

W. McK. & R. W. BURNS.
OIL BURNER.
APPLICATION FILED JAN. 26, 1910.

1,008,783.

Patented Nov. 14, 1911.

2 SHEETS—SHEET 1.

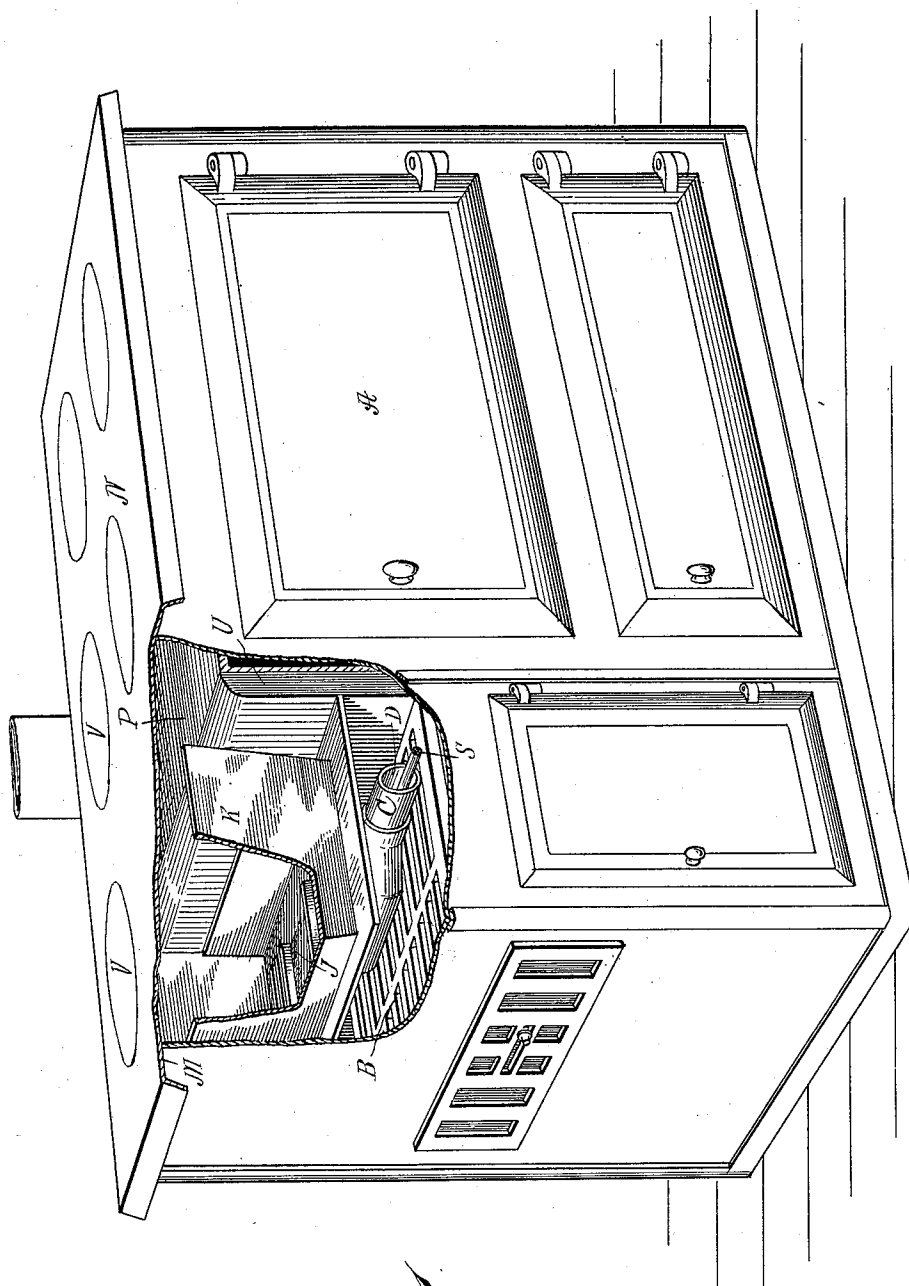


Fig. 1

WITNESSES:

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F. B. Foster

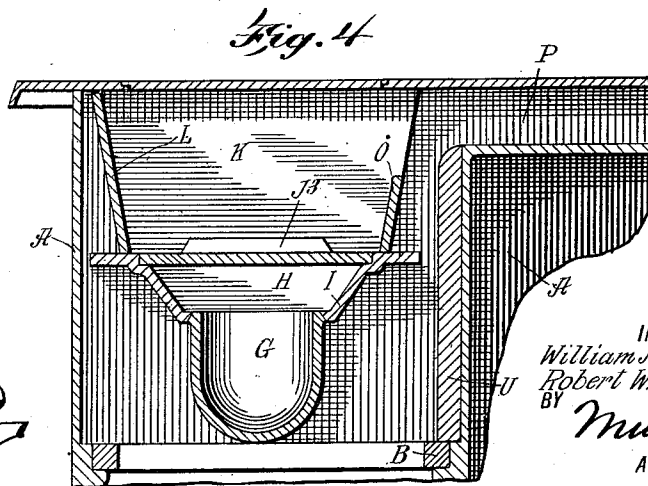
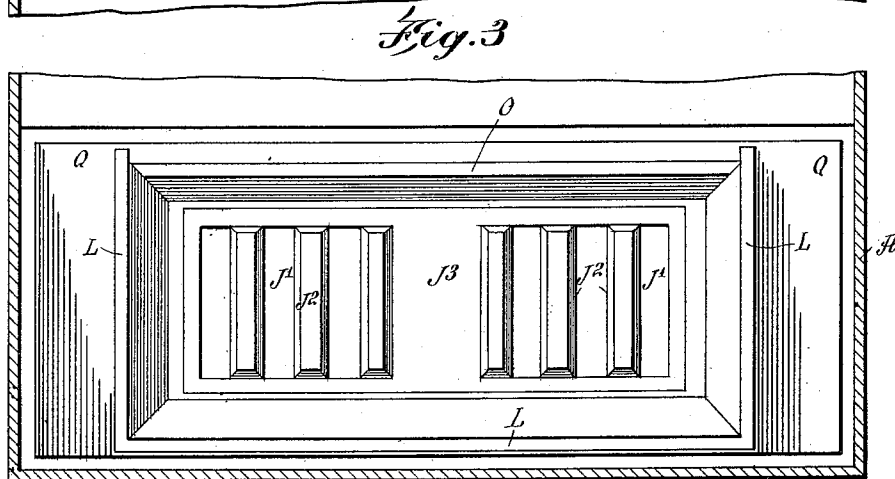
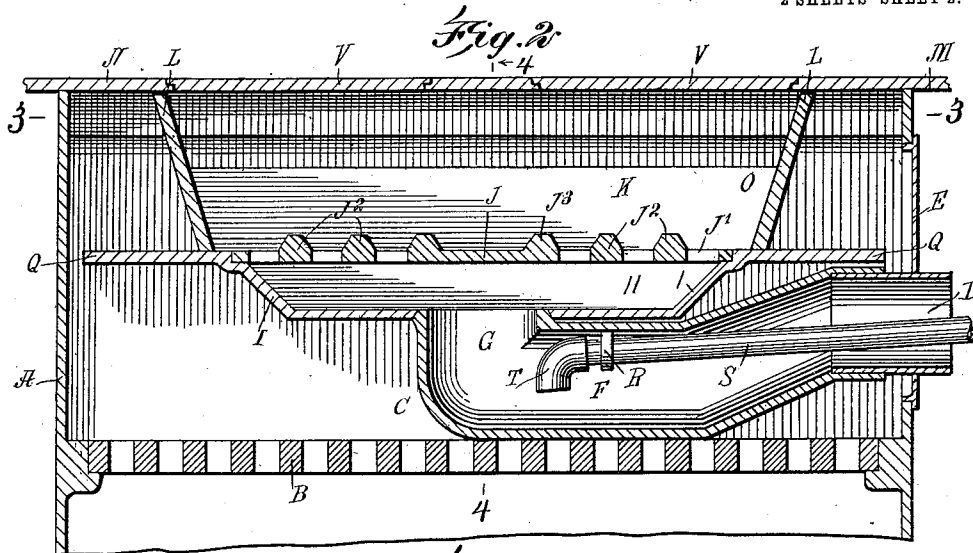
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2 SHEETS—SHEET 2.



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J. N. Smith
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William McK. Burns
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UNITED STATES PATENT OFFICE.

WILLIAM McK. BURNS, OF CONCORDIA, AND ROBERT W. BURNS, OF CHERRYVALE,
KANSAS.

OIL-BURNER.

1,008,783.

Specification of Letters Patent. Patented Nov. 14, 1911.

Application filed January 26, 1910. Serial No. 540,140.

To all whom it may concern:

Be it known that we, WILLIAM McK. BURNS, a resident of Concordia, in the county of Cloud and State of Kansas, and ROBERT W. BURNS, a resident of Cherryvale, in the county of Montgomery and State of Kansas, both citizens of the United States, have invented a new and Improved Oil-Burner, of which the following is a full, clear, and exact description.

The invention relates to oil burners, and has for an object to provide a burner adapted to use oil as fuel for heating.

A further object of our invention is to provide a burner having a combustion chamber adapted to receive oil therein, the said oil being ignited and diffused in a manner adapted to generate heat suitable for various purposes, as will be hereinafter more fully specified.

Our invention embodies a feed pipe inserted through an air chamber and terminating in a mixing chamber where oil flowing from the feed pipe is adapted to mix with air from the air chamber, and the said mixture is then passed into a combustion chamber where, by suitable ignition means, the resulting combustion produces heat which rises upwardly into a firebox and is then distributed to act on the various elements which are to be heated.

Our invention is particularly adapted for cooking or for heating rooms and the like, and can be readily secured in stoves originally designed for the use of coal as a fuel.

Our invention still further embodies certain novel features of construction as will be hereinafter more fully described and specified in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference denote corresponding parts in all the views, and in which—

Figure 1 is a perspective view of a stove equipped with our invention, parts of the stove and oil burner being broken away to show the underlying structure; Fig. 2 is a fragmentary sectional side view of the stove, showing the location and various chambers of the oil burner; Fig. 3 is a sectional plan view taken on the line 3—3 in Fig. 2, and Fig. 4 is a sectional view taken on the line 4—4 in Fig. 2, and showing the oil burner in sectional elevation.

In the fire pot of a stove A, of any preferred make, is disposed over a grate B, a conduit C. At the point D in the conduit C is an air inlet extending from the exterior of the stove A through a door E to the inside of the stove. The air inlet is preferably circular in shape and in the conduit adjacent the air inlet and at the point F a mixing space is formed. Adjacent the point F, or mixing space, a combustion space is provided at G and disposed over the combustion space is a firebox H extending transversely to the inner terminal of the conduit C and provided with angular sides I as will be seen in Fig. 2.

A partition J having apertures J' and suitable cross bars J² on both sides of a centrally disposed member J³, is disposed over the firebox H and forms a base for a heating chamber or oven K extending longitudinally to the firebox, over the same. The heating chamber K comprises angular sides L extending upwardly to within a distance of the underside M of the stove top N, with the exception of one side O, which extends upwardly only a short distance so as not to interfere with the draft flue P of the stove A. The partition J has portions Q extended from both ends of the partition J for the purpose of strengthening and more securely holding the partition J in place.

Depending from a bracket R, on the conduit C, is a feed pipe S, having an end T turned downwardly as will be clearly seen by referring to Fig. 2. The feed pipe S extends outwardly through the air inlet D and connects with a tank placed a distance from the stove A and adapted to contain fuel such as oil. It will be seen that the stove A is lined with suitable fireclay P and that the angular sides L of the heating chamber or oven K are slanted at a convenient angle so as not to interfere with the lids V of the stove A.

When it is desired to operate the burner, oil is permitted to drop into the conduit C at F, from the supply pipe S'. Here the oil fumes and air from the air inlet D combines to produce a rich inflammable mixture. Suitable igniting means, comprising for instance, a burning piece of oil soaked cotton held on one end of a long stick, is then extended through the air inlet D into the conduit C to the point F, where, coming into contact with the mixture of oil and air, the

said mixture combusts in the space G of the conduit, from which the flames produced rise into the firebox H and the heat generated is diffused by the partition J through the heating chamber K, thereby heating the contents of any vessels that may be placed on top of the stove A or set over the openings of the same in the top plate of the stove. By means of a suitable regulating cock or the like, the amount of oil fed into the conduit C from the oil supply pipe S, can be easily regulated and an even degree of heat can be maintained in the heating chamber K.

It will be expressly noted that our invention can be very readily placed in any well known stove, regardless of the nature of the fuel previously used in the stove and it will be understood that any suitable igniting means can be employed to initially ignite the oil in the conduit. It will be still further understood that we do not limit ourselves to the precise construction as shown in the drawings, the scope of our invention being fully defined in the appended claims.

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

1. The combination with a stove, of an oil burner therefor adapted to be inserted in the fire box of the stove and supported upon the grate thereof, said burner comprising a conduit resting upon the grate and leading out through one side of the stove, the inner end of the conduit extending upwardly, a feed pipe extending into the conduit and having a downwardly discharging inner end arranged adjacent to the upwardly extending inner end of the conduit, a burner fire box supported upon the conduit and into which the inner end of the conduit opens, said burner fire box having a top provided with openings on each side of the center thereof, and a heating chamber above the burner fire box and having its rear wall terminating short of the bottom of the flue of the stove, the other walls of the chamber extending to within a short distance of the top of the stove.

2. An oil burner for stoves, comprising a

conduit adapted to rest upon the grate of a stove with its outer end extending out through a side of the stove, a feed pipe extending into the conduit and having a downwardly discharging end arranged adjacent to the inner end of the conduit, a fire box supported upon the inner end of the conduit and into which the said conduit opens, said fire box having a top provided with openings on each side of the center thereof, and a heating chamber, the bottom of which is formed by the top of the fire box, the heating chamber having one of its walls of less height than the others.

3. An oil burner for stoves, comprising a conduit having an upwardly extending inner end and adapted to rest on the grate of a stove, a feed pipe extending into the conduit and having its inner end arranged adjacent to the upwardly extending inner end of the conduit, and a fire box supported upon the said inner end of the conduit, and into which the said conduit opens, said fire box having a top provided with openings on each side of the center thereof.

4. An oil burner for stoves, comprising a boxlike structure open at the top and having an apertured partition dividing it into a fire box and a heating chamber, a conduit upon which the structure is supported, having an upwardly extending inner end opening into the fire box of said structure, and a feed pipe extending into the conduit, the whole being adapted to be placed in a stove with the conduit resting upon the grate thereof.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM McK. BURNS.

Witnesses:

IRA MAHAFFEY,
S. C. MOORE.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ROBERT W. BURNS.

Witnesses:

C. W. VANCE,
C. W. HART.