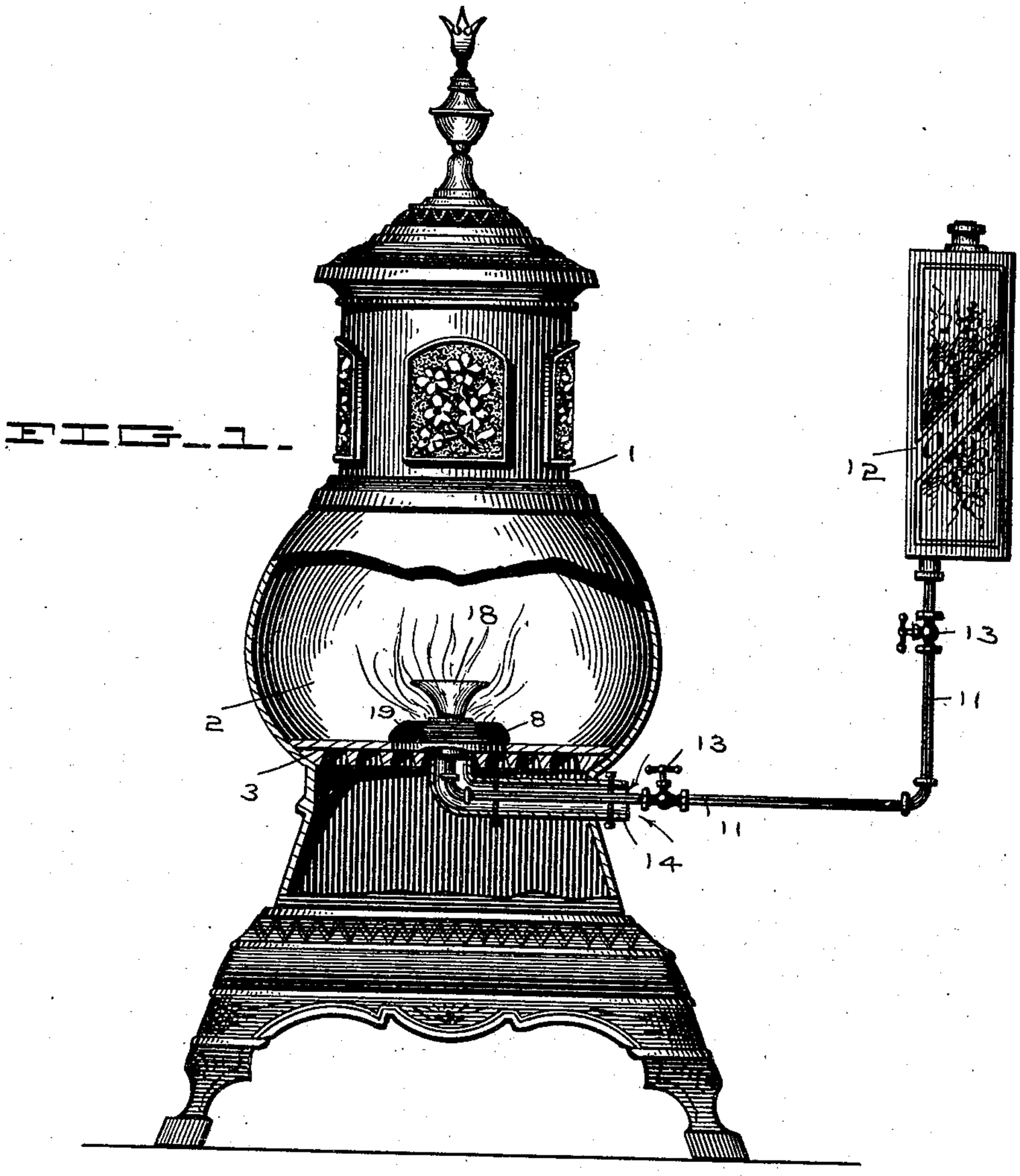
(No Model.) 2 Sheets—Sheet 1.

W. T. PUTNAM.

OIL BURNER.

No. 501,692. Patented July 18, 1893.

FIG. 1.



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(No Model.) 2 Sheets—Sheet 2.

W. T. PUTNAM

OIL BURNER.

No. 501,692. Patented July 18, 1893.

FIG. 2.

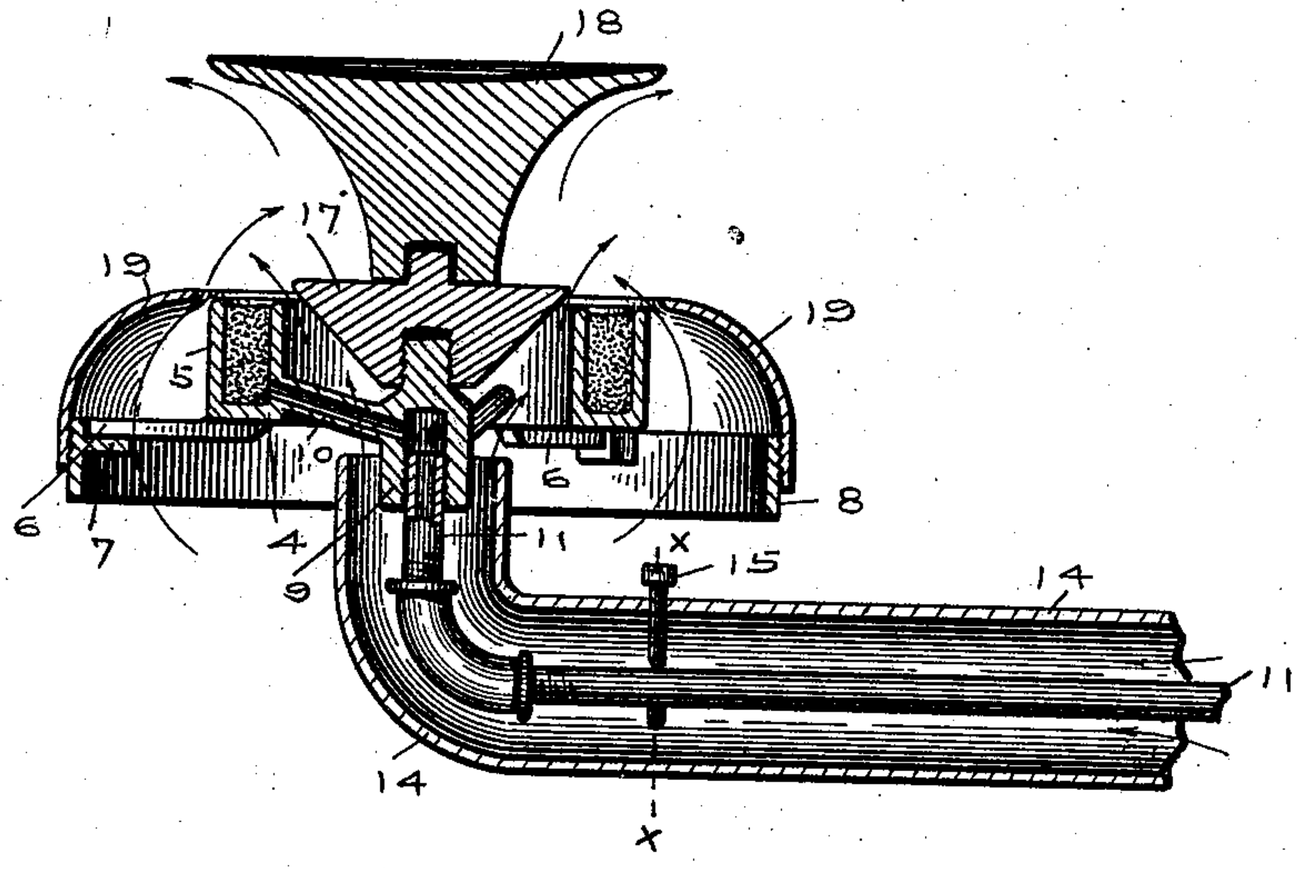


FIG. 3.

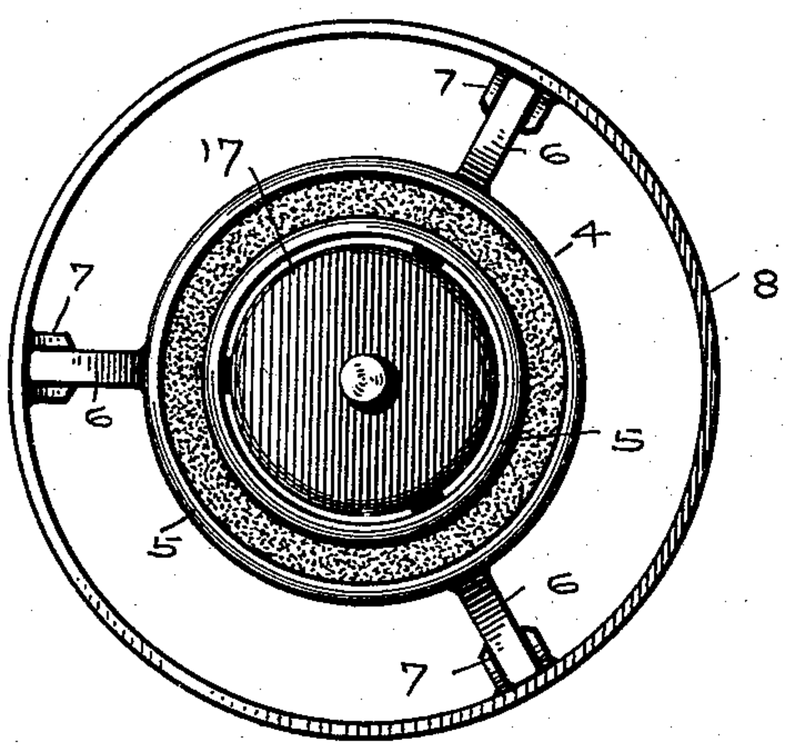


FIG. 4.

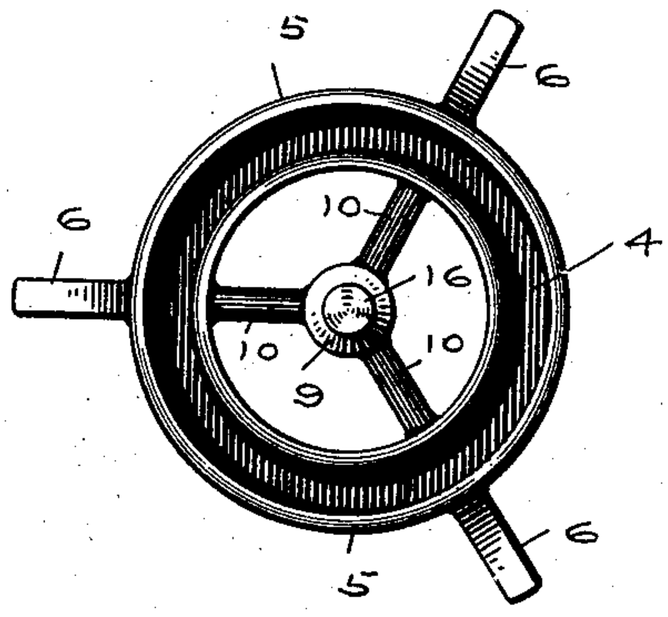
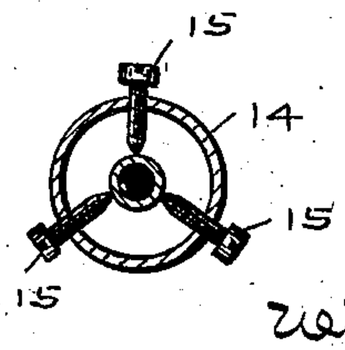


FIG. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM T. PUTNAM, OF BRIGHTWOOD, INDIANA.

OIL-BURNER.

SPECIFICATION forming part of Letters Patent No. 501,692, dated July 18, 1893.

Application filed December 19, 1892. Serial No. 455,659. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM T. PUTNAM, a citizen of the United States, residing at Brightwood, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Oil-Burners; and I do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to new and useful improvements in the construction and operation of oil burners, as will be hereinafter described and more particularly pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 is a view partly in elevation and partly in section of a stove with one of my burners therein connected with an oil supply. Fig. 2 is an enlarged central section through the burner, its shell, deflector and central draft pipe. Fig. 3 is a top plan view of the burner resting in place on the lower part of the shell, with the deflector removed. Fig. 4 is a plan view of the burner with its filling removed. Fig. 5 is a cross section through the central air flue of the burner on the line *x*—*x*, Fig. 2.

In detail, 1 represents a stove of any ordinary form or construction; 2 the fire-pot, and 3 the grate of the same.

4 is the burner proper, which is circular in form, and has an open center with flanges around its outer and inner edges, the burner having arms or lugs 6 formed on its outside which are supported in brackets 7 formed on the inside of the lower part 8 of the burner shell. In the center of the burner is formed a hollow head 9 which is connected to the burner by short hollow arms 10 which serve as oil inlets to the burner, a pipe 11 being tapped into the head 9 from below, and extends to the outside of the stove, where it is connected with an oil tank 12, valves 13 being connected to such pipe for regulating the flow of oil. Around the oil supply pipe 11, from a point just below the burner to a point outside of the stove, is secured a pipe or casting 14, this pipe being of a greater diameter than the supply pipe 11, and serves the purpose of a central air draft to the burner and also to keep the oil cool until it is practically in the burner, the pipe 14 being held around the supply pipe 11 by means of set screws 15 shown in Figs 2 and 5. On the top of the head 9 is a threaded projection 16, and on this is adapted to be screwed an air deflecting cone 17 whose top is a little above the upper edge of the burner, thus directing the central air draft, which is secured mainly through the pipe 14 over the top of the burner. The air deflector 17 has also a projection on its top over which fits the base of the flame deflector 18.

The burner 4 has preferably a filling of mineral substance, such as sand, and the upper part of the burner shell has an open contracted top which is about on a line with the upper edge of the burner, and acts to deflect the outer air current which comes through the ordinary draft opening of the stove, over the top of the burner and on an angle opposite of the inner air current. The part 19 of the shell being screwed on to the lower part 8 may thus be adjusted to direct the outer air current at the desired angle.

In operation, the oil being turned on, it passes through the pipe 11, head 9, and short arms 10, and filters up through the burner filling, when it may be lighted. The air current through the pipe or casting 14 keeps the oil perfectly cool until it reaches the burner, when it is suddenly heated, and may be said to generate into a gas, which, after the burner is well heated, is lighted into a flame at about the point where the inner and outer air currents meet over the top of the burner. These two currents working against each other mix perfectly with the oil products, and perfect combustion is secured. The flame being deflected above into a larger area by the deflector 18, the deflecting cone 19 being screwed on the top of the head 9, and the upper part of the shell 19 screwed on the lower part 8, both may be adjusted to direct the inner and outer air drafts at the angle of meeting that the best results may be obtained.

Modifications may be made in my device to

adapt it for use in other stoves, or to simplify the construction, but the principle and operation will remain the same.

What I claim as my invention, and desire to secure by Letters Patent, is the following:

1. In an oil burner having an open center, a pipe with open ends, one below the center of such burner, and the other extending to the outside of the stove, whereby a central air draft is furnished the burner, substantially as set forth.

2. In an oil burner having an open center and connected with an oil supply pipe by hollow radial arms, a larger pipe with open ends surrounding such supply pipe from a point below the burner to the outside of the stove, thereby giving a central air draft to such burner and keeping the supply pipe cool, substantially as shown and described.

3. An oil burner consisting of a circular pan with a filling of suitable material and adapted to be connected with an oil supply through a central pipe, such pipe inclosed in a larger one from a point below the burner to the outside of the stove, and a central air deflector supported above such inclosing pipe for spreading the air supply through such pipe above the burner, substantially as set forth.

4. An oil burner having an open center and connected with an oil supply, such burner supported centrally within a surrounding shell or air flue, such shell having an adjustable extension on its top with contracted edges, whereby the space between the edges of the extension and the burner may be adjusted substantially as set forth.

5. An oil burner having an open center and connected with an oil supply, such burner supported centrally within a surrounding shell or air flue, such shell having an adjustable extension on its top with contracted edges whereby the space between the edges of the extension and the burner may be adjusted, an air deflector adjustably supported within the open center of the burner and a flame deflector above, substantially as set forth.

6. An oil burner having an open center and connected with an oil supply, such burner centrally supported within a surrounding shell or flue, an extension screwing on such shell, the top of such extension being contracted, an air deflector adjustably supported within the open center of the burner, a flame deflector above, and an air pipe leading from without the stove to a point just below the central air deflector, all substantially as set forth.

7. An oil burner having an open center and supported within a surrounding shell, a head in such open center connected with an oil supply, and with the burner by radial pipes, a deflector adjustably supported on said head, and a flame deflector above such air deflector, all substantially as set forth.

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

WILLIAM T. PUTNAM.

Witnesses:
H. D. NEALY,
L. E. PUTNAM.