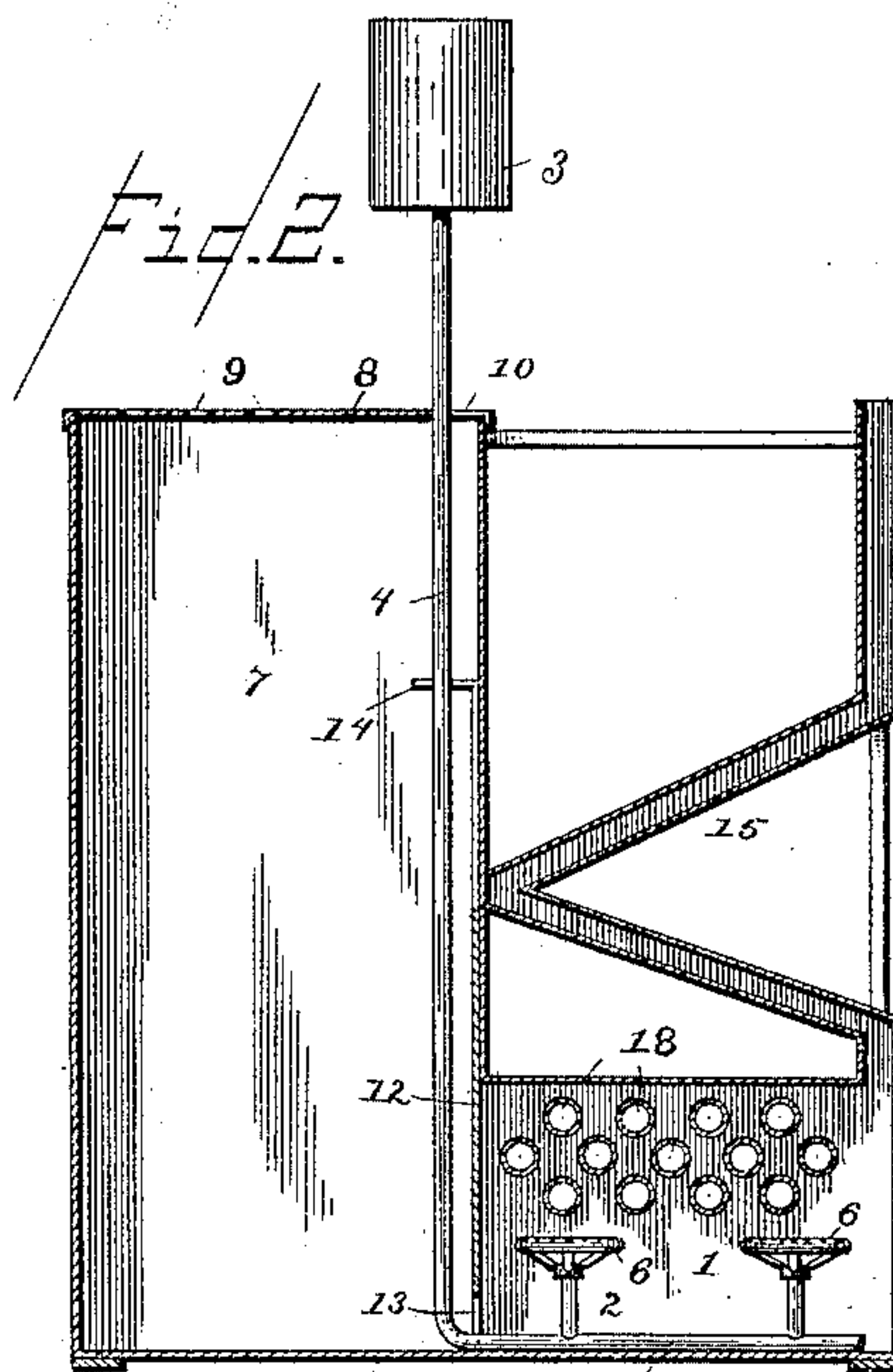
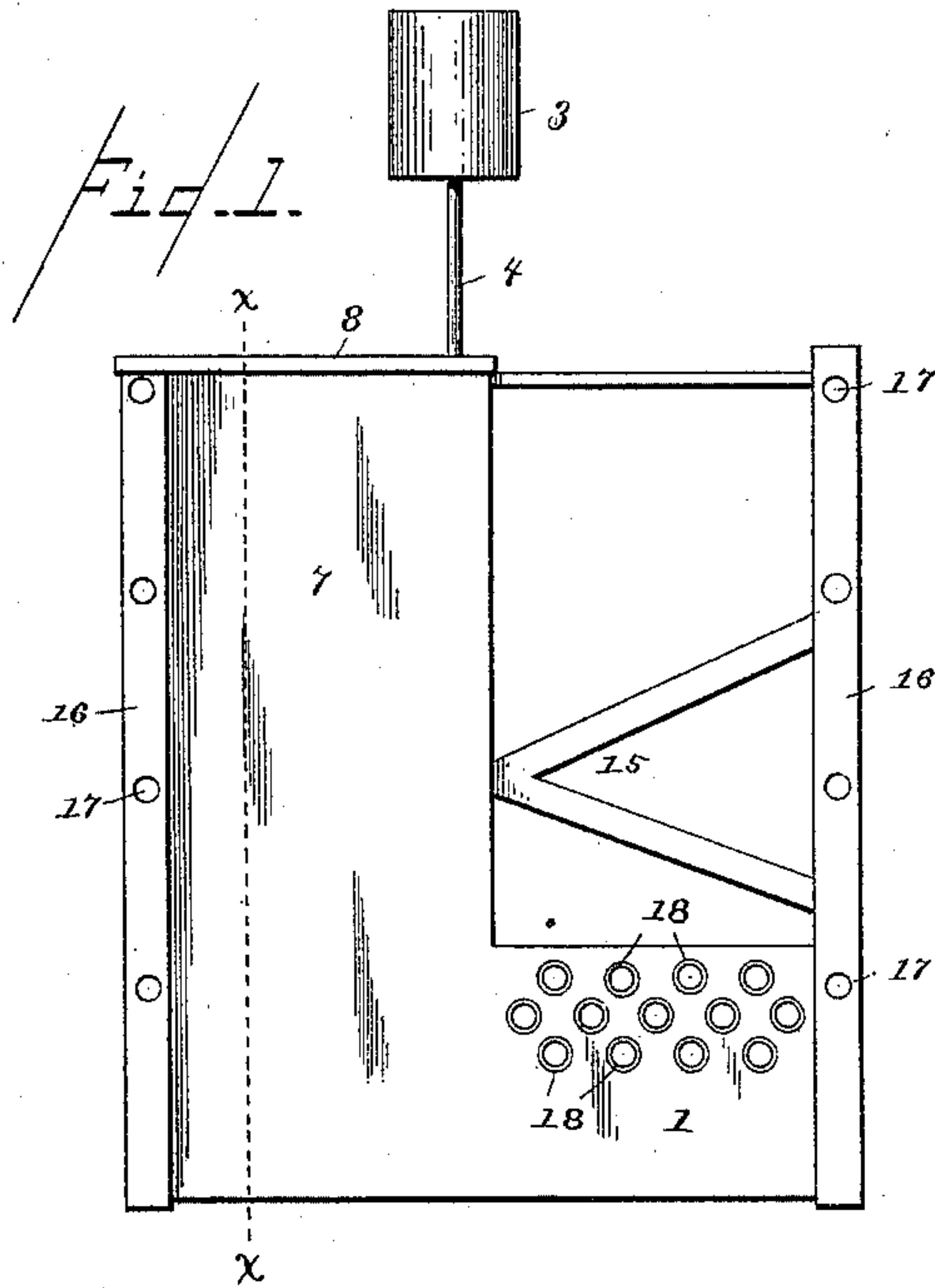


(No Model.)

J. L. BRANDT.
BATH HEATER.

No. 432,596.

Patented July 22, 1890.



WITNESSES:

Edwin L. Bradford
Curtis L. Hammond

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UNITED STATES PATENT OFFICE.

JOHN L. BRANDT, OF TERRE HAUTE, INDIANA.

BATH-HEATER.

SPECIFICATION forming part of Letters Patent No. 432,596, dated July 22, 1890.

Application filed January 8, 1890. Serial No. 336,221. (No model.)

To all whom it may concern:

Be it known that I, JOHN L. BRANDT, a citizen of the United States, residing at Terre Haute, in the county of Vigo and State of Indiana, have invented certain new and useful Improvements in Heaters for Bath-Water; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in apparatus or devices for heating the water contained in bath-tubs, church baptisteries, tanks, pools, and other receptacles.

It has long been a serious question how to heat the water in reservoirs or vessels similar to those above named and for similar purposes without the employment of the expensive hot-water connections and heaters now in common use. Many attempts have been made to provide a heating device for use in the connection above set forth; but owing to defects in their construction or mode of operation, or owing to the great expense or cost of manufacture or their unreliability to perform the object sought to be attained, they have proved more or less abortive and have not been introduced into general public use.

My invention is designed to obviate the above and other objections, and provide a heater for bath-tubs, church baptisteries, and other similar places, which shall be simple in construction, economical in manufacture, and durable in use, and by which water can be heated expeditiously and rapidly and at a very small cost for the fuel consumed.

The invention consists in the several novel features of construction and new combinations of parts hereinafter fully described, and definitely pointed out in the appended claim.

In the accompanying drawings, in which similar figures of reference indicate like parts in all the views, Figure 1 is a side elevation of an apparatus constructed according to my invention. Fig. 2 is a central longitudinal section of the same.

In the said drawings the heating device is represented as being composed of an L-shaped vessel and a flue having a width equal to the width of the heater, whereby it presents an extensive heating-surface to the wa-

ter, said flue leading upward from the horizontal portion of the heater. The base portion 1 of this vessel constitutes the chamber for the burner or heater 2, consisting of an oil-reservoir 3, an oil-pipe 4, bent at right angles at its lower end, forming a horizontal burner-tube 5, in which is inserted one or more burners 6. The vertical portion 7 of the vessel forms the cold-air flue, and is provided with a sliding cover 8, provided with perforations 9, for the entrance of air, and with a slot 10 in its inner edge for the passage of the oil-tube 4.

The numeral 12 designates a slide which serves to close communication between portions 1 and 7, except at the bottom, where there is a small opening 13, which serves as an entrance for the cold air for supporting combustion and also for the passage of the oil-tube. This slide is provided with a lug 14, by which it may be operated. The numeral 15 designates the hot-air or heating flue. It is made to take a winding, zigzag, or tortuous course, as shown, so as to present a large heating-surface. This flue is open at its upper end, which is on or about on a level with the top of the vertical portion 7 of the vessel, and communicates at its lower end with the top of the horizontal portion 1 containing the burners.

16 16 designate vertical bars provided with a series of perforations 17. These bars are firmly secured to the apparatus and serve to retain the same in place by the holes engaging with nails, bolts, or other fastening devices on the sides of the tub, tank, or other receptacle.

The device may be made of galvanized iron or other suitable material, and should be of such a height as to extend a short distance above the surface of the water.

The operation of the invention is as follows: The apparatus is placed in the tub, tank, or other receptacle and secured thereto by means of the perforated bars, being wholly submerged in the water except at the tops of the hot and cold air flues. The burners are then lighted and in the horizontal portion 1 through the vertical portion 7, and the slide is then lowered and the cover closed. It will be seen that the air-passage in the slide is at the lower portion thereof, so that the cold air

from the vertical portion will enter portion or chamber 1 through said opening, and becoming heated will escape into the winding hot-air flue in the top of said vessel, and
5 thence pass through said flue to the outer air. By the above construction the water will be thoroughly and rapidly heated by the heat radiated from the heating-vessel.

10 Instead of the oil-reservoir, oil-pipe, and oil-burners being employed, it is obvious that a gas pipe and burners, connected with a service or other pipe, may be employed without departure from my invention.

15 In Fig. 2 the horizontal portion 1 is provided with a number of transverse tubes 18, located above the burners, and through which the water in the tank may circulate.

Having thus described my invention, what I claim is—

A heating apparatus consisting of the vessel having the horizontal and vertical portions, a slide located between said portions and provided with an air-passage in its lower end, a zigzag hot-air flue having a width equal to the width of the vessel and extending upward
25 from the horizontal portion thereof, whereby it presents an extended heating-surface to the water, transverse tubes extending across said horizontal portion, and a burner or burners located in such portion beneath the zigzag
30 flue, substantially as described.

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

JOHN L. BRANDT.

Witnesses:

ANDREW GRIMES,
WILSON H. SOALE.