J. M. JOHNSON & G. W. NOBLE.

STOVE.

APPLICATION FILED JUNE 26, 1908.

941,321.

Patented Nov. 23, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

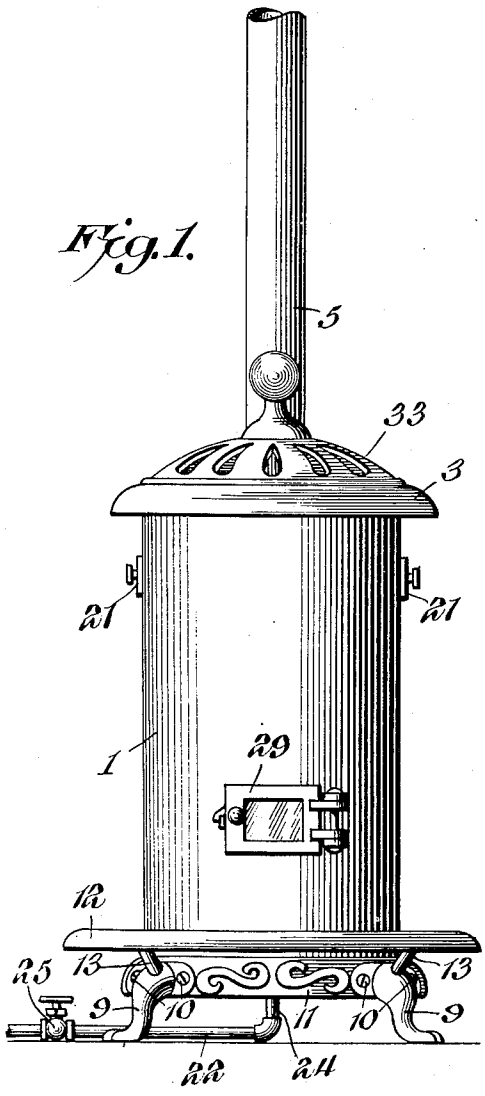
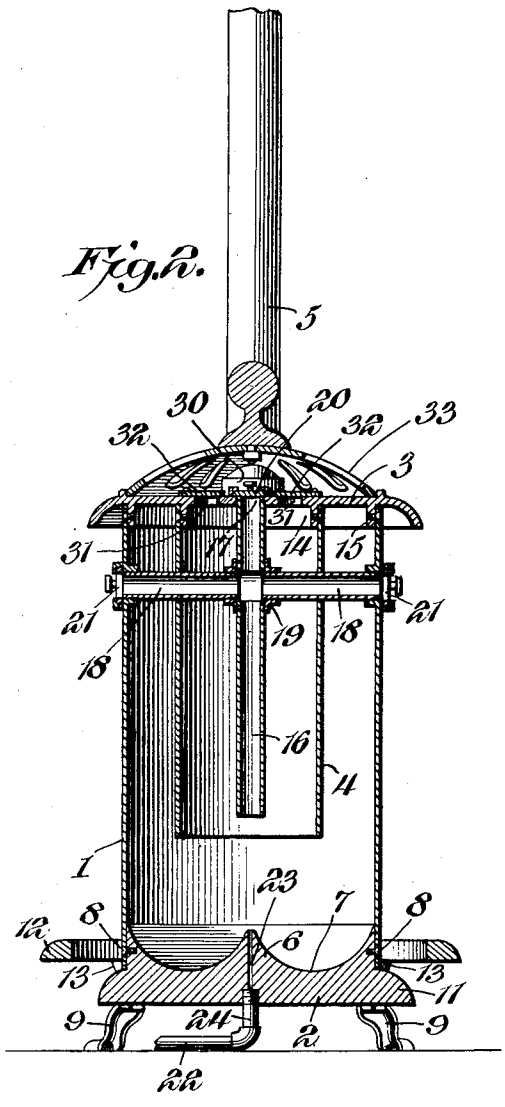


Fig. 2.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

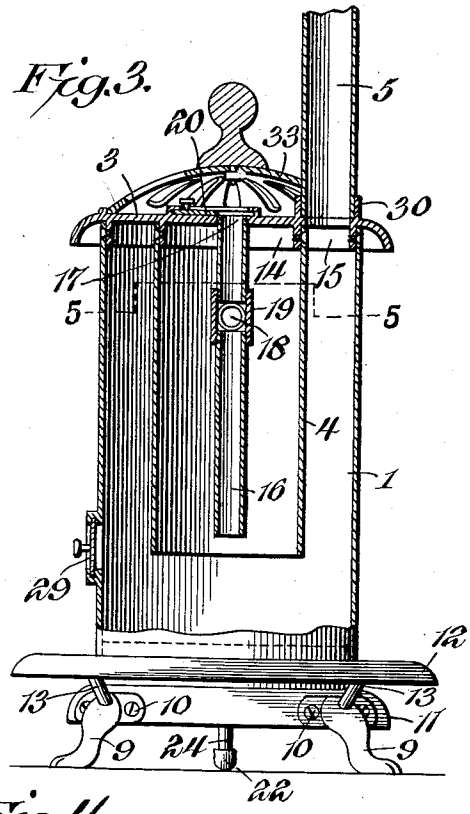


Fig. 6.

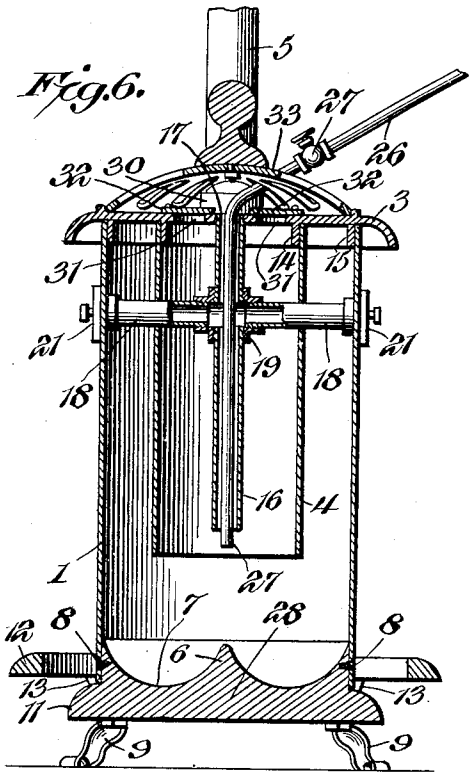


Fig. 4.

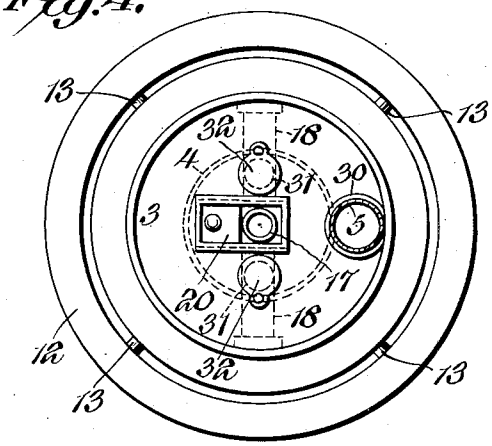
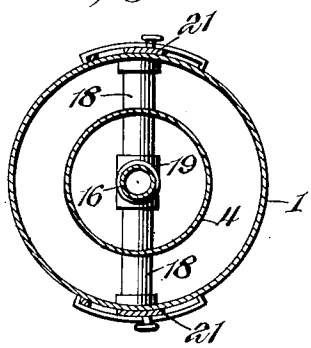


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOHN M. JOHNSON AND GUY W. NOBLE, OF BELLEVILLE, KANSAS.

STOVE.

941,321. Specification of Letters Patent. Patented Nov. 23, 1909.

Application filed June 26, 1908. Serial No. 440,486.

To all whom it may concern:

Be it known that we, JOHN M. JOHNSON and GUY W. NOBLE, citizens of the United States, residing at Belleville, in the county of Republic and State of Kansas, have invented a new and useful Stove, of which the following is a specification.

The invention relates to improvements in stoves.

The object of the present invention is to improve the construction of stoves, and to provide a simple and comparatively inexpensive one, designed for burning crude oil, and adapted to afford a uniform heat with great economy.

A further object of the invention is to provide a clean odorless crude oil burning stove of this character, in which the soot will be intercepted before it reaches the smoke pipe, and from which the soot may be easily removed.

With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:—Figure 1 is an elevation of a crude oil burning stove, constructed in accordance with this invention. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a vertical sectional view, taken at right angles to Fig. 2. Fig. 4 is a plan view of the stove, the cap being removed. Fig. 5 is a horizontal sectional view, taken substantially on the line 5—5 of Fig. 3. Fig. 6 is a vertical sectional view, illustrating a modification of the invention.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

The stove comprises in its construction an outer cylindrical shell 1, a bottom 2, a top 3, and an inner cylindrical shell 4, depending from the top of the stove and adapted to spread and throw the flame outward for causing the same to impinge against the outer shell or casing of the stove, and capable also of intercepting and collecting the soot to prevent the latter from fouling the stove pipe 5. The bottom of the stove, which consists preferably of a casting of iron, or other suitable metal, constitutes a burner, and is provided with a central upwardly extending tapered or conical portion 6, and it has an annular groove or depression 7, surrounding the central tapered portion. The annular groove or depression is approximately semi-circular in cross section, and the central tapered portion acts as a spreader and is adapted to distribute the crude oil uniformly to the different portions of the bottom of the stove. The central tapered or conical portion is formed by the annular groove or depression, and the outer walls of the same extend upwardly to a point slightly above the apex of the central portion. The bottom 2 of the stove fits within and is secured by screws 8, or other suitable fastening devices to the lower end of the outer shell or casing 1, an air tight joint being provided. The outer shell forms a combustion chamber and the stove is preferably supported by legs 9, which are secured by screws 10, or other suitable fastening devices to the side faces of the bottom at points below the lower end of the outer shell or casing. The lower portion of the bottom is enlarged to extend beyond the outer shell or casing, which rests upon such extension or enlargement 11. The base of the stove is also preferably equipped with a ring 12, connected by arms 13 with the legs 9, but any design of p! in or ornamental trimmings may be employed, as will be readily understood.

The top of the stove is provided with inner and outer depending annular flanges 14 and 15, to which are secured by screws, or other suitable fastening devices, the upper ends of the inner and outer shells or casings, air tight joints being also provided at the top of the stove. The inner shell or casing 4, which is concentric with the outer shell or casing depends from the top and terminates short of the bottom or burner, and the distance between the lower end of the shell or casing and the bottom or burner of the stove may be varied with the size of the latter. The crude oil is ignited upon the bottom or burner of the stove, and the flames passing upward impinge against the outer shell or casing and a uniform heat is thereby secured

The stove is equipped with a vertical

draft pipe 16, piercing the top of the stove and having an upper threaded end 17, which is screwed into a threaded opening of the top 3. The draft pipe is provided with horizontal branches 18, spanning the combustion chamber of the stove and piercing the inner and outer shells and having their outer ends secured in openings in the outer shell and connected at their inner ends with the vertical pipe 16 by a suitable coupling 19. A three-way draft connections is thus provided, and the vertical pipe is preferably made in upper and lower sections, as shown, but any other construction may be employed, as will be readily understood. The draft is controlled by top and side dampers 20 and 21, slidably arranged in suitable guides and adapted to regulate the draft by varying the size of the exposed portions of the ends of the draft pipe.

The fuel may be supplied to the stove in a variety of ways. In Figs. 1 to 5 inclusive of the drawings, a feed pipe 22 is connected with the bottom 2 of the stome, which is provided with a central perforation 23, forming a passage for the oil, which may be forced into the stove by either air pressure or gravity. The feed pipe is provided with an upwardly extending branch or portion 24, which is screwed into an enlargement of the lower portion of the passage 23. The feed pipe is also equipped with a valve 25 for controlling the flow of fuel.

In Fig. 6 of the drawings the feed pipe 26 extends through the vertical draft pipe and terminates at a point above the center of the bottom of the stove. The feed pipe 26 is equipped with a suitable valve 27, and the bottom 28 of the stove is imperforate. The feed pipe may, however, pierce the side of the stove, and the crude oil may be piped from the exterior of a building if desired.

In starting the stove a piece of lighted paper is placed upon the bottom and the crude oil is fed into the stove and is ignited by the flame of the burning paper. As soon as the crude oil is lighted, the continued feed of fuel will maintain a constant blaze within the stove and the degree of heat may be controlled by varying the flow of the oil.

The stove is equipped at the front with a hinged door 29, having a transparent portion of isinglass, or other suitable material and adapted to afford access to the burner of the stove. The stove pipe is connected with a suitable collar or flange 30, surrounding an opening communicating with the space between the inner and outer shells and preferably located at the back of the stove. Any soot accumulating within the stove may be conveniently removed through covered clean-out openings 31. The clean-out openings are formed in the top of the stove and are located over the space inclosed by the inner shell or casing, and the covers 32 for the clean-out openings may be slidably mounted in ways, or constructed in any other preferred manner.

The stove is designed to be equipped with a plain or ornamental cap 33 of any preferred design, removably arranged upon the top of the stove. The cap is removed to afford access to the clean-out openings and the damper for controlling the draft through the vertical draft pipe.

Having thus fully described our invention, what we claim as new and desire to secure by Letters Patent, is:—

1. A stove of the class described including a bottom constituting a burner, an outer shell secured to the said bottom and forming a combustion chamber, a stove top to which the outer shell is secured, an inner shell secured to and depending from the top of the stove and spaced from the outer shell and terminating short of the said bottom, a vertical draft pipe located within the inner shell and communicating at its upper end with the outside air and provided at a point intermediate of its ends with horizontal branch pipes piercing the inner and outer shells and spanning the combustion chamber, and a smoke pipe connected with the stove at the top of the intervening space between the inner and outer shells.

2. A stove of the class described including a bottom constituting a burner, an outer shell secured to the said bottom and forming a combustion chamber, a stove top to which the outer shell is secured, an inner shell secured to and depending from the top of the stove and spaced from the outer shell and terminating short of the said bottom, a vertical draft pipe located within the inner shell and communicating at its upper end with the outside air and provided at a point intermediate of its ends with horizontal branch pipes piercing the inner and outer shells and spanning the combustion chamber, said draft pipe being secured to the stove top and the latter being provided between the vertical draft pipe and the inner shell with clean-out openings, covers for the said openings, and a smoke pipe connected with the stove and communicating with the intervening space between the inner and outer shells at the top thereof.

3. A stove of the class described including a solid casting forming a burner and constituting the bottom of the stove and provided with a central upwardly extending tapered portion and having a groove surrounding the same, an outer shell secured to the said casting and forming a combustion chamber, a stove top to which the outer shell is secured, an inner shell secured to and depending from the stove top and spaced from the outer shell and terminating short of the said casting, a vertical draft pipe located within the inner shell and communicating at

the top with the outside air and secured to and depending from the stove top, the latter being also provided between the draft pipe and the inner shell with clean-out openings, covers for the said openings, a smoke pipe connected with the stove and communicating with the top of the intervening space between the inner and outer shells, and a fuel supply pipe extending through the draft pipe and located above the central tapered portion of the casting.

4. A stove of the class described including a solid casting forming a burner and constituting the sole bottom of the stove and provided with a central upwardly extending inclined projection and having a groove surrounding the same and forming an outer inclined wall, a stove top, an outer shell secured to the casting beyond the groove by an air tight connection and also to the stove top, an inner shell open at the bottom and secured to and depending from the stove top and spaced from the outer shell and terminating short of the said casting, and a central vertically disposed draft pipe located within the inner shell and depending from the top of the stove and terminating short of the tapered projection, said draft pipe having lateral branches provided with dampers, which branches pierce the inner and outer shells and span the combustion chamber.

In testimony, that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses.

JOHN M. JOHNSON.
GUY W. NOBLE.

Witnesses for John M. Johnson:
B. T. WEAVER,
T. CARPENTER.
Witnesses for Guy W. Noble:
J. E. GRIEST,
R. D. BLAINE.