No. 713,821. Patented Nov. 18, 1902.

D. WEDEAN.

TANK HEATER.

(Application filed May 1, 1901.)

(No Model.)

Fig. 1.

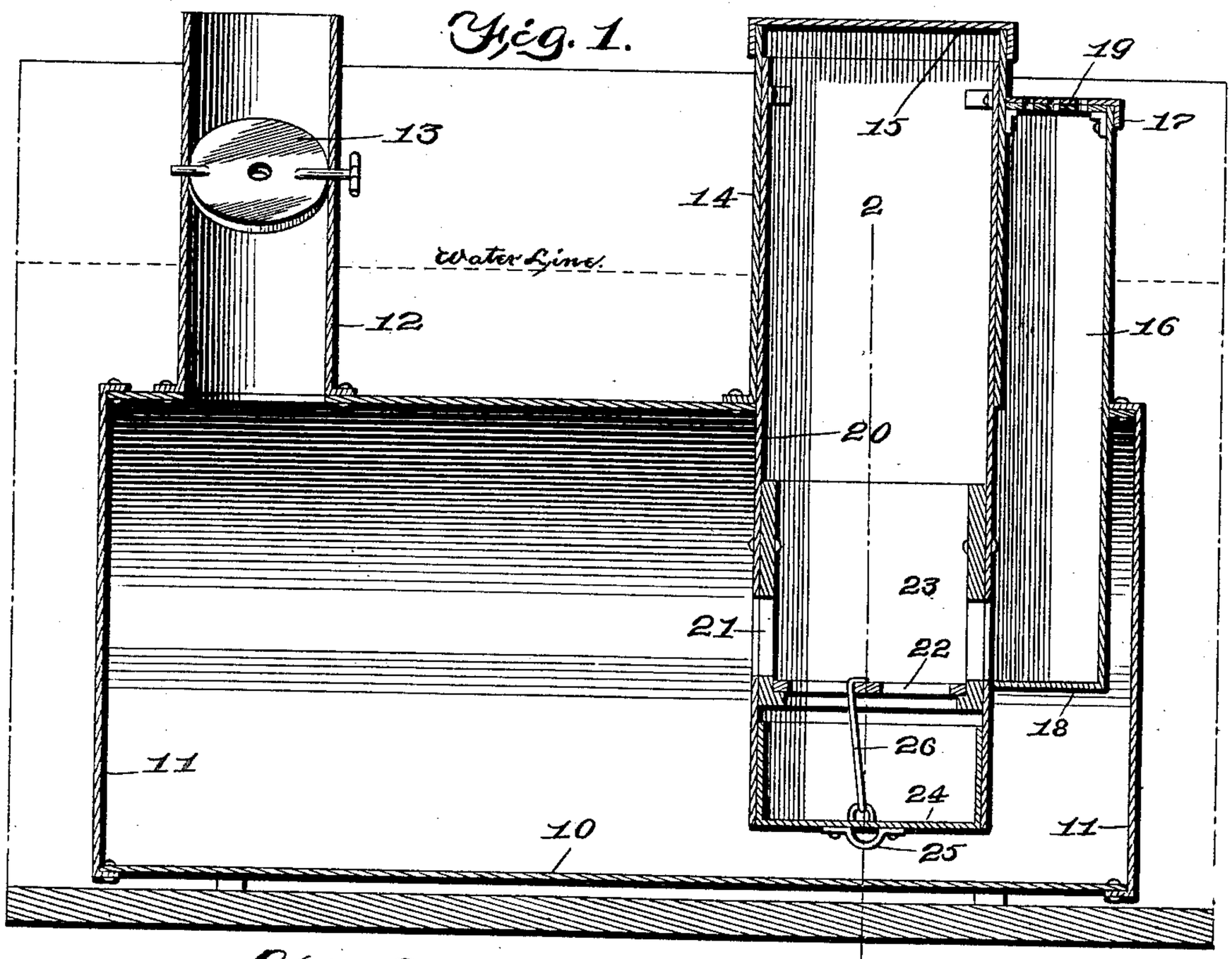
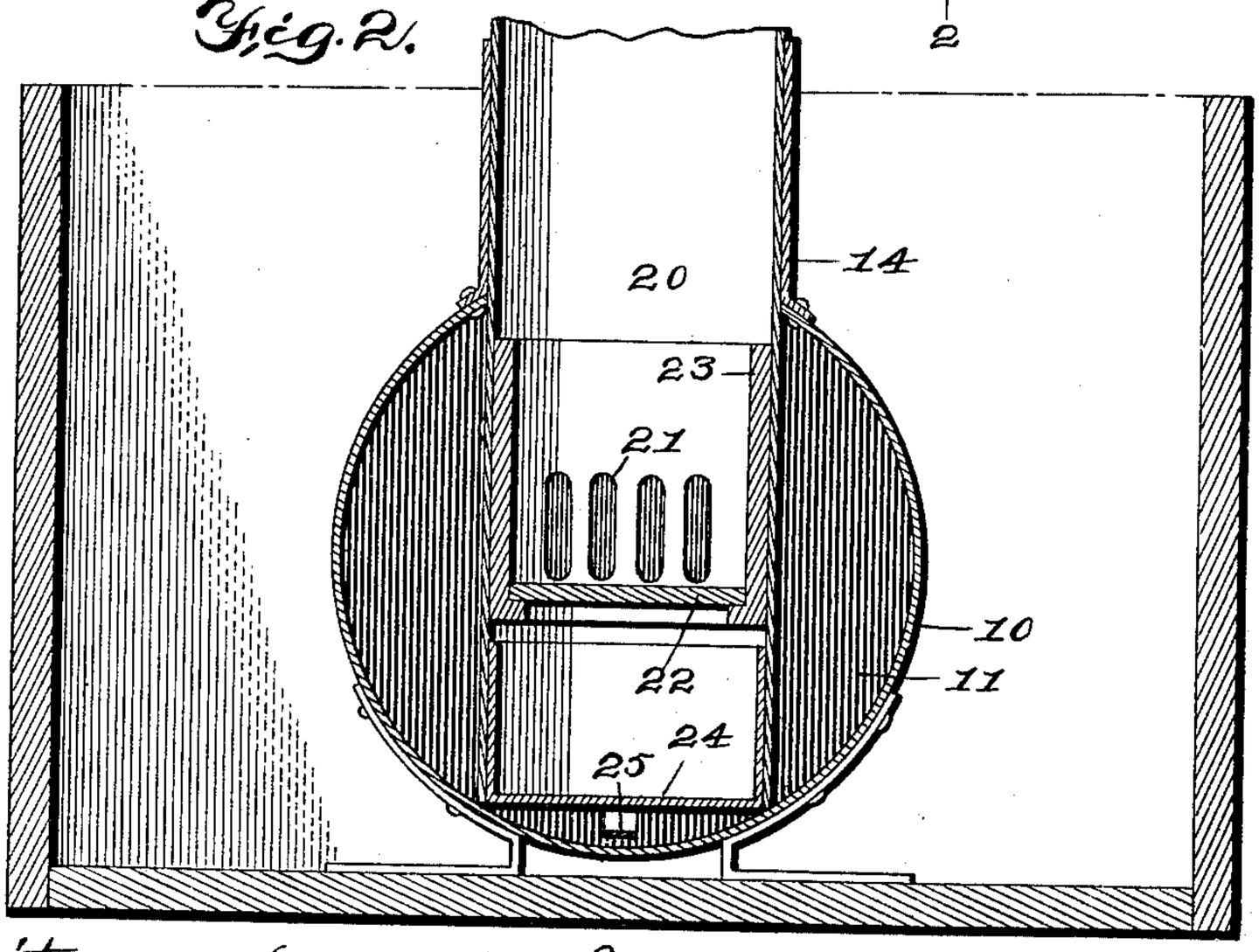


Fig. 2.



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UNITED STATES PATENT OFFICE.

DAVID WEDEAN, OF ORIENT, IOWA.

TANK-HEATER.

SPECIFICATION forming part of Letters Patent No. 713,821, dated November 18, 1902.

Application filed May 1, 1901. Serial No. 58,312. (No model.)

To all whom it may concern:

Be it known that I, DAVID WEDEAN, a citizen of the United States, residing at Orient, in the county of Adair and State of Iowa, have invented certain new and useful Improvements in Tank-Heaters, of which the following is a specification.

The object of this invention is to provide a tank-heater of simple, durable, and inexpensive construction in which a maximum amount of the heat generated will be utilized in heating water and which may be readily and quickly supplied with fuel and be so regulated as to burn for a comparatively great length of time without attention; and more specifically it is my object to provide a cylinder capable of being submerged and having fixed thereto draft-pipes and a detachable fire-chamber that may be raised and lowered at will and also a grate and an ash-box beneath the grate detachably connected with the fire-chamber, so that when the fire-chamber is elevated the ashes will be raised with it and then may readily be dumped.

My invention consists in certain details in the construction, arrangement, and combination of the various parts of the device, and particularly in the feature of the detachable combustion-chamber, fire-box, and ash-pit, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claim, and illustrated in the accompanying drawings, in which—

Figure 1 shows a vertical central longitudinal sectional view of the complete device. Fig. 2 shows a transverse sectional view of same on the indicated line 2 2 of Fig. 1.

Referring to the accompanying drawings, I have used the reference-numeral 10 to indicate a sheet-metal cylinder having the heads 11. Said cylinder is designed to be placed in a water-tank below the water-level thereof. At one end of the cylinder 10 is a pipe 12, having a damper 13 to provide for the discharge of the products of combustion. Near the other end of the cylinder is an angular upwardly-projecting pipe 14 to project to a point considerably above the water-level of the tank and permanently secured to the cylinder 10. This pipe 14 is provided with a detachable cover 15, and at one side thereof is a draft-passage, (indicated by the numeral 16,) with its top some distance beneath the pipe 14 and provided with a perforated top plate 17. This draft-passage extends to a point near the bottom of the tank 10 and has a solid bottom piece 18 therein and is open at its front or part adjacent to the pipe 14, thereby providing a passage-way closed on all sides except for the perforations in the top and the part adjacent to the pipe 14. Beneath the top 17 is a slide 19, also perforated, said perforations therein being so arranged with relation to the perforations in the top that they may be made to coincide or when the slide 19 is moved to stand in a position out of alinement with the perforations in the top.

The parts before described, with the exception of the slide 19, are all permanently secured together and are obviously of such simple construction that they may be manufactured in a cheap and inexpensive manner.

The receptacle comprising the fuel-chamber, fire-box, and ash-pit comprises a rectangular sheet-metal tube 20 of a size designed to enter and closely fit into the pipe 14. Said tube 20 is open at its top and bottom, and openings 21 are made in two of its sides diametrically opposite each other at a point near the bottom of the tube for purposes hereinafter made clear. At a point directly beneath the openings 21 is a grate 22 of ordinary construction, and the walls of the interior of the tube from the grates upwardly are lined with cast-metal plates 23 or firebrick, as desired, said lining also being provided with openings to coincide with the openings 21.

The reference-numeral 24 indicates the ash-box, provided with a handle 25 and designed to enter and closely fit into the bottom of the tube 20. It may be held in place by any ordinary means, preferably such as the hook 26, pivoted in the ash-box and designed to engage the grate.

In practical use the cylinder 10 and the parts permanently fixed thereto are first placed in the water-tank and firmly secured in position. Then the ash-box is placed in the bottom of the tube 20 and secured by means of the hook 26. Then a fire is started in the fire-box, and the tube 20 is then placed in the pipe 14 until its bottom rests upon the bottom of the cylinder 10, as shown in Fig.

2. Then the cover 15 may be placed on top of the pipe 14, and the draft-openings in the passage-way 16 are made to coincide, so that the air may pass downwardly through said passage-way through the openings 21 into the fire upon the grate. Obviously the heat generated from said fire will pass through the openings 21 on the opposite side of the tube 20 into the cylinder 10 and from there will be radiated from the cylinder 10 to heat the water in the tank, the products of combustion passing upwardly through the pipe 12. If desired, the tube 20 may be completely filled with fuel, which will feed the fire automatically as the fuel on the bottom is burned out and forms ashes, which drop through the grate into the ash-chamber. The cover 15 may be removed at any time for purposes of gaining access to the fire-box or for feeding more fuel. If at any time it is desired to remove clinkers from the grate or ashes from the ash-box, the cover 15 is removed and the entire tube 20 is withdrawn from the cylinder 10, thereby leaving a comparatively large opening through the pipe 14, whereby access may be had to the interior of the cylinder 10.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States therefor, is—

An improved tank-heater comprising in combination a sheet-metal cylinder to be submerged in a water-tank and having a discharge-opening at its top near one end and also having an opening at its top near its other end to receive a combustion-chamber, a smoke-pipe communicating with the discharge-opening and extending upwardly, an upright tube over the other opening open at both ends, a tube to serve as a combustion-chamber open at both ends and passed through the upright tube, a detachable ash-box on the lower end of said tube to rest upon the bottom of the cylinder, a grate above the ash-box supported in said tube and a draft-pipe passed through the cylinder alongside of the upright tube to discharge into the interior of the combustion-chamber near its lower end and above the grate, substantially as and for the purposes stated.

DAVID WEDEAN.

Witnesses:
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