E. G. L. GREGSON.

CRUDE OIL BURNER.

APPLICATION FILED JAN. 19, 1910.

976,358. Patented Nov. 22, 1910.

Fig. 1.

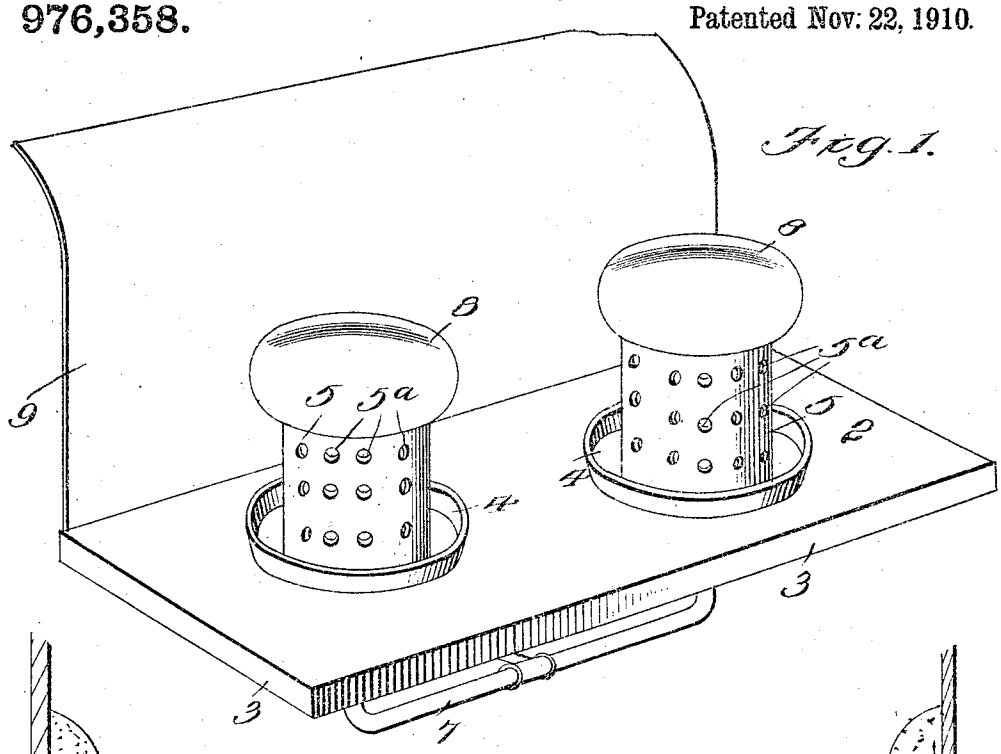


Fig. 2.

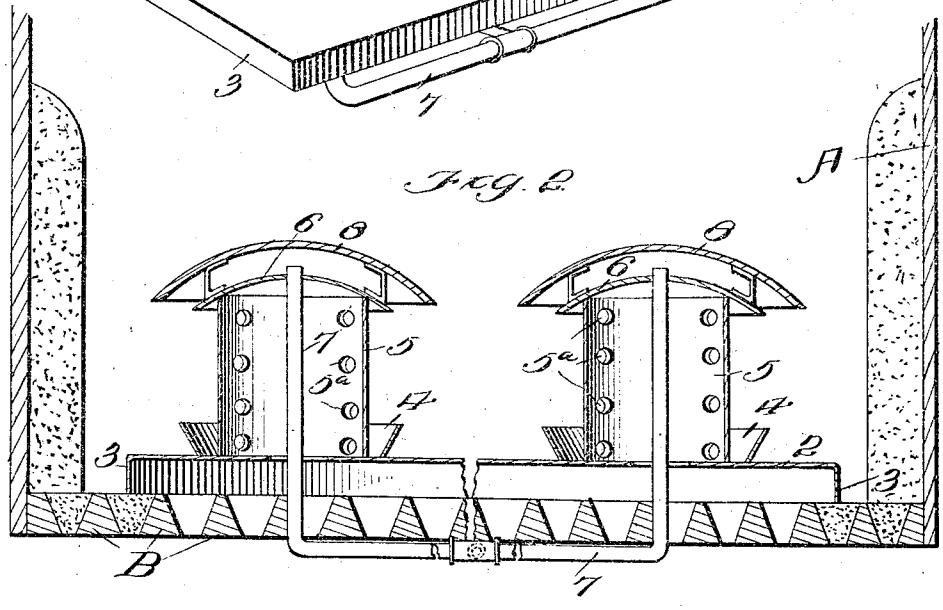
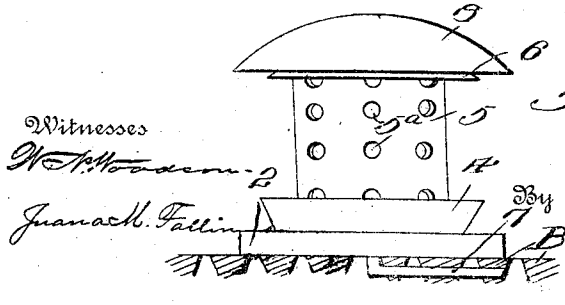


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

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CRUDE-OIL BURNER.

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To all whom it may concern:

Be it known that I, EMILY G. L. GREGSON, citizen of the United States, residing at Fort Worth, in the county of Tarrant and State of Texas, have invented certain new and useful Improvements in Crude-Oil Burners, of which the following is a specification.

My invention relates to certain new and useful improvements in burners for liquid and gaseous fuel, and the invention has for its object the provision of a relatively simple, cheap and effective burner which is adapted to burn crude petroleum or other like oils, the object of the invention being to provide a burner of this character, wherein an ample supply of air is furnished to the flame, to the end that all the oil may be consumed.

For a full understanding of the invention and the merits thereof, and to acquire a knowledge of the details of construction, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a perspective view of a double burner constructed in accordance with my invention; Fig. 2 is a vertical longitudinal section thereof; Fig. 3 is a side elevation of a single burner.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Referring to the figures, 2 designates a base of any desired size, but relatively large as compared with the burner, said base being provided with the downwardly turned marginal flanges 3. This base is adapted to rest upon the grate B of a stove A, the grate surface exterior to the base 2 being filled or covered with noncombustible material so that all the air which passes to the fire shall pass through that portion of the grate beneath the base 2.

Mounted upon the upper face of the base 2 are a plurality of burning troughs 4. In the drawing, these troughs have the form of shallow rings, but I of course do not wish to be limited to this particular shape. Inlet openings are formed in the base, these openings being disposed in the center of the troughs. Surrounding these openings are the upwardly extending air cylinders 5 which are perforated as at 5^a from top to bottom with a plurality of holes.

Mounted upon the upper end of each air cylinder 5, and closing the upper end of the same, is the concavo-convex distributing cap 6 which projects out beyond the air cylinder 5, but is of somewhat smaller diameter than the cup or trough 4. Passing up through the center of the air cylinder 5 and opening upon the apex of the cap 6, is the supply pipe 7 which is connected to any suitable oil supply tank, as is usual in burners of this character. The supply pipe 7 opens out upon the apex of the cap 6 so that oil welling up through the supply pipe will be evenly distributed around the cap and will flow downward to the edges thereof, and will thence drip into the troughs 4. As the oil flows downward over the surface of the conical cap 6, it will become heated, and coming into contact with the air flowing out from the openings in the cylinder 5, the oil will be heated and burned. The cup or trough 4 will catch any excess oil which will become eventually consumed.

Preferably mounted upon the upper face of the cap 6 is the hood 8 which is supported upon the cap 6 in any desired manner and acts to prevent the oil upon the upper surface of the conical cap from igniting. It also acts as a deflector, causing the flames to flare outwardly around the upper end of the burner, by reason of the fact that it is supported in parallel relation to the cap 6 and projects out slightly beyond the cap, though not below the lower margin thereof.

While I have shown a base 2 provided with two separate burners, I wish it understood that I may use one burner, as shown in Fig. 3, or a plurality of burners, as desired.

My construction is shown in Figs. 1 and 2 as adapted for use with a range having a rectangular fire box and a lower draft, but it is to be understood that where the burner is used in ordinary stoves having a front draft, a shield 9 is used which will direct the draft into the air cylinders, it being understood that that portion of the grate which is immediately beneath the outwardly curved portion of the shield is not filled with any filling material, thus permitting the air to be deflected downward through the grate by the shield so it will pass upward through the air tubes 5.

It will be seen that with the arrangement of the perforated air cylinders described, the oil pipe is kept relatively cool, that the oil is heated after leaving the pipe by contacting with the distributing cap, and that the air will pass out on all sides of the air cylin-

der so as to become thoroughly intermingled with the dripping oil and cause a thorough combustion of the liquid fuel.

While I have shown what I regard as the preferable form of my invention, I do not wish to be limited to the precise construction set forth, as it will be obvious that many changes might be made without departing from the spirit of the invention, and that the construction may be modified in many particulars to adapt it to different circumstances.

Having thus described the invention, what I claim is:—

1. A crude oil burner comprising a hollow base having downwardly extending marginal flanges, said base being open on its under side and adapted to rest upon a grate of a stove, said base being formed with an air inlet opening, an upwardly extending air-conducting pipe open at its lower end and surrounding said air inlet opening and supported on the hollow base, said pipe having a wall provided with a plurality of perforations, a distributing cap forming the upper end of the pipe and extending out beyond the same, the margin of the cap being downwardly depressed, a burning trough mounted on said base and surrounding the pipe, said trough being of greater diameter than the cap, and an oil supply pipe passing up through the base and air-conducting pipe and opening upon the apex of the distributing cap.

2. A crude oil burner including a base open on its inner side and adapted to rest upon a grate, said base being formed with an air inlet opening, a relatively large air supply pipe extending upward from the base and formed with a plurality of perforations, said pipe surrounding the air inlet opening, a concavo-convex distributing cap closing the upper end of the air pipe and projecting out beyond the same, a trough surrounding the pipe and of greater diameter than the distributing cap, a supply pipe passing up through the base and the air pipe, and opening on the apex of the cap, and a hood having a depending margin supported on the cap in substantially parallel relation thereto, the lower edge of the hood projecting out beyond the said trough.

3. A crude oil burner comprising a hollow base opening on its under side and adapted to rest on the grate of a stove, an upwardly extending air-conducting pipe on the hollow base, having a perforated wall, a distributing cap forming the upper end of the pipe and extending out beyond the same, a trough mounted upon the base and surrounding the pipe and of greater diameter than the distributing cap, an oil supply pipe passing up through the base and air-conducting pipe and opening upon the apex of the distributing cap, and a draft shield attached to the said base and extending above the distributing cap.

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

EMILY G. L. GREGSON. [L. S.]

Witnesses:
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