No. 609,949. Patented Aug. 30, 1898.

G. SCHNEIDER & W. H. HILL.

TANK HEATER.

(Application filed Jan. 25, 1898.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

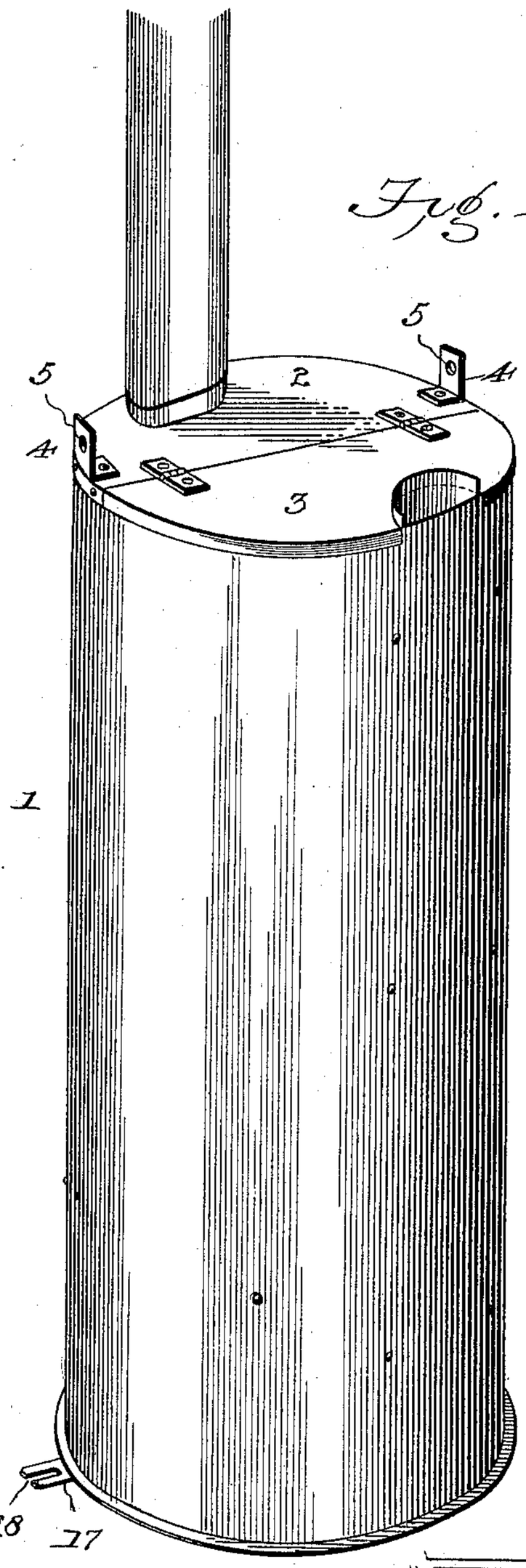
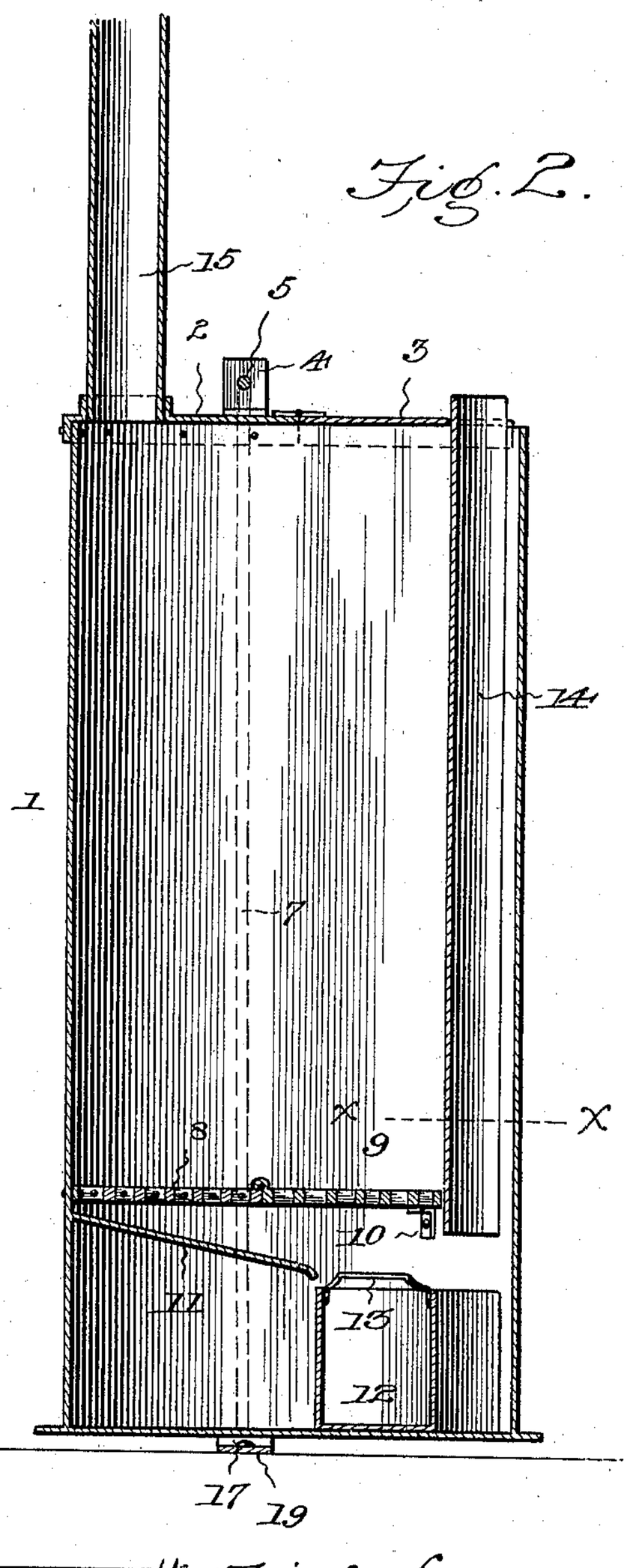


Fig. 2.



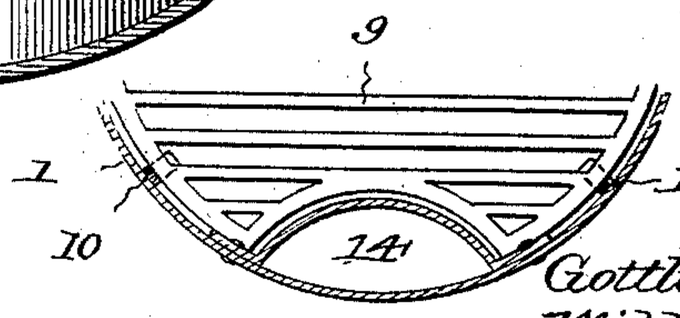


Fig. 6.

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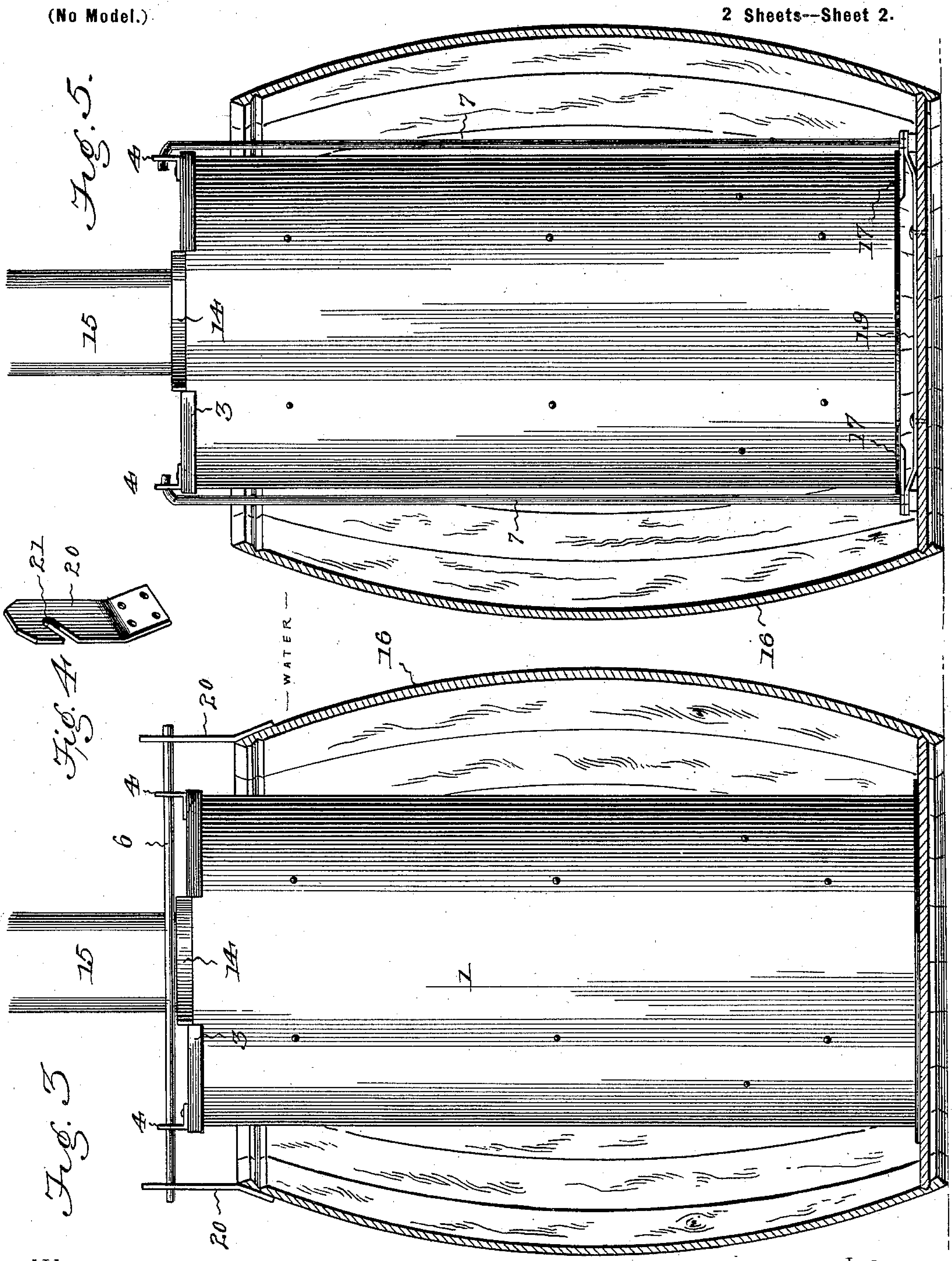

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UNITED STATES PATENT OFFICE.

GOTTLIEB SCHNEIDER AND WILBER H. HILL, OF KENDALLVILLE, INDIANA.

TANK-HEATER.

SPECIFICATION forming part of Letters Patent No. 609,949, dated August 30, 1898.

Application filed January 25, 1898. Serial No. 667,905. (No model.)

To all whom it may concern:

Be it known that we, GOTTLIEB SCHNEIDER and WILBER H. HILL, citizens of the United States, residing at Kendallville, in the county of Noble and State of Indiana, have invented a new and useful Tank-Heater, of which the following is a specification.

This invention relates to that class of devices for heating water for agricultural or other purposes, the heater being submerged in the water to be heated.

The purpose of the invention is to provide a heater of the character aforesaid which will be simple in construction and comparatively inexpensive and which will admit of the fire being easily controlled, according to the temperature of the water and the bulk thereof to be heated.

Other objects and advantages are contemplated and will appear in the course of the following description, and to a full understanding thereof reference is to be had to the accompanying drawings, in which corresponding and like parts are indicated by the same reference characters in all the views.

Figure 1 is a perspective view of the heater. Fig. 2 is a vertical central section thereof. Figs. 3 and 5 indicate different means for securing the heater in a barrel or tank. Fig. 4 is a detail view in perspective of a notched bracket. Fig. 6 is a detail section on the line *x x* of Fig. 2.

The heater may be of any form and size, according to the style of tank into which it is to be placed and to meet the work required thereof. As shown, the body 1 of the heater is of circular form and is closed at its top by a cover composed of sections 2 and 3, the section 2 having a depending flange, which is riveted, bolted, or otherwise secured to the top edge portion of the body 1 and the section 3 being hinged at its inner edge to the section 2, so as to be turned upward and backward at its free edge to admit of access to the interior of the heater for any desired purpose. The body 1 is closed at its bottom in such a manner as to exclude water. Brackets 4 are secured to the opposite ends of the section 2 and have transversely-alining openings 5 for the passage therethrough of a transverse rod 6 or the hooked ends of vertical rods 7, according to the manner of securing the heater within the tank.

A grate is located within the lower portion of the heater and is composed of a stationary part 8 and a movable part 9, the latter being hinged to the section 8 and supported at its free end upon stops 10, secured to the sides of the heater. An inclined plate 11 is located immediately below the fixed section 8, and its lower edge overhangs an ash-pan 12, which is removably fitted within the heater and which is adapted to be withdrawn therefrom after the sections 3 and 9 of the cover and grate have been thrown backward out of the way by means of a hooked rod or other implement engaged with a bail or handle 13, applied to the said ash-pan. The draft for supporting combustion is supplied to the fire by means of a vertical air-passage 14 at the inner side of the heater, and this air-passage is formed by means of a strip of sheet metal curved or deflected between its longitudinal edges and having the latter riveted or otherwise secured to the sides of the body 1. The air-passage may terminate at any convenient point with reference to the plane of the grate, either above or below, the latter construction being preferable, as the air is admitted into the space below the grate and can then pass upward through the fire from all points. The smoke-pipe 15 is fitted to a collar formed with or applied to the fixed part 2 of the cover. If it be required to secure the heater to the bottom of a barrel or tank, as 16, a plate 17 is secured to the bottom side of the heater and has its end portions projecting beyond the sides thereof and notched, as shown at 18, for the reception of the vertical rods 7, which have their lower ends headed and engaged with the terminal portions of a corresponding plate 19, secured to the bottom of the tank. The other ends of the vertical rods 7 are hooked or bent inwardly and engaged with the brackets 4 in the manner set forth and most clearly indicated in Fig. 5. When it is required to remove the heater from the tank, it is only necessary to disengage the upper ends of the rods 7 from the brackets 4, which operation can be easily effected by moving the rods 7 outward at their upper ends.

In some cases it is desirous to secure the heater to the upper portion of the tank, and to attain this end brackets or plates 20 are secured to opposite sides of the tank and extend above the same, their upper portions having inclined notches 21 to receive the end portions of the transverse rod 6, which latter is thrust through the openings 5 of the brackets 4. By having the notches 21 inclined the rod 6 is not liable to easy displacement, the upward tendency of the heater when submerged serving to hold the end portions of the rod at the inner upper ends of the notches 21. The notches 21 are formed in opposite edges of the brackets or plates 20, thereby admitting of the end portions of the rods being disengaged therefrom by giving the heater a slight turn, as will be readily comprehended.

While it is preferred to have the air-passage 14 located diametrically opposite the smoke-pipe 15, as a better draft is secured, it is obvious that it may be placed at any desired point with reference to the heater and pipe 15.

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

1. In a tank-heater, the combination of a grate located in the lower portion thereof and comprising a fixed and a movable section, an ash-pan located in the space formed between the grate and the bottom of the heater and directly below the movable section of the grate, and a plate placed beneath the fixed section of the grate and inclining downwardly and toward the ash-pan to direct the ashes thereto, substantially as set forth.

2. In a tank-heater, the combination with the tank, and heater, of a plate secured to the bottom of the tank, a corresponding plate secured to the bottom of the heater and having its end portions projecting, brackets secured to the upper portion of the heater and having openings, and vertically-disposed rods having their lower ends secured to the terminal portions of the plates attached to the bottom of the tank and engaging with the end portion of the plate applied to the bottom of the heater, and having their upper ends bent and adapted to make detachable connection with the aforesaid brackets, substantially as described.

3. The herein-described tank-heater, comprising a body having an inner vertical air-passage at one side, and a smoke-outlet at the opposite side, a grate secured within the lower portion of the body and comprising a fixed and a hinged section, the latter clearing the lower end of the air-passage, an ash-pan removably inserted within the body of the heater, a plate placed beneath the fixed part of the grate and adapted to direct the ashes falling thereon into the ash-pan, and a cover having a relatively-fixed part supporting the smoke-pipe, and a movable part clearing the upper end of the aforesaid air-passage and adapted to be turned aside to permit of the removal of the ash-pan, substantially as set forth.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

GOTTLIEB SCHNEIDER.
WILBER H. HILL.

Witnesses:
R. B. EMERSON,
H. D. BRACE.