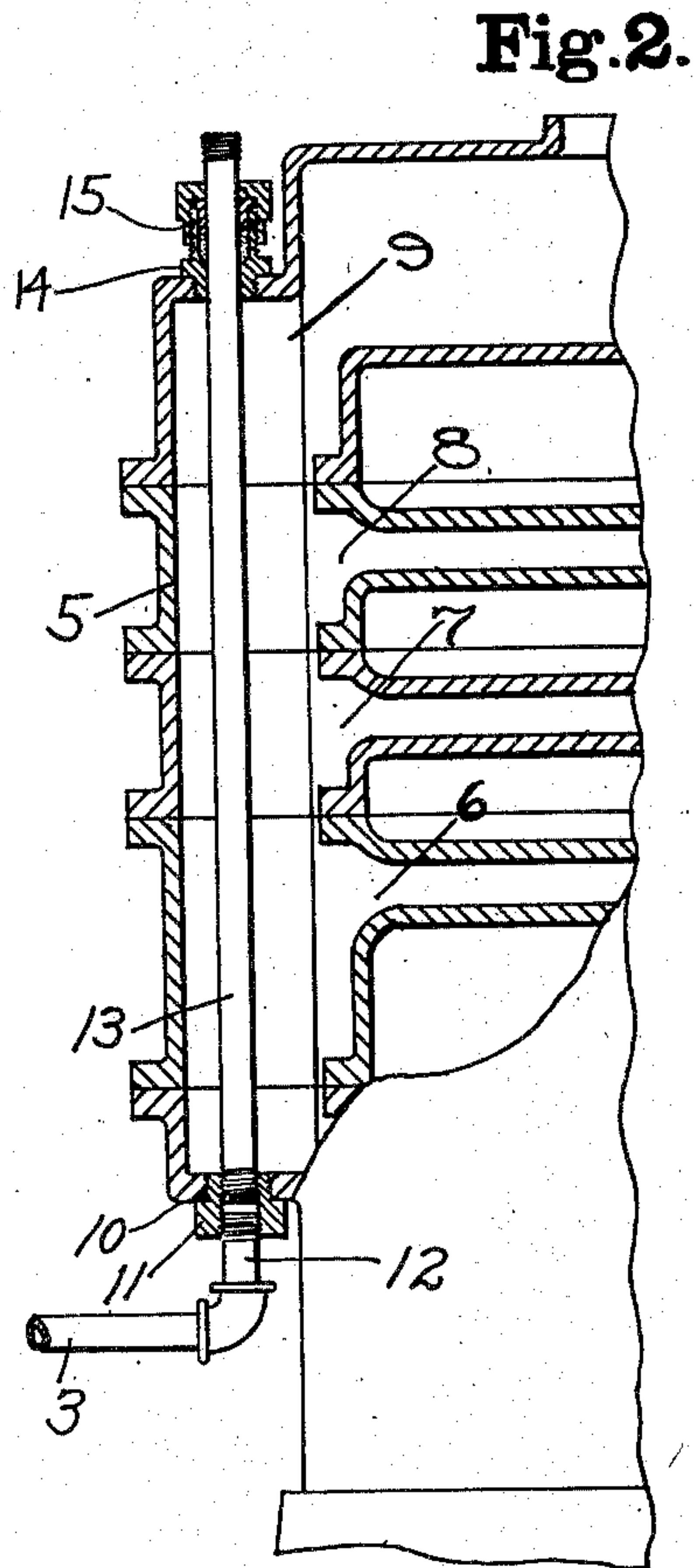
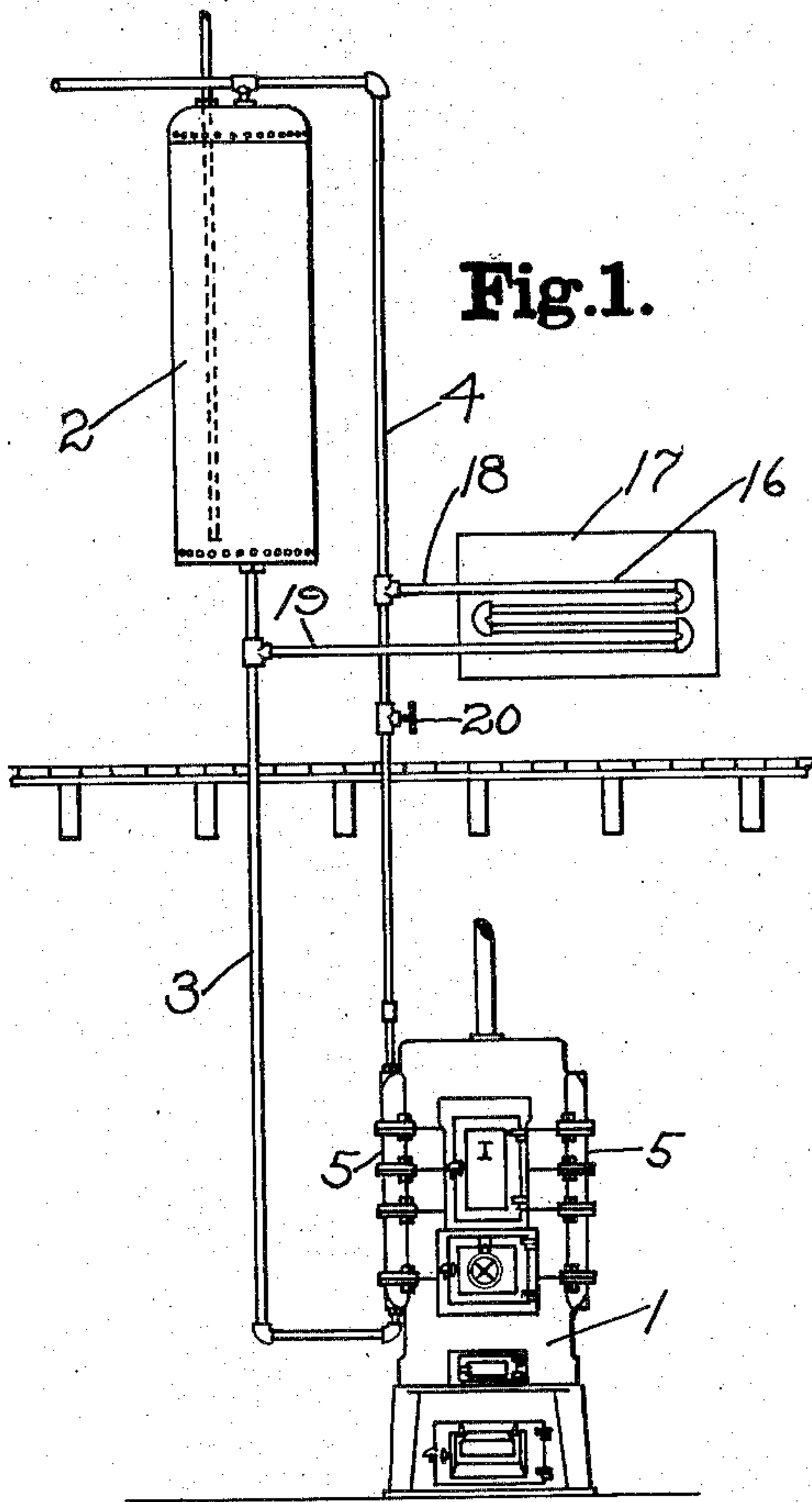


W. W. RICH.  
WATER HEATING APPARATUS.  
APPLICATION FILED APR. 7, 1909.

947,308.

Patented Jan. 25, 1910.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

WALTER W. RICH, OF PUTNAM, CONNECTICUT, ASSIGNOR TO PUTNAM FOUNDRY AND MACHINE COMPANY, OF PROVIDENCE, RHODE ISLAND, A CORPORATION OF CONNECTICUT.

## WATER-HEATING APPARATUS.

947,308.

Specification of Letters Patent.

Patented Jan. 25, 1910.

Application filed April 7, 1909. Serial No. 488,453.

*To all whom it may concern:*

Be it known that I, WALTER W. RICH, a citizen of the United States, residing at Putnam, in the county of Windham and State of Connecticut, have invented certain new and useful Improvements in Water-Heating Apparatus, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to improvements in systems or apparatus for heating water more particularly for household purposes, and has for its object to provide a simple, practical and inexpensive means whereby  
15 the water service pipe may be connected directly to the steam heater and run into and through one or more of the water chambers thereof and upon emerging from the upper portion of the heater return to the usual hot  
20 water supplying tank.

It is customary in many instances to use a gas range in the kitchen, in which case it is rather expensive to heat the water for the usual hot water tank. Then again, when  
25 the coal or gas range is alone used to heat the tank, as soon as the fire is low or out the water becomes cool and there is no hot water for bathing or other purposes during the evening. In some instances a heating  
30 system has been connected to the tank in which a coil for heating the water is placed over the fire-pot of the heater to come in direct contact with the heated gases, but by this system the water is often boiled and  
35 converted into steam creating a pressure which sometimes if not properly vented is likely to explode. Then again, the coil being in such close contact with the fire burns out quickly and is obliged to be often renewed.

40 My improved system of running the service pipe through a water chamber of the boiler is found to heat the water in the pipe to the desired temperature and as the heat thus applied to the pipe is mild compared  
45 to the heat in the fire-pot, the life of the pipes and fittings of this system are prolonged indefinitely.

With these and other objects in view, the invention consists of certain novel features  
50 of construction, as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings: Figure  
1— is a diagrammatic view illustrating the  
55 hot water supply tank as being connected

to the water front in the range, and also to the heater located in the basement. Fig. 2— is an enlarged detail of the steam heater partially in section showing the detailed arrangement for attaching the hot-water service pipe thereto for heating the water for household purposes.

Referring to the drawings, 1 designates the usual steam heater for heating the building in which the same is located, and 2 represents the usual hot water supplying tank to which this heater may be connected through the service pipes 3 and 4.

One style of heater to which my system may be attached is made up of a plurality of superimposed hollow water retaining sections, the whole being suitably connected so that the hollow portions in each of these sections communicate one with the other, said communication being by way of the upright water leg or chamber 5 through the ports 6, 7, 8 and 9, as illustrated in Fig. 2. These water legs or chambers 5 are preferably formed by extending the heater casing out on either side in a semi-tubular form beyond the regular circular contour of the body of the heater proper, which projecting casing provides a convenient place through which to pass the hot water circulating or service pipe. The simplest and most convenient form of making connection to this casing is by tapping out its lower end at 10 and screwing therein a bushing 11. This bushing is tapped from its lower side to receive the nipple 12 and from its upper side to receive the service pipe 13, which pipe is preferably constructed of brass and is passed down through the upper end of the casing, said end being also provided with a bushing 14 in which is fitted a packing gland 15 through which this pipe is passed and made tight, the gland also allowing for a slight movement of said pipe due to the uneven expansion of the different metals. By inserting this service pipe into the water chamber of the heater proper this pipe receives the direct effect of the hottest water in the heater which is constantly surging around it.

When it is desired to have the hot water front or coil 16 in the kitchen range, indicated in outline at 17, see Fig. 1, to operate in combination with the steam heater 1, it is only necessary to connect the same by means of pipes 18 and 19 to pipes 3 and 4, and the two will work in unison, and a valve 20 may



be inserted into pipe 4 to cut off the supply from the heater, if desired, when the water in the tank has become sufficiently hot.

By the arrangement of my improved heating apparatus I am enabled to obviate the necessity of expensive auxiliary heating devices or apparatus and provide simple, practical and inexpensive means for readily attaching the system direct to the heater whereby a portion of the service pipe may come in direct contact with the hottest portion of the circulating water in the heater thereby obtaining the maximum efficiency with the minimum expenditure of heat.

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

1. In an apparatus of the character described, a heater constructed of a casing and a plurality of hollow water containing sections, said heater casing being formed with an outwardly projecting semi-tubular upright water leg which extends along one side of the casing, there being a series of ports which establish communication between said water leg and said sections, a pipe extending

through said water leg, and a service pipe connected to each end of said water leg.

2. In an apparatus of the character described, a heater constructed of a casing and a plurality of hollow water containing sections, said heater casing being formed with an outwardly projecting semi-tubular upright water leg which extends along one side of the casing, there being a series of ports which establish communication between said water leg and said sections, a bushing tapped into the top end and a bushing tapped into the bottom end of said water leg, a pipe extending through the top bushing and having its lower end threaded into said bottom bushing, a nipple threaded into the under side of the bottom bushing, a packing gland carried by the top bushing, and service pipes connected to the nipple and the upper end of the water leg pipe.

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

WALTER W. RICH.

Witnesses:

JOHN F. CARPENTER,

R. ALTA SHARPE.