(No Model.)

A. H. RUSSELL.

PETROLEUM BURNER FOR STOVES.

No. 422,317. Patented Feb. 25, 1890.

Fig. 2.

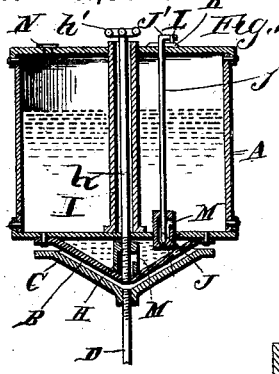


Fig. 1.

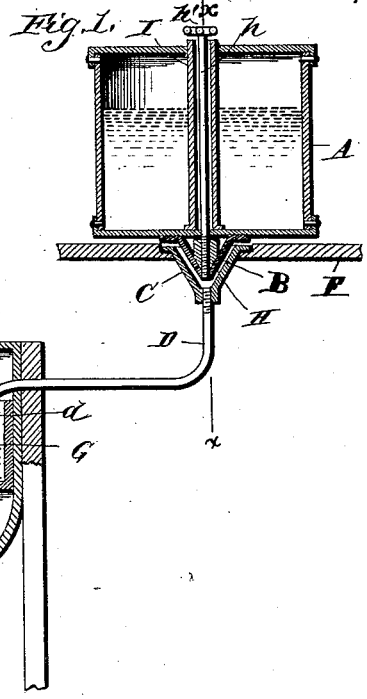


Fig. 5.

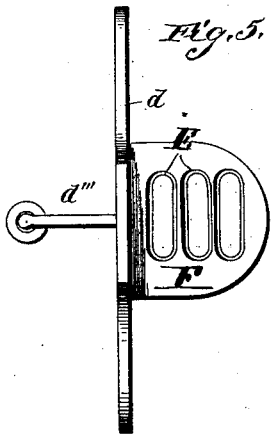


Fig. 3.

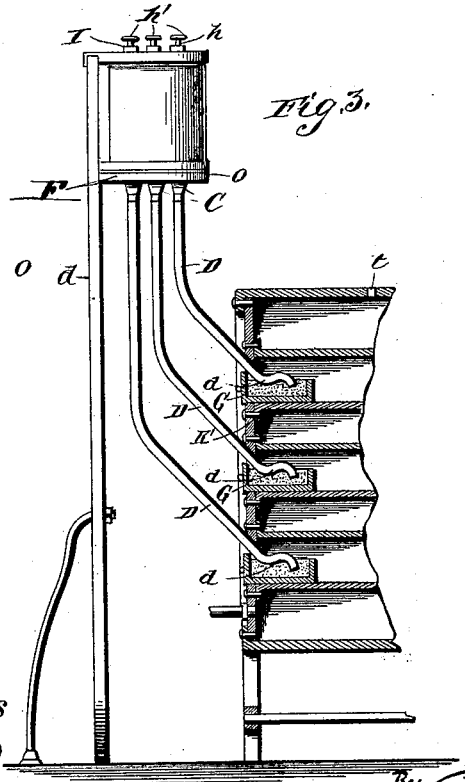
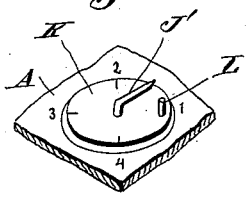


Fig. 4.



WITNESSES

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ALBERT H. RUSSELL, OF KANSAS CITY, MISSOURI.

PETROLEUM-BURNER FOR STOVES.

SPECIFICATION forming part of Letters Patent No. 422,317, dated February 25, 1890.

Application filed May 2, 1889. Serial No. 309,383. (No model.)

To all whom it may concern:

Be it known that I, ALBERT H. RUSSELL, of Kansas City, Jackson county, Missouri, have invented certain new and useful Improvements in Petroleum-Burners for Stoves, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

This invention relates to improvements in hydrocarbon burners or heaters, having special reference to the reservoir or tank for feeding and regulating the flow of the liquid fuel; and it consists in a certain novel construction and combination of devices fully described hereinafter in connection with the accompanying drawings, and specifically pointed out in the claims.

Figure 1 is a central sectional view of a reservoir embodying my improvements connected to a generator or burner. Fig. 2 is a sectional view of the same on the line *x x* of Fig. 1. Fig. 3 is a side view of a slightly-modified form of reservoir, showing three gage-chambers and a similar number of supply-pipes running therefrom. Fig. 4 is a detail perspective view of the dial-gage, and Fig. 5 is a plan view of the reservoir support or shelf.

The reservoir or tank A is provided at its bottom with a conical or funnel-shaped gage-chamber B, which fits in and conforms to the mouth or funnel C of the feed-pipe D, the said mouth or funnel being supported on a shelf or support F, in an opening E of which it fits. The mouth or funnel C extends down through the said opening, and the upper end of the supply or feed pipe D screws into the center thereof and is supported thereby. The lower end of the supply or feed pipe is inserted in the generator G, which is preferably filled with an absorbent material, such as mineral wool.

The gage-chamber B is of a predetermined capacity, holding about enough petroleum or oil to thoroughly saturate the absorbent in the generator, whereby when the fire is to be started the whole of the contents of the gage-chamber is discharged into the generator and ignited, and the heat from the combustion vaporizes the fuel which is contained in the lower discharge end of the supply or feed pipe, the said pipe being preferably provided with a trap *d* to contain a small quantity of the fuel. The peculiar construction and arrangement of the parts of the burner form no part of this invention, and are fully set forth and claimed in a separate application.

Centrally of the reservoir or tank is a vertical tube I, through which passes the stem or rod *h* of the supply-valve H, fitting or seated in the bottom of the chamber B, said stem or rod being provided at its upper end, above the top of the reservoir, with a handle *h'*, for convenient manipulation of the valve. In the bottom of the reservoir itself is also fitted a needle-valve J, having a stem or rod *j* extending up through said reservoir and out through its cover or top, and also having an arm or pointer J' traveling over a dial or graduated plate K. I also employ a stop L to arrest and prevent the arm or pointer from making a complete revolution. A greater movement of the arm or pointer would result in completely cutting off the supply of petroleum or oil from the chamber B, and consequently to the generator, which is not designed to be effected through the valve J, said valve always being open more or less to allow a constant flow of the fuel when the lower valve is open. The casings of the valves H and J are both provided with inlet-passages M, as shown clearly in the drawings.

The supply of petroleum or oil through the pipe D to the generator is cut off, when necessary, by closing the valve H, but after the contents of the gage-chamber have been discharged into the generator the valve J is adjusted to allow a regular flow of fuel to the generator, and the arm or pointer on the stem of the said valve indicates to the operator the rapidity of the flow, whereby it may be properly regulated. In the top of the reservoir or tank is a capped or screw-plug closed opening N, whereby said reservoir or tank may be filled.

It will be observed that as the reservoir or tank and the supply-pipe are disconnected or separable the former may be readily moved to a distance from the stove when it is desired to fill it with fuel, thereby avoiding the

danger of an explosion from the accidental spilling of the oil where fire is liable to be communicated thereto.

In the modification of my invention shown in Fig. 3 the shelf or support is provided with a series of openings, in each of which fits a funnel or mouth of a supply or feed pipe, and the reservoir or tank is provided with a series of gage-chambers fitting in the said funnels and provided with valves, as above described.

The operation of my invention is as follows: When a fire is to be started, the valve H is opened, thereby allowing the contents of the gage-chamber to flow through the supply or feed pipe to the generator, where it is absorbed and ignited, and then the valve J is adjusted to allow a steady flow of fuel through the gage-chamber and supply-pipe to the generator. When the valve H is closed to extinguish the fire, the fuel continues to flow through the valve J until the gage-chamber is filled, when the burner is in condition to be again started.

In two applications of mine filed, respectively, January 25, 1889, Serial No. 297,509, and August 30, 1889, Serial No. 322,428, I have shown in the first-named case a heating and cooking stove, and in the second-named case a hydrocarbon-burner, each having a reservoir similar to that forming the subject-matter of this application. I do not lay any claim herein to the construction either of the heating and cooking stove or the hydrocarbon-burner claimed in the above-mentioned cases.

Having thus described the invention, what I desire to claim and secure by Letters Patent, is—

1. A reservoir for hydrocarbon-burners, having a vertical central tube I, a funnel-shaped or inverted conical gage-chamber of a known capacity located centrally below said reservoir and communicating therewith by a feeding-valve J, the valve-seat arranged centrally in the bottom of the gage-chamber and provided with a perforation in its top which registers with a perforation in the bottom of the tube I, and the valve-stem mounted in said registered perforations fitting in the valve-seat and extending up through the vertical tube, substantially as specified.

2. A reservoir for hydrocarbon-burners, having a central vertical tube I, a funnel-shaped gage-chamber located below, a needle-valve J between the reservoir and the gage-chamber, the valve-seat in the center of gage-chamber and the valve-stem incased in the tube I and fitting in said valve-seat, in combination with a funnel C, adapted to receive the funnel-shaped gage-chamber and having a feed-pipe D connected to its center directly beneath the said valve-seat, substantially as specified.

3. In a hydrocarbon burner or heater, the combination, with the supply or feed pipe communicating at its lower end with a generator or burner and provided at its upper end with a mouth or funnel let into an opening in a support, of the independent reservoir or tank having a depending gage-chamber seated in or above the said mouth or funnel, the valve seated in the bottom of the gage-chamber, and the valve feeding the contents of the main chamber of the reservoir into the gage-chamber, substantially as specified.

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

ALBERT H. RUSSELL.

Witnesses:
W. E. BENSON,
J. S. EVANS.