

2. In a spring construction, a main frame, supporting wires, springs mounted upon the supporting wires, clips connecting pairs of the supporting wires to the frame, said clips having tongues, an auxiliary frame having engagement with the innermost springs of the construction, and means held upon said clips by the tongues of the latter to yieldably support the auxiliary frame.

3. In a spring construction, upper and lower edge wires, supporting wires, springs mounted upon the supporting wires, clips connecting the supporting wires and the lower edge wire, an auxiliary frame mounted between the upper and lower edge wires and having connection with the innermost springs intermediate the ends of the latter, and means mounted upon the adjacent clips for engagement with the auxiliary frame to support the latter.

4. In a spring construction, upper and lower edge wires, supporting wires, springs mounted upon the supporting wires, clips connecting the supporting wires and the lower edge wire, an auxiliary frame mounted between the upper and lower edge wires and having connection with the innermost springs intermediate the ends of the latter, and yieldable elements mounted upon said clips and having slidable engagement with the auxiliary frame.

5. In a spring construction, a main frame including upper and lower edge wires, supporting wires, clips engaging pairs of supporting wires and the lower edge wire to support the former, the clips having tongues, an auxiliary frame having connection with the innermost springs and also having loops in its sides, springs each having parallel members lying upon corresponding clips and secured to the latter by means of said tongues, each of the last named springs also having an arm provided at its end with a loop for slidable engagement with the corresponding loop of the auxiliary frame.

6. A clip for spring construction work comprising a body having its sides cut away and also having laterally directed pairs of fingers at each end of said cut away portions and a finger adjacent one pair of the

aforesaid fingers, the material of the body being struck up to provide tongues.

7. A clip for spring construction work comprising a body provided with cut away portions and a series of laterally directed fingers and also provided with a series of tongues struck up from the body.

8. A clip for spring construction work comprising a substantially elongated body provided at one end with a pair of fingers and at its opposite end with a single finger and also provided with a second pair of fingers intermediate the aforesaid pair of fingers and said single finger.

9. A clip for spring construction work comprising a substantially elongated body provided at one end with a pair of fingers and at its opposite end with a single finger and also provided with a second pair of fingers intermediate the aforesaid pair of fingers and said single finger, the said clip also having a series of tongues intermediate its edges struck up therefrom.

10. A clip for spring construction work comprising a body provided at each end with laterally directed offset fingers and at one end having a finger between the offset fingers at such end and arranged at a right angle to the offset fingers.

11. In a spring construction, a main frame, springs mounted in the main frame, an auxiliary frame in the main frame and having laterally directed projecting portions, and auxiliary springs having engagement with said projecting portions of the auxiliary frame and adapted to yieldably support the latter.

12. A clip comprising a body provided at each end with a pair of laterally directed fingers, one end having a third finger, the body of the clip having tongues struck up therefrom with one tongue directed longitudinally of the clip and the other tongue directed substantially transversely thereof.

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

JOHN H. SNUGGS.

Witnesses:

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OIL BURNER.

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2 SHEETS—SHEET 2.

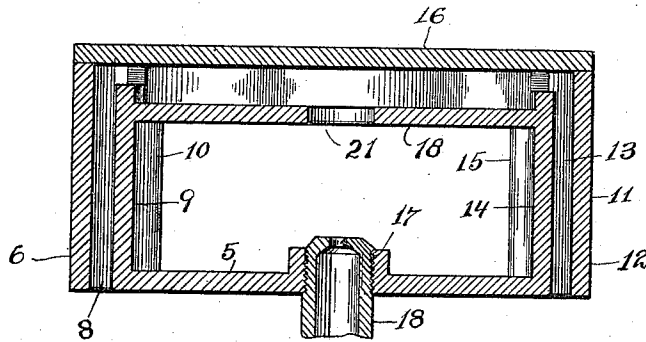


Fig. 3.

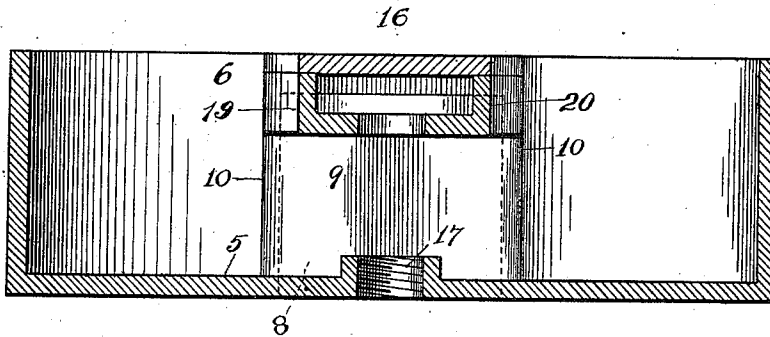


Fig. 4.

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OIL-BURNER.

976,105.

Specification of Letters Patent. Patented Nov. 15, 1910.

Application filed May 21, 1910. Serial No. 562,620.

To all whom it may concern:

Be it known that I, WILLIAM A. STEPHENS, a citizen of the United States, residing at Lawton, in the county of Comanche and State of Oklahoma, have invented new and useful Improvements in Oil-Burners, of which the following is a specification.

This invention relates to improvements in crude oil burners and more particularly to the type applied to an ordinary cook stove or range.

One object of the invention is the provision of a burner having oppositely positioned air ducts, communicating at one end with the exterior of the burner and at their opposite ends with the combustion space of the burner.

Another object is the provision of a burner provided with oppositely positioned air ducts, a combustion space located between said air ducts, and a deflector overlying the combustion space.

With these and other objects in view, which will more fully hereinafter appear, the present invention consists in certain novel details of construction and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings, and more particularly pointed out in the appended claims; it being understood that various changes in the form, proportion, size, and minor details of the device may be made, within the scope of the appended claims, without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, forming part of the specification:—Figure 1 is a rear elevation of the device. Fig. 2 is a plan view of the same. Fig. 3 is a transverse sectional view on the line 3—3 of Fig. 2. Fig. 4 is a longitudinal sectional view on the line 4—4 of Fig. 2.

Similar numerals of reference are employed to designate corresponding parts throughout.

The device includes in its construction a pan the said pan comprising a bottom 5 substantially semi-circular in contour and of a size to be readily inserted through the side door of an ordinary cook stove or range and into the firebox thereof. Rising from the curved side of the bottom 5 is a side wall 6, and rising from the straight side of the bottom 5 are side walls 7 and 7', which are con-

siderably less in height than the side wall 6 and having their outer ends cast integral or otherwise secured to the opposite ends of the side wall 6. Formed in the bottom 5 and adjacent to the medial portion of the curved side wall 6 is an oblong opening 8, and rising from the inner side of this opening is a wall 9 of less height than the side wall 6, connection between the opposite ends of the wall 9 and side wall 6 being established by means of end walls 10 the upper edges of the said end walls 10 extending a trifle above the plane of the upper edge of the side wall 9. With this construction it will be manifest that a duct is provided through which air may pass from below the grate of the stove through the opening 8.

The bottom 5 is bulged outwardly between the side walls 7 and 7' as shown at 11, and rising from the edge of this bulged portion is a wall 12, the upper edge of which is in a plane slightly below the upper edge of the side wall 6, and the opposite ends of which are cast integral or otherwise secured with the inner ends of the side walls 7 and 7'. Formed in the bulged portion of the bottom 5 is a curved opening 13, and rising from the inner side of the curved opening is a wall 14 corresponding in height to the height of the wall 9, connection between the said wall and wall 12 being established by means of end walls 15, the upper edges of which extend a trifle above the plane of the upper edge of the wall 14. With this construction it will be manifest that a second pocket is provided.

By reference now to Figs. 3 and 4 it will be seen that connecting the upper end portions of the walls 9 and 14, is a horizontally disposed plate 18. The opposite sides of this plate are provided with upwardly extending portions 19 and 20, the upper edges of said upwardly extending portions lying in a plane with the upper edges of the end walls 10 and 15. The plate 18 is provided with a centrally disposed opening 21 through which air may pass upwardly and over the wall 14 and into the space between the walls 14 and 9. The space between the walls 14 and 9 will subsequently be termed the mixing space, and cast integral or otherwise secured to the upper edges of the wall 12 and side wall 6 are the opposite ends of a deflector plate 16 corresponding in width to the distance between the end walls 10 and

15 of the ducts. Formed in the bottom 5
and between the ducts just described is an
opening 17, through which passes the end
portion of an oil supply pipe 18. It will
5 be manifest when the device is positioned in
the fire-box of a stove or the like and oil
passed through the pipe 18 and into the pan
that sufficient air will pass through the ducts
and into the mixing space to combine with
10 the oil when ignited to support proper com-
bustion. It will be seen that the rising
flame will be deflected by the plate 16 and
flare outwardly and upwardly, the action of
the flame producing a draw through the
15 ducts thus insuring a sufficient quantity of
air to pass into the mixing space. It will
be seen that the side walls 7 and 7' rising as
they do, a short distance above the bottom
5 will provide guards to prevent uncon-
20 sumed oil from flowing from the pan.

From the foregoing, it is evident that I
have provided a device which is compara-
tively simple in structure and inexpensive
in manufacture, embodying few parts and
25 these so arranged that the danger of de-
rangement will be reduced to a minimum.

I claim:—

1. An oil burner comprising a pan includ-
ing a substantially semi-circular-shaped bot-
30 tom, a side wall rising from the curved side
of the bottom, a pair of side walls rising
from the straight side of the bottom, the

second-named side walls being of less height
than the curved side wall and having their
opposite ends secured to the opposite ends 35
of the said curved side wall, an oil supply
pipe opening through the said bottom, and
oppositely positioned air ducts opening at
one end through the bottom of the pan and
their opposite ends leading to the space sur- 40
rounding the oil supply pipe.

2. An oil burner comprising a pan in-
cluding a substantially semi-circular-shaped
bottom, a side wall rising from the curved
side of the bottom, a pair of side walls ris- 45
ing from the straight side of the bottom,
the second-named side walls being of less
height than the curved side wall and having
their opposite ends secured to the opposite
ends of the said curved side wall, an oil sup- 50
ply pipe opening through the said bottom,
oppositely positioned air ducts opening at
one end through the bottom of the pan and
their opposite ends leading to the space sur-
rounding the oil supply pipe, and a de- 55
flector positioned above the air ducts and
over the space surrounding the oil supply
pipe.

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

WILLIAM A. STEPHENS.

Witnesses:

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E. J. LIVERMORE.