

H. S. HUMPHREY.

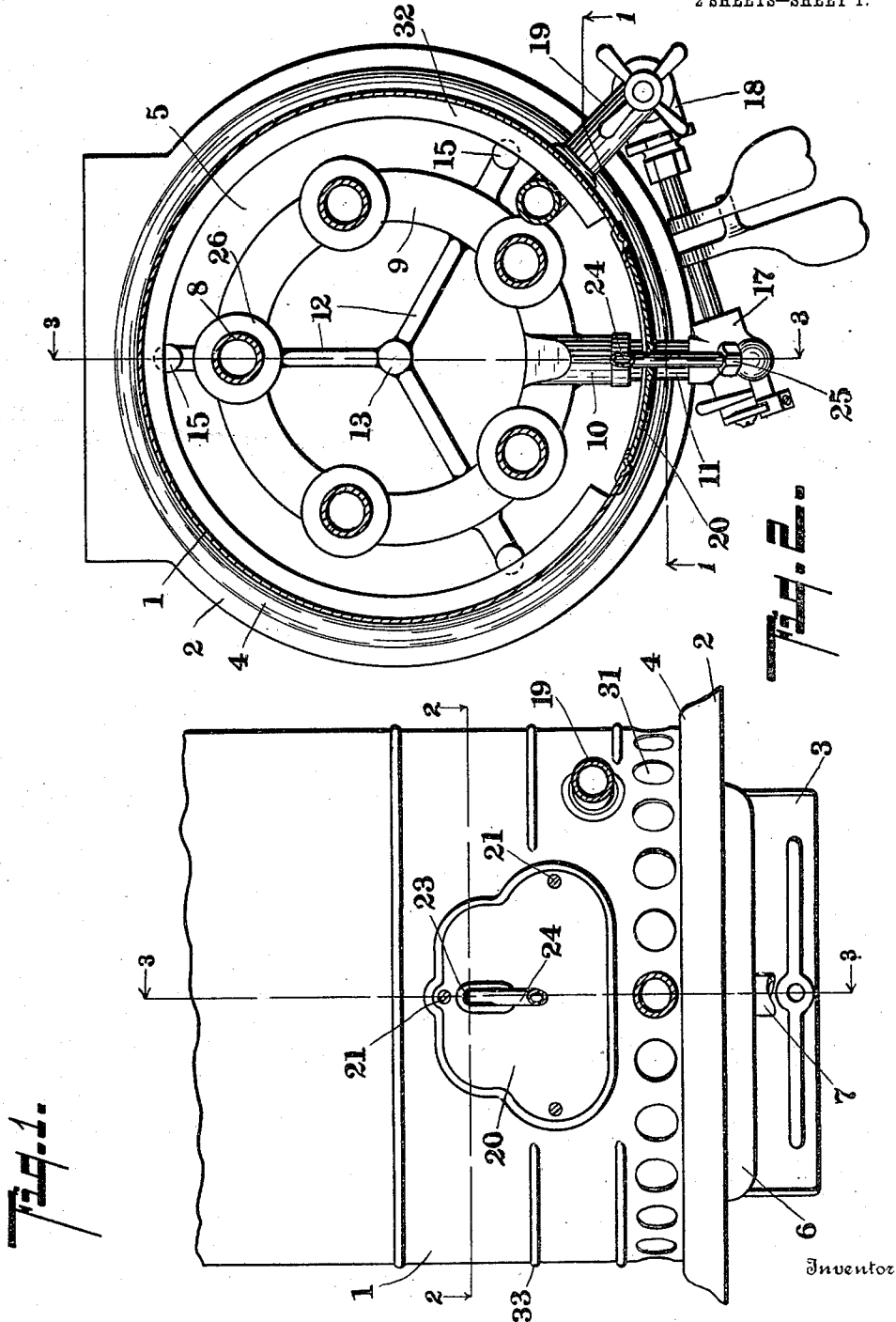
WATER HEATER.

APPLICATION FILED MAR. 31, 1908.

960,933.

Patented June 7, 1910.

2 SHEETS—SHEET 1.



Witnesses

L. G. Cunfield
Gertrude Tallman

By

Herbert S. Humphrey
Chapman & Deane

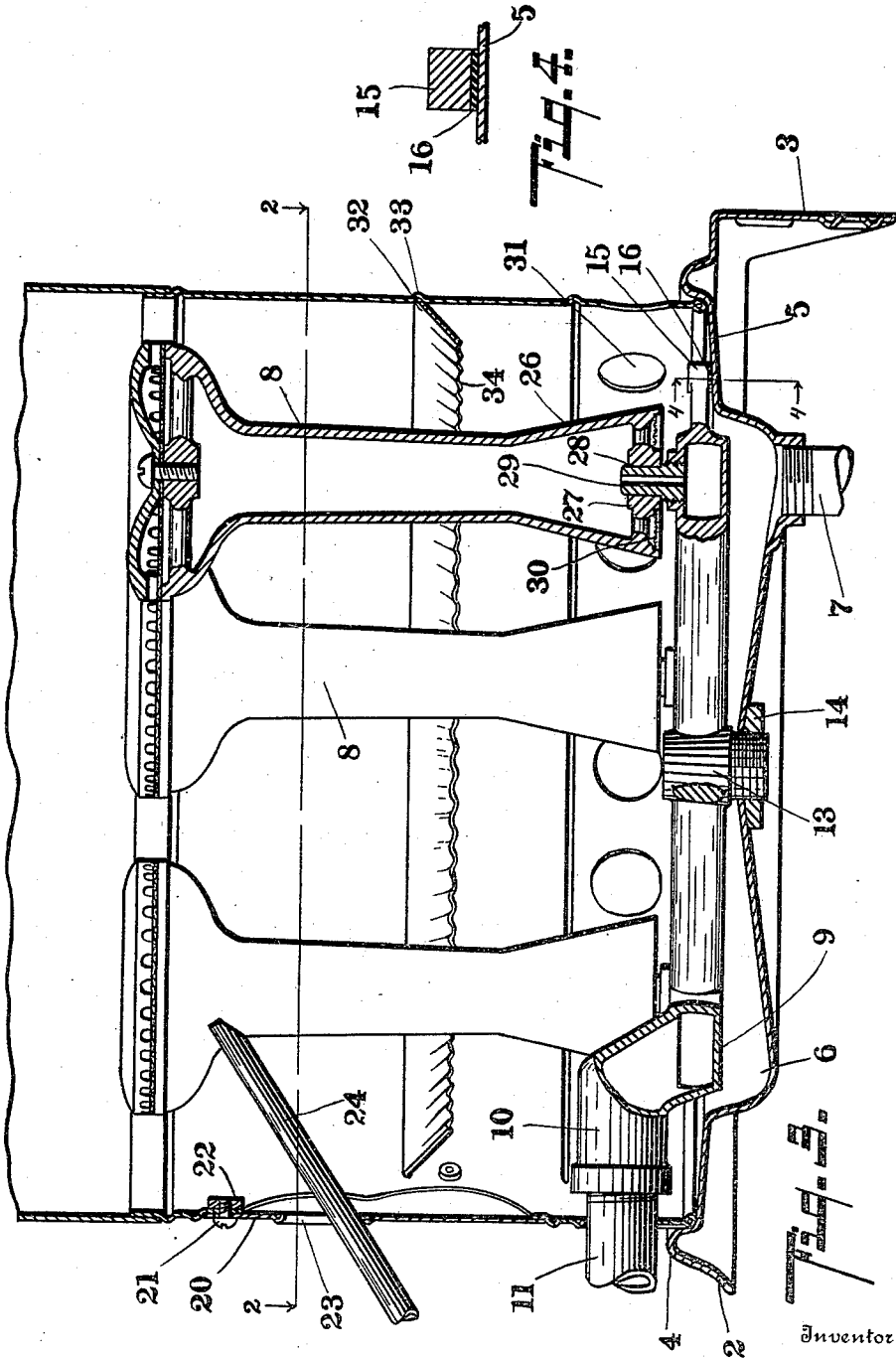
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UNITED STATES PATENT OFFICE.

HERBERT S. HUMPHREY, OF KALAMAZOO, MICHIGAN.

WATER-HEATER.

960,933.

Specification of Letters Patent.

Patented June 7, 1910.

Application filed March 31, 1908. Serial No. 424,323.

To all whom it may concern:

Be it known that I, HERBERT S. HUMPHREY, a citizen of the United States, residing in the city and county of Kalamazoo, State of Michigan, have invented certain new and useful Improvements in Water-Heaters, of which the following is a specification.

This invention relates to improvements in water heaters.

10 The main objects of this invention are: First, to provide in a water heater an improved arrangement of the parts whereby they are effectively supported, and may be adjusted to meet the requirements of the particular installation. Second, to provide in a water heater an improved construction whereby the exterior of the casing is protected from the drip resulting from condensation.

20 Further objects, and objects relating to structural details, will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification.

25 The invention is clearly defined and pointed out in the claims.

A structure embodying the features of my invention is clearly illustrated in the accompanying drawing, forming a part of this specification, in which,

30 Figure 1 is a detail vertical section of my improved water heater taken on a line corresponding to the broken line 1—1 of Fig. 2; Fig. 2 is a horizontal section taken on a line corresponding to line 2—2 of Figs. 1 and 3; Fig. 3 is an enlarged detail vertical section taken on a line corresponding to line 3—3 of Figs. 1 and 2; and Fig. 4 is a detail vertical section taken on a line corresponding to line 4—4 of Fig. 3, showing the arrangement of the burner support rests upon the base.

40 In the drawing, the sectional views are taken looking in the direction of the little arrows at the ends of the section lines, and similar numerals of reference refer to similar parts throughout the several views.

45 Referring to the drawing, the casing 1 of my improved water heater is preferably cylindrical in form and is preferably formed of sheet metal. The base 2 is also preferably formed of sheet metal, although the same may be cast, if desired. The base is preferably provided with a bracket portion 3, which is designed to be attached to the wall or other support for the heater. The

base is preferably provided with an upwardly-projecting annular rib 4, which is adapted to form a seat for the casing. This properly centers and supports the casing, and has the further advantage of securing a finished appearance, and also strengthens the base.

Within the rib is a downwardly-inclined ledge portion 5, as clearly appears from Fig. 3. The central portion is preferably depressed, as at 6, the bottom of the central portion being preferably convexed. A suitable drip pipe, as 7, is attached to the depressed portion which forms a trough leading to the drip pipe. The burners 8 are provided with a support which is adapted to conduct the gas thereto. This preferably consists of the gas delivery ring 9, which is provided with a suitable nipple 10 by which it is coupled to the gas supply pipe 11. The ring is provided with cross pieces 12 having a centrally-arranged stud or post 13, which is adapted to be arranged through a central opening in the base. The stud is preferably threaded to receive a nut, as 14, by means of which the burner support may be secured adjustably in position. The burner support is provided with outwardly-projecting supporting arms 15 adapted to rest on the base, as illustrated in the drawing. These supports are preferably provided with pads 16, so that they do not mar the base to scratch or destroy the finish thereof, it being desirable to cover the same with porcelain, enamel or other noncorrodible material. By supporting the burners in this manner, they are supported without injury to the bottom; and, further, the base and casing may be arranged in any desired relation,—that is, it is immaterial which side of the casing the heater support may be. The base may be so turned as to bring the bracket 3 thereof into proper position, and this permits the location of the valves 17 for the gas supply pipe 11 and the valve 18 for the water delivery pipe 19 in the position most convenient for the user.

50 The casing is preferably provided with an opening through which the burners 8 may be removed or inserted, as desired. This opening is provided with a closure 20, which is detachably secured in place, as by means of the screw bolts 21 the nuts 22 being preferably secured in position on the inner wall of the casing. The closure 20 is preferably provided with an opening 23

adapted to receive the pilot burner 24. The pilot burner is detachably secured to the valve casing 17 by threading therein, so that it can be removed when it is desired to open the closure 20. A suitable lock nut, as 25, is provided for the pilot burner, so that it may be effectively locked in position. By thus forming the casing, the burners may be readily removed, as desired, for the purpose of renewal or cleaning. The burners 8 are provided with an expanded portion 26 at their lower ends and with a cross piece 27 having a central opening 28 therethrough adapted to receive the gas delivery nozzle 29; thereby effectively supporting the burners upon the gas delivery ring 9, and making them readily detachable.

The burners are preferably provided with screens 30, which are arranged in their lower ends below the cross arms 27. This prevents the entrance of dust and other materials into the burners and is effective in preventing the clogging of the same, which is of material advantage, as these water heaters are especially designed for use in bath rooms where lint and the like is likely to be drawn into the casing, and which is here collected so that it does not pass up to the jet orifices of the burners. By affording means of access to the interior of the casing, the burners can be removed and any collection of lint, dust, or the like, brushed from the screen, and the same can be readily replaced. This screen also prevents the lighting of the gas at the gas nozzle from the flashing of the gas or explosion which ordinarily takes place within the casing when the burners are lighted. The flame passing down outside of the burner to the base thereof is prevented from igniting the gas at this point, as stated.

The casing is provided with air inlet openings 31, which are preferably located around practically the entire base of the casing so as to afford a full supply of air to the burners. Above these burner openings, I provide a drip ledge 32 which is secured to the wall, preferably by forming a bead 33 in the wall adapted to receive the edge of the ledge. This ledge is inclined downwardly and is preferably corrugated at its edges, as 34, as the water more readily drips therefrom, and this is also of convenience in manufacturing the ledge from a strip of sheet metal; as it permits the forming of the same from a practically straight strip of metal.

I have illustrated and described my improvements in detail in the form preferred by me on account of structural simplicity and convenience in assembling the parts. I am aware, however; that the structure is capable of considerable variation in structural details without departing from my invention.

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

1. The combination with a cylindrical casing, of a base plate therefor having a raised annular rib at its outer edge adapted to form a seat for said casing, and having a downwardly inclined ledge-like portion extending inwardly from said rib and a depressed central portion; the bottom of said central portion being convexed, said casing being arranged on said base plate to be adjusted thereon; burners; a gas delivery ring adapted to support said burners; a cross piece for said ring having a central threaded post arranged through a central opening provided therefor in said base plate; a nut for said threaded post arranged on the under side of said base plate; and outwardly projecting supporting arms for said ring adapted to rest on the said ledge-like portion of said base plate, whereby said gas delivery ring is supported on said base plate; to be adjusted with said casing.

2. The combination with a casing, of a base plate therefor having a depressed central portion, the bottom of said central portion being convexed and an inwardly inclined ledge-like portion surrounding said depressed portion, said casing being arranged on said base plate to be adjusted thereon; burners; a gas delivery ring on which said burners are mounted; a cross piece for said ring having a central threaded post arranged through a central opening provided therefor in said base plate; a nut for said threaded post arranged on the under side of said base plate; and supports for said ring adapted to rest on the said ledge-like portion of said base plate, whereby said gas delivery ring is adjustably supported on said base plate.

3. The combination with a casing, of a base plate therefor having a depressed central portion, the bottom of said central portion being convexed and an inwardly inclined ledge-like portion surrounding said depressed portion, said casing being arranged on said base plate to be adjusted thereon; burners; a gas delivery ring on which said burners are mounted; a cross piece for said ring having a central post arranged through a central opening provided therefor in said base plate; and supports for said ring adapted to rest on the said ledge-like portion of said base plate whereby said gas delivery ring is supported on said base plate to be adjusted with said casing.

4. The combination with a casing, of a base plate therefor; said casing being arranged on said base plate; burners; a gas delivery ring on which said burners are mounted adjustably arranged on said base plate; a cross piece for said ring having a

post arranged through an opening provided therefor in said base plate; securing means for said post arranged on the under side of said base plate; and supports for said ring adapted to rest on said base plate, whereby said gas delivery ring is supported on said base plate to be adjusted with said casing.

5. The combination with a casing, of a base plate therefor, said casing being arranged on said base plate to be adjusted thereon; burners; a gas delivery ring having a plurality of upwardly projecting nozzles adapted to receive and support said burners; a cross piece for said ring having a post arranged through an opening provided therefor in said base plate; and supports for said ring adapted to rest on said base plate, whereby said gas delivery ring is supported on said base plate to be adjusted with said casing.

6. The combination with a casing, of a base plate therefor, said casing being arranged on said base to be adjusted thereon said base plate being provided with an attaching bracket; burners; a support for said burners adapted to convey the gas thereto;

a central post for said support arranged through a central opening provided therefor in said base plate; and supports for said burner support adapted to rest on said base plate, whereby said burner support is supported on said base plate to be adjusted with said casing.

7. The combination with a casing, of a base plate therefor, on which said casing is adjustably arranged said base plate being provided with an attaching bracket; a gas supply pipe arranged through said casing; burners; a support for said burners adapted to be connected to said gas supply pipe and conduct the gas to said burners; and a central post on said support arranged through a central opening in said base plate whereby the casing and burner connections may be adjusted.

In witness whereof, I have hereunto set my hand and seal in the presence of two witnesses.

HERBERT S. HUMPHREY. [L.S.]

Witnesses:

F. A. LEMKE,

EDNA VALENTINE.