

(No Model.)

H. STACEY.
OIL BURNER.

No. 509,831.

Patented Nov. 28, 1893.

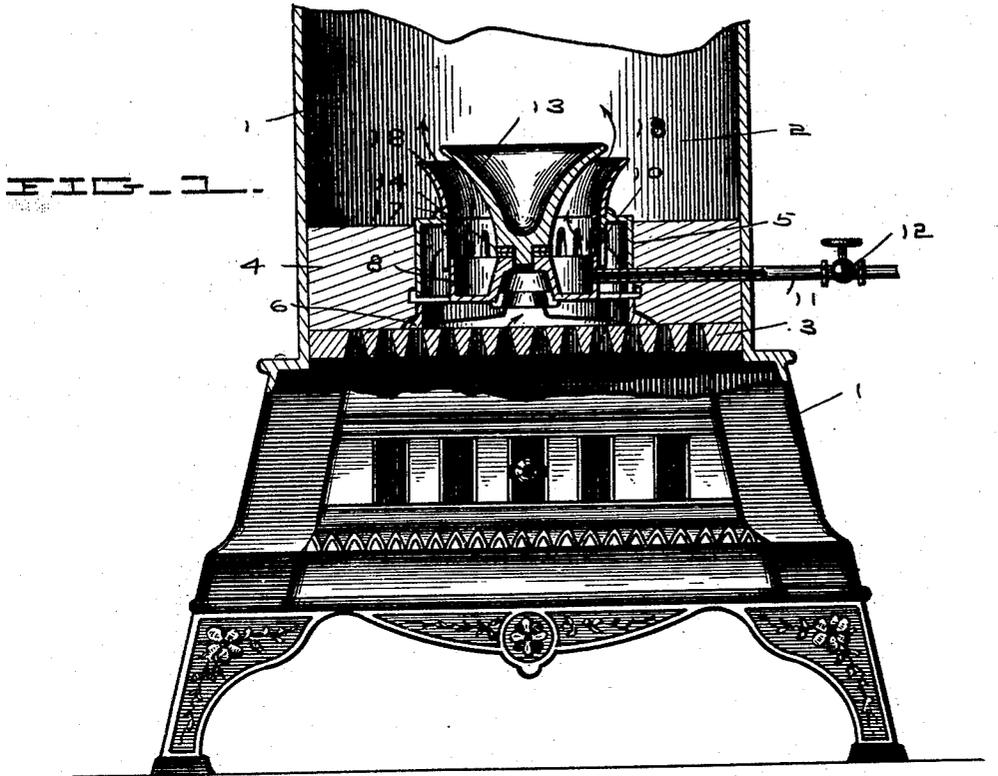


FIG. 1.

FIG. 2.

FIG. 3.

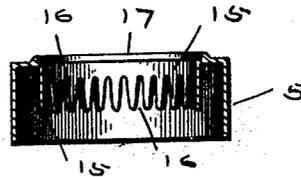
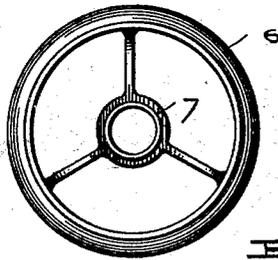
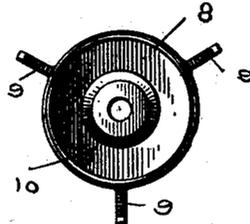


FIG. 4.



Witnesses

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Inventor

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UNITED STATES PATENT OFFICE.

HENRY STACEY, OF INDIANAPOLIS, INDIANA, ASSIGNOR OF ONE-HALF TO
MICHAEL H. CAIN, OF SAME PLACE.

OIL-BURNER.

SPECIFICATION forming part of Letters Patent No. 509,831, dated November 28, 1893.

Application filed August 10, 1892. Serial No. 442,667. (No model.)

To all whom it may concern:

Be it known that I, HENRY STACEY, of Indianapolis, county of Marion, and State of Indiana, have invented certain new and useful Improvements in Oil-Burners; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like figures refer to like parts.

My invention relates to new and useful improvements in the construction of oil burners, and is an improvement on the one shown and described in Letters Patent No. 473,858, granted to me April 26, 1892, and will be understood from the following description.

In the drawings, Figure 1 is a view partly in section of a stove with a burner therein embodying my improvements. Fig. 2 is a plan view of the base upon which the burner rests. Fig. 3 is a central section through the shell which forms an air chamber around the burner. Fig. 4 is a plan view of the burner.

In detail, 1 represents a stove, 2 the fire pot, and 3 the grate.

4 is a non-combustible filling, preferably of clay, which is filled in around the burner shell 5 in a semi-plastic state, and which prevents any draft from passing out through the grate outside of such shell.

6 represents a suitable base, shown in detail in Fig. 2, which has a central projecting ring 7 which fits within the cored out bottom of the burner 8 to retain it in a central position. The burner itself has radiating arms or lugs 9 which rest on top of the base 6, and on these arms the burner shell 5 which forms a surrounding air chamber rests. The burner also has a circular oil chamber 10 which is connected by a pipe 11 having a valve 12 therein with any suitable oil supply, the central part of the burner being raised, and its sides formed on an angle, this extension being centrally perforated, as shown in Figs. 1 and 4. On the top of this central extension a flaring or inverted conical deflector 13 is adapted to rest, a projection being formed on its under side which fits in an opening in the central extension of the burner, thereby closing the same, and washers 14 may be interposed between the deflector and the top of the burner for the purpose of raising such de-

flector to any desired position. The burner shell 5 is formed in the shape of a cylinder with an overhanging top extending inward and then downward, as at 15, the downward extension fitting snugly outside the burner, and has slits formed therein, thus allowing the air to pass up through the grate, the air chamber and through these slits. The shell forming the air chamber is formed with an annular flange 17 on its top, and within this rests an upward flaring extension 18 shown in Fig. 1, this serving to keep the flame against the flaring sides of the deflector, the shape of the deflector and extension being such as to retard the flame and cause it to hug the deflector, and thus secure perfect combustion of the oil gas before it escapes from the top of the deflector, thereby giving a perfect flame above the burner and its combustion chamber, and one that is free from smoke, soot, and other impurities. By increasing or decreasing the number of washers upon which the deflector rests the space between the deflector and the extension 18 may be adjusted, whereby the flame escaping from around the top of the deflector can be regulated, the deflector being either raised up from the flaring extension 18, or will be brought into closer proximity to the same, and thereby cause the flame to decrease in size and become thin, thereby decreasing the heat and completing the combustion of the gas.

The advantages in the construction and operation of this burner over those in my former patent are numerous, the combustion being more perfect because it takes place within the burner before it escapes into the fire pot of the stove, and owing to perfect combustion there is no loss of heat as there was in the former device, where a certain amount of combustion took place after the gas from the oil had escaped into the fire-pot of the stove, and through this caused to some extent a smoky and dirty flame. By the construction of the air chamber surrounding the burner, the draft is evenly divided and none escapes from the air chamber without passing through the combustion chamber to the burner, and this secures a much better mixing of the air and gas generated by the oil than in the former device, and the proportion of air mixed

is just what is needed to effect perfect combustion, and this can be adjusted by raising or lowering the deflector 13; hence a more perfect fire. Owing to the manner of constructing the burner it is also possible to make it much lighter and smaller than in the former case, where a great number of perforations were necessary. In this burner they are entirely done away with. Owing to the form and the manner of supporting and adjusting the central deflector in relation to the outside extension of the burner shell, as before mentioned, the size of the flame can be regulated, and the escape of the products of combustion can be retarded so that they will be consumed within the combustion chamber of the burner, and the volume of air coming into the combustion chamber be adjusted to effect a mixing with the oil gas in the proper proportion to produce complete combustion.

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

1. In an oil burner the combination of a suitable oil chamber, an inverted conical deflector having a solid projection below adapted to fit in a socket in such oil chamber and washers adapted to fit over such projection to render such deflector vertically adjustable, and a wall of the burner surrounding such deflector.

2. An oil burner, consisting of an oil chamber, an air chamber surrounding and extend-

ing higher than the same, suitable openings in the inner wall of such air chamber for the admission of air into the oil chamber, a vertically adjustable deflector supported above such burner, and a wall surrounding such deflector parallel with the same, substantially as shown and described.

3. An oil burner consisting of an oil chamber set on a suitable base and supplied with oil, such oil chamber having a central extension, a socket in such extension, washers adapted to build up such extension, an air chamber surrounding such oil chamber and extending higher than the same, a series of flanges extending downward from the overhanging top of such air chamber to the wall of the oil chamber, such flanges separated for the admission of air to the oil chamber, an inverted bell-shaped deflector with a solid projecting base adapted to fit in the socket in the extension in the oil chamber, and a wall surrounding such deflector extending nearly as high as the same, parallel with and at a suitable distance from such deflector, substantially as shown and described.

In witness whereof I have hereunto set my hand this 28th day of July, 1892.

HENRY STACEY.

Witnesses:

H. D. NEALY,
E. B. GRIFFITH.