

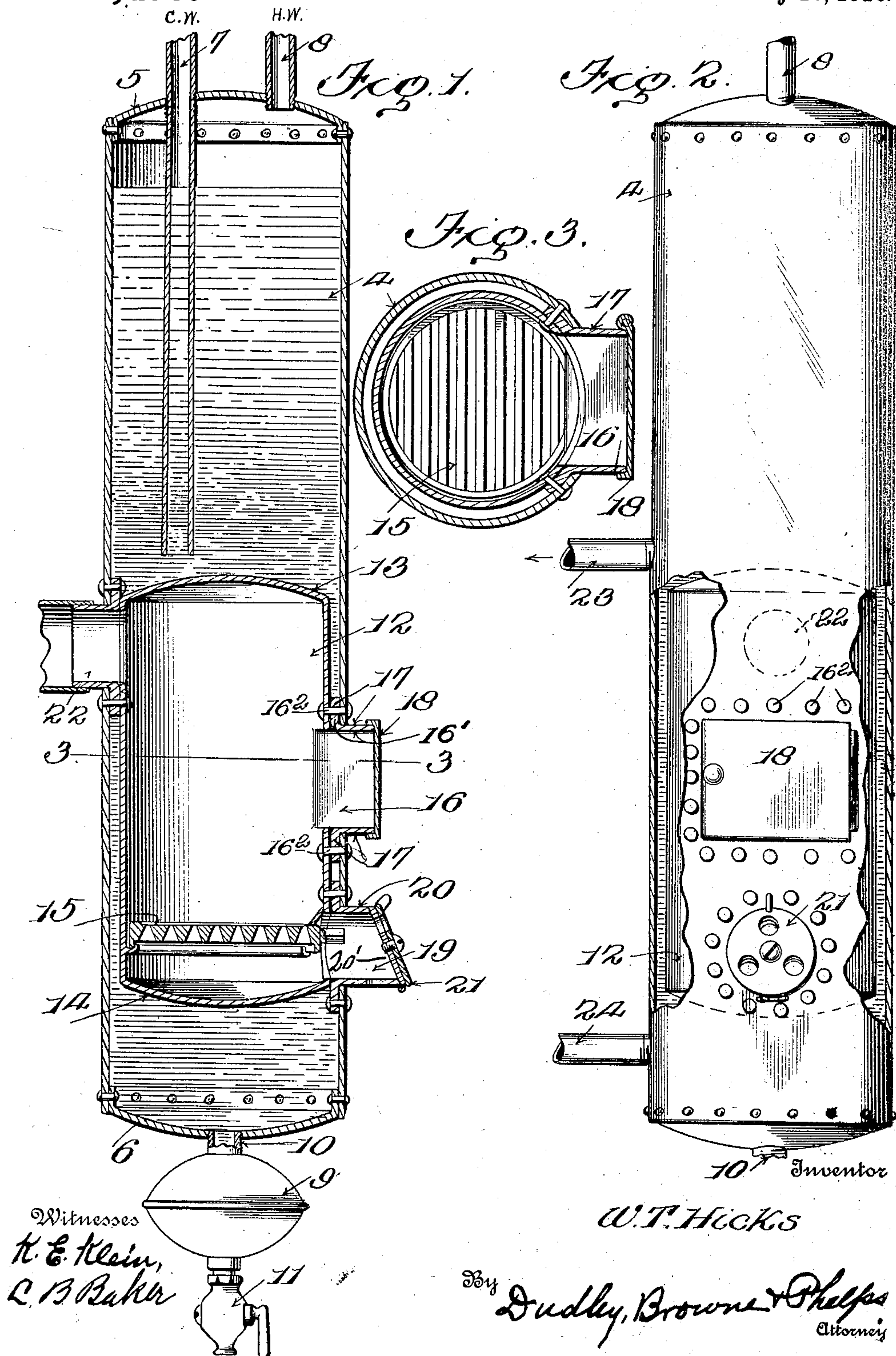
W. T. HICKS.

WATER HEATER.

APPLICATION FILED SEPT. 2, 1909.

958,499.

Patented May 17, 1910.



UNITED STATES PATENT OFFICE.

WILLIAM T. HICKS, OF BLOOMINGTON, INDIANA.

WATER-HEATER.

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Specification of Letters Patent.

Patented May 17, 1910.

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To all whom it may concern:

Be it known that I, WILLIAM T. HICKS, a citizen of the United States, residing at Bloomington, in the county of Monroe and State of Indiana, have invented certain new and useful Improvements in Water-Heaters, of which the following is a specification.

Ordinarily a reservoir for hot water in the form of a tank is connected to a water back in a stove or range, so that when the stove or range is run the water in the tank will be heated. It has been found necessary however to heat water in the tank for various purposes at times when it was not convenient or desirable to build a fire in the stove or range, and it has also been found that the heating of the water in the tank by the stove or range was insufficient to keep the water heated when the water is continuously withdrawn from the tank.

It is the object of my invention to provide a tank or reservoir of such a construction that the water in the tank may be heated from the stove to which it is connected when the stove is in use and the heat therefrom is sufficient to supply the hot water required, and when either the stove is not in use or its heat is insufficient to supply the demand for hot water to be able to build a fire within the tank itself for the purpose of heating the water.

It is also an object of my invention to provide a construction of heating tank or reservoir which need not be connected with any stove but in which a fire may be built when hot water is desired, and which will quickly and economically heat water.

With these and other objects in view my invention consists in certain constructions, combinations and arrangements of parts the preferred form of which will be first described in connection with the accompanying drawings and then the invention particularly pointed out in the appended claims.

Referring to the drawings wherein the same part is designated by the same reference numeral wherever it occurs Figure 1 is a central longitudinal section; Fig. 2 is a side elevation partly broken away and Fig. 3 is a horizontal section taken on line 3, 3 of Fig. 1.

The shell of the boiler is composed of the cylindrical portion and the heads 5 and 6.

7 and 8 designate the pipes through which the cold water to be heated enters the heater

and the hot water is withdrawn therefrom respectively in the ordinary manner.

9 designates a mud drum connected to the head 6 by means of the pipe 10, and 11 designates a faucet through which the sediment collected in the drum may be allowed to run out.

Mounted within the shell and preferably in the lower portion thereof as shown is an inner shell comprising a cylindrical portion 12 and the heads 13 and 14. This inner shell forms a furnace in which fire may be placed, and, in the form of my invention shown, is provided in its lower portion with a grate 15 on which the fire may be built. It is of course obvious that a gas heater or other form of heater may be substituted for the grate. The shell 12 is provided with an opening 16 at one side thereof which is surrounded by a collar 16' which fills the space between the shell of the furnace and the shell of the boiler immediately around the opening 16. The collar and the furnace shell are secured to the interior of the boiler shell by means of suitable securing devices as the rivets 16², whereby the furnace shell is secured in position in the boiler shell and from the edges of the collar the flanges 17 extend through the body portion 4 of the outer shell. The collar 16' is provided with a door 18. Through the opening 16 coal or other fuel may be placed on the grate 15.

19 designates an opening formed by the flanged collar 20 extending through the wall 4 of the reservoir beneath the grate 15, the flange 20 at its outer end having a door 20' and a damper 21 therein of any desired form for the purpose of controlling the air supplied beneath the grate 15.

22 is a flanged collar forming a flue extending from the upper portion of the shell 12 through the body 4 of the outer shell and is adapted to be connected to a chimney.

The flanged collars 20 and 22 are secured in position similarly to the flanged collar 16'.

From the construction so far described it will be seen that I have provided a water heater in which the fire chamber is located entirely within the heater and is entirely surrounded by the water to be heated, so that the water in the heater can be quickly and economically heated.

23 and 24 are pipes extending from the body 4 of the outer shell which are adapted to be connected to the water back of a stove

or range in any desired manner. Through these pipes the water will circulate through the water back in the well known manner and become heated when the stove is in use.

5 I realize that considerable variation is possible in the details of construction and arrangement of parts without departing from the spirit of my invention, and I therefore do not intend to limit myself to the specific form shown and described.

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

1. In a water heating apparatus, the combination with a reservoir having water inlet and outlet pipes connected therewith, of a shell constituting a combustion chamber located entirely within the reservoir and separated therefrom, said shell being located at a point intermediate the ends of said reservoir, said shell and said reservoir being each provided with openings in line with each other, flanged collars inserted in the openings in the reservoir with the flanges surrounding the openings in the shell and extending between the shell and the wall of the reservoir, rivets passing through the shell, the collar and the wall of the reservoir to secure the parts together, said openings being so arranged whereby combustion may be maintained within the shell.

2. In a water heating apparatus, the combination with a reservoir having water inlet and outlet pipes connected therewith, of a shell constituting a combustion chamber located entirely within the reservoir and separated therefrom, said shell being located at

a point intermediate the ends of said reservoir, said shell and said reservoir being each provided with openings in line with each other, flanged collars inserted in the openings in the reservoir with the flanges surrounding the openings in the shell and extending between the shell and the wall of the reservoir, rivets passing through the shell, the collar and the wall of the reservoir to secure the parts together, a fuel supporting element located within the shell, said openings being so located as to furnish a draft inlet below said fuel supporting element, a fuel inlet opening above said fuel supporting element, and a draft outlet above the same.

3. In a water heating apparatus, the combination with an upright reservoir having water inlet and outlet pipes connected thereto, said reservoir having a convex bottom, of a shell constituting a combustion chamber located entirely within the reservoir and separated therefrom, said shell being located intermediate the top and bottom of said reservoir, said shell being provided with openings communicating through the side of the reservoir whereby combustion can be maintained within the shell, said convex bottom being provided with a central opening, and a sediment collecting drum connected to said central opening.

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

WILLIAM T. HICKS.

Witnesses:

L. P. SQUIER,
M. F. CHAMBERLIN.