(No Model.)

H. B. CLARKE.

HOT WATER HEATER.

No. 492,538. Patented Feb. 28, 1893.

Fig 1.

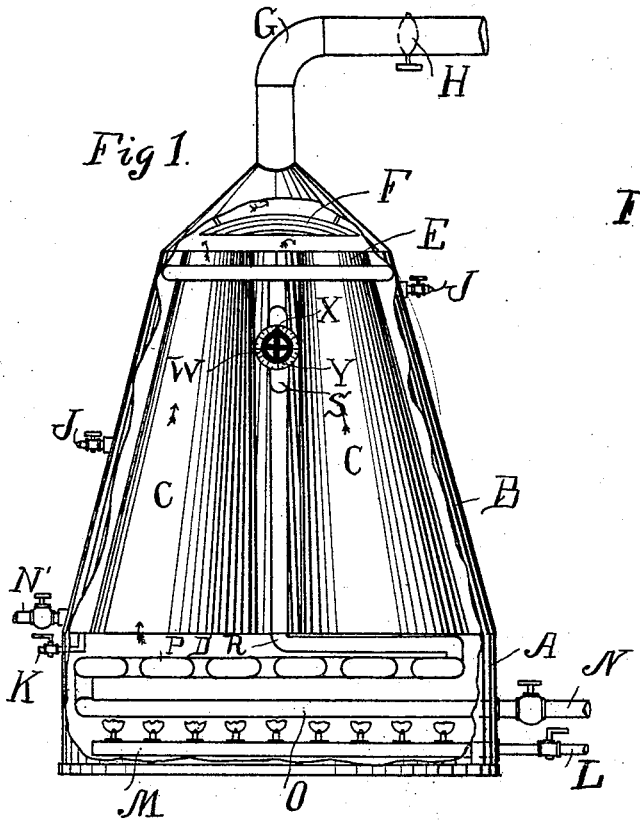


Fig 3.

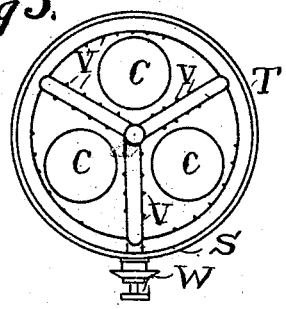
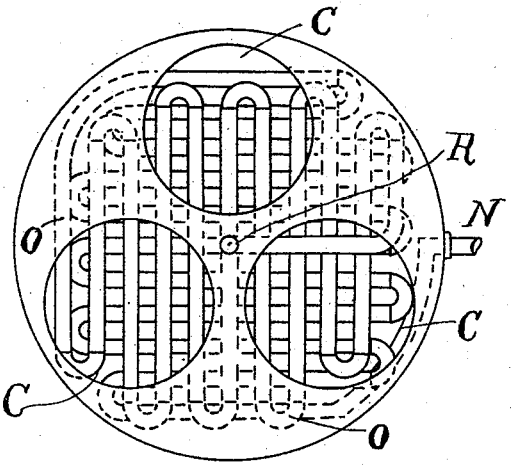


Fig 2.



WITNESSES

Walter J. Gunthorp

Alice Geddes

INVENTOR

Henry B. Clarke

BY Francis W. Parker.

ATTORNEY

UNITED STATES PATENT OFFICE.

HENRY B. CLARKE, OF CHICAGO, ILLINOIS.

HOT-WATER HEATER.

SPECIFICATION forming part of Letters Patent No. 492,538, dated February 28, 1893.

Application filed June 9, 1892. Serial No. 436,038. (No model.)

To all whom it may concern:

Be it known that I, HENRY B. CLARKE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Hot-Water Heaters, of which the following is a specification.

My invention relates to hot water heaters and has for its object to provide convenient means for heating water. It is illustrated in the accompanying drawings, wherein:

Figure 1, is a side view with part broken away to show the interior. Fig. 2, is a cross section with parts removed showing the coils in dotted lines. Fig. 3, is a detail of the showering device.

Like parts are indicated by the same letters in all the figures.

A is the base or fire box of the boiler upon which rests the boiler B. Through this boiler passes a series of cone-shaped hot air pipes, C C; D is the bottom, and E the top of such boiler.

F is a deflector plate disposed above the upper ends of the cone-shaped hot air pipes, and beneath the discharge pipe G, which is controlled by the damper H.

J J are vent cocks opening into the boiler proper.

K is a blow off valve in the bottom of the boiler.

L is a fluid fuel pipe which leads to the burner pipe M, disposed in any convenient manner.

N, is a water pipe leading into two series of oppositely disposed coils O P, placed one above the other, and from the inner extremity of such coils leads the pipe R upwardly to the center of the boiler. This pipe, at the top, is framed in a U shaped piece S, which leaves the boiler and returns thereto and is provided with three hollow arms, T T, which lead to the hollow ring U. These arms and ring are perforated as indicated at V V so as to discharge toward the cone-shaped pieces C C, and the U-shaped pipe S is provided at its upper end with the valve and handle W, carrying the pointer X, adapted to move over the graduated scale Y. These parts could be considerably altered with regard to their number and construction and relations without departing from the spirit of my invention, and some of the parts might be dispensed with without interfering with the function or operation of the remaining parts.

The use and operation of my invention are as follows: The water to be heated is admitted by means of the water pipe preferably from the water main, whence it passes back and forth through the lower coil, then it passes into the members of the upper coil, passing back and forth transversely to the direction of the members of the lower coil, thence it passes up through the central pipe and out through the laterally projecting pipe, where it is controlled by the valve. This valve may be turned as desired so as to indicate on the scale the temperature of the water to be delivered from the apparatus; for this valve controls the amount of water which is admitted or discharged through the apertures in the ring and arms which constitute the showering device, and if the heat is of a given quantity the scale may be graduated so as to indicate the temperature to which the water flowing through will be raised. The water is discharged against the sides of the conical-shaped heating pipes, and thence it descends to the bottom of the boiler, whence it flows off through the discharging water pipe N'.

It is assumed that the device is to be used for heating running water obtained from a main with the usual pressure and for use where it is desired to raise the water which is delivered from the main at a substantially uniform temperature to the point of use at some higher temperature.

I claim—

In a hot water heater, the combination of an inclosing jacket or case with hot water coils in the base thereof and disposed at right angles to each other, an inleading pipe opening into such coil, a vertical central pipe leading up from such pipe, a gas pipe and jets beneath the water pipes to heat the water in same, a series of conical shaped heating pipes open above and below, a heat discharge pipe open from the top of the case, a series of perforated pipes entirely surrounding each conical pipe at its upper end and connected with a water pipe so as to sprinkle the water about such conical pipes at their upper ends, a chamber about and containing such conical pipes, into which the water pipes run and a draw pipe from such chamber; all substantially as shown and described.

HENRY B. CLARKE.

Witnesses:
HAMILTON B. DOE,
J. V. CLARKE, Jr.