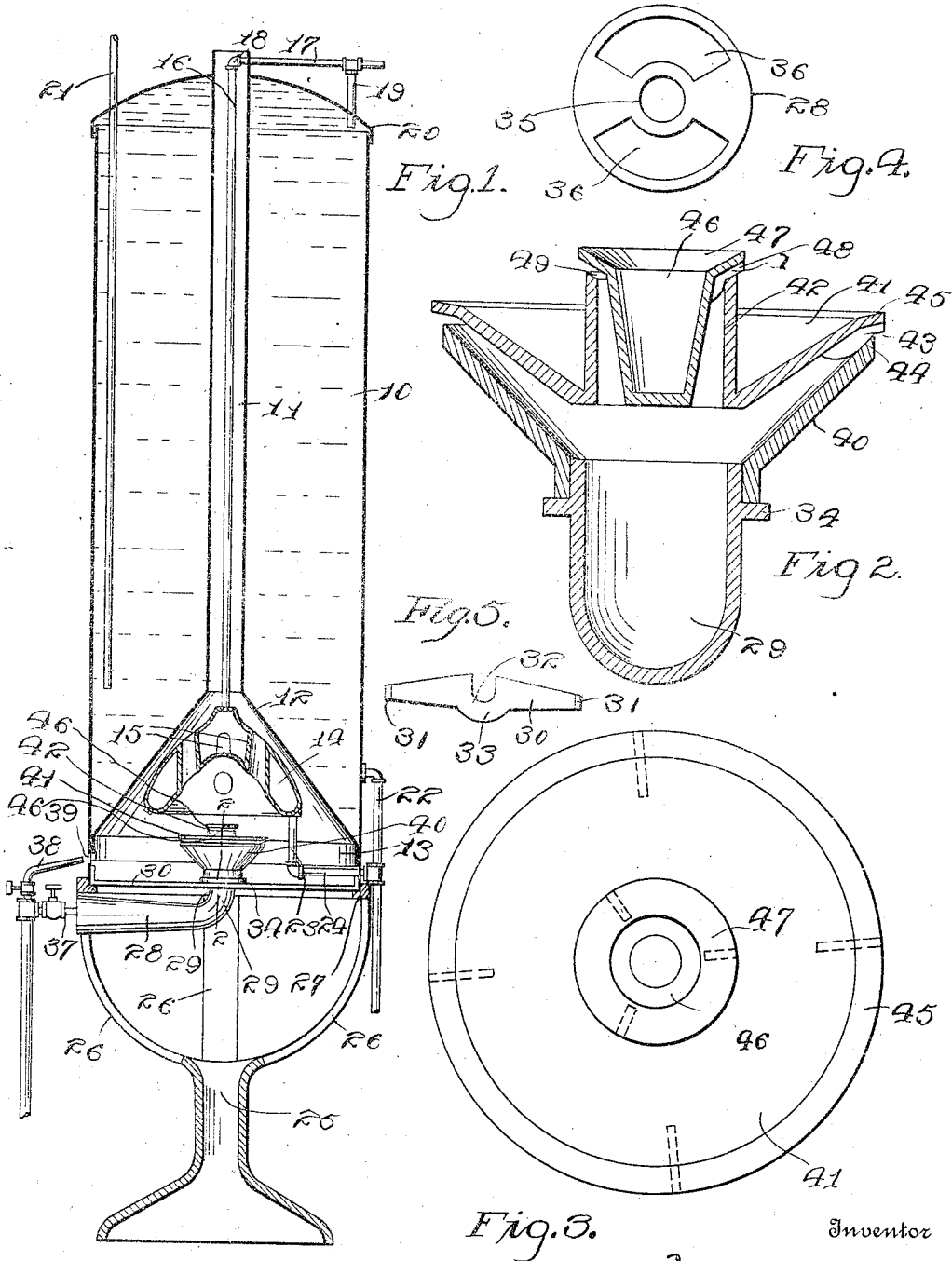


J. ANTONUCCIO.
BURNER.
APPLICATION FILED JULY 18, 1911.

1,014,932.

Patented Jan. 16, 1912



Witnesses
H. A. Stock.
J. Antonuccio

Fig. 3.

Inventor

Joseph Antonuccio
By E. C. Vrooman,
Attorney

UNITED STATES PATENT OFFICE.

JOSEPH ANTONUCCIO, OF OAKLAND, CALIFORNIA.

BURNER.

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Specification of Letters Patent.

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Application filed July 18, 1911. Serial No. 639,103.

To all whom it may concern:

Be it known that I, JOSEPH ANTONUCCIO, a citizen of the United States, residing at Oakland, in the county of Alameda and State of California, have invented certain new and useful Improvements in Burners, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to water heaters of the type which are connected with a boiler, and the principal object of the same is to so construct the burner which is used with this heater that it may be readily taken apart for
15 cleaning, and to so form the parts of the burner that water dropping from the heating chamber will be caught by the upper plates of the burner and prevented from entering the gas chamber.

20 This invention is illustrated in the accompanying drawings wherein:—

Figure 1 is a longitudinal section through a boiler provided with the improved heating means. Fig. 2 is a vertical section along the
25 line 2—2 of Fig. 1. Fig. 3 is a top plan view of the burner. Fig. 4 is an end view of the mixing chamber, and Fig. 5 is a top plan view of the yoke which supports the burner.

Referring to the accompanying drawings
30 by numerals it will be seen that the heating attachment is connected with the boiler 10 which is provided with a central passage way 11 which forms an extension of the conical bottom 12 of the boiler. The bottom
35 12 is provided with a flange 13 which is secured to the lower portion of the boiler and the space within the conical bottom forms a chamber for a heating drum 14 which is provided with a central opening
40 formed in its upper end and with a plurality of passage ways 15 surrounding the central opening. A pipe 16 extends from the opening in the upper end of the heating drum through the passage 11 and is connected at
45 its upper end with a pipe 17 by means of the joint 18. A return pipe 19 leads from the pipe 17 back into the boiler 10 through the cover 20. A cold water inlet 21 enters the boiler through the cover and terminates
50 at a point adjacent the upper end of the bottom 12. A pipe 22 leads from the lower portion of the boiler and a pipe 23 leading from the heating drum 14 is connected with the pipe 22 by means of a pipe
55 24 so that water from the boiler can pass through the pipes 22, 24, and 23 into the

heating drum. From an inspection of Fig. 1 it will be seen that the heating drum is supported beneath the bottom 12 by means of the pipes 16 and 23, and it will also be
60 seen that the boiler is mounted upon a base 25 which is provided with arms 26 supporting a flanged rim 27 upon which the boiler rests.

A tapered tube 28 having an upwardly
65 curved end 29 is supported beneath the heating drum 14 by means of a yoke 30. The yoke 30 is provided with upturned ends 31 by means of which it is connected with a lower portion of the boiler and is provided
70 intermediate its length by a recess 32 having a curved rear wall 33. The upper end of the curved portion 29 of the tube 28 is provided with a flange 34 so that the tube may be passed into the recess 32 and be supported
75 upon the yoke by means of the flange 34. The outer end of the tube 28 is provided with a central opening 35 and the side openings 36 so that a gas pipe 37 may enter the tube 28 through the opening 35 and the re-
80 quired air will be supplied through the openings 36. A pilot light 38 is connected with the gas supply pipe and is positioned so that the flame from the pipe 38 will pass through an opening 39.
85

A substantially funnel shaped piece 40 is mounted upon the upper end of the tube 28 with its lower end resting upon the flange 34 and a frusto-conical plate 41 having a central cylindrical sleeve 42 is mounted upon the
90 piece 40 and is held in spaced relation thereto by means of the lugs 43. It should be noticed that the piece 40 is provided with a beveled edge 44 and that the outer portion 45 of the plate 41 is bent at an angle to the
95 major portion of the plate 41 and overlaps the upper edge of the piece 40. A cup shaped piece 46 is mounted within the sleeve 42 and is provided with a flared upper portion 47 which overlaps the upper end of the
100 sleeve 42. The lugs 48 are mounted upon the under face of the outer portion 47 and rest upon the beveled upper edge of the sleeve 42 and thus hold the piece 46 in spaced relation to the sleeve 42 with the
105 flared outer portion 47 overhanging the edge of the sleeve.

In using this device the gas is supplied through the pipe 37 into the tube 28 where it is mixed with air and passes through the
110 curved upper end 29 and out through the spaces between the piece 40 and the outer

portion 45 of the plate 41 and through the space between the upper edge of the sleeve 42 and the flared outer portion 47 of the piece 46. The products of combustion pass 5 through the passages 15 and around the heating drum 14 through the space between the heating drum and the bottom of the boiler through the passage way 11, thus thoroughly heating the heating drum and also heating the bottom of the boiler and the walls of the passage 11. It should be noted 10 that by having the bottom of the boiler conical and the heating drum positioned adjacent the upper end of the bottom that the heating drum and burner are surrounded by 15 the water in the boiler and, therefore, all the heat caused by the burner acts upon the water in the heating drum, pipe 16 and in the boiler 10. By having the outer portions 20 of the plate 41 and piece 46 extend over the edges of the piece 44 and sleeve 42 any water which gathers upon the lower face of the heating drum is prevented from dropping upon the burner and getting into the pipe 25 as any water which drops is caught upon the plate 41 or within the shaped piece 46 where it remains until it is heated by the gas and evaporates.

What I claim is:—

30 1. A burner of the character described, comprising a mixing chamber, a funnel

shaped member supported on said mixing chamber having its largest diameter uppermost and having an opening therethrough, a flatter funnel shaped member resting upon 35 the first funnel shaped member and having lugs to space its outer edge a short distance above the first funnel shaped member, said second funnel shaped member having a 40 walled opening therethrough, and a small cup shaped member supported on said second funnel shaped member and having its edges projecting beyond the vertical walls thereof, substantially as described.

2. In a burner of the character described, 45 a mixing chamber, a funnel shaped member supported on said mixing chamber with its largest diameter uppermost, a second shallower funnel shaped member supported upon the first funnel shaped member and 50 having a cylindrical walled opening through its center, and a cup shaped member having a flaring edge supported on said cylindrical walls with its edges beyond said cylindrical walls, substantially as described. 55

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

JOSEPH ANTONUCCIO.

Witnesses:

F. J. SCHROEDER,
H. C. SCHROEDER.