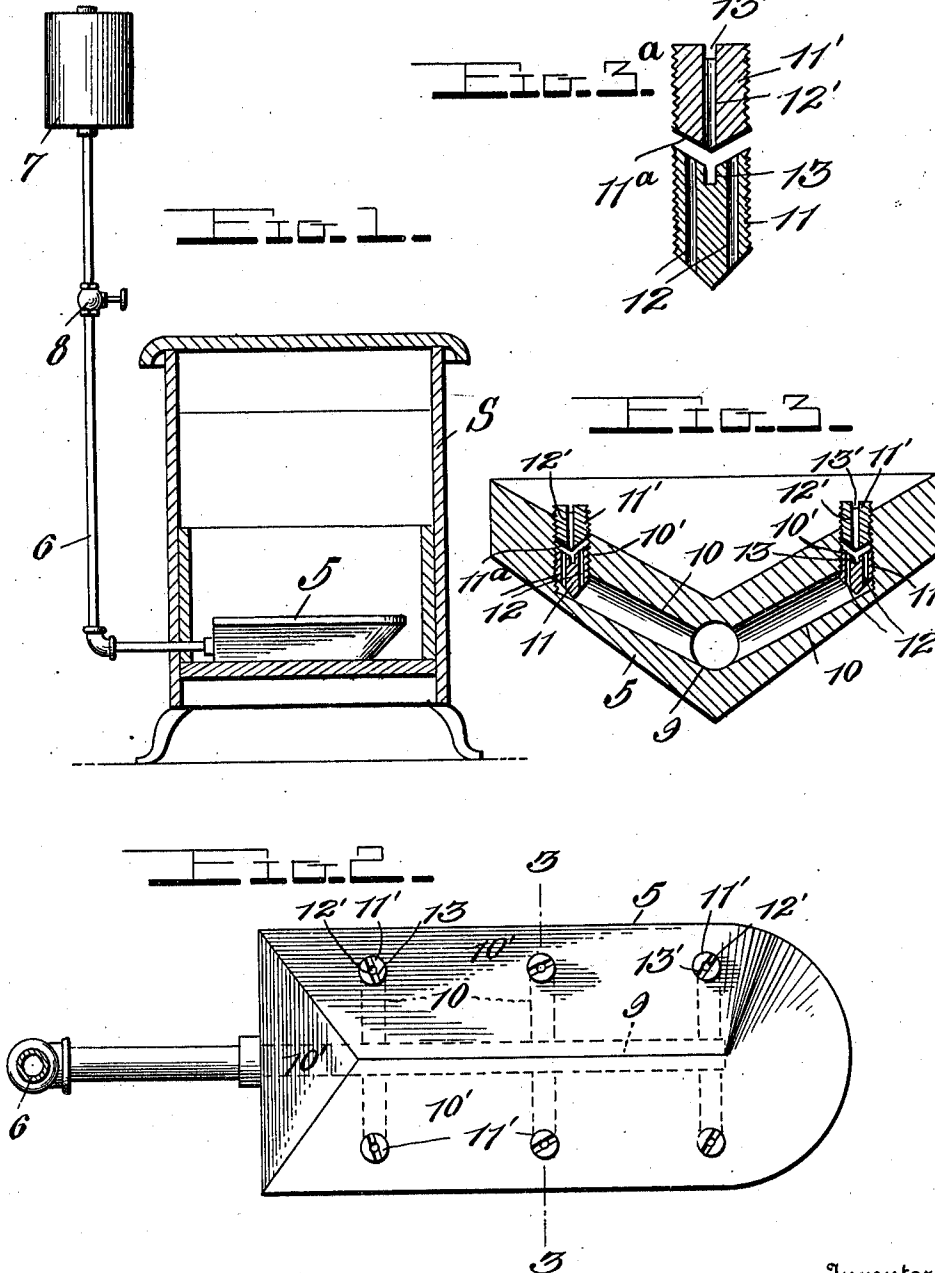


G. PONTBRIAND.
OIL BURNER.
APPLICATION FILED NOV. 21, 1910.

990,164.

Patented Apr. 18, 1911.

2 SHEETS-SHEET 1.



Witnesses
Chas. L. Griebauer.
W. F. Reeder.

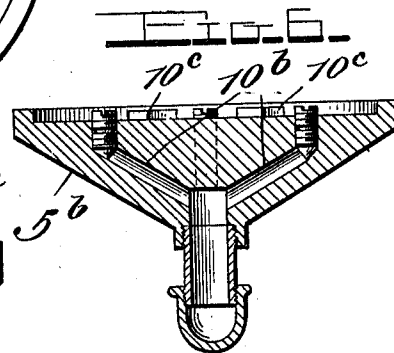
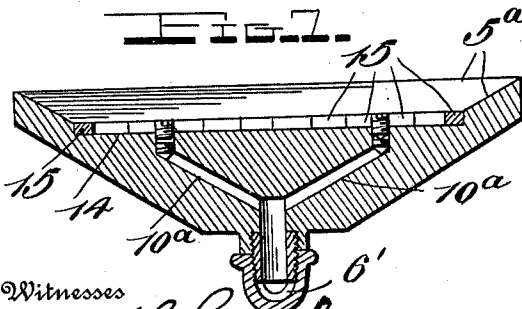
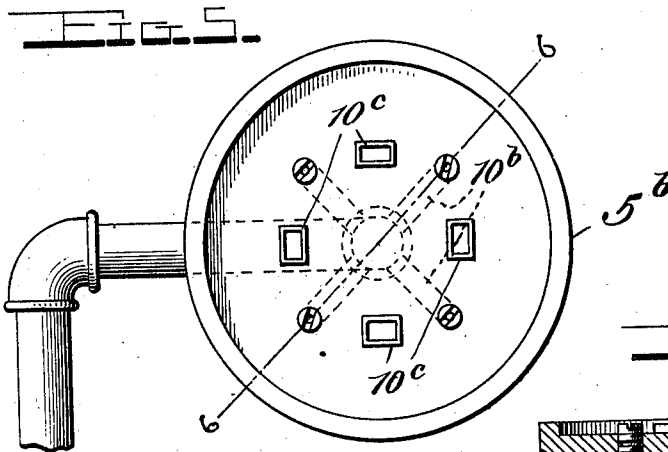
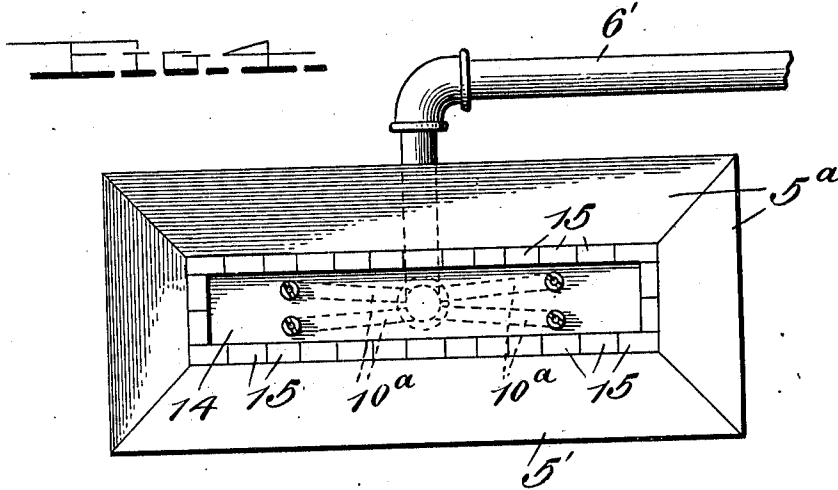
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 By *Watson E. Coleman,*
 Attorney

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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

GILBERT PONTBRIAND, OF WEST WARREN, MASSACHUSETTS.

OIL-BURNER.

990,164.

Specification of Letters Patent.

Patented Apr. 18, 1911.

Application filed November 21, 1910. Serial No. 593,524.

To all whom it may concern:

Be it known that I, GILBERT PONTBRIAND, a citizen of the United States, residing at West Warren, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Oil-Burners, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to improvements in crude oil or kerosene burners and has for its primary object to provide a device of this character of simple construction and one which is highly efficient in practical use, the same being capable of application to heating stoves of the various constructions at present in vogue.

A further object of the invention is to provide a crude oil burner having a very extensive area of heat generating surface, and means for easily and quickly regulating the supply of oil to the burner.

A still further object of the invention resides in the provision of a burner body adapted to be positioned in the fire box of a stove, said body having a main oil conducting channel, and a plurality of branch channels communicating therewith to supply the heating fluid evenly over the entire heat generating surface of said body.

With the above and other objects in view, the invention consists of the novel features of construction, combination and arrangement of parts hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal section through an oil stove illustrating one embodiment of the invention, showing the same arranged in the fire box of the stove; Fig. 2 is a top plan view of the burner; Fig. 3 is an enlarged section taken on the line 3—3 of Fig. 2; Fig. 3^a is an enlarged detail section of the valve; Fig. 4 is a plan view of a modified form of the burner; Fig. 5 is a top plan view of another modification; Fig. 6 is a section taken on the line 6—6 of Fig. 5. Fig. 7 is a longitudinal section of the modified form of the device shown in Fig. 4.

Referring in detail to the drawings S in-

dicates a cooking or heating stove of any well known form in which my improved oil burning device is adapted to be arranged. The burner 5 is positioned in the fire box of the stove as clearly shown in Fig. 1 and is of substantially rectangular form, though it will be understood that the burner body may be made circular or of any polygonal shape. The body 5 is transversely disposed in the fire box, and to the rear end thereof one end of a supply pipe 6 is connected, said pipe extending to an oil supply tank 7 and having arranged at a convenient point, a cut-off valve 8 by means of which the supply of oil to the burner may be controlled and regulated. The burner body 5 is formed with a main longitudinal channel 9 which is open at its rear end and into which the end of the supply pipe 6 is threaded. From reference to Fig. 3 of the drawings it will be observed that the top of the burner body inclines inwardly and downwardly from its longitudinal edges to the center thereof, and a plurality of transverse branch passages 10 open upon these inclined surfaces, as indicated at 10'. A sectional valve plug 11 is threaded into the ends 10' of the branch passages for regulating the outlet of the oil upon the trough-like upper surface of the burner body. The ends of the branch passages 10 are vertically disposed as shown in Fig. 3 and are threaded to receive the valve sections. The lower valve section is tapered at one end and is provided with the longitudinal oil passages 12. The other end of this valve section is provided with a conical seat and is centrally recessed as shown at 13 to receive the end of a screw driver whereby said section may be threaded into the vertical end portion of the passage 10. The other of the valve sections 11' is also formed with a conical end 11^a to engage upon the seat in the upper end of the lower section. This upper valve section is formed with a single central oil passage 12' and is also provided in its upper end with a recess 13' to receive the screw driver. The lower valve section is first threaded into the end of the passage 10 until its lower conical end engages with the wall of the transversely disposed portion

of said passage. The upper valve section 11' is then threaded into the opening 10' and its lower end disposed in spaced relation to the upper end of the lower valve section so as to regulate the flow of the oil through the passage 12'. It will be obvious that if this upper section 11' is threaded into the opening 10' so as to engage its lower end 11^a upon the seat formed in the upper end of the lower valve section, the flow of oil through said sections will be entirely cut off. In the operation of this form of the device, the oil flows from the tank 7 through the supply pipe 6 and into the longitudinal channel 9 of the burner body, from whence it passes through the several branch passages 10 and through the valve sections upon the inclined sides of the top of the burner. The oil is ignited and is contained in the trough formed by the inclined sides until it is entirely consumed. In this manner an extensive heat generating surface is secured with a minimum consumption of fuel.

In Fig. 4 I have illustrated a slightly modified construction in which the burner 5' is formed with the inclined boundary walls 5^a. These walls, however, do not extend to the center of the body as in the preferred form of my invention, but have their inner edges spaced, and the central portion of the body is deepened as shown at 14 to form an oil containing basin. The inner edges of the side walls 5^a of the body are lined with fire brick or asbestos 15. The oil supply pipe 6' extends beneath the body of the burner and upwardly through the center thereof. Oil passages 10^a extend from the opening in the burner body with which the supply pipe communicates, and have their ends vertically disposed and opening into the depressed central portion of the burner as previously described in connection with the preferred form of the device. By means of this last described construction, the burning oil is confined between the asbestos walls 15 and the heat which is generated is directed outwardly and upwardly by the inclined side walls 5^a of the burner.

In Figs. 5 and 6 a slightly different construction is shown wherein the burner body 5^b is of circular form in plan and is of cone-shaped form in cross section. The supply pipe extends beneath the burner body and is centrally threaded into the same. With this main supply port, a plurality of branch passages 10^b formed in the burner body, are connected, said passages opening upon the surface of the burner. Draft openings 10^c are provided between the oil outlet valves so that the flame will be divided and spread over as large an area as possible whereby a maximum of heating capacity is obtained. The edges of these openings are preferably

raised or provided with ribs to prevent oil flowing through the same. In each of the forms of the invention, the sectional valves 11 are employed whereby means are provided for easily and quickly regulating the flow of oil upon the heat generating surface of the burner.

From the foregoing it is believed that the construction and operation of my improved oil burner will be readily understood. The device is adapted for use in connection with heating or cooking stoves or furnaces of any of the various well known makes and will quickly heat the apartment or the stove at a very slight expense. The means for regulating the supply of oil for equal distribution throughout the heating area of the burner insures the highest heating capacity with a minimum consumption of fuel. It will be obvious that the device can be constructed at a very low cost. It is also highly durable and extremely efficient in practical use.

While I have shown and described the preferred construction and embodiments of my invention, it will be understood that the device is susceptible of still further modification without departing from the essential feature or sacrificing any of the advantages thereof.

Having thus described the invention what is claimed is:—

1. An oil burner comprising a body adapted to be arranged in the fire box of a stove, said body having a trough formed in its upper surface, said body having an oil inlet port, a supply pipe connected to said inlet port, said body also having a plurality of branch passages extending from said inlet port, the ends of said branch passages being vertically disposed and opening into the trough of the body, and a valve threaded into the end of each of said passages, said valve being formed in two relatively adjustable sections, the lower section having a plurality of ports therein, the upper valve section having a single port, said latter valve section being adapted for adjustment relative to the lower section to regulate the outlet of the oil.

2. An oil burner of the character described comprising a body adapted to be arranged in the fire box of a stove, said body being formed on its upper surface with inwardly and downwardly inclined walls to provide a longitudinally extending trough, said body also having a longitudinal oil conducting passage therein and a plurality of transverse branch passages communicating with said longitudinal passage, the ends of said branch passages being vertically disposed and opening upon the inclined walls of the top of the burner, a supply pipe ex-

tending from an oil supply tank and connected to one end of the longitudinal passage, and a sectional valve threaded into the vertically disposed end of each of the branch
5 passages, said valve sections being separately adjustable to regulate the outlet of the oil.

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

GILBERT PONTBRIAND.

Witnesses:

LEON DEMERS,
JOS. LALIBERTE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
