

J. J. KELLY.
HOT WATER TANK.
APPLICATION FILED JUNE 6, 1908.

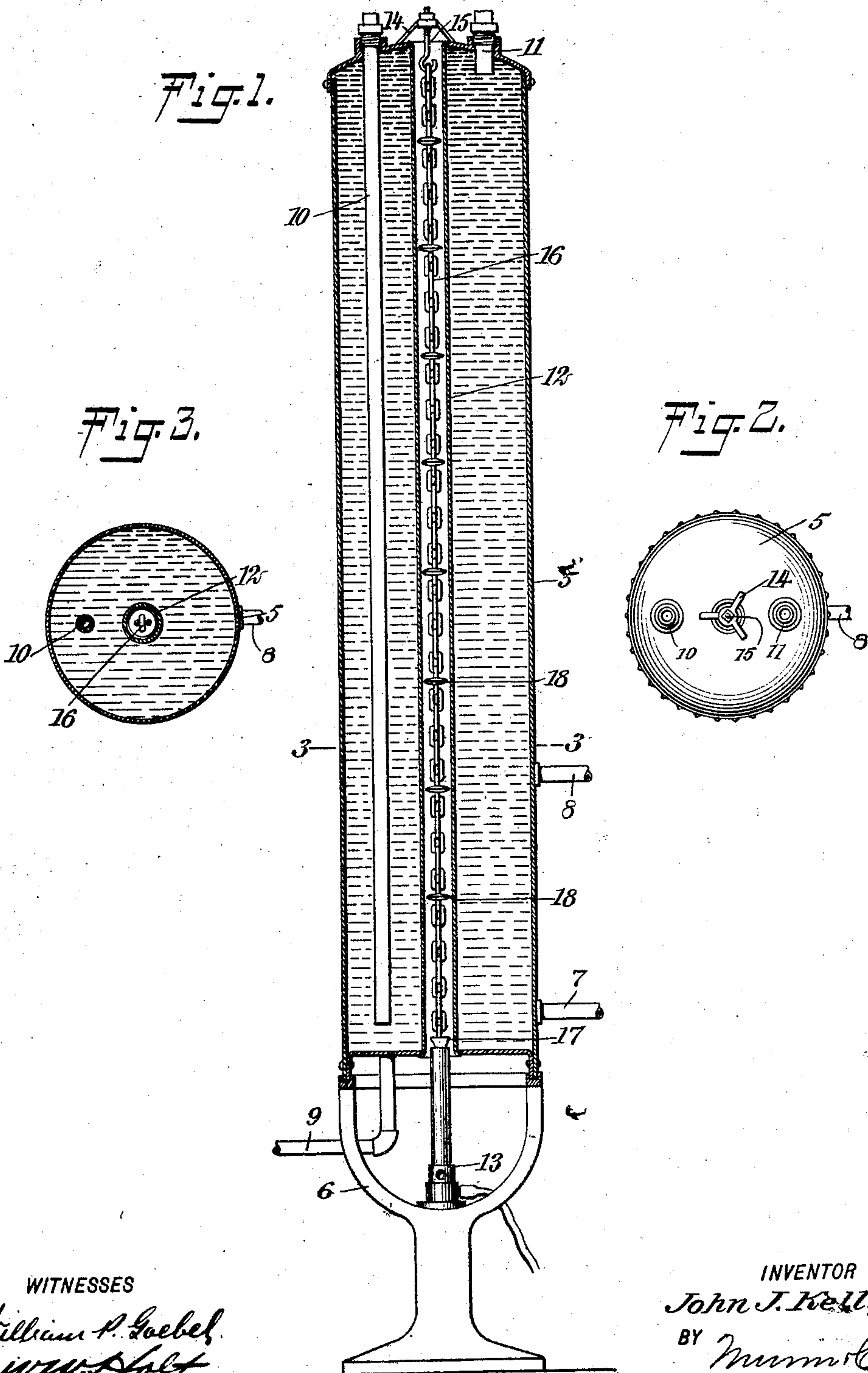
953,958.

Patented Apr. 5, 1910.

Fig. 1.

Fig. 3.

Fig. 2.



WITNESSES
William P. Goebel
J. W. Holt

INVENTOR
John J. Kelly
BY Munn & Co.
ATTORNEYS

UNITED STATES PATENT OFFICE.

JOHN J. KELLY, OF WHITING, INDIANA.

HOT-WATER TANK.

953,958.

Specification of Letters Patent.

Patented Apr. 5, 1910.

Application filed June 6, 1908. Serial No. 437,109.

To all whom it may concern:

Be it known that I, JOHN J. KELLY, a citizen of the United States, and a resident of Whiting, in the county of Lake and State of Indiana, have invented a new and Improved Hot-Water Tank, of which the following is a full, clear, and exact description.

This invention is an improvement in hot water tanks such as are ordinarily used in connection with cooking ranges for heating water for domestic purposes, and has in view the provision of a gas heater in connection with the tank, to heat the water when the fire in the range is out, or to be used as an auxiliary heater or as the sole heater of the water, as desired.

The invention consists of an upright hot water storage tank, a feed pipe and a hot water return pipe respectively leading from and leading to the tank, a vertical flue passing through the tank, and a chain heat collector suspended in the flue, with the links thereof hanging vertically, of less transverse diameter than the internal diameter of the flue, and spaced from the walls of the flue, and the successive links having approximately equal cross-sectional areas.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a central vertical section of a hot water tank embodying my invention; Fig. 2 is a plan of the same; and Fig. 3 is a cross-section substantially on the line 3—3 of Fig. 1.

The tank proper, as shown, is of the conventional form, and is in the nature of a long cylindrical body 5 supported in an upright position on a suitable base 6, but may be of any desired construction, and to which my improvements are applicable. At the side of the tank I have shown pipes 7 and 8, respectively leading to and from the heating coil of the range, a drain pipe 9 leading from the bottom of the tank, a supply pipe 10 and a discharge pipe 11, leading respectively to the lower portion of the tank and from the upper portion of the tank, all of which pipes are common to hot water

tanks of this character, for which reason further reference to them is deemed unnecessary.

In applying my improvements to the tank 55 5, I make use of a vertical flue 12, and expand its ends in the opposite heads of the tank, the flue being preferably centrally arranged. In the fork of the stand 6 is seated a burner 13, which for convenience of illustration I have shown as an ordinary Bunsen burner, which is suitably connected with the gas supply. At the top of the tank is secured a spider or similar device 14, bridging over the upper end of the flue, for receiving and supporting the threaded shank of a hook 60 15, from which is suspended in the flue a chain heat collector 16, the links of which hang vertically, are of less diameter than the internal diameter of the flue, and with the successive links of approximately the same cross-sectional area; the heat collector extends to or closely adjacent to the flame of the burner, at which point it is provided with a conical member 17, for spreading the flame. The conical member may be vertically adjusted by the nut on the shank of the hook and in this manner held in the required position relative to the burner. At intervals of the chain's length are attached 80 metal disks 18, which are slightly less in diameter than the internal diameter of the flue, to provide for the escape of the heated gases. These disks cause the diffusion of the heated gases in their ascension and cause them to repeatedly come in contact with the inner wall of the flue, which obviously reduces their temperature to approximately the same as that of the water, before their escape. The flue not only receives the heat 90 from the burned gases, but is further heated by radiation from the chain 16, which in turn receives its heat not only from the rising gases but also directly from the flame through the conductivity of the metal of which it is made. In this way I am enabled to economically and efficiently heat the water.

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

The combination of an upright hot water

storage tank, a feed pipe and a hot water
return pipe respectively leading from and
leading to the tank, an approximately ver-
tical flue passing through the tank, a gas
5 or vapor burner supported at the lower end
of the flue, a heat collector suspended in the
flue, having a flame spreader at its lower
end, and means for vertically adjusting the
heat collector in the flue to regulate the po-

sition of the spreader relatively to the 10
burner.

In testimony whereof I have signed my
name to this specification in the presence of
two subscribing witnesses.

JOHN J. KELLY.

Witnesses:

CHAS. E. FLAGG,

JOHN T. BURKE.