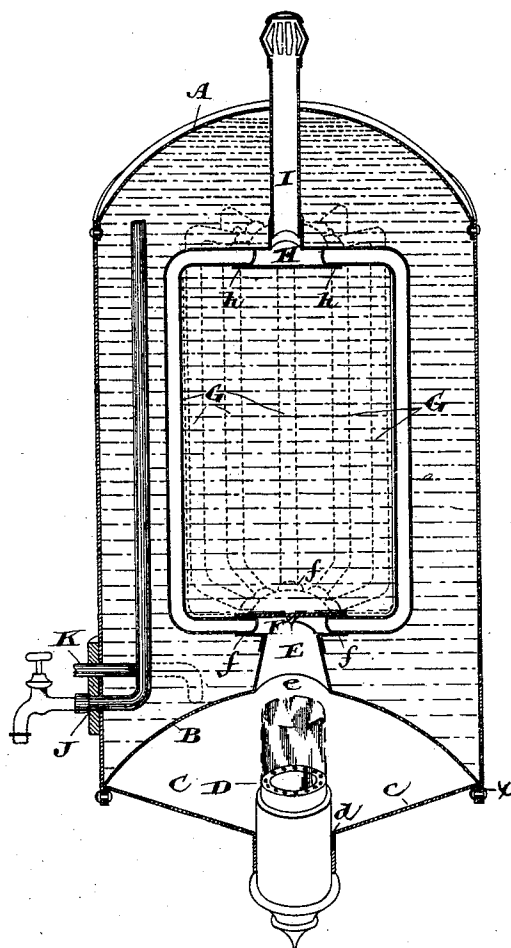


(No Model.)

W. KENNEDY.
HOT WATER HEATER.

No. 480,406.

Patented Aug. 9, 1892.



Witnesses.

Lewis P. Abell.

A. B. Monkhouse.

Inventor:

Wm Kennedy

by *Ferguson & Co*
Attys

UNITED STATES PATENT OFFICE.

WILLIAM KENNEDY, OF NEWMARKET, CANADA.

HOT-WATER HEATER.

SPECIFICATION forming part of Letters Patent No. 480,406, dated August 9, 1892.

Application filed April 11, 1891. Serial No. 388,446. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM KENNEDY, of the town of Newmarket, in the county of York, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Hot-Water Heaters, of which the following is a specification.

The object of the invention is to provide a hot-water heater in which the water may be heated and kept at any desired temperature ready for use at a minimum cost; and it consists, essentially, of supporting within the heater a series of tubes radiating from and communicating with the upper and lower central hot-air pipes, so that the heat arising from the burner below will pass through all the radiating pipes, the heater being otherwise constructed in detail as hereinafter more particularly described.

The drawing represents a sectional perspective view of my hot-water heater.

A and B are the top and bottom of the heater, respectively, which are made, preferably, convex in form.

C is the fire-box the bottom *c* of which completely closes in the box, with the exception of the central hole *d*, which is designed to receive the burner D.

E is the lower pipe or passage-way, which is secured on the top of the bottom B, which has a hole *e* made in it in order to allow the heat to pass into the pipe E.

F is a hollow collar secured on the top of the pipe E and having a series of pipe-sockets *f* radiating therefrom, so as to receive the lower ends of the double-elbow tubes G, and H is a hollow collar secured to the bottom of the upper pipe I and having also a series of pipe-sockets *h* radiating therefrom, so as to receive the upper ends of the double-elbow tubes G.

J is the hot-water outlet-pipe, and K is the pipe for admitting the cold water into the heater.

It will be seen from the above description that the heat arising from the burner D will not only impinge upon the bottom of the heater, but will gradually pass up through the passage-way E and tubes G into the outlet-flue I. The heat radiating from these tubes, combined with the heat arising from the bot-

tom, will act upon the water very quickly and raise it to the desired temperature in a very short time.

Although my hot-water heater is designed more particularly for heating water for barbers' use, it will of course be understood that it may be utilized for many other purposes, which I do not think it necessary for me to enumerate. Both the concave bottom and the supplemental bottom are secured to the casing at their edges, which are brought together at the same point and held by the rivets *x*. It will be noticed that the space inclosed between the series of pipes is entirely free and the water may circulate freely therein and between the pipes to the outside space. The vertical column of water which extends centrally between the imperforate faces of the collars is heated by said faces, while the outer portion of the column is heated by the series of pipes. In devices of this kind, adapted to be supported on a lamp or gas fixture, it is essential that it be light and yet capable of receiving a large quantity of water and of exposing it to a large heating-surface. All these requirements are met in the present arrangement, wherein a free space for the water is provided, which is inclosed by a series of pipes and the imperforate collars.

What I claim as my invention is—

A water-heater comprising an outer casing, a concave piece extending entirely across the casing and constituting the bottom of the same, and a supplemental bottom, also extending entirely across the casing, both secured to the said casing at its lower end and forming a fire-box permanently carried thereby and constituting the bottom closure for the casing, the collar F, forming a supplemental fire-box within the casing and above the main fire-box, a pipe E, connecting the main and supplemental fire-box, and the circulating-pipes leading from the supplemental fire-box F, the said supplemental bottom having an opening adapted to fit over a burner, substantially as described.

WILLIAM KENNEDY.

Witnesses:

T. WOODCOCK,
JOSEPH MALTBY.