(No Model.)

3 Sheets—Sheet 1.

F. L. McGAHAN.

OIL STOVE AND BURNER.

No. 501,357. Patented July 11, 1893.

FIG. 1.

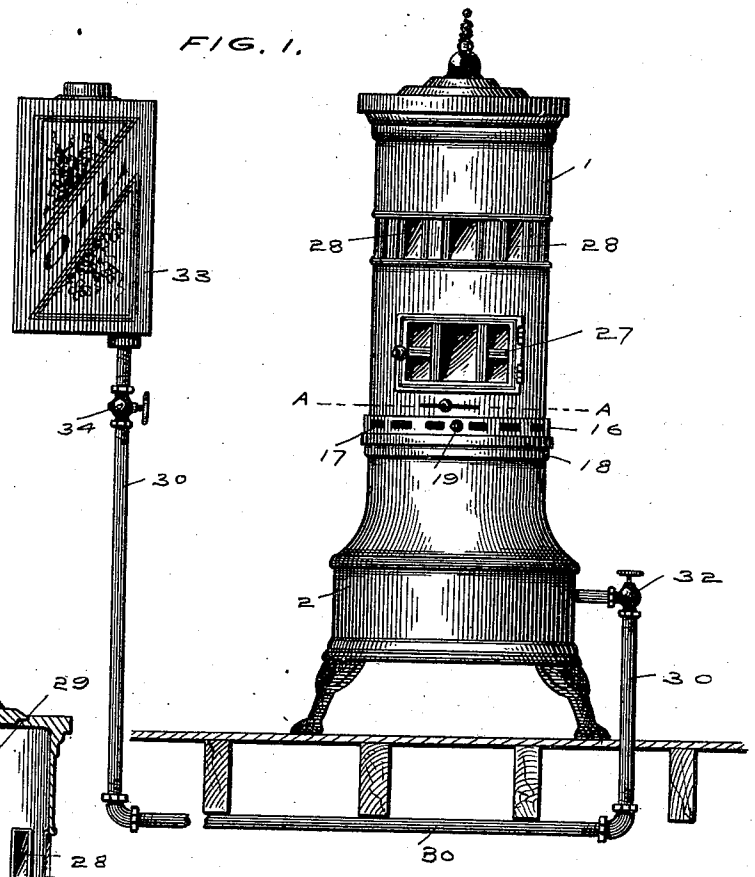


FIG. 2.

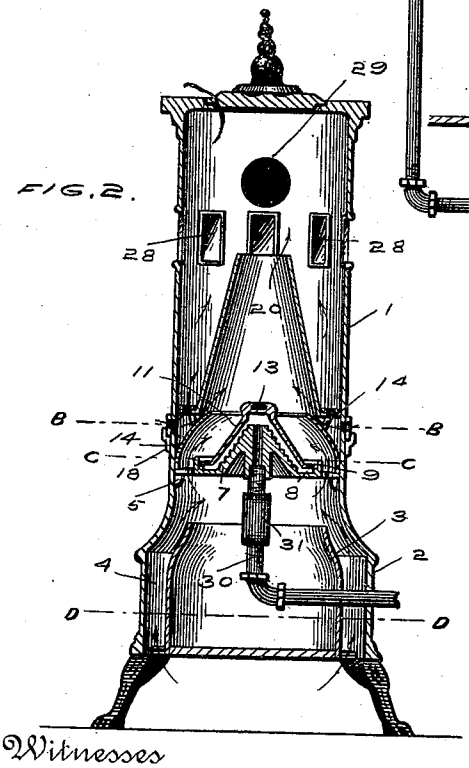
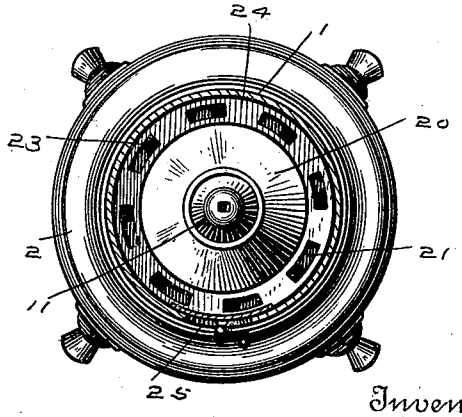


FIG. 3.



Witnesses

C. A. Adams.

H. W. Teal

Inventor

Fred'k L. McGahan

(No Model.)

3 Sheets—Sheet 2.

F. L. McGAHAN.

OIL STOVE AND BURNER.

No. 501,357. Patented July 11, 1893.

FIG. 4.

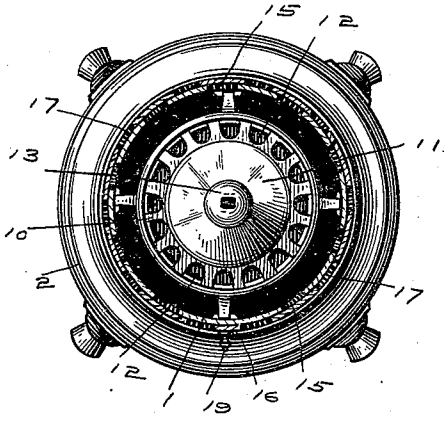


FIG. 5.

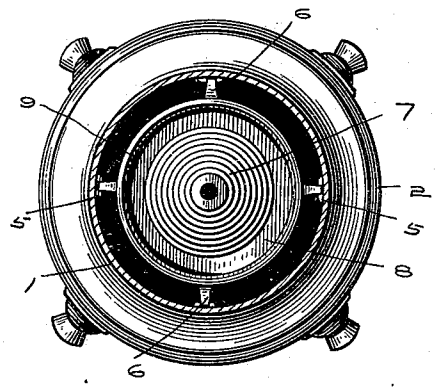


FIG. 6.

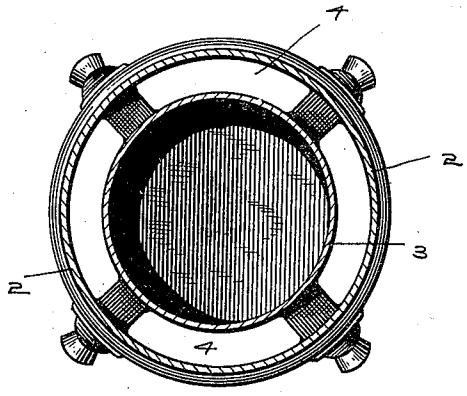
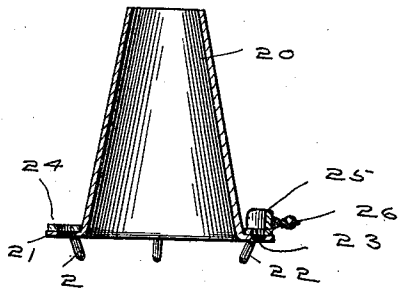


FIG. 7.



Witnesses

C. A. Adams.

H. W. Teal

Inventor

Fred'k L. McGahan

(No Model.)

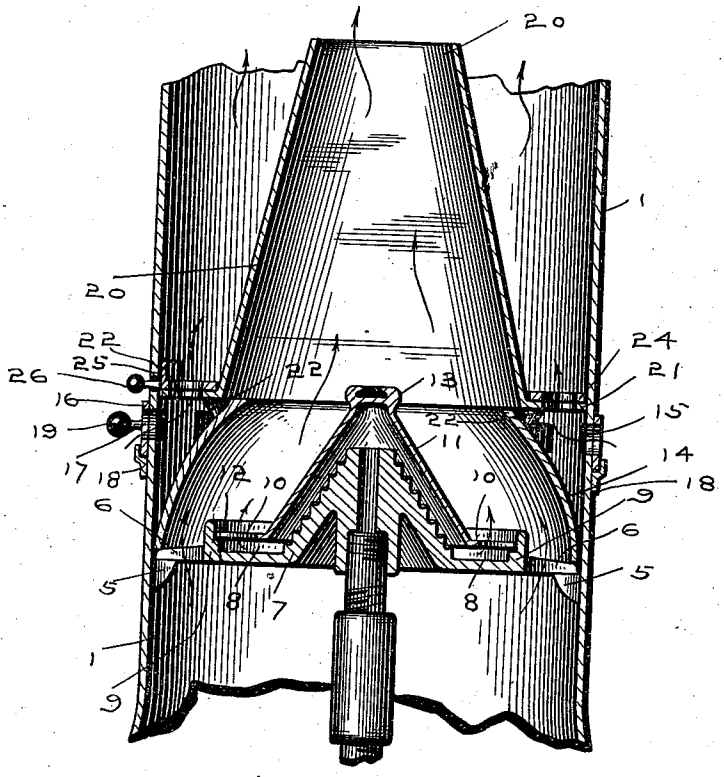
3 Sheets—Sheet 3.

F. L. McGAHAN.

OIL STOVE AND BURNER.

No. 501,357. Patented July 11, 1893.

FIG. 8.



Witnesses

C. A. Adams.

A. L. McGahan

Inventor

Fred. L. McGahan

UNITED STATES PATENT OFFICE.

FREDERICK L. McGAHAN, OF INDIANAPOLIS, INDIANA.

OIL STOVE AND BURNER.

SPECIFICATION forming part of Letters Patent No. 501,357, dated July 11, 1893.

Application filed January 2, 1892. Serial No. 416,898. (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 Stoves and 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 certain new and useful improvements in oil stoves and burners and it consists in the construction and arrangement of parts as hereinafter fully described and more particularly pointed out in the claims, reference being had to the accompanying drawings in which—

Figure 1 is an elevation of a stove embodying my improvements. Fig. 2 is a central vertical section through the same. Fig. 3 is an enlarged cross section through the stove on the line A—A, Fig. 1, the burner and its connections all being in place. Fig 4 is a similar view on the line B—B, Fig. 2, the chimney and deflector being removed. Fig. 5 is an enlarged cross section on the line C—C, Fig. 2, the burner only being in place. Fig. 6 is a similar view on the line D—D, Fig. 2. Fig. 7 is a detached sectional view of the burner chimney, and Fig. 8 is an enlarged central vertical section through the burner and its connections, within the stove.

In detail (1) represents a stove of cylindrical shape preferably made of sheet metal and having the enlarged base (2) resting on suitable feet and (3) is a cylindrical shell of less diameter than the base (2) and rests within the same, the top of the shell being contracted as shown, the space between the shell (3) and the walls of the base (2) being open and forming an air flue (4).

(5) are brackets which are attached to the walls of the stove and may be adjustable if desired and on these rest the lugs (6) formed on the base of the hollow burner (7) which is of circular shape and as shown in Figs. 4 and 5 is of less diameter than the stove its top being in the form of a cone having grooves or channels surrounding it; a larger one (8) being formed in its base and having a double rim (9) surrounding it, on the lower one of which rests the base flange (10) of the hood (11) and in this flange are the openings (12). The hood is formed with a knob (13) on its top having a hole therein so that it may be lifted off of the burner with an ordinary stove lid lifter when desired, the hood itself being similar in shape to the burner but larger, space being left between the two as shown in Fig. 2.

(14) is a deflector whose base fits snugly within the stove and rests on the lugs (6) of the burner and its top is contracted as shown in Fig. 2 and just below the same openings (15) are formed in the walls of the stove, a ring or band (16) having similar openings (17) resting in a bracket (18) on the outside and the ring (16) having a knob or handle (19). The openings (15) in the stove may be opened or closed to any degree and are for admitting air to the stove, above the burner.

(20) is a conical chimney formed of thin metal whose flanged base (21) snugly fits the inside of the stove and on the under side of which are the feet (22) resting on the outside of the deflector (14), (23) being openings in the flange (21) shown in Fig. 3.

(24) is a flat ring resting on the flange and having openings adapted to register with those of the flange, a vertical flange (25) being formed on one side of the ring (24) and fitting against the front wall of the stove (1) closing the slot (25) formed therein through which works the knob (26) for regulating the movement of the ring (24).

(27) is a stove door and (28) are suitable windows covered with mica near the top, (29) being the chimney opening.

To the under side of the burner (7) is connected the pipe (30) provided with the screw sleeve (31) for adjustment, the pipe extending to the outside of the stove and having the regulating valve (32) and is then carried down beneath the floor of the room in which the stove is, and to any desired point and connected with a tank (33) holding oil for the supply of the burner, the supply pipe (30) having a cut-off valve therein just below the tank.

The operation of my device is as follows:

the valves in the supply pipes being opened, oil flows through the same and up into the burner where it overflows and runs down its sides filling the grooves thereon and the larger one (8) in the burner base, where the oil is lighted, the flame burning up through the openings (12) in the hood flange and as the hood is heated a gas is generated between it and the burner, and a flame free from soot and dirt is secured, the flame being turned toward the center of the stove by the deflector (14) and up through the chimney (20) heating the same and thereby heating the stove. The air draft from the base of the stove is always the same but as before mentioned the draft supplied through the openings (15) is regulated by moving the ring or band (16), and the draft through the openings (23) in the flange of the chimney base by the ring resting on the same, and through these latter openings the draft within the stove is controlled, either letting the air pass up outside of the chimney or when closed forcing it in between the deflector and the chimney base where it mixes with the flame.

By the construction and arrangement of the various parts as hereinbefore mentioned, a perfect mixing of air with the flame is obtained and for that reason there is none of the soot and gummy deposit usually formed where oil burners are used.

In some cases it is desirable to use the burner and its hood by themselves in an ordinary stove but if desired either the deflector or chimney may be also used separately over the burner but the best results are obtained when used as I have hereinbefore described.

It is obvious that changes may be made in my device without departing from the spirit of my invention; but

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A hollow burner connected with an oil supply and suitably supported within a stove, and having an air space around its base, a conical hood having openings in its bottom resting on said burner base and above the same, a deflector having an open contracted top supported above the burner and its hood, with an air space between and a conical chimney resting on said deflector, all substantially as shown and described.

2. A hollow burner connected with an oil supply and suitably supported within a stove with an air space formed between said burner and the walls of the stove, a conical hood having openings in its bottom resting on the base of said burner and above the same, a deflector having an open contracted top supported above said burner and its base, and fitting snugly within the walls of the stove, a conical chimney resting on said deflector and having a flanged base with closable draft openings therein, such base overhanging the deflector and forming an air chamber between the deflector and the stove walls, such walls having draft openings therein below said chimney base, substantially as set forth.

3. A hollow burner connected with an oil supply and centrally supported within a stove, a deflector having an open contracted top supported above said burner, whereby an air space is formed between them, a conical chimney resting on said deflector and having a flanged base with draft openings therein, a ring resting on said base with similar openings adapted to be operated from without the stove, with draft openings in the walls of the stove below the chimney base and means for regulating the same, substantially as set forth.

4. An oil burner suitably connected with an oil supply, and centrally supported within a stove, a deflector having an open contracted top supported above said burner, its base fitting the stove shell, a conical chimney resting on said deflector and forming an extension thereof, draft openings in the flanged base of said chimney regulated from without the stove, and draft openings in the walls of the stove, whereby an air draft is supplied within the stove and outside the chimney, substantially as set forth.

5. An oil stove having a circular air flue formed in its base, a burner connected with an oil supply and centrally supported within said stove above its air flue, a deflector and chimney supported above said burner forming a conical air flue, and means for supplying an air draft within the stove and outside of such chimney, substantially as set forth.

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

FRED. L. McGAHAN.

Witnesses:

JAMES P. BAKER,

M. G. McLAIN.