

No. 768,155.

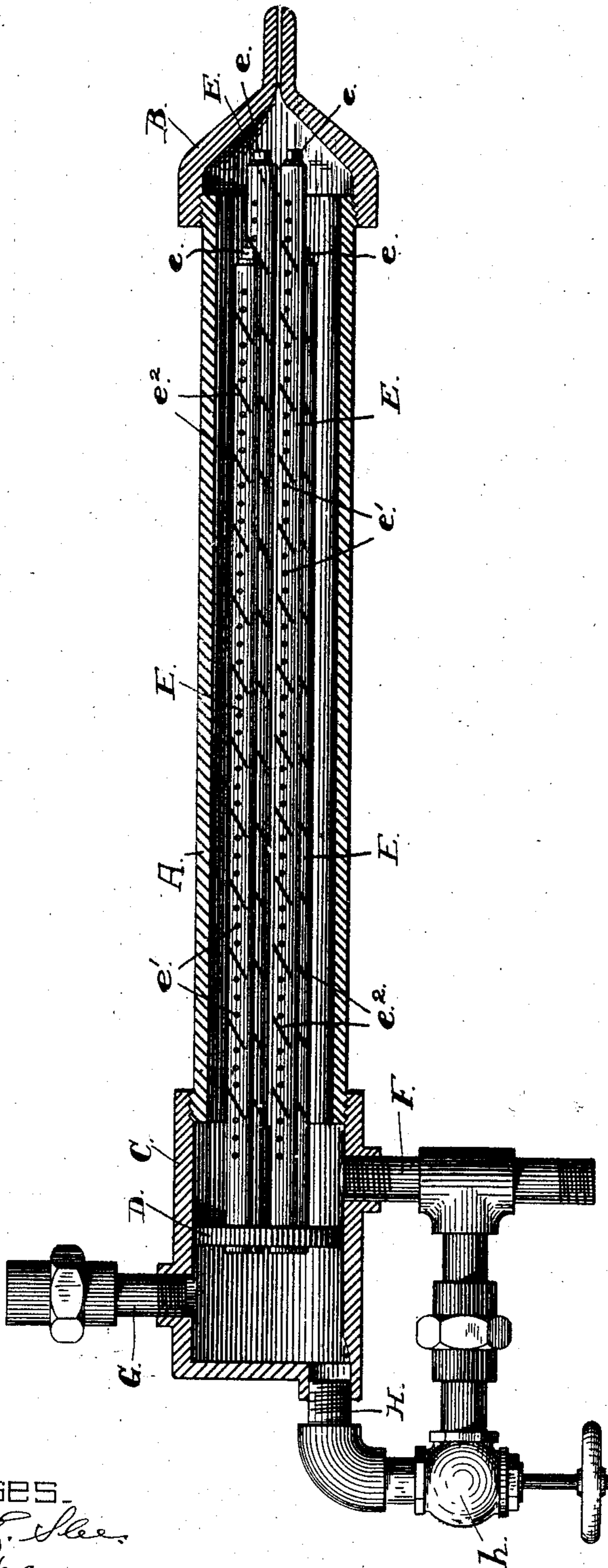
PATENTED AUG. 23, 1904.

T. SIMON.

HYDROCARBON BURNER.

APPLICATION FILED FEB. 24, 1904.

NO MODEL.



Witnesses.

Arthur H. Slee.
Walter E. Vance.

Invention

Thomas Simon
by Wm F. Booth
his Attorney.

UNITED STATES PATENT OFFICE.

THOMAS SIMON, OF SAN FRANCISCO, CALIFORNIA.

HYDROCARBON-BURNER.

SPECIFICATION forming part of Letters Patent No. 768,155, dated August 23, 1904.

Application filed February 24, 1904. Serial No. 195,037. (No model.)

To all whom it may concern:

Be it known that I, THOMAS SIMON, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented certain new and useful Improvements in Hydrocarbon-Burners; and I do hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to the class of burners for use with liquid hydrocarbons, more especially crude oil.

The object of my invention is to provide a burner in which the commingling of the oil with whatever elastic gas is used, such as steam or air, is made under practically atomic or comminuted conditions, resulting in a thorough mixture.

To this end my invention consists, primarily, in means within the burner for introducing the one ingredient of the mixture into the other by a multitude of fine jets; and it also consists in the novel burner which I shall now describe by reference to the accompanying drawing, in which the figure is a longitudinal section of my burner, the interior pipes and the various connections being shown in full elevation.

A is the outside shell or casing of the burner, to the forward extremity of which is fitted, by any suitable form of connection, the nozzle-tip B, the exit-aperture of which may be of any suitable shape. Upon the rear end of the casing A is fitted in any suitable manner the entrance-chamber C. In the chamber C is a cross-partition D, forming a head, to which are fitted the pipes E, which open through the head D and extend forwardly in the casing A to near its tip, and said pipes at their forward ends are closed by plugs or caps *e*, while their rear ends are open. Each of these pipes E is provided with a number of holes *e'*, which may be relatively arranged in any suitable manner.

With the entrance-chamber C forward of the cross-partition or head D is made a connection F from any suitable source of elastic gas, such as steam or air, under pressure—in practice, from a source of steam. With the entrance-chamber C back of the cross-partition or head D is made a connection G from a suitable source of oil. Also with said chamber C back of the partition is made a connection

H from a source of water or steam, said connection being here shown as communicating with the steam connection F and controlled by a cock *h*.

The operation of the burner is as follows: The connection H is normally cut off by its cock *h*, as its function is simply to clean out the burner when required. Steam is admitted through the connection F to the chamber C in front of the cross-partition, and thence passes into the casing A, enveloping the pipes E. The oil is admitted through the connection G into the chamber C back of the cross-partition, and thence passes into the pipes E. From the holes *e'* in these pipes it is forced out into the steam in a multitude of fine jets, practically atomized and even vaporized as it nears the outer ends of the pipes, thus mingling with the steam under substantially atomic conditions, resulting in a thorough mixture.

To clean the interior of the burner, water or steam may be forced in through the connections F and H.

It is obvious that the entrances of the steam and the oil may be relatively reversed without departing from the spirit of my invention—that is to say, the oil might be admitted to the casing A and the steam to the perforated pipes E, in which case the steam would be introduced into the oil by a multitude of jets producing a similar atomic condition under which the mixture is made. The pipes E in addition to the holes *e'* may, if desired, be provided with slits *e''*, which, especially where the oil is not under great pressure, will supplement the holes in delivering a sufficient quantity of the oil to the steam.

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

1. A hydrocarbon-burner consisting of an outer casing having on its forward end an exit-tip, an entrance-chamber fitted upon and communicating with the rear end of said casing, a cross-partition in said entrance-chamber, a plurality of pipes fitted to and opening through said partition, said pipes extending forwardly into the outer casing nearly to its tip, and having their outer ends closed and their walls pro-

vided with numerous small exits, a fluid connection with the entrance-chamber in front of its partition and a fluid connection with said chamber back of the partition.

- 5 2. A hydrocarbon-burner consisting of an outer casing having on its forward end an exit-tip, an entrance-chamber fitted upon and communicating with the rear end of said casing, a cross-partition in said entrance-chamber, a plu-
10 rality of pipes fitted to and opening through said partition, said pipes extending forwardly into the outer casing nearly to its tip, and having their outer ends closed and their walls pro-

vided with numerous small exits, a fluid connection with the entrance-chamber in front of 15 its partition, a fluid connection with said chamber back of the partition, and a controllable fluid connection between said first-named connection and the entrance-chamber back of its partition. 20

In witness whereof I have hereunto set my hand.

THOMAS SIMON.

Witnesses:

WALTER F. VANE,
D. B. RICHARDS.