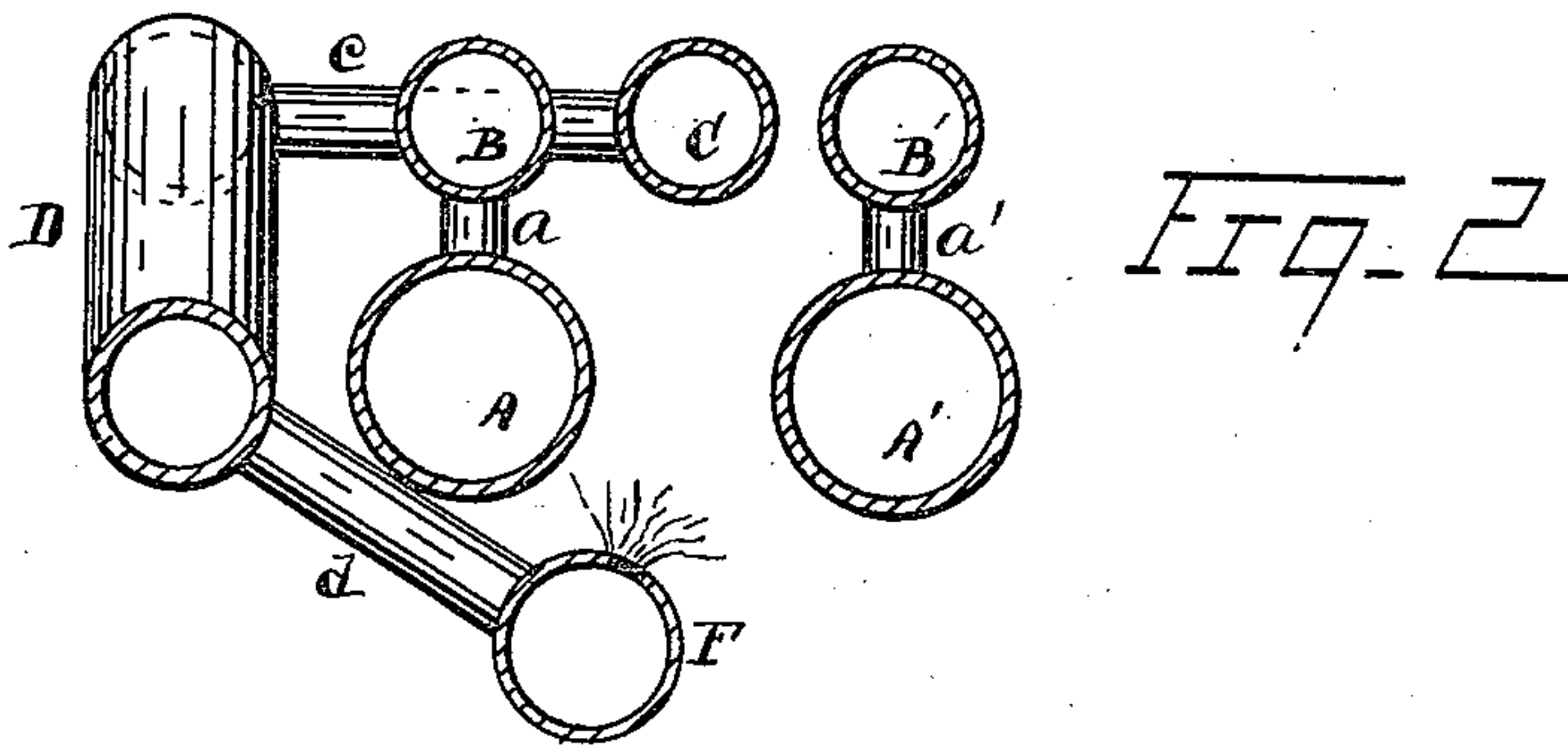
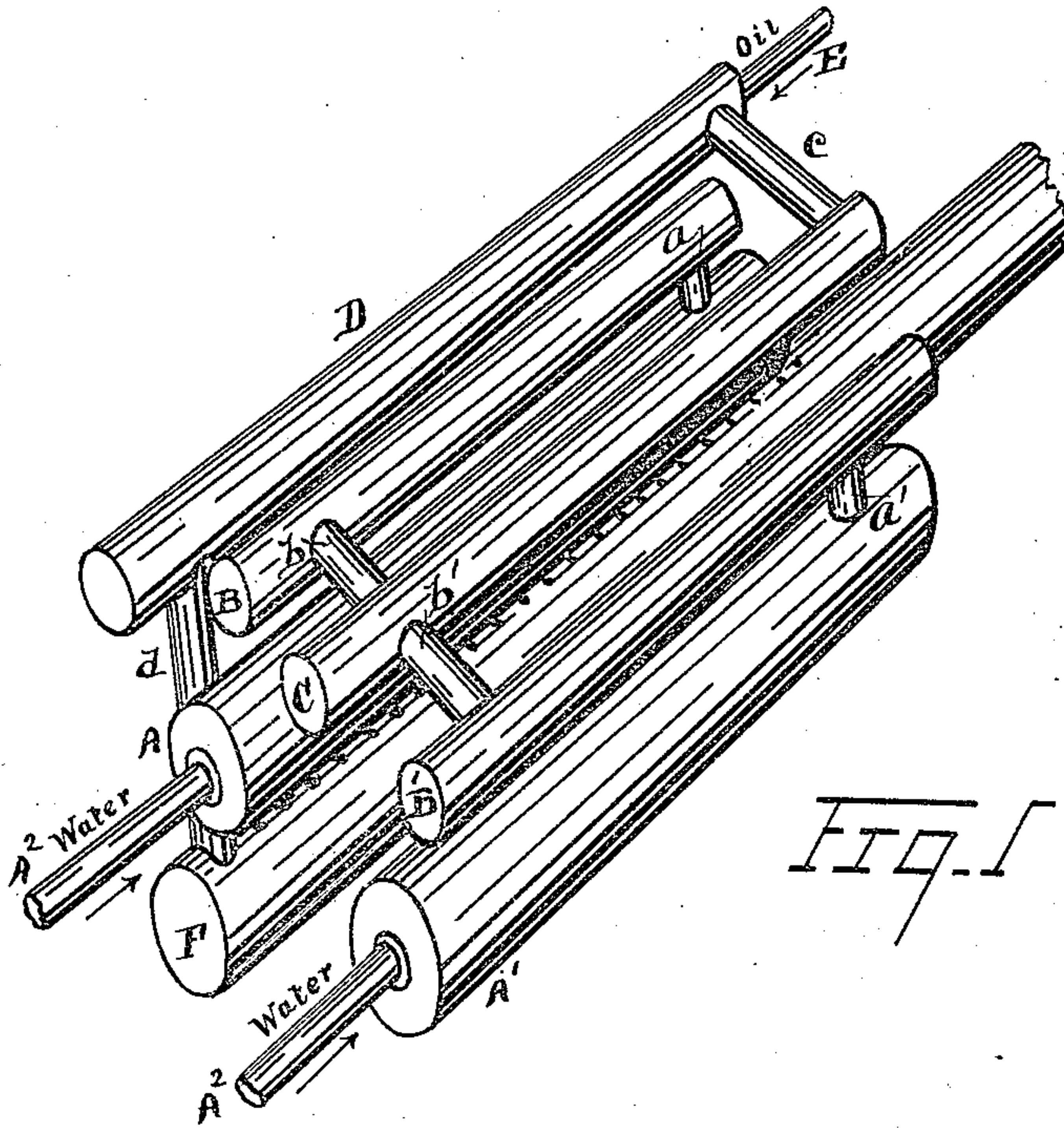


(No Model.)

E. G. MUMMERY.
VAPOR BURNER

No. 442,693.

Patented Dec. 16, 1890.



Witnesses

John Schuman.
Charles F. Salow.

Inventor

Edwin G. Mummery

By his Attorney

Newell S. Wright.

UNITED STATES PATENT OFFICE.

EDWIN G. MUMMERY, OF DETROIT, MICHIGAN.

VAPOR-BURNER.

SPECIFICATION forming part of Letters Patent No. 442,693, dated December 16, 1890.

Application filed April 1, 1890. Serial No. 346,163. (No model.)

To all whom it may concern:

Be it known that I, EDWIN G. MUMMERY, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Vapor-Burners; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to certain new and useful improvements in hydrocarbon-burners, and is designed more particularly as an improvement upon that class of burners whereby steam is employed to vaporize the hydrocarbon.

My invention has for its object a more rapid generation of steam, more efficiently superheating the same, and consequently materially expediting the generation of hydrocarbon vapor, securing a hotter and a quicker fire, and at the same time securing greater economy.

To these ends my invention consists of the combinations of devices and appliances hereinafter specified and claimed, and more fully illustrated in the accompanying drawings, in which—

Figure 1 is a view in perspective embodying my invention, and Fig. 2 is a vertical cross-section thereof.

I carry out my invention as follows: A and A' represent two steam-generating chambers or conduits with which a water-supply pipe A² communicates.

B and B' are two superheater chambers or pipes with which the conduits A and A' communicate at their extremities opposite the entrance of the water-supply, as shown at *a a'*.

C is an additional superheater chamber or pipe communicating with the pipes B and B' at their extremities opposite the connections *a a'*, as shown at *b b'*. The superheater-pipe C at its opposite end communicates with a vapor-generating pipe D, as shown at *c*.

Leading into the pipe D is a hydrocarbon-supply pipe E, so admitting the hydrocarbon thereinto as to be atomized by the entering steam and commingled therewith, the resulting vapor passing from said pipe E into a perforated burner-tube F, as through a connection *d*. The burner-tube is so arranged

as to throw the flame supported thereby as much as possible upon the generating-pipes A A', superheater-pipes B, B', and C, and also upon the vapor-generating tube D, in order that the steam and hydrocarbon may receive its fullest effect. By thus increasing the number of water or steam-generating pipes and also the number of superheating-pipes their size may be considerably diminished, while their total capacity is largely increased over devices of this class heretofore employed, while an added superheater-pipe C is also provided, so located as to more thoroughly superheat the steam generated before its admission into the vapor-generating tube D. The more complete superheating of the steam makes it both hotter and drier than has heretofore been the case. By increasing the number and capacity of the steam-generating chambers the supply of steam is also expedited and increased. This means a quicker and a hotter fire, as combustion is rendered more complete. The hotter the steam is superheated the more perfect is the vaporization of the oil. These results combined affect very considerably the efficiency of the burner.

The increase of heating-surface in the steam-generating and superheater pipes superheating the steam more perfectly and in a much shorter time are results of obviously great importance, rendering the device every way much more satisfactory.

What I claim is—

In combination, the steam-generating chambers A and A', constructed to communicate with a water-supply, superheater-chambers B and B', communicating with the chambers A and A', a superheater-chamber C, communicating with chambers B and B', a vapor-generating chamber D, communicating with the superheating-chamber C and provided with a hydrocarbon-supply conduit leading thereinto, and a perforated burner F, communicating with the vapor-generating chamber and located below the steam heating and vaporizing chambers, substantially as set forth.

In testimony whereof I sign this specification in the presence of two witnesses.

EDWIN G. MUMMERY.

Witnesses:

N. S. WRIGHT,

CHARLES F. SALOW.