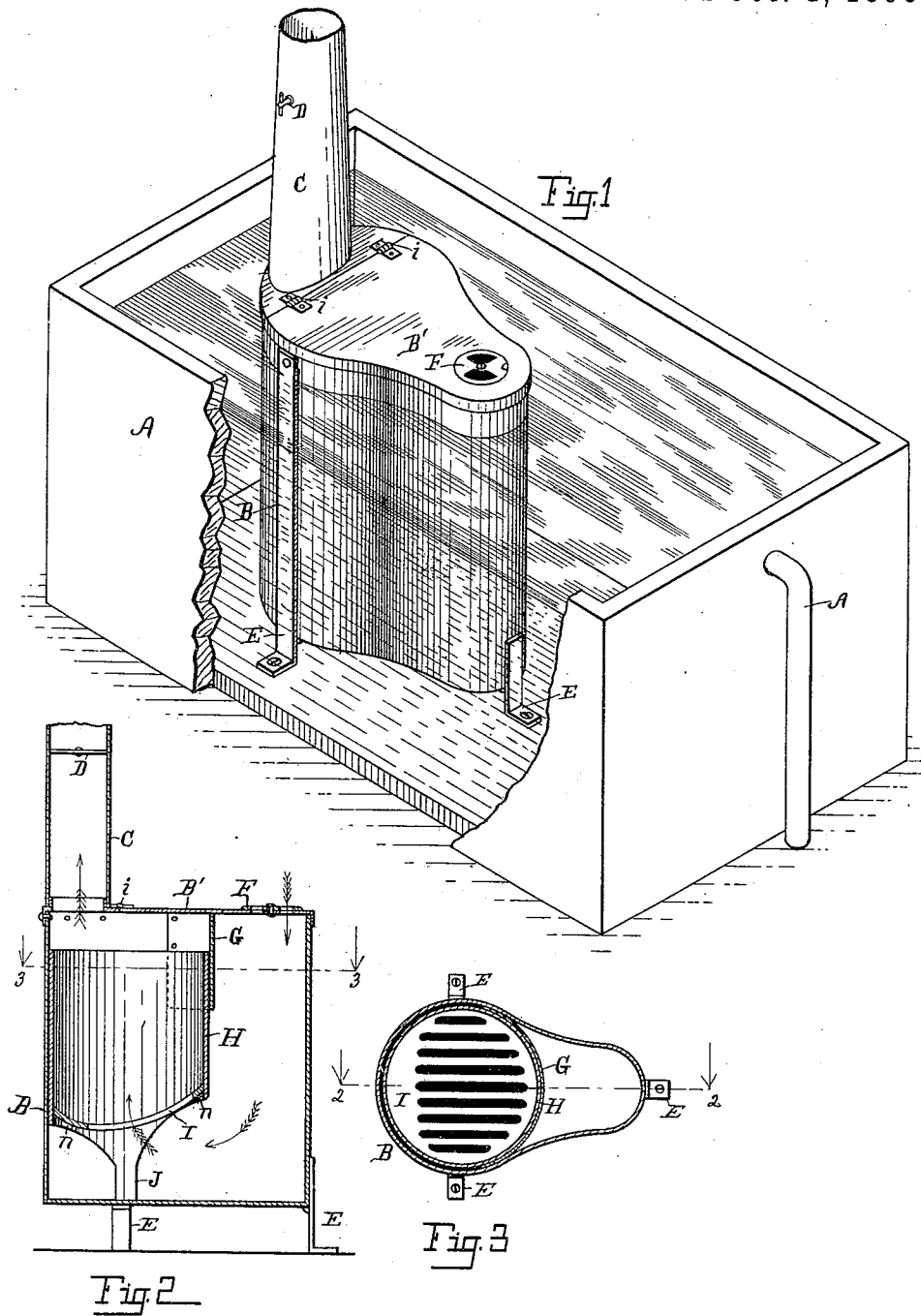


(No Model.)

W. E. SLOWEY & C. E. JEFFRES.  
HEATER FOR WATER TANKS.

No. 547,038.

Patented Oct. 1, 1895.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

WILLIAM E. SLOWEY AND CHARLES E. JEFFRES, OF ALBION, MICHIGAN.

## HEATER FOR WATER-TANKS.

SPECIFICATION forming part of Letters Patent No. 547,088, dated October 1, 1895.

Application filed March 1, 1895. Serial No. 540,130. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM E. SLOWEY and CHARLES E. JEFFRES, citizens of the United States, residing at the city of Albion, in the county of Calhoun and State of Michigan, have invented certain new and useful Improvements in Heaters for Water-Tanks, of which the following is a specification.

Our invention relates to improvements in heaters for water-tanks.

The objects of our invention are, first, to provide a heater for a water-tank which will operate economically and effectively with ordinary fuel; second, to provide a heater which shall be absolutely safe for the purpose; third, to provide a heater so constructed that it shall be convenient and easy to keep in order; fourth, to provide a tank-heater that shall be easy to repair. We accomplish these objects of our invention by the devices shown in the accompanying drawings, in which—

Figure 1 represents a view of our improved device in use in a tank, a portion of the tank being broken away. Fig. 2 is a vertical longitudinal sectional view on line 2 2 of Fig. 3. Fig. 3 is a sectional view on line 3 3 of Fig. 2.

The sectional views are all taken looking in the direction of the little arrows at the ends of the section-lines.

Similar letters of reference refer to similar parts throughout the several views.

Referring to the lettered parts of the drawings, A represents the tank proper and its appurtenances, here shown in a conventional manner.

B represents the outer casing of our improved heater, which is oblong in form and of a rounded contour, a cross-section being somewhat oval in form. This outer casing is secured to the bottom of the tank by little strips E, which prevent its floating in the tank.

B' is the cover which is hinged at i.

Inside of the outer casing B is a tight partition G, extending down from the top of the tank in a vertical position. This is circular in contour and, with the back portions of the tank, will form a complete cylindrical space. Inside of this space and slightly separated from the walls of the tank is supported the fire-pot H. This is supported at the bottom by lugs J at each side. Lugs n n (three in number, one in front and two at the back side)

support a curved grate I. This grate is higher in front than at the rear, which gives easy access through the draft-space to the grate to permit removal of ashes and cleaning away of any accumulations which prevent free access of air.

In the cover B' is placed a perforated-disk damper F for controlling the access of air. A length of stovepipe C, or more than a length, if required, is placed over the back or main portion of our improved heater to furnish draft, and a damper D is placed in the pipe to assist in controlling the combustion.

In operation our improved water-heater is very effective. The fire-pot H is a little separated from the outer casing B when the outer casing B is immersed in water. This has a very beneficial effect in preventing the "sweating" or condensation of moisture, which will dampen the fire where no such provision is provided and prevent its burning. With the space between the fire-pot and the outer casing the condensation of the moisture is in the outer casing and passes down without impeding the combustion. A heater operating like our improved heater will quickly remove any ice from a tank and will warm the water to a temperature agreeable for use of stock in extremely cold weather.

We desire to state that our improved tank-heater is capable of considerable variation in construction without departing from our invention. The exact form of the device is not material to its operation. It is necessary to have a tight partition extending down by the heater to divide the outer casing into a combustion-chamber and a draft-chamber, and it is necessary that the fire-pot be a little separated from the outer casing, in order to prevent condensation of moisture and consequent dampening of the fire. We desire to say, however, that the form in which we have produced the device will be found the most desirable under all circumstances. The device is compact. The fire-pot and combustion-chamber are in circular form and therefore the best adapted to hold the fire. Only a little fire is necessary and the draft-space is only sufficient to admit of the hand or arm of an operative or a poker to properly clear away the ashes and regulate the fire.

It will be noted with this improved device

that all of the parts are so easy to construct that any part may be quickly and easily renewed when it becomes worn without the necessity of employing skilled labor to assemble the parts together.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

In a water heater for use in tanks, the combination of the outer casing, B; a partition, G, extending from the top downward in said tank dividing the same into a combustion chamber and a draft chamber; a fire pot, H, having legs, J, to be placed in said combustion chamber; a curved grate, I, supported on

the lugs, *n*, in said fire pot; the forward side of which is higher than the rear; a cover, B', on said casing with a damper, F, therein; a pipe, C, above the combustion chamber containing the damper, D, all substantially as described for the purpose specified.

In witness whereof we have hereunto set our hands and seals in the presence of two witnesses.

WILLIAM E. SLOWEY. [L. S.]  
CHARLES E. JEFFRES. [L. S.]

Witnesses:

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