

(No Model.)

F. L. McGAHAN.
OIL BURNER.

3 Sheets—Sheet 1.

No. 501,356.

Patented July 11, 1893.

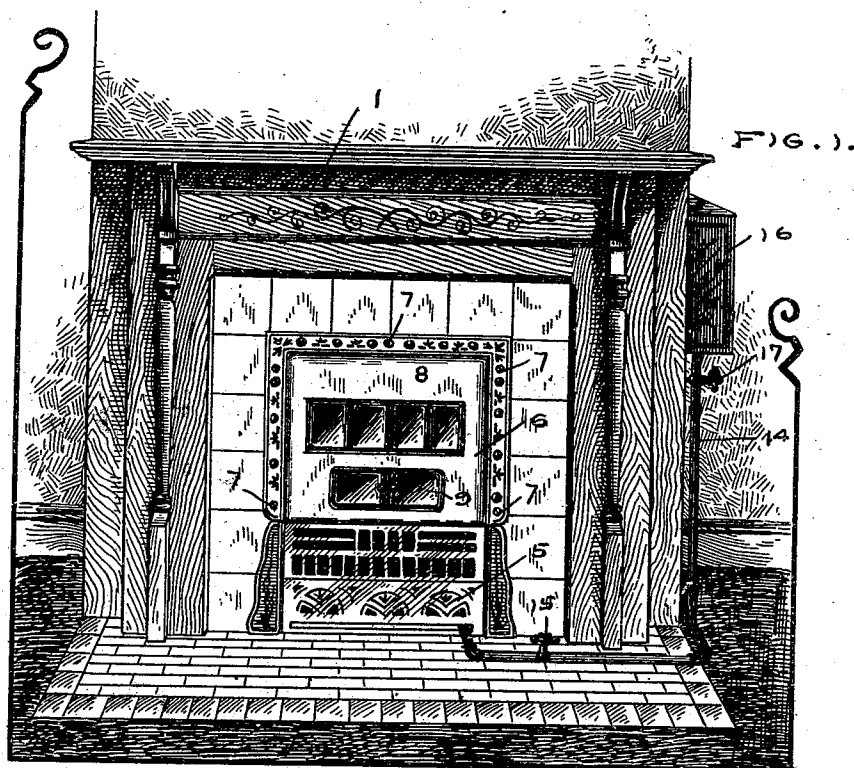
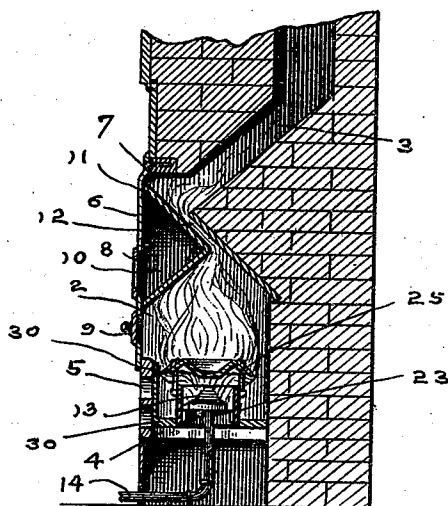


FIG. 2.



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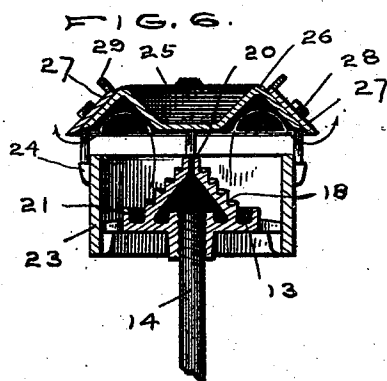
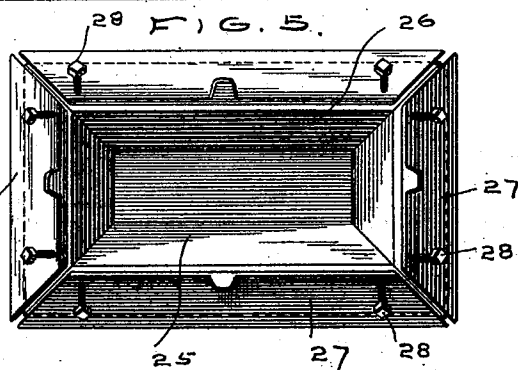
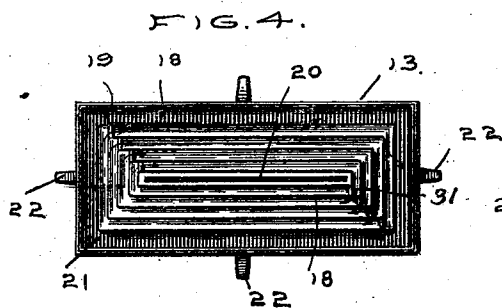
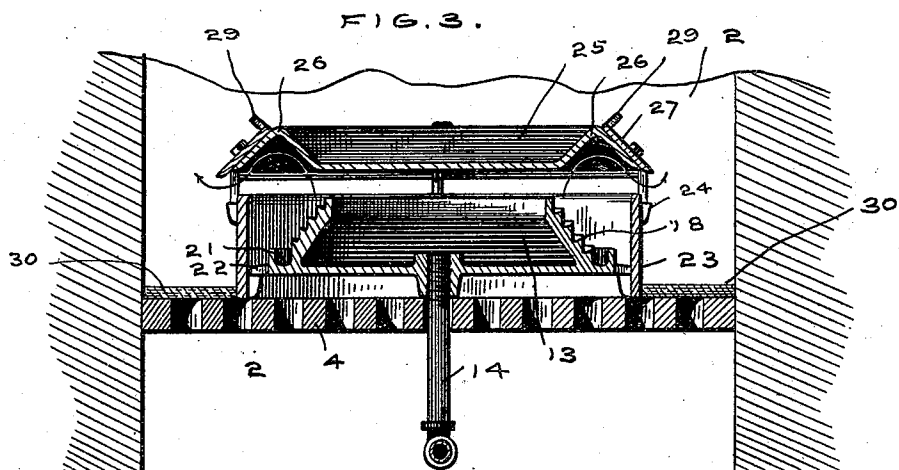
(No Model.)

3 Sheets—Sheet 2.

F. L. McGAHAN.
OIL BURNER.

No. 501,356.

Patented July 11, 1893.



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J. A. Seaton
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(No Model.)

3 Sheets—Sheet 3.

F. L. McGAHAN.
OIL BURNER.

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FIG. 7-

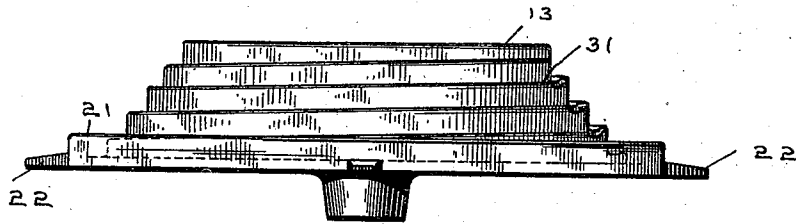


FIG. 8.

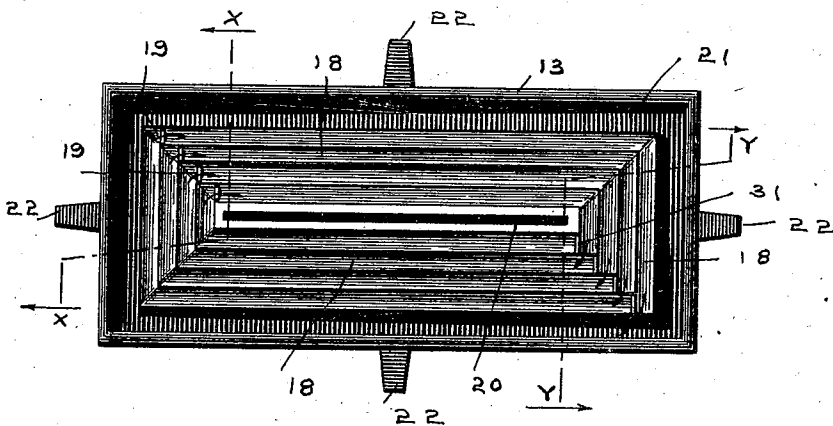
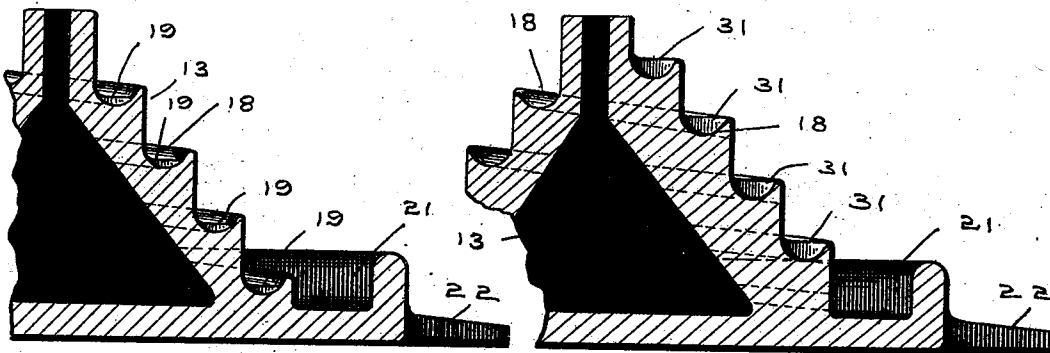


FIG. 9.

FIG. 10.



Witnesses

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UNITED STATES PATENT OFFICE.

FREDERICK L. MCGAHAN, OF INDIANAPOLIS, INDIANA.

OIL-BURNER.

SPECIFICATION forming part of Letters Patent No. 501,356, dated July 11, 1893.

Application filed December 4, 1891. Serial No. 414,047. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK L. MCGAHAN, a citizen of the United States, residing at Indianapolis, 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 improvements in oil burners for heating and cooking purposes, and to the construction and arrangement of parts as will be hereinafter fully described and more particularly pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of a fire place in which my burner is placed, showing the oil connections. Fig. 2 is a central vertical section through the same. Fig. 3 is an enlarged central longitudinal section through the grate, burner, its shell and deflector. Fig. 4 is a detail top view of the burner. Fig. 5 is a similar view of the deflector. Fig. 6 is a central cross section through the burner, its shell and deflector. Fig. 7 is an enlarged elevation of the burner. Fig. 8 is a plan view of the same. Fig. 9 is a cross sectional view, still further enlarged, on the line X—X, Fig. 8, looking in the direction of the arrows, and Fig. 10 is a similar view on the line Y—Y Fig. 8.

In detail, 1 represents a mantel, 2 the fire-place, 3 the chimney, and 4 the grate, which is supported in the ordinary manner, and has a facing 5.

6 is a movable front for the fire-place, and extends from the top of the facing 5 to the top of the fire place 3 and entirely closes the same, being attached by screws 7, which enter metal sockets secured in the wall. This method of attachment may, however, be varied, the only object being to have the front 6 so that it can be readily removed when desired.

8 are mica windows in the front 6, and 9 are sliding or hinged doors, so that access may be obtained to the interior of the fire place

for lighting the burner, or for any other purpose.

10 is a chamber formed on the back of the front 6 by the sheet metal piece 11, which also forms a hood for the fire and its rear end being on the same angle as the back of the fire-place, forms a narrow passage 12 to the chimney or flue 3, and 13 is the burner, which is an oblong hollow casting with an opening in its bottom, into which a feed pipe 14 is screwed, having a valve 15, and is connected with an oil tank 16 supported at any suitable point, with a cut-off valve 17 in the pipe 14 immediately beneath it. The burner 13, as before mentioned, is of an oblong shape, and its sides are on an angle of about forty-five degrees, and in these sides is formed a series of shallow grooves or channels 18 extending entirely around the burner, one above the other, and are inclined slightly, these grooves starting at one corner of the burner, as at 31, and having dams 19 at the corners diagonally opposite, and as the oil in the burner overflows through the narrow opening 20, it runs down the first groove 18 until it reaches the first dam 19, when it overflows into a continuation of the same channel until it reaches the corner from where it started, which is below the starting point, and the end of the grooves being open as shown in Fig. 7, the oil will overflow into the groove 18 below, and so on until it reaches the bottom and overflows into the pan or projecting rim 21 of the burner. At the same time each of the grooves 18 has retained a part of the oil that has flowed into it.

On the rim 20 are projections 22 which rest on brackets formed on the inside of the hollow burner shell 23, which is of an oblong shape and slightly larger in area than the burner 13, and rests on the grate 4 extending up to a line with the top of the burner.

24 are brackets on the outside of the shell 23, on which rest the feet of the deflector 25, which is formed with the lowered center and raised angular parts 26, the outside being on an angle and extending out to a line with the shell 23, and on these sloping sides are secured the adjustable wings 27 having slots in which work bolts 28 secured to the deflector. They also have lugs 29, and by these any of the wings may be lowered or raised, the bolts holding them by their friction in any position

they may be set, and so where more fire may be desired on one side of the burner, by lowering the wing on the opposite side, the flame naturally turns away from it and escapes by the most open outlet.

30 is asbestos sheeting secured in place around the shell 23, and to the back of the facing 5, so that no draft may get to the burner except that which passes up through the shell 23, as it has been found that an oil fire cannot be successfully operated when there is a draft above the burner, as the air does not mix thoroughly with the flame, and the carbon in the oil not being consumed, the result is that it creates a dirty fire, and a large amount of soot, but by my device this is overcome, and the result is a steady and clean flame.

The advantage of my burner over others of a similar character is this, that when the oil is first turned on, it runs immediately to the bottom or pan. At the same time each groove or channel has a quantity of oil retained therein, so when the fire is lighted it begins to heat the base of the burner first, thus generating a gas, and making a much quicker and hotter fire than where the burner begins to heat from the top, and where oft-times the oil never reaches the bottom of the burner at all when it is turned low, this causing it to furnish a weak and smoky flame.

It is obvious that the channels 18 in my burner might be formed in a spiral form, that is continuous with dams arranged as at present, without departing from the principle of my invention, and my burner can be operated in any kind of a stove or fire place with equally as good results as in the closed fire place shown in the drawings.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. An oil burner composed of a hollow casting with a central opening, such burner having sloping sides with inclined grooves formed therein, with dams in such grooves to retard the flow of oil, substantially as set forth.

2. An oil burner composed of a hollow casting with a central slot, such burner having sloping sides with a series of inclined grooves formed therein, dams in such grooves and a projecting base forming a pan around the burner, all combined substantially as set forth.

3. An oil burner composed of a hollow casting with a central opening in its top, such burner having sloping sides with a series of inclined grooves formed therein, the lower end of each being above the upper end of the one below, whereby the oil as it is fed from the burner will flow through all of such grooves, substantially as set forth.

4. An oil burner composed of a hollow rectangular casting with a central slot in its top, such burner having sloping sides with a series of inclined grooves formed therein, dams in such grooves at opposite corners, and a projecting base forming a pan around the entire burner, the oil as it escapes from the burner adapted to pass entirely around the same, overflowing the several dams till it reaches the pan below, substantially as set forth.

5. In an oil burner, a deflector composed of a rectangular casting having sloping sides with wings adjustably secured thereon, such deflector adapted to be supported above a burner, substantially as set forth.

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

FRED. L. MCGAHAN.

Witnesses:

J. A. SEATON,
H. W. NEAL.