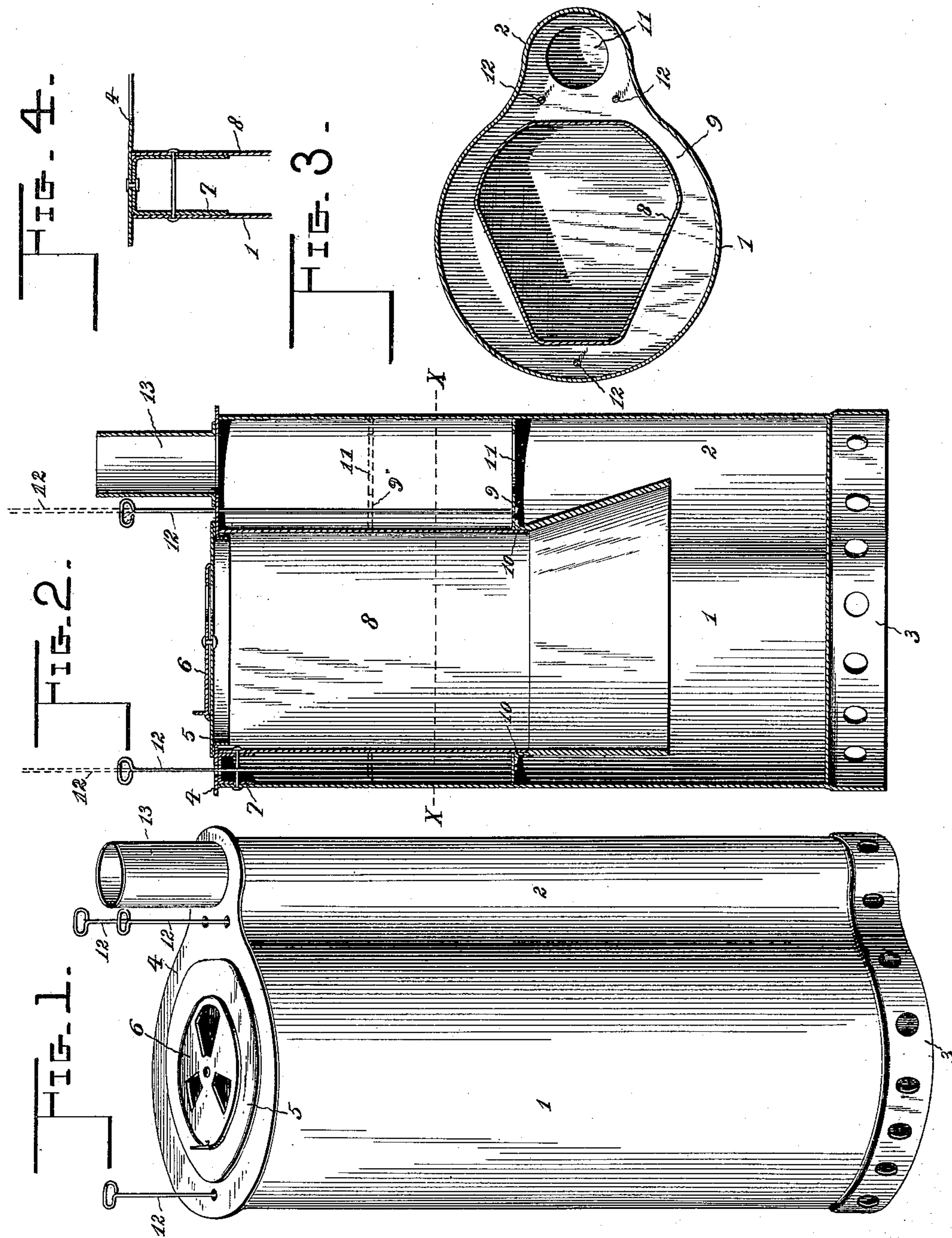
Patented Jan. 31, 1899.

C. H. DAYTON.

FEED COOKER.

(Application filed Jan. 31, 1898.)

(No Model.)



Witnesses

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CHARLES H. DAYTON, OF IOWA CITY, IOWA.

FEED-COOKER.

SPECIFICATION forming part of Letters Patent No. 618,647, dated January 31, 1899.

Application filed January 31, 1898. Serial No. 668,600. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. DAYTON, a citizen of the United States, residing at Iowa City, in the county of Johnson and State of Iowa, have invented a new and useful Feed-Cooker and Tank-Heater, of which the following is a specification.

The purpose of the present invention is to provide a device for cooking feed and heating water for stock and agricultural purposes, the heater being immersed in the barrel or receptacle containing the feed to be cooked or the water to be heated, and which will be of simple construction and admit of the heat being restrained to any height of the heater, according to the depth of its immersion into the water or feed to be heated.

A further purpose of the invention is to prevent the rapid burning out of the upper portion of the heater and to prolong its period of usefulness; also, to utilize the fuel to the best possible advantage and confine the heat when required to the lower portion of the device when the same only is submerged.

For a full understanding of the merits and advantages of the invention reference is to be had to the accompanying drawings and the following description.

The improvement is susceptible of various changes in the form, proportion, and the minor details of construction without departing from the principle or sacrificing any of the advantages thereof, and to a full disclosure of the invention an adaptation thereof is shown in the accompanying drawings, in which—

Figure 1 is a perspective view of the heater. Fig. 2 is a vertical central section thereof, the dotted lines showing an adjusted position of the baffle-plate or means for restraining the heat. Fig. 3 is a transverse section on the line X X of Fig. 2. Fig. 4 is a detail view showing the means for connecting the top, the body, and the magazine together.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The body of the heater is uniform through-

out its length and is of irregular shape in cross-section and comprises a main portion 1 and a contracted portion 2, as most clearly indicated in Fig. 3. The heater has a depending rim 3 below its bottom, which forms a stand to engage with the bottom of the tank or receptacle in which the heater is placed, so as to hold the bottom of the heater away from the bottom of the barrel or receptacle. This rim has a series of perforations to admit of a free circulation of water or liquid feed beneath the bottom of the heater. The top 4 conforms to the outline of the body and is secured thereto in any convenient way and has a centrally-disposed opening, which is closed by a lid or cover 5, provided with a damper 6, which can be opened more or less to control the admission of air for promoting and supporting combustion when the heater is in service. As shown, the top 4 has U-shaped irons 7, secured thereto in any substantial manner, and the vertical members of these irons are riveted or otherwise made fast to the body of the heater and to the magazine 8, thereby connecting these parts in a simple and substantial manner. The magazine 8 is of irregular shape and is suspended from the top 4 in line with the opening therein closed by the cover 5. The rear portion of the magazine is considerably larger in cross-sectional area than the front portion, as clearly indicated in Fig. 3, and is inversely disposed with reference to the body of the heater, the larger portion of the magazine being placed opposite and adjacent to the contracted portion 2 of the body and the smaller portion remote from the said contracted part 2. This construction and disposition of the magazine equalizes the distribution of the heat and causes all points of the body to be about uniformly heated, which is of advantage in heating water and cooking feed for stock. Inasmuch as the lower portion of the magazine is subjected to the greatest heat and in order that it may not burn out rapidly it is made heavy or cast and flares toward its lower end, so as to throw the heat and flame outward against the sides of the body. The greatest flare is at the rear

side or opposite the extended or contracted portion 2 of the body, so as to compel the heat to pass therein.

The space formed between the opposing sides of the magazine and body is irregular, as clearly indicated in Fig. 3, and a baffle-plate 9 is slidable therein and conforms at its outer and inner edges to the outlines of the inclosing walls. This baffle-plate is limited in its downward movement by engaging with lugs 10, formed with or applied to the lower portion of the magazine about at the juncture of the flaring part therewith. An opening 11 is provided in the rear portion of the baffle-plate for the escape of smoke and products of combustion. The purpose of the baffle-plate is to confine the heat to the lower portion of the heater when the same is only partly submerged, thereby preventing the burning out of the upper portion, which is not protected by being immersed. Moreover, by confining the heat in this manner it is utilized to the best advantage, especially when only a small quantity of water is to be heated or feed to be cooked. The baffle-plate is adjusted vertically from the top of the heater by rods 12 or any connections which will admit of the same end being attained. These rods or connections 12 are made fast at their lower ends to the baffle-plate and pass through suitable openings in the top 4. If desired, means may be provided for positively holding the baffle-plate at an adjusted position; but in practice this is not deemed necessary, as the friction and binding between the baffle-plate and walls of the heater are found sufficient for this purpose.

The fuel is supplied to the heater through the opening closed by the cover 5, and the fire may be caused to burn more or less briskly by a proper adjustment of the damper 6. The smoke and products of combustion escape from the lower part or combustion-chamber of the heater through the opening 11 in the baffle-plate and thence out through the smoke-pipe 13, fitted to the top 4, opposite the contracted portion 2 of the heater.

If the device is only partly submerged, the baffle-plate is lowered, so as to confine the heat to that portion of the heater which is immersed; but if the heater is to be used to its utmost capacity the baffle-plate is moved upward to its topmost limit, thereby enabling the heat to pass through all portions of the device, so that the water in contact with the sides thereof may be heated in the shortest space of time possible.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. In a tank-heater and feed-cooker, the combination of a body for containing the fire of irregular cross-sectional area and comprising an enlarged portion and a contracted part, a magazine located within the enlarged portion of the body and having its lower end ex-

panded and extending into the contracted portion of the body, and a smoke-pipe communicating with the upper end of the contracted part of the body, substantially as set forth. 70

2. In a tank-heater and feed-cooker, the combination of a body having an enlarged and a contracted portion, and a magazine having enlarged and contracted portions and inversely disposed with reference to the body, whereby the enlarged portion of the magazine is placed opposite and adjacent to the contracted portion of the body, substantially as set forth. 75

3. In a heater of the type to be submerged, the combination of a body, of a horizontally-disposed baffle-plate coextensive with the interior of the said body and having an escape-opening for smoke and products of combustion, and means for adjusting the baffle-plate vertically within the body to correspond with the level of the water in which the heater is submerged for confining the effective heat to the required elevation, substantially as and for the purpose described. 80 90

4. In a heater for agricultural purposes and the like, the combination of a body having a smoke-pipe in communication with its upper portion, and a magazine located within the said body, of a baffle-plate located in the space formed between the magazine and the body, and means for adjusting the baffle-plate vertically, substantially as set forth. 95

5. In a heater, the combination with the body of irregular shape in cross-section and comprising an enlarged and a contracted portion, of a magazine of irregular shape and comprising an enlarged and a contracted part and placed with the enlarged portion opposite and adjacent to the contracted part of the body, said magazine having its lower portion made heavy and flaring outwardly and downwardly adjacent to the contracted part of the said body, substantially as described for the purpose set forth. 100 110

6. In a heater for agricultural purposes and the like, the combination with a body having a smoke-pipe in communication with its upper portion, and a magazine located within the said body, of a baffle-plate located in the space formed between the body and the magazine, and completely surrounding the latter, having rods secured to the upper face thereof and extending through the top of the body, whereby the baffle-plate is adjusted, stops provided upon the body or magazine to limit the downward movement of the plate, and a smoke-opening provided therein, substantially as shown and described. 115 120

7. In a tank-heater and feed-cooker, the combination with a body having an enlarged and a contracted portion, and a magazine having enlarged and contracted portions and inversely disposed with reference to the body, whereby the enlarged portion of the magazine is placed opposite and adjacent to the contracted portion of the body, of a baffle-plate 125 130

arranged between the walls of the body and the
magazine, conforming to the contour thereof
and completely surrounding the magazine,
having a smoke-opening provided through
5 the contracted portion of the plate, and a
smoke-pipe connecting with the contracted
portion of the body, substantially as and for
the purpose set forth.

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

CHARLES H. DAYTON.

Witnesses:

JOEL DAYTON,
TOM NELSON.