

(No Model.)

2 Sheets—Sheet 1.

F. L. McGAHAN.
PORTABLE OIL STOVE.

No. 505,631.

Patented Sept. 26, 1893.

FIG. 1.

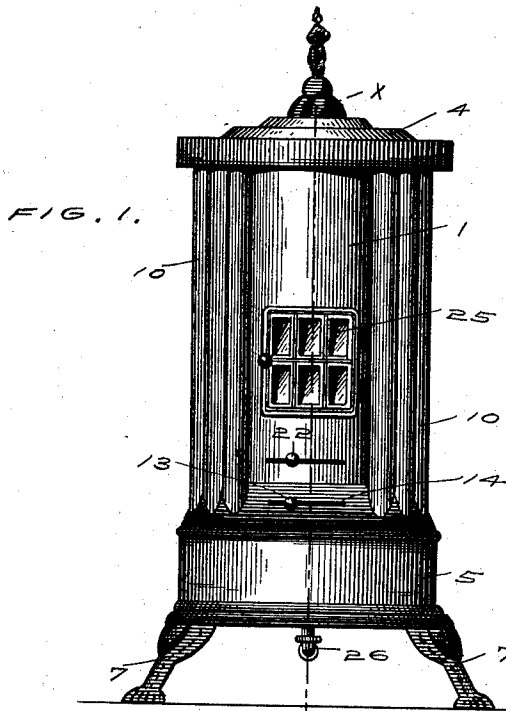


FIG. 2.

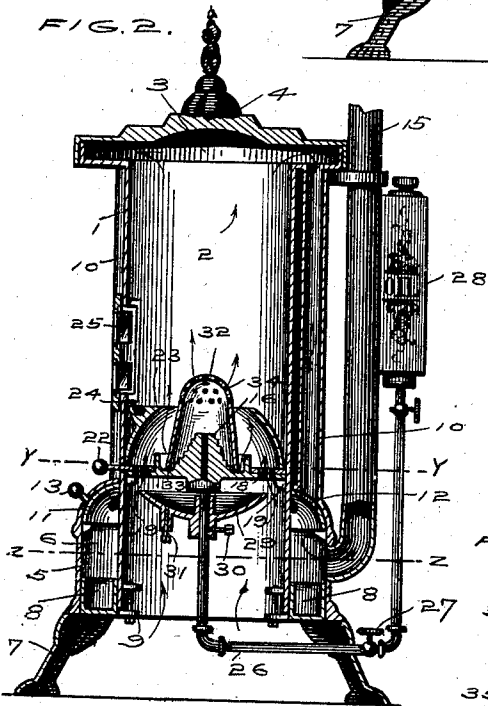


FIG. 3.

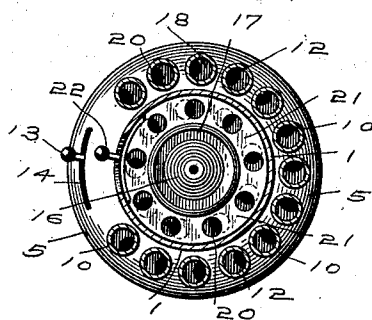


FIG. 4.

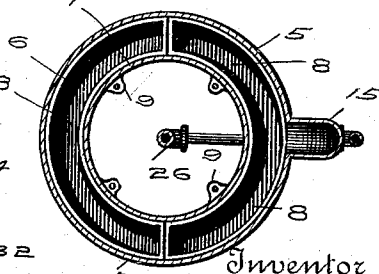
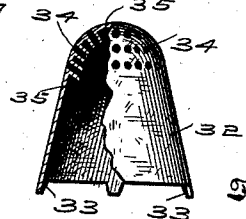


FIG. 5.



Witnesses

C. A. Adams.

James W. Redmon

Inventor

Fred L. McGahan

By his Attorney

H. W. Neely.

(No Model.)

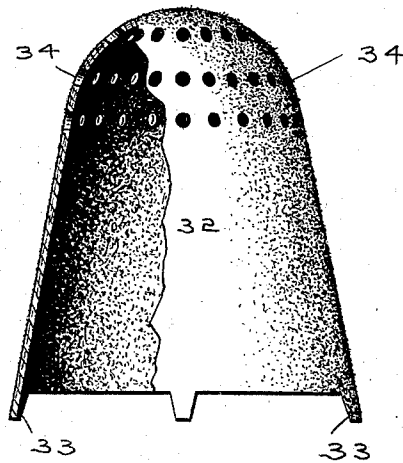
2 Sheets—Sheet 2.

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FIG. 5.



Witnesses

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—*—

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UNITED STATES PATENT OFFICE.

FRED L. MCGAHAN, OF INDIANAPOLIS, INDIANA.

PORTABLE OIL-STOVE.

SPECIFICATION forming part of Letters Patent No. 505,631, dated September 26, 1893.

Application filed December 2, 1892. Serial No. 453,905. (No model.)

To all whom it may concern:

Be it known that I, FRED 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 Portable Oil-Stoves; 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 a new and useful improvement in portable oil stoves, and it consists in the construction and arrangement of parts, as will be fully described in the following specification, and more particularly pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 is a front view of a stove embodying my improvement. Fig. 2 is a central vertical section of the same on the line X—X, Fig. 1. Fig. 3 is a cross section on the line Y—Y, Fig. 2, the burner shell and deflector being removed. Fig. 4 is a cross section on the line Z—Z, Fig. 2, and Fig. 5 is a detail view of a modified form of the burner shell partly in section. Fig. 6 is an enlarged view of the burner shell or hood.

In detail, (1) is the shell of the stove surrounding the combustion chamber (2), and is preferably of cylindrical shape, its lower end being open, and its upper end terminating in the overhanging chamber (3), which is closed by the removable cover or cap (4). At the base of the stove shell (1), and connected thereto, is the outer and larger shell (5) forming between the two the circular chamber (6), and suitable feet (7) support the whole.

The bottom of the chamber (6) is formed of two semi-circular pans (8), whose sides fit snugly between the outer and inner walls and are held in place by screw bolts, which work in the lugs (9) on the pans, and through similar lugs on the inside of the stove shell.

The two chambers (3 and 6) of the stove are connected together by the vertical pipes or flues (10), which serve as heat radiators, and at their outlets into the chamber (6) is a

circular damper (11) having openings (12) which are adapted to be brought into line with the flue openings by the knob (13) attached to the damper and working through the slot (14) in the stove shell.

(15) is the stove chimney, and is connected with the circular chamber (6), and may either lead to a suitable flue or be cut off and open into the room at a point a little higher than the top of the stove.

(16) is a hollow burner which may be of any ordinary form or construction, the one shown in the drawings being a conical shape, and has a series of grooves or channels surrounding it and a larger one (17) in the base. It also has its outwardly projecting flange (18), which rests on lugs (19) connected to the inside of the stove shell at any desired point, the flange having the draft openings (20).

(21) is a circular damper having similar openings and rests on the burner flange, (22) being its knob or handle, which works in a slot in the stove shell, so that it may be moved from the outside. It is not necessary that the flange 18 be formed integral with the burner, as the latter may be as well supported from below, the way shown being, however, the most simple.

(23) is a circular deflector having a constricted top, and rests either on the damper (21) outside of its openings, or may be supported above it, and it has the projection (24) with a hole therein, so that the deflector may be lifted up with an ordinary stove lid lifter through the door (25) of the stove for lighting the burner.

(32) is a conical hood or shell formed of asbestos or mineral wool pressed into shape, and preferably has feet (33) which rest in the channeled base of the burner, and its top, and a part of the sides, have perforations (34) which may, if desired, have the inturned rims (35) around their edges, as shown in the modification in Fig. 5.

To the under side of the burner (16) is connected the feed pipe (26) extending downward and to the outside of the stove, where it is provided with a regulating valve (27), and is then carried up and connected to an oil tank (28) attached to the stove chimney (15) by metal bands, and holds a quantity of non-

explosive oil, which is usually burned in stoves of this class.

(29) is an overflow pan centrally connected to the feed pipe (26) just below the burner by a set screw (30), and is provided with the opening (31) closed by a screw plug, so that when the pan is filled by overflow from the burner it may be easily emptied into any suitable vessel and be returned to the oil tank.

The operation of my stove is as follows: The valves in the oil supply pipe being open, the oil flows up into the burner, and, being lighted, the blaze escapes from below the edges of the burner shell and through its perforations, it being retarded by its passage through the shell, and, when heated, the shell is practically an incandescent furnace where the products of combustion, such as carbon, are consumed, leaving the flame free from these and pure. At the same time it serves as a radiator and throws its heat throughout the stove, while the flame is carried by the draft up to the top of the stove and down through the vertical radiating flues (10) into the chamber (6) before it reaches the stove chimney, and nothing but heat will escape from the top of the same into the room. At the same time the heat that is passing through the vertical stove flues heating them, is radiated into the room, heating the same.

It will be understood that in using my stove where the chimney is not connected to a flue, the flame must be regulated by the valves in the supply pipe, and also by the draft dampers (11) and (21) within the stove, for, as in an ordinary coal oil lamp, when too much oil is supplied to the burner, there will be more carbon than the flame can consume before it escapes from the chimney, but when the chimney is connected with a flue a much greater heat is obtained, but a larger quantity of oil is consumed, and much heat is lost up the chimney, as is the case with all oil stoves where they are connected with flues. On the other hand, when my stove is not connected with a flue, a slow and steady flame is kept up, and as none of the heat is wasted, a stove can be more economically run, and is of great benefit in rooms where there are no flues, and for street car and vehicle purposes. Should any soot or dirt be thrown out by the flame, caused by an overflow of oil, it will be deposited through the heating flues into the pans forming the

bottom of the chamber (6), and as the pans are removed the stove can be readily cleaned. 55

Having fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In an oil stove, a combustion chamber open at its base, an outer chamber surrounding the lower part of the same, vertical flues connecting the top of the combustion chamber with the chamber below, a chimney leading from the latter, and a damper within the base chamber for regulating the draft through the flues, all substantially as set forth. 60 65

2. An oil stove having a burner centrally supported therein, a plate having draft openings therein surrounding the base of such burner, a movable ring resting on the same having similar openings adapted to register with the first, a conical hood supported above such burner, and a deflector having an open contracted top supported around such hood, substantially as set forth. 70 75

3. An oil stove having a central combustion chamber, an upper chamber or enlargement connected by flues with a circular chamber surrounding the stove base, said base chamber connected with a chimney opening into the room, a damper within said base chamber for regulating the draft through the flues, and a circular damper supported around a burner within the stove for regulating the draft within the combustion chamber, substantially as set forth. 80 85

4. An oil stove provided with a combustion chamber, enlarged at its top and connected by flues to a circular base chamber, a circular damper within said base chamber for regulating the draft through the flues and a chimney leading therefrom, a burner suitably supported within the combustion chamber a flanged plate with openings therein supported around such burner, a circular damper resting on said flange and having similar openings, a conical perforated shell or hood supported over the burner, and a deflector supported around the burner, substantially as set forth. 90 95 100

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

FRED L. MCGAHAN.

Witnesses:

H. D. NEALY,
JAMES W. REDMON.