(No Model.)

W. H. BROOKS.

HYDROCARBON BURNER.

No. 273,942. Patented Mar. 13, 1883.

Fig. 1.

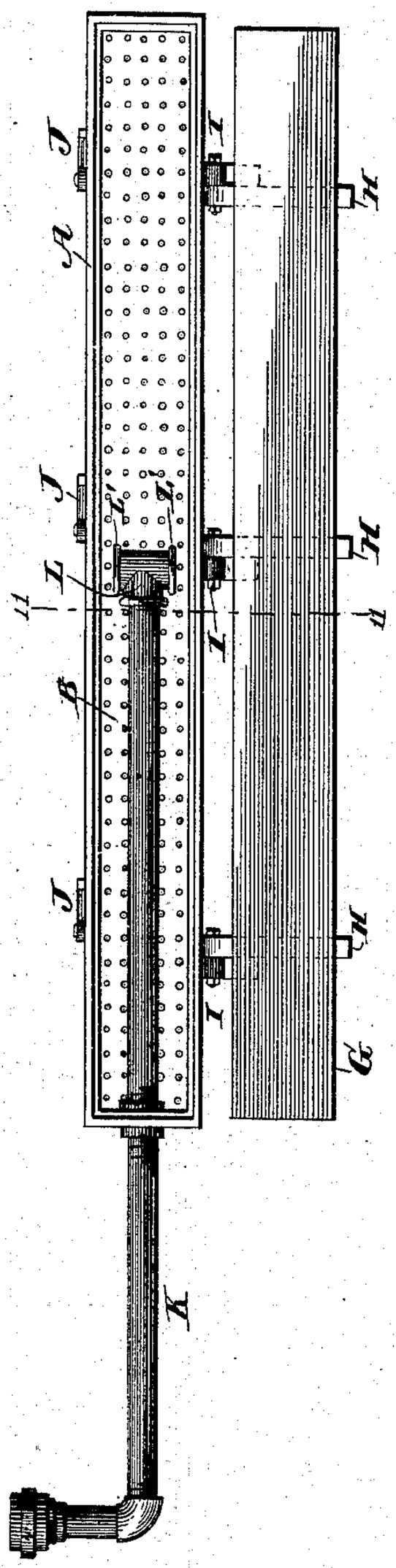


Fig. 2.

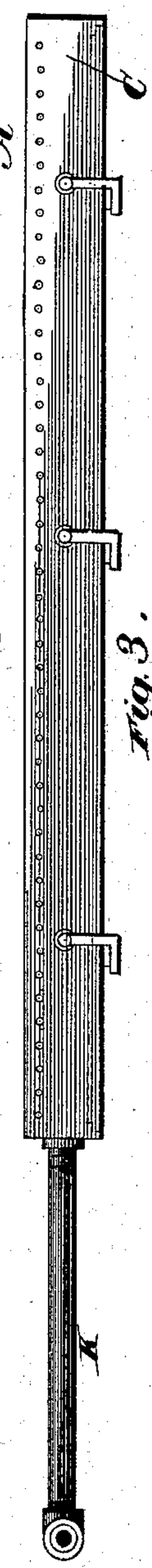
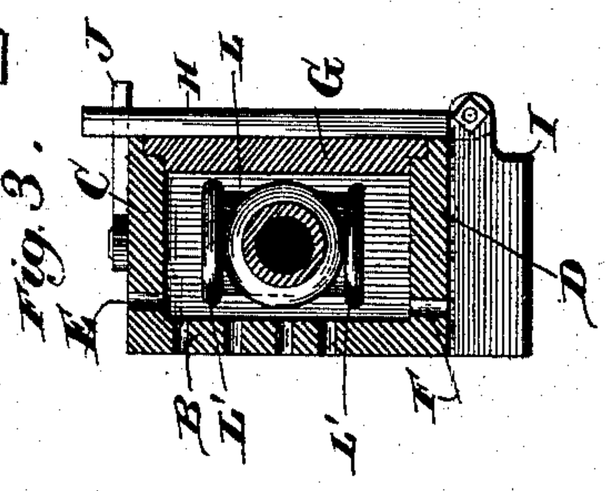


Fig. 3.



WITNESSES:

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HYDROCARBON-BURNER.

SPECIFICATION forming part of Letters Patent No. 273,942, dated March 13, 1883.

Application filed January 29, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. BROOKS, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in Hydrocarbon-Burners, of which the following is a specification.

This invention relates to hydrocarbon-burners for heating boiler and other furnaces; and its object is to provide a burner of such construction that a large number of jets of flames will issue therefrom in use, and which will equally distribute the vapor gas to be burned, thereby insuring an effective heating capacity, which rapidly and efficiently heats the boiler or other furnace.

The object of my invention I accomplish by the construction and arrangement of parts, hereinafter described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a side plan view of my improved hydrocarbon-burner, with its movable side or cover in an open position; Fig. 2, a top plan view; and Fig. 3, a transverse sectional view taken through the line 11 11 of Fig. 1.

In my application for Letters Patent filed December 8, 1882, Serial No. 78,719, I illustrated and described an apparatus for generating vapor from liquid hydrocarbons, in which a dome is located over the vaporizing-vessel, and provided with a pipe for carrying off the generated vapor.

The burner forming the subject-matter of my present application is especially designed to be connected with the vapor-conducting pipe in my first-mentioned application, for the purpose of burning the hydrocarbon vapor generated in the vaporizing-vessel.

Referring to the annexed drawings, the letter A indicates the casing or body of the burner, of oblong shape, one vertical side wall, B, of which is perforated along the entire length of the casing to create an extended area of jet-orifices, from which the flames issue. The top and bottom walls, C and D, of the casing, adjacent to the perforated vertical wall, are provided with a line of perforations, as at E and F, which are arranged closely together and parallel to the sides of the casing, all in such manner that portions of the flames will issue from the top and bottom of the casing. The side wall, G, of the casing opposite the perforated wall B is movable, and carried by bars H, hinged at their lower ends to brackets I, secured to the bottom wall of the casing, the upper ends of the bars projecting above the top wall of the casing, and adapted to be engaged by pivoted hooks J for confining the movable side in its closed position. The pipe K, for conveying the vapor-gas to the interior of the burner-casing, is composed of suitable sections properly united by couplings, and adapted to connect with the pipe leading from the dome of the vaporizing-vessel in my application before alluded to. This pipe K extends through one end wall of the casing and terminates at or near the center thereof—that is, at a point midway the length of the casing—in a head, L, having lateral branches L′ L′, such head being in the form of a T, the open ends of the lateral branches being located respectively opposite the top and bottom walls of the casing, whereby the vapor gas issuing from such open ends will strike the said top and bottom walls, and be thereby deflected in such manner as to equally or uniformly distribute the gas throughout the interior of the casing. The open ends in the lateral branches L′ are preferably constructed of a diameter less than the cross-sectional area of the pipe K, for the purpose of causing the gas to issue therefrom in strong currents which are directed laterally from the main line. I have found that if the gas issued from the end of the supply-pipe K in the direction of the length thereof, it is caused to back up at one end of the chamber formed by the casing, and consequently the gas is not uniformly distributed over the entire area of the perforated wall of the casing; but by the provision of the lateral branches or T-head, as set forth, the flow of gas is not retarded, and it will not back up against the end of the pipe, but will be uniformly distributed in all directions throughout the chamber, the flames issuing from the perforations, before set forth, in numerous jets throughout the entire area of such perforations.

A burner constructed in accordance with my invention, as hereinbefore described, will in practice be located on the bridge-wall of the boiler or other furnace, or, if desired, otherwise supported in the furnace-chamber, and the jets of flame will issue through one side

wall of the casing and along the edges of the top and bottom walls, the latter jets issuing at right angles to those at the side of the casing. The entire structure is simple and comparatively inexpensive, and in use will be found exceedingly efficient, fulfilling all the conditions required in a hydrocarbon-burner in an effectual manner. The hinged side of the casing affords facility for gaining access to every portion of the interior thereof, should such be desirable for the purpose of cleaning the same or for other objects.

While the burner has been described as specially designed for use in connection with the gas-generator forming the subject-matter of my application before referred to, it will be obvious that it can be used with other generators or reservoirs containing the vaporizers.

Having thus described my invention, what I claim is—

1. A hydrocarbon-burner composed substantially of an oblong casing having a perforated side wall and a vapor-gas-supply pipe terminating at or near the center of the casing in lateral branches, which open respectively opposite the top and bottom walls of the casing, substantially as described.

2. A hydrocarbon-burner composed of a casing having a perforated side wall, top and bottom walls, each provided with a line of perforations adjacent to the perforated side wall, and a vapor-gas-supply pipe terminating at or near the center of the casing in lateral branches, which open respectively opposite the said top and bottom walls, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

W. H. BROOKS.

Witnesses:
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