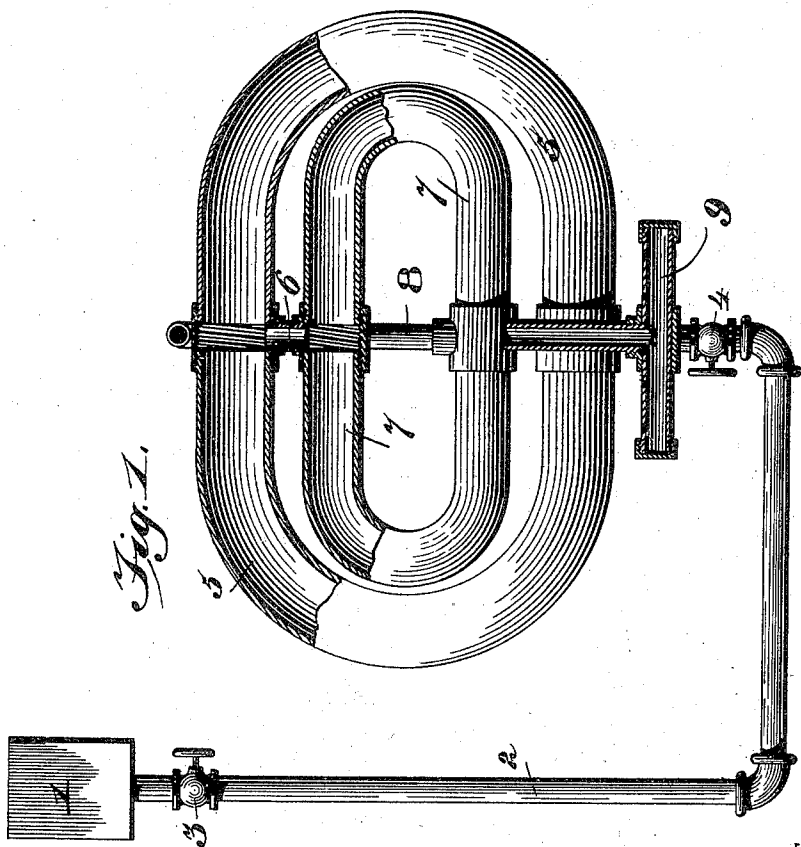
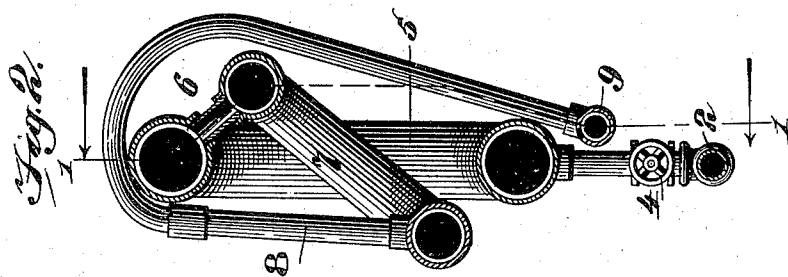


(No Model.)

G. CLAIR.
HYDROCARBON BURNER.

No. 580,305.

Patented Apr. 6, 1897.



Inventor

George Clair

Witnesses

H. A. Dieterich
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By *his* Attorneys.

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

GEORGE CLAIR, OF OTTAWA, KANSAS.

HYDROCARBON-BURNER.

SPECIFICATION forming part of Letters Patent No. 580,305, dated April 6, 1897.

Application filed October 5, 1896. Serial No. 607,937. (No model.)

To all whom it may concern:

Be it known that I, GEORGE CLAIR, a citizen of the United States, residing at Ottawa, in the county of Franklin and State of Kansas, have invented a new and useful Hydrocarbon-Burner, of which the following is a specification.

My invention relates to fluid-fuel burners designed especially for hydrocarbons; and the object in view is to provide a simple and efficient arrangement of vaporizing-retorts designed to expose the maximum vaporizing-surface to the heat.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claim.

In the drawings, Figure 1 is a side view, partly in section, of a burner constructed in accordance with my invention, the section being taken on the line 1 1 of Fig. 2. Fig. 2 is a transverse vertical section.

Similar numerals of reference indicate corresponding parts in both figures of the drawings.

1 designates a feed tank or reservoir with which communicates a feed-tube 2, provided with a feed-valve 3. The feed-tube is further provided with a regulating-valve 4 and contiguous to the latter is connected with the lower side of a continuous tubular retort 5, constructed of tubing and preferably arranged, as shown, in an elliptical form. The upper side of this main retort is in communication, by means of a connecting-tube 6, with a superheating-retort 7, also of continuous tubular construction, elongated horizontally to produce an approximately elliptical form and arranged at an inclination intersecting the plane of the main retort and of such a size as to be surrounded by the main retort. The inclination of the superheating-retort arranges its upper and lower sides in different vertical planes, and communicating with the same at its lower side is a conveyer-tube 8, which extends upwardly and passes over the upper side of the main retort and thence downwardly to the center of the burner-tube 9, which is located below the

lower side of the main retort, whereby the heat produced by combustion at the burner first strikes the lower side of the main retort and is then distributed and comes in contact with the vaporizing-surfaces of both retorts, as well as the conveyer 8, by which the superheated vapor is fed from the lower side of the superheating-retort to the burner.

The arrangement of the parts of the burner, as above described, is compact without preventing an upward draft between the sides of the main and superheating retorts, said draft being necessary in order to insure the rise of flame in an approximately solid column and in contact with all parts of the surfaces of the retorts. The function of the regulating-valve 4 is to control the amount of fluid admitted to the main retort, and hence the intensity of the heat produced at the burner.

A particular advantage of the above-described construction resides in the fact that any liquid or unvaporized fuel which may reach the superheating-retort 7 is prevented, by reason of the upwardly-looped conveyer-tube, from passing to the burner, thus causing any overflow from the main retort to remain in the superheating-retort until vaporized.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having described my invention, what I claim is—

The combination with a feed-tube having a regulating-valve, of a continuous tubular main retort having its lower side in communication with the feed-tube, a continuous tubular superheating-retort arranged within the space inclosed by the main retort and disposed at an inclination intersecting the plane of the main retort whereby its upper and lower sides are in different vertical planes, the upper side of the superheating-retort being connected with the upper side of the main retort, a conveyer-tube communicating with the lower side of the superheating-retort and extending upwardly therefrom and over the upper side of the main retort whereby

liquid reaching the superheating-retort is prevented from passing to the burner, and a burner-tube communicating with the extremity of the conveyer-tube and located below, to eject flame upon, the lower side of the main retort, substantially as specified.

In testimony that I claim the foregoing as

my own I have hereto affixed my signature in the presence of two witnesses.

GEORGE CLAIR.

Witnesses:

HOWARD HAYES,
J. T. FORGUY.