

(No Model.)

J. W. REES.
HYDROCARBON BURNER.

No. 550,530.

Patented Nov. 26, 1895.

Fig. 1.

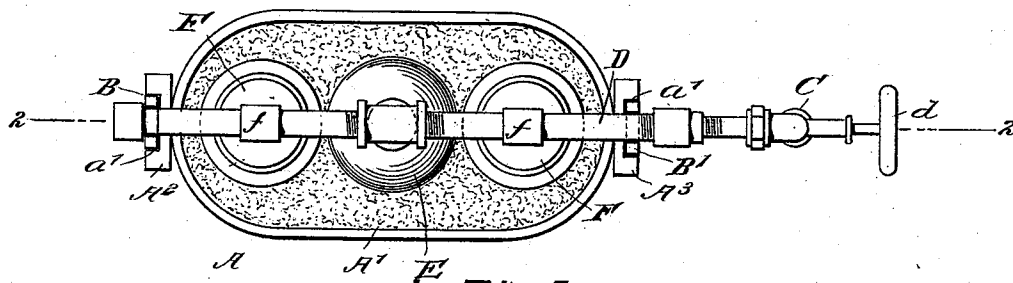


Fig. 2.

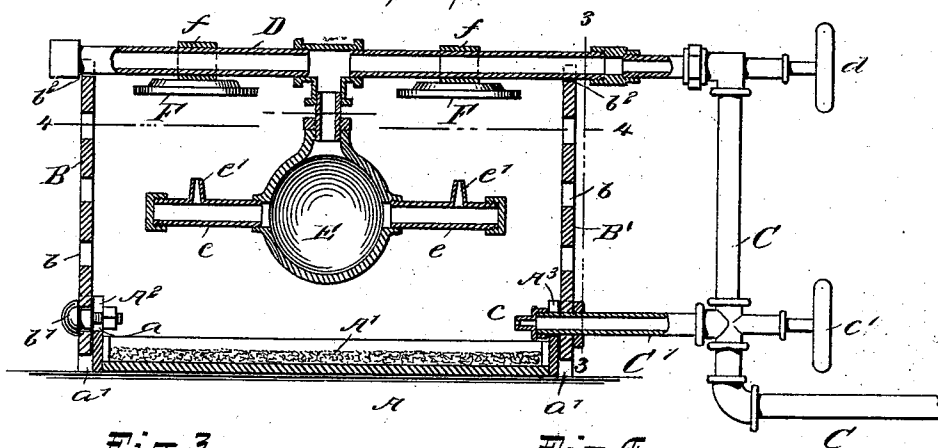


Fig. 3.

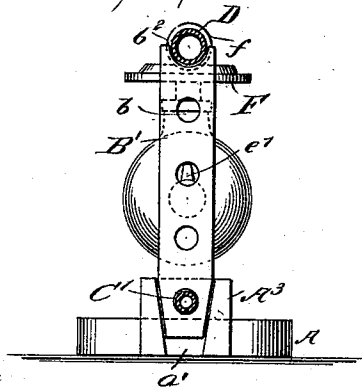


Fig. 4.

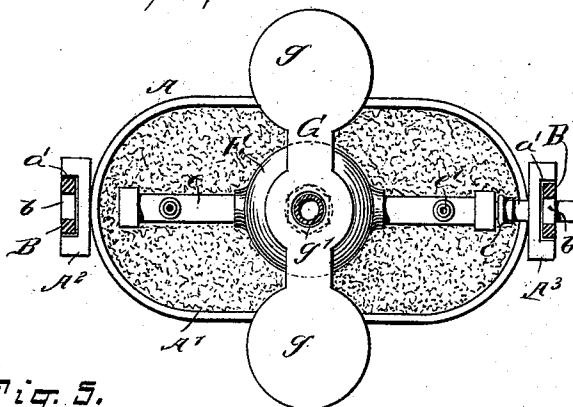
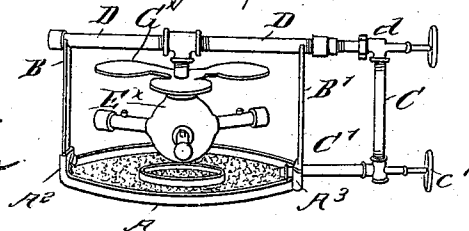


Fig. 5.



WITNESSES:

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HYDROCARBON-BURNER.

SPECIFICATION forming part of Letters Patent No. 550,530, dated November 26, 1895.

Application filed February 12, 1895. Serial No. 538,086. (No model.)

To all whom it may concern:

Be it known that I, JACOB W. REES, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Hydrocarbon-Burners, of which the following is a full, clear, and exact description.

This invention relates to certain improvements in that class of hydrocarbon-burners which are adapted to burn either oil or gas, the burner being adapted to produce the gas from oil; and the object of the invention is to provide a burner of this character of a simple and inexpensive construction which shall present certain features of novelty and advantages for use over similar devices heretofore employed, all as will be hereinafter fully set forth.

The novel features of the invention will be carefully defined in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of a burner embodying my improvements. Fig. 2 is a vertical longitudinal section taken substantially in the plane indicated by the line 2 2 in Fig. 1. Fig. 3 is a vertical transverse section of the burner, taken in the plane indicated by line 3 3 in Fig. 2. Fig. 4 is a horizontal section taken substantially in the plane indicated by line 4 4 in Fig. 2, showing the burner provided with a modified form of spreader; and Fig. 5 is a perspective view showing a modified form of burner provided with three nozzles.

Referring primarily to Figs. 1 to 3, A represents a drip-pan, preferably of suitable form to be set in the fire-box of an ordinary cook-stove, provided with a raised marginal flange and a lining A', of mineral wool or similar refractory comminuted material, and having at its ends raised lugs A² A³, having at their upper ends open-ended slots a, as clearly shown in Fig. 2, and provided in their outer faces with vertical guideways a' to receive the lower ends of the standards B, forming supports for the burner and oil-supply pipe.

The standards B B' have perforations b formed at suitable intervals in their length, the perforations in the standard B being

adapted to coincide with the perforation a in the lug A² at one end of the pan A, and the perforations in the standard B' being adapted to coincide with the perforation a in the lug A³ at the other end of pan A, whereby it will be seen that the elevation of the burners supported on the standards above the drip-pan may be regulated to bring the flame to the proper position. As the pan A rests on the grate of the stove, this adjustment may be readily effected, the lower ends of the standards passing between the grate-bars if set so as to project below the pan A.

As seen at the left in Fig. 2, a bolt b' extends through the perforation in the standard B and in the lug A² and serves to hold said standard in position when adjusted, and to similarly hold the standard B' in position when adjusted I extend the oil-supply pipe C', branching from the main supply-pipe C, through the perforation in said standard B' and in the corresponding lug A³, the said branch pipe C' being provided with a nozzle c and with a needle or equivalent valve c', controlling the flow of oil therethrough.

The pipe C, at the point where it communicates with branch pipe C', extends vertically, and at its upper end it is connected to the horizontal pipe D, controlled by a valve d and communicating with the vaporizer E, the upper ends of the standards B B' being provided, as clearly seen in Fig. 3, with notches b² to receive and hold the pipe D.

The pipe D is composed, by preference, of a suitable number of sections, and at its center a T-coupling is arranged between two of said sections and connects with the vaporizer E, which is of globular form, as clearly seen, provided with radial horizontal arms e, extending, as seen in Figs. 1 and 2, from opposite sides of the vaporizer, and provided at or near their ends with upwardly-directed nozzles e'. Over the nozzle e' spreaders F, in the form of flat metal disks, are secured, being provided with eyes f on their rear or upper faces to receive the pipe D, on which they are loosely mounted.

The operation is as follows: When it is desired to employ the device as a generator and burner, the valve c' is turned to permit a stream of oil to flow through the nozzle c onto the lining A' of the drip-pan A, and when suf-

efficient oil has been absorbed by said lining the valve is turned to cut off the supply of oil and the oil lighted in the drip-pan, so as to burn up around the vaporizer E and its arms
5 e. The vaporizer having become sufficiently heated, the valve d is turned to permit the oil to flow into the vaporizer, where it is vaporized and burned at the nozzles e', the flame being spread out by the spreaders F in a well-
10 known way.

When desired, the spreaders may be moved over longitudinally of the pipe D from the nozzles e', so as to permit the flame to play direct on a vessel placed on one of the holes
15 of the stove, or if oil is to be burned alone the initial heating is dispensed with.

The construction seen in Fig. 4 is the same as that above described, with the exception that the arms of the vaporizer E are arranged
20 at right angles to pipe D, and the two spreaders F are replaced by a single spreader-plate G, having enlarged ends g adapted to lie over the nozzles, and provided with a central perforation g' to receive the neck of the vaporizer. In this form when it is not desired to
25 use the spreader the plate G is turned so that its arms lie between the two burners.

The construction seen in Fig. 5 is similar to that seen in Fig. 4, except that the vaporizer E^x has three arms arranged equidistantly, and the spreader-plate G^x has also
30 three equidistant arms.

Having thus described my invention, I claim as new and desire to secure by Letters
35 Patent—

1. In a hydrocarbon burner, the combination of a drip pan having a marginal upturned flange the opposite sides of which are formed with vertical exterior guideways, standards
40 having their lower ends mounted in said guideways, and having notches formed at their upper ends, an oil supply pipe supported in the notches at the upper ends of

the respective standards and a burner centrally mounted on the said oil supply pipe
45 over the drip pan, substantially as set forth.

2. In a hydrocarbon burner, the combination of a drip pan having a marginal upturned flange provided at opposite sides with raised
50 lugs the outer sides of which are formed with vertical guideways and the upper ends of which are provided with open ended slots, standards having notched upper ends and perforated lower ends engaging the guide-
55 ways in said lugs and having their perforations corresponding to the slots in the raised lugs, fastening devices extending through the slots in the lugs and the perforations in the standards and adapted to secure the stand-
60 ards in place, and an oil supply pipe engaging the notches in the upper ends of the standards and a burner centrally mounted on the oil supply pipe above the drip pan, substantially as set forth.

3. In a hydrocarbon burner, the combination of a drip pan having a slotted lug at one
65 side, a standard provided with a notched upper end and having a perforation at its lower end to correspond with the slot in said lug, an oil supply pipe supported in the notched
70 upper end of the standard and provided with a burner located above the drip pan, a screw threaded branch pipe extending through the corresponding perforation and slot of the respective standard and lug and adapted to
75 discharge into said drip pan, a projection on the branch pipe adapted to engage one side of the standard and a discharge nozzle screwing on the end of the said pipe adapted to engage the slotted lug, substantially as set
80 forth.

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Witnesses:

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