

1,070,052.

Fig. I.

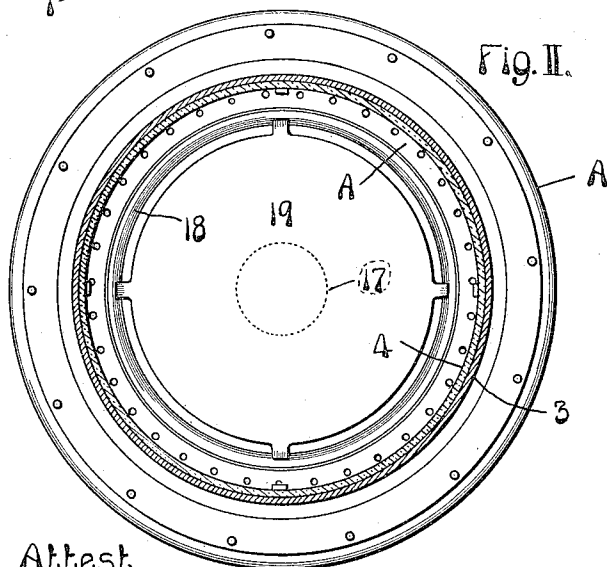


Fig. II.

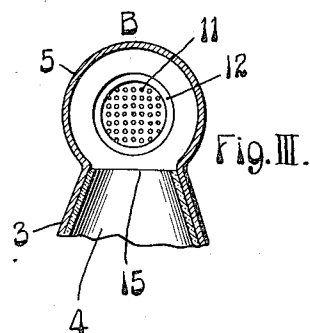


Fig. III.

Attest
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UNITED STATES PATENT OFFICE.

JOHN A. McSALLEY, OF ST. LOUIS, MISSOURI.

WATER-HEATER.

1,070,052.

Specification of Letters Patent.

Patented Aug. 12, 1913.

Application filed July 31, 1912. Serial No. 712,407.

To all whom it may concern:

Be it known that I, JOHN A. McSALLEY, a citizen of the United States of America, and a resident of the city of St. Louis and State of Missouri, have invented certain new and useful Improvements in Water-Heaters, of which the following is a full, clear, and exact description; reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to a water heater and has for its object the production of a very simple device whereby water may be heated very quickly.

The preferred form of my invention comprises a delivery pipe, means for conducting hot air to said delivery pipe and an atomizer for discharging numerous fine streams of water into said delivery pipe. The water so discharged forces the hot air along the delivery pipe and said air is caused to circulate through and between the fine streams of water thereby heating the water in a very brief period of time.

Figure I is a section of a water heater embodying the features of my invention. Fig. II is a horizontal section taken on the line II—II, Fig. I. Fig. III is a vertical section showing the atomizer for discharging water into the delivery pipe.

In the accompanying drawings: A designates an annular gas burner provided with legs 1 and having a flange 2 upon which a hood 3 is seated. The hood is preferably lined with asbestos 4 or some other suitable insulating material. A delivery pipe B is formed in part by a tubular member 5 at the upper end of the hood 3 and in part by a pipe section 6 which may if desired be connected to a shower bath fixture 7. The fixture 7 is a shell having a perforated bottom 8 through which the water is discharged and a removable cap 9 provided with a flue 10 for the escape of gas. A perforated disk 11 is clamped against a flange 12 in the delivery pipe by means of a threaded bushing 13.

14 designates a strainer associated with the perforated disk 11 to prevent particles of solid matter from entering the delivery pipe.

In the practical use of this device, water

under pressure is conducted through the bushing 13 to the perforated disk 11 which serves as an atomizer for discharging fine streams of water into the delivery pipe B as indicated by arrows in Fig. 1. The atomized water passing over the air inlet opening 15 creates a suction in the hood 3 with the result of drawing the hot air from the hood 3 and forcing said air through the delivery pipe. It will be noted that the hot air is thoroughly mixed with the atomized spray of water and that the water is finally discharged through the perforated bottom of the shower bath fixture 7 while the air or gases pass out through the flue 10.

To prevent the incoming cool air from rushing upwardly through the center of the annular burner A, the device is preferably provided with a deflector for deflecting the air toward the body of the burner. This deflector comprises a bottom member 16 having an inlet opening 17 and provided with an annular flange 18 which rests on the burner. A disk 19 connected to the bottom member 16 has its peripheral edges spaced from the flange 18 to provide an annular opening through which the incoming air must pass. Air entering the inlet opening 17 is deflected toward the body of the burner by the disk 19 and must pass through or very close to the flame before passing upwardly in the hood 3. This deflector tends to retard the incoming air but such retardation is amply compensated for by the forced draft created through the medium of the rapidly moving streams of water above the upper end of the hood 3.

The hood 3 forms a large combustion chamber in which the fuel is completely consumed, hence the fuel is never chilled or dampened by the water in the delivery pipe, and the deflector members 16 and 19, by forming an auxiliary heating compartment, prevent the fuel from being chilled by the incoming air.

I claim:—

A water heater comprising a delivery pipe, provided with an air inlet opening, a hood forming a combustion chamber communicating with said air inlet opening, an annular burner provided with openings for

discharging fuel into said combustion cham-
means comprising a bottom plate closely fit-
to said annular burner, said air deflecting
means comprising a bottom plate closely fit-
5 ted to said annular burner and having an
air inlet opening near its center, and a cir-
cular top plate surrounded by said annular

burner and separated therefrom to provide
an annular opening adjacent to the fuel
discharge openings of said burner.

JOHN A. McSALLEY.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
