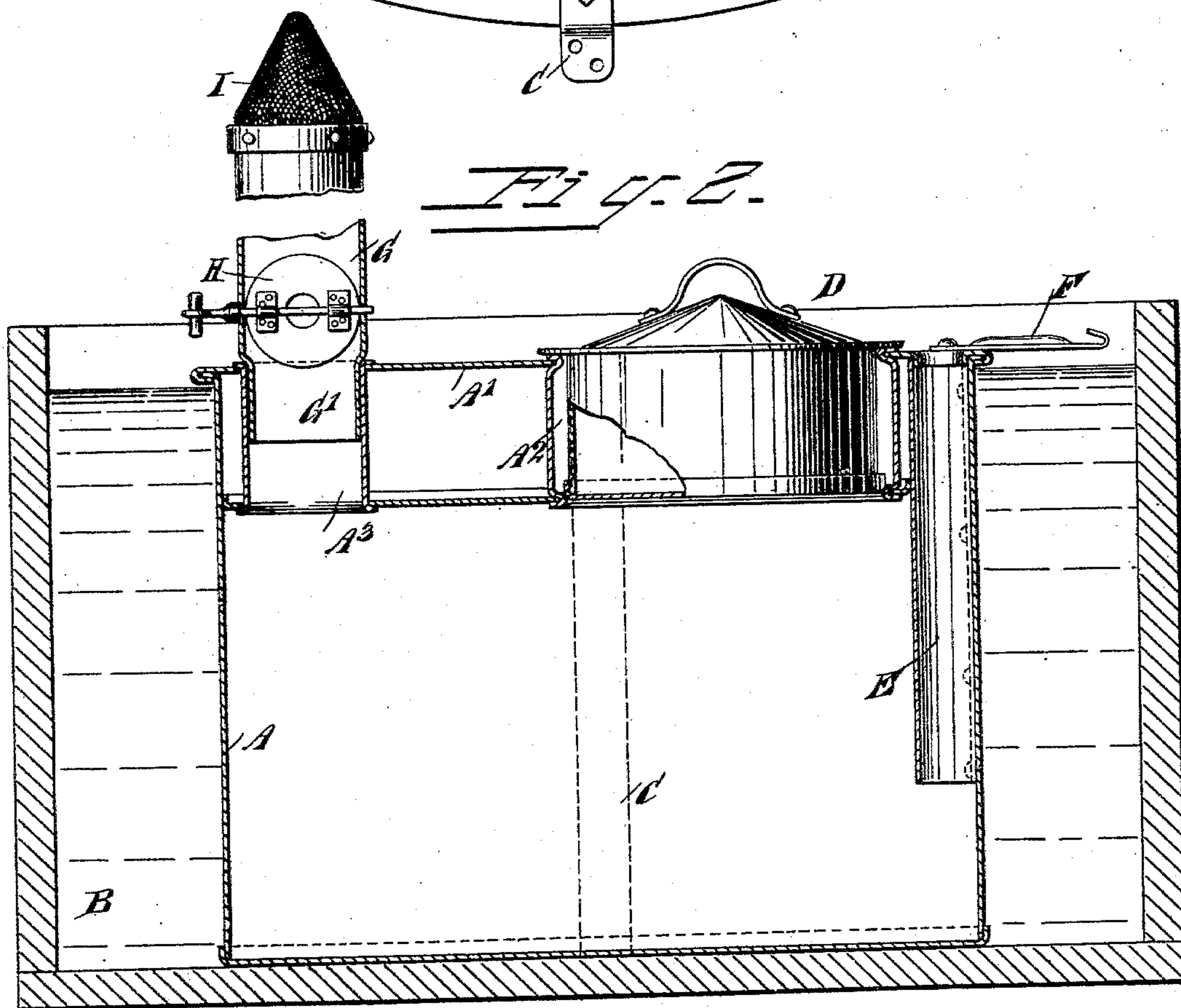
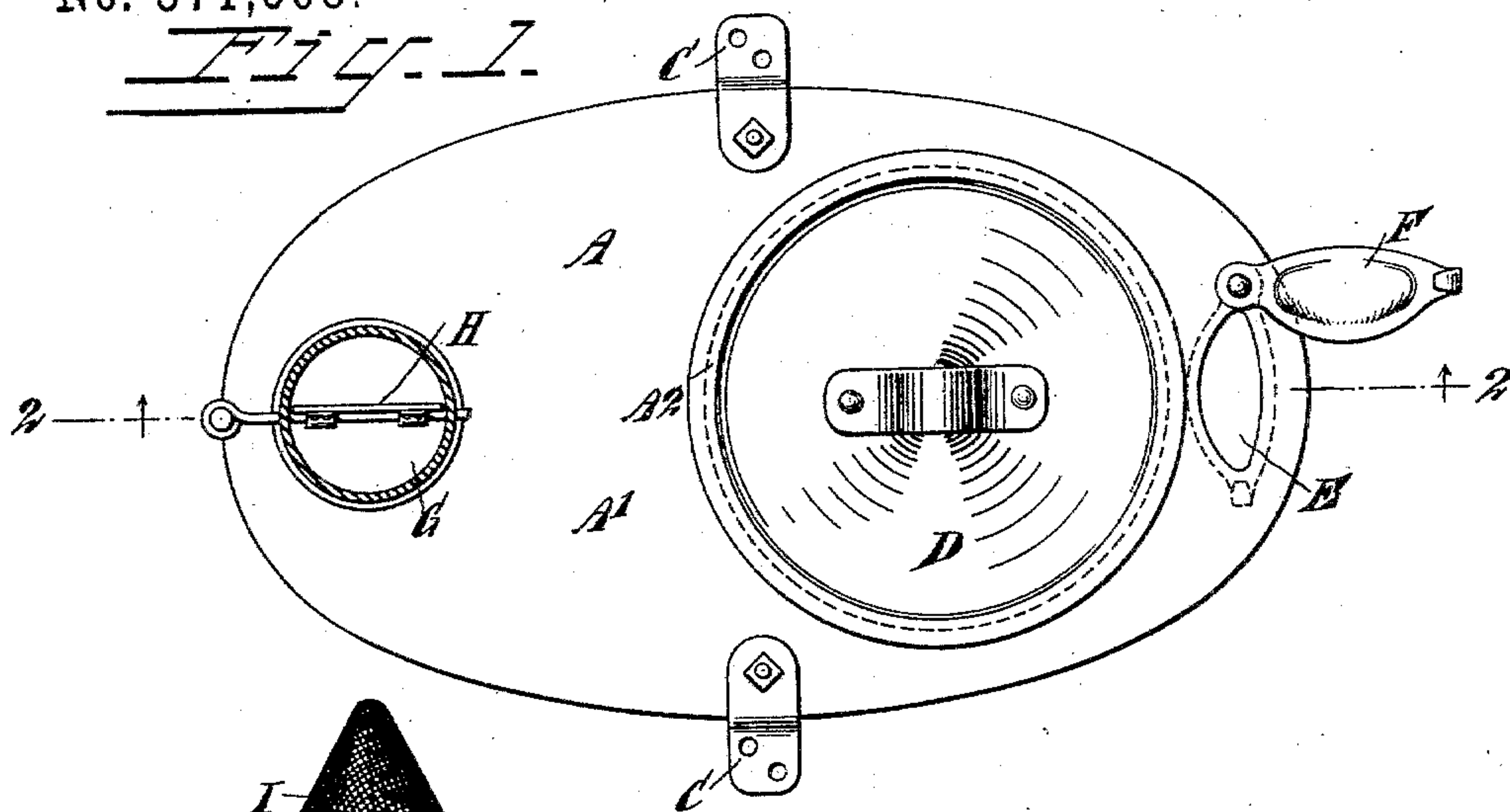


(No Model.)
A. W. JOHNSEN & P. T. & T. HERREID.

TANK HEATER.

No. 571,668.

Patented Nov. 17, 1896.



WITNESSES:

Henry T. Kirsch.

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ATTORNEYS.

UNITED STATES PATENT OFFICE.

ANDREW W. JOHNSEN, PETER T. HERREID, AND THOMAS HERREID, OF
BLAIR, WISCONSIN.

TANK-HEATER.

SPECIFICATION forming part of Letters Patent No. 571,668, dated November 17, 1896.

Application filed February 26, 1896. Serial No. 580,892. (No model.)

To all whom it may concern:

Be it known that we, ANDREW W. JOHNSEN, PETER T. HERREID, and THOMAS HERREID, of Blair, in the county of Trempealeau and State of Wisconsin, have invented a new and Improved Tank-Heater, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved tank-heater more especially designed for heating water and other liquids, cooking feed and other substances, and arranged to effectively heat the surrounding liquid or substance without an appreciable loss of heat.

The invention consists of certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in both the figures.

Figure 1 is a plan view of the improvement with part in section, and Fig. 2 is a sectional side elevation of the same on the line 2 2 of Fig. 1 and as applied.

The improved tank-heater is provided with a casing A, adapted to be fastened in a tank B, containing the liquid or feed to be heated, said casing being for this purpose provided with downwardly-extending arms C, adapted to be nailed or otherwise fastened to the bottom of the tank B.

The casing A is provided with a double top A', so that the combustion-chamber, formed in the casing below said top, extends a suitable distance below the level of the liquid or feed contained in the tank B, and the heat generated in said combustion-chamber is not liable to radiate from the top into the air and get lost; but all the heat will be utilized for heating the surrounding liquid or feed in the tank A. The double top A' is provided with a manhole A², normally closed by a manhole-cover D, likewise made double and seated at its bottom and top on seats formed in said top A'. The manhole A² serves principally for introducing the necessary fuel into the casing at the time the cover D is removed, and when the fuel is burning said cover is inserted to close the manhole.

In one end of the casing A is arranged a

draft-channel E, extending downwardly from the top surface of the casing to within a short distance of the bottom thereof, as plainly indicated in Fig. 2, the upper end of said channel being adapted to be closed by a suitable hinged door F. In the other end of the casing A is arranged a chimney G for the smoke and gases to pass to the outer air, said chimney being set with its slightly-contracted lower end G' into a thimble A³, secured in the double top A', as plainly indicated in Fig. 2.

The chimney G is provided with a suitable damper H for regulating the draft, and on the upper end of said chimney is secured a cone-shaped wire-netting I to form a spark-arrester.

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

1. A tank-heater, comprising a casing adapted to be fastened in a tank containing the liquid, feed or the like to be heated, said casing being provided with a combustion-chamber and having a double top forming a closed air-space for the purpose of preventing radiation of heat, substantially as shown and described.

2. A tank-heater, comprising a casing adapted to be set in a tank containing the liquid, feed or the like to be heated, said casing being provided with a double top, forming a combustion-chamber in the lower portion of the casing, a draft-channel in one end of said casing, and a chimney held on the other end of said casing and set in a thimble secured in said double top, substantially as shown and described.

3. A tank-heater, provided with a casing adapted to be set in a tank containing the liquid, feed or the like to be heated, said casing being provided with a double top and a combustion-chamber in the lower portion of said casing, said double top being provided with a manhole, and a cover fitting said manhole and seated thereon at its lower and upper ends, substantially as shown and described.

ANDREW W. JOHNSEN.
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THOMAS HERREID.

Witnesses:

ALBERT B. PETERSON,
OLE GUNDERSEN.