No. 698,983. Patented Apr. 29, 1902.

M. LYNCH.

TANK HEATER.

(Application filed Sept. 6, 1901.)

(No Model.)

Fig. 1.

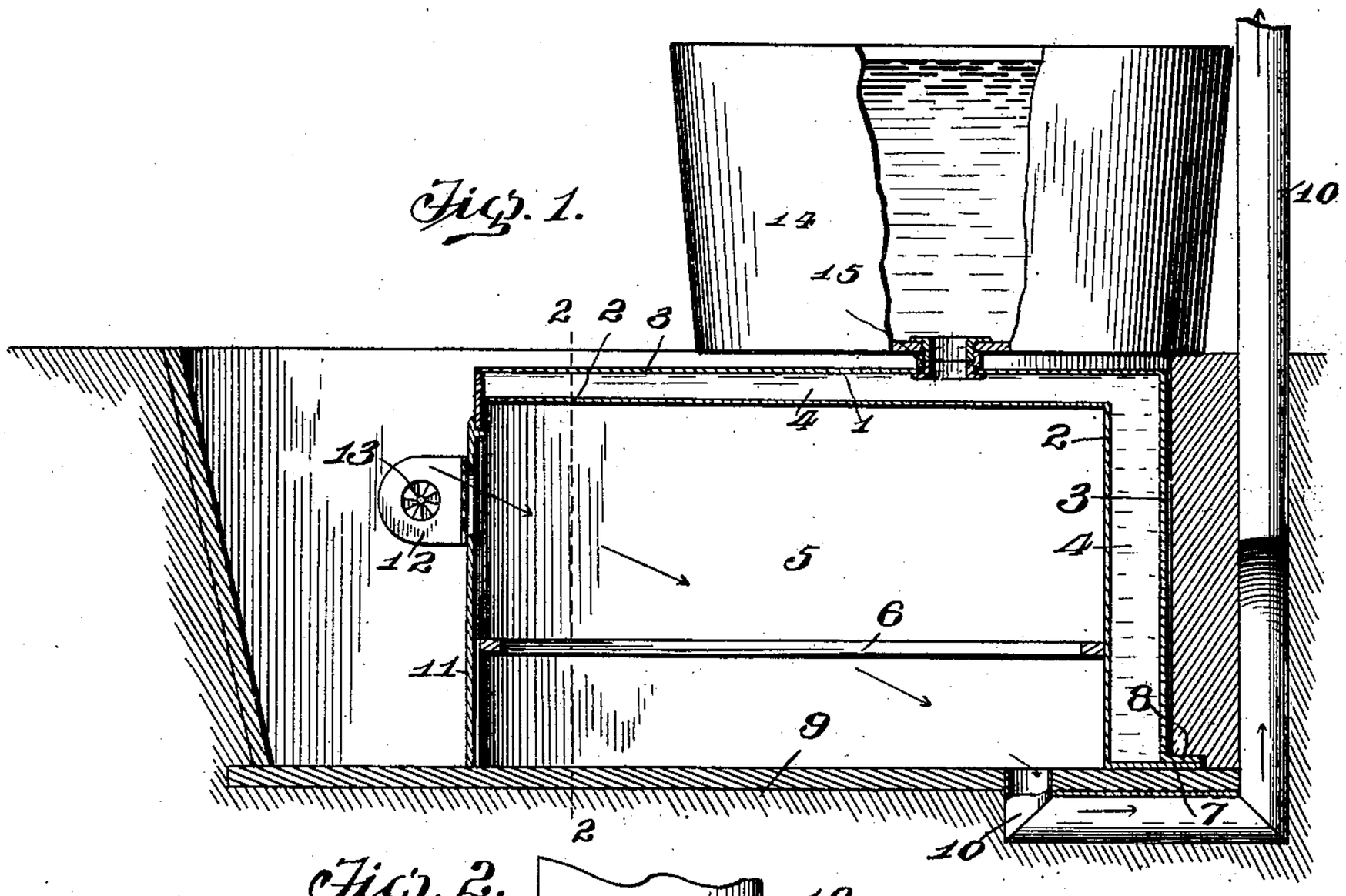
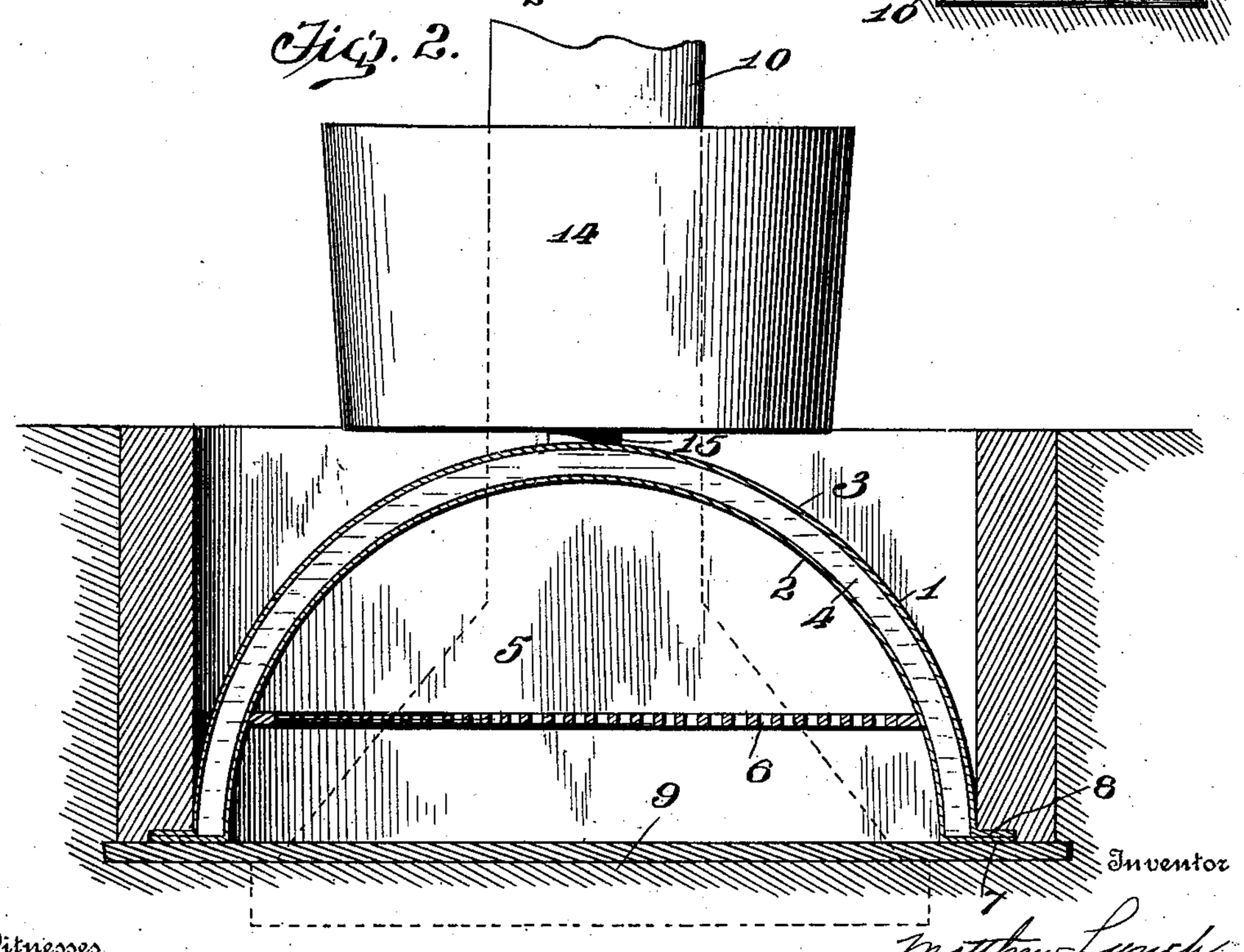


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

MATTHEW LYNCH, OF MALTABEND, MISSOURI.

TANK-HEATER.

SPECIFICATION forming part of Letters Patent No. 698,983, dated April 29, 1902.

Application filed September 6, 1901. Serial No. 74,559. (No model.)

To all whom it may concern:

Be it known that I, MATTHEW LYNCH, a citizen of the United States, residing at Maltabend, in the county of Saline and State of Missouri, have invented certain new and useful Improvements in Tank-Heaters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to improvements in tank-heaters, and more particularly to that form of heater provided with a water-jacket inclosing the combustion-chamber, the same being of the downdraft type.

One of the objects of the invention is the exposure of a maximum of surface to the action of the products of combustion for a rapid heating of a comparatively small quantity of water for creating a circulation thereof, whereby the hot water will be caused to rise and permit cold water to take its place, communication being had with the tank being heated.

It consists of certain other novel constructions, combinations, and arrangements of parts, as will be hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 represents a vertical longitudinal section through a tank-heater embodying the features of the present invention, the tank being shown in elevation with part broken away to reveal the structure. Fig. 2 represents a transverse section of the same, taken on line 2 2 of Fig. 1.

In the art to which my invention relates it is often found desirable to rapidly heat the contents of a tank, and to accomplish this with a minimum of fuel I provide, as seen in the accompanying drawings, illustrating one embodiment of the present invention, a water-jacket, as 1, which is formed of an inner wall 2 and an outer wall 3, the two walls being spaced apart, forming an intermediate water-space 4. The jacket 1 is preferably of arch shape in transverse section, but may be of any desired shape, the said jacket forming the top, side, and rear walls to an interior combustion-chamber, as 5, in which is supported a suitable grate, as 6. The walls 2 and 3 are each provided all around, except at the front end, with an outwardly-extending flange, as 7, said flanges being secured together by any preferred securing means, the jointure between said flanges being such as to prevent the passage of water, the flange of wall 2 closing the space between the two walls at the base.

The flanges 7 rest upon and may, if desired, be secured to a suitable base, as 9, the said base being penetrated by a flue, as 10, of any preferred form, the same entering the combustion-chamber 5 near the rear end thereof.

The front end of chamber 5 is closed by a wall, as 11, provided with a door, as 12, for the supply of fuel, said door having a suitable draft-regulator, as 13, and in operation the air for supporting combustion is permitted to enter through said regulator, passing downward through grate 6, as indicated by the arrows, and finally out flue 10.

In operation the jacket and parts described are preferably buried in the earth to the extent shown in the drawings, and a tank, as 14, is mounted above the jacket and rests upon the surrounding earth. The parts of a suitable threaded tubular coupling, as 15, are united, thereby establishing communication between tank 14 and water-space 4, whereby the heated water of jacket 1 may rise into tank 14 and the cold water thereof may descend into said jacket for becoming heated.

It will be noted that the walls 2 and 3 are each formed of one integral piece of material, including the flanges 7, which are simply struck outwardly therefrom. This feature facilitates the manufacture and reduces the expense of production of the improved heater. Of course that portion of each of walls 2 and 3 forming the end wall to chamber 5 may be formed separately from and secured to the front portion of its respective side wall, if desired.

In positioning the jacket 1 the flanges 7 may be passed beneath the surrounding earth, together with base 9, as shown, or said base may alone be held in place in such manner, said flanges being secured to the base.

Any desired form of ash-pan may be placed beneath grate 6, or no pan need be used, if preferred.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A tank-heater comprising a water-jacket forming the top, sides and one end wall of a combustion-chamber, a front wall completing the same, a door formed therein, a grate within said chamber, and a flue of approximately the width of the combustion-chamber leading from the bottom of said chamber for conducting the products of combustion therefrom, substantially as described.

2. In a tank-heater, the combination with a tank, of a water-jacket beneath the same, means for permitting communication between the interior of said jacket and said tank, the said jackets forming the rear, top and side walls of a combustion-chamber, a front wall and base completing the same, a grate within said chamber, a door formed in the said front wall for the introduction of fuel to said grate, means carried by said door for regulating the supply of atmosphere to the combustion-chamber, and a flue of approximately the width of the combustion-chamber penetrating said base, near the rear end thereof and adapted to conduct the products of combustion therefrom, the structure being such that air admitted through said regulator is directed downwardly through said grate and out through said flue, substantially as described.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

MATTHEW LYNCH.

Witnesses:
W. H. HALL,
W. J. BROWN.