

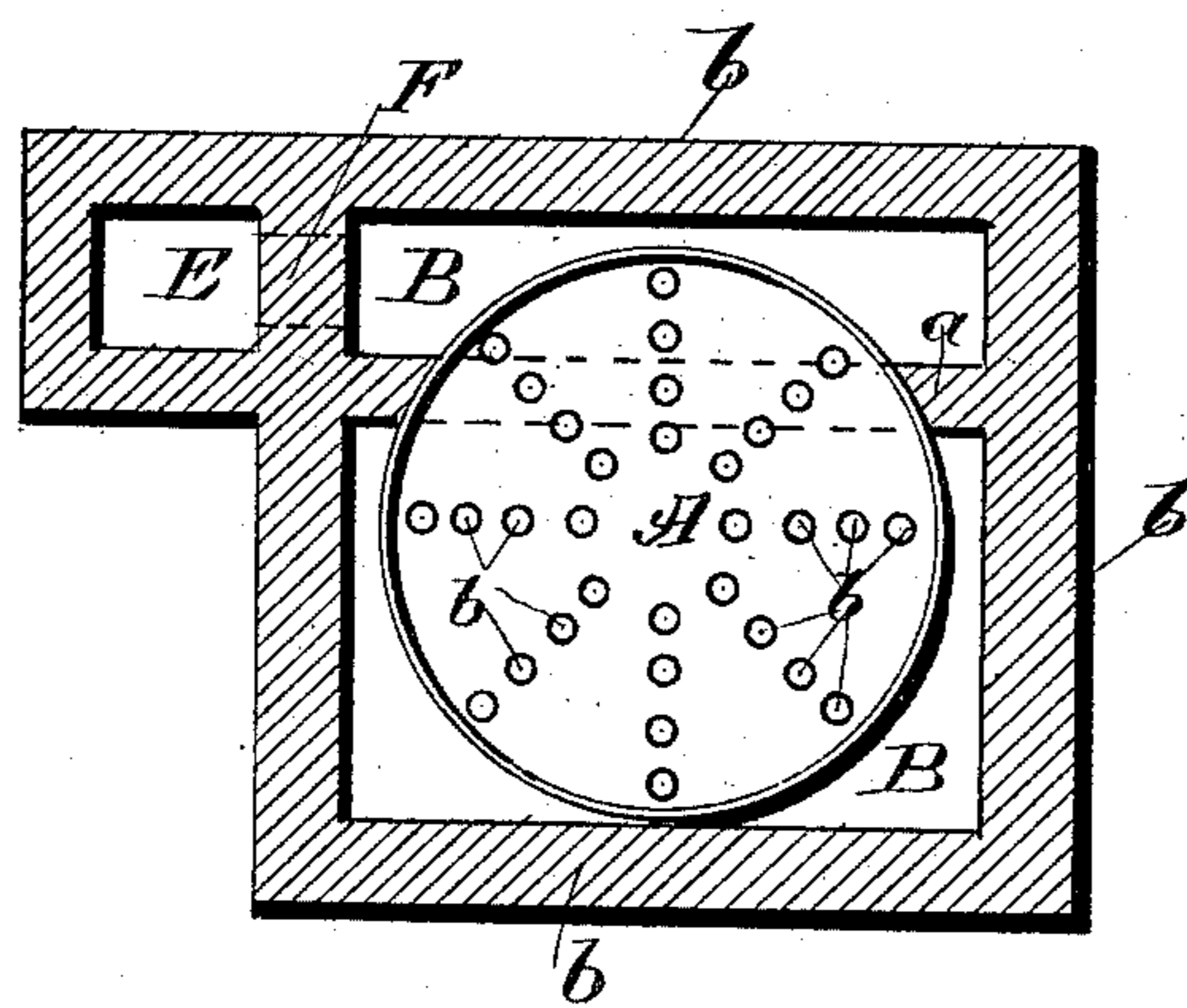
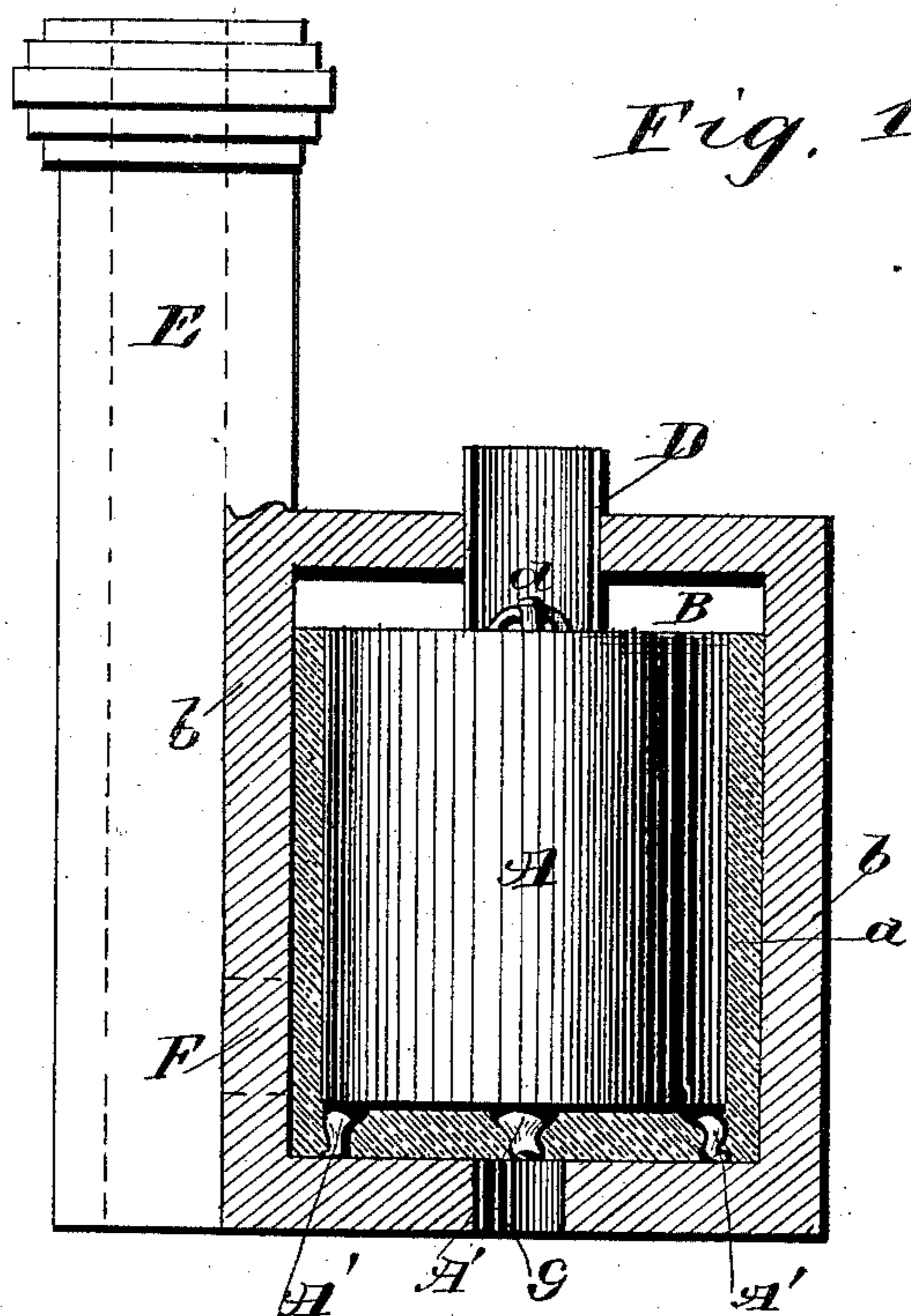
(No Model.)

R. C. CLARK & M. H. WARREN.

PETROLEUM STILL.

No. 298,825.

Patented May 20, 1884.



WITNESSES

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ROLLIN C. CLARK AND MURRAY H. WARREN, OF CORRY, PENNSYLVANIA.

PETROLEUM-STILL.

SPECIFICATION forming part of Letters Patent No. 298,825, dated May 20, 1884.

Application filed December 21, 1883. (No model.)

To all whom it may concern:

Be it known that we, ROLLIN C. CLARK and MURRAY H. WARREN, of Corry, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Petroleum-Stills; and we do hereby 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 pertains to make and use the same.

Our invention relates to improvements in stills especially adapted to the reduction or refining of hydrocarbon-oil.

The object of our invention is to construct a still that will require less fuel in operating it than stills heretofore in use. A further object is to construct a still and attachments so that the heat will be distributed around the still and through tubes in the body of this still, so as to heat the contents thereof evenly in all parts.

With these objects in view our invention consists in certain features of construction and in combination of parts hereinafter described, and pointed out in the claims.

The shape of the still is that of a vertical cylinder with vertical tubes running through it and arranged on radial lines, and having a large space in the center of the still, from which by the said arrangement of tubes free access may be had to all parts of the still for cleaning and removing the refuse of distillation. The still is located in a heating-chamber in such a manner that products of combustion preferably admitted directly into the said heating-chamber will envelop the still and pass at the same time through the said vertical tubes. A bridge-wall is provided running across the bottom and up the sides of the still, and separating the heating-chamber from the top of the still downward into two parts. The products of combustion are admitted to the chamber on one side of the bridge-wall, and pass up through the tubes and around the side of the still, thence over the top and down through the tube, and around the side on the other side of the bridge-wall, and pass thence to the chimney. By this distribution the heat is utilized in a degree that is found very economical in fuel. By this distribution

of heat the oil in the still is quickly and evenly heated and the overheating of parts and the consequent scorching of the oil is avoided. Also, this construction, by which the still and its contents are so quickly and evenly heated, will be found equally effective in cooling the still by passing cold air by the same route just described from the heated air.

In the drawings, Figure 1 is an elevation of the still and the wall of the heating-chamber and bridge-wall in vertical sections. Fig. 2 is a transverse section of the still, the walls of the heating-chamber, and bridge-wall.

A represents the still in the shape of a vertical cylinder located in the heating-chamber B, and resting on the supports A', that elevate the still some distance above floor of the said chamber. A bridge-wall, *a*, extends under the still, preferably on one side of the center and up the sides of the still, partly closing the space between the still and the walls *b* of the chamber, and dividing the chamber below the top of the still into two parts.

C are vertical tubes running through the still and set on radial lines, as shown in Fig. 2. A large space is left unoccupied by tubes in the central part of the still, from which, by reason of the tube being set on radial lines, as aforesaid, access may be had to all parts of the inside of the still, greatly facilitating the cleaning of the still and the removal of refuse therefrom.

A casing, D, incloses the man-hole *d* on top of the still and passes up through the wall or casing above, through which access may be had to the inside of the still.

E is the chimney, and F the flue leading from the chamber B to the chimney.

G is the opening in the floor of the chamber B, through which the products of combustion are admitted into the chamber, and preferably by means of a heat-generator in direct communication with said chamber.

The still may be provided with such outlet and inlet pipes and valves as are necessary in the usual manner.

In operating the device the heat is admitted into the chamber B on one side of the bridge-wall, and passes up through the tube and around the side of the still, and thence over

the top and down on the other side of the bridge-wall, through the tubes, and around the side of this part of the still, and from thence through the flue F, leading to the chimney.

5 We are aware that stills have been inclosed in heating-chambers, and we make no claim, broadly, to such construction.

What we claim is—

1. In a petroleum-still, the combination, with
10 a heating-chamber, the lower portion of which is divided into two parts by a bridge-wall, a flue communicating with one portion of said chamber, and the flue or opening G in the bottom of the other portion of said chamber, of
15 a vertical still supported on standards directly over the opening G, and provided with vertical flues, all of the above parts combined, as described.

2. In a petroleum-still, the combination, with
20 a heating-chamber divided from the top of the

still downward into two parts, a flue communicating with one portion of the chamber, and the flue or opening G in the bottom of the other portion of said chamber, of a vertical still supported on standards over the opening 25 G, and provided with vertical tubes extending through the still and set on radial lines, so as to leave a space in the center of the still, and with a man-hole, by means of which access is had to the space between the tubes, 30 substantially as set forth.

In testimony whereof we sign this specification, in the presence of two witnesses, this 11th day of December, 1883.

ROLLIN C. CLARK.
MURRAY H. WARREN.

Witnesses:

G. G. USHER,
B. D. CHADWICK.