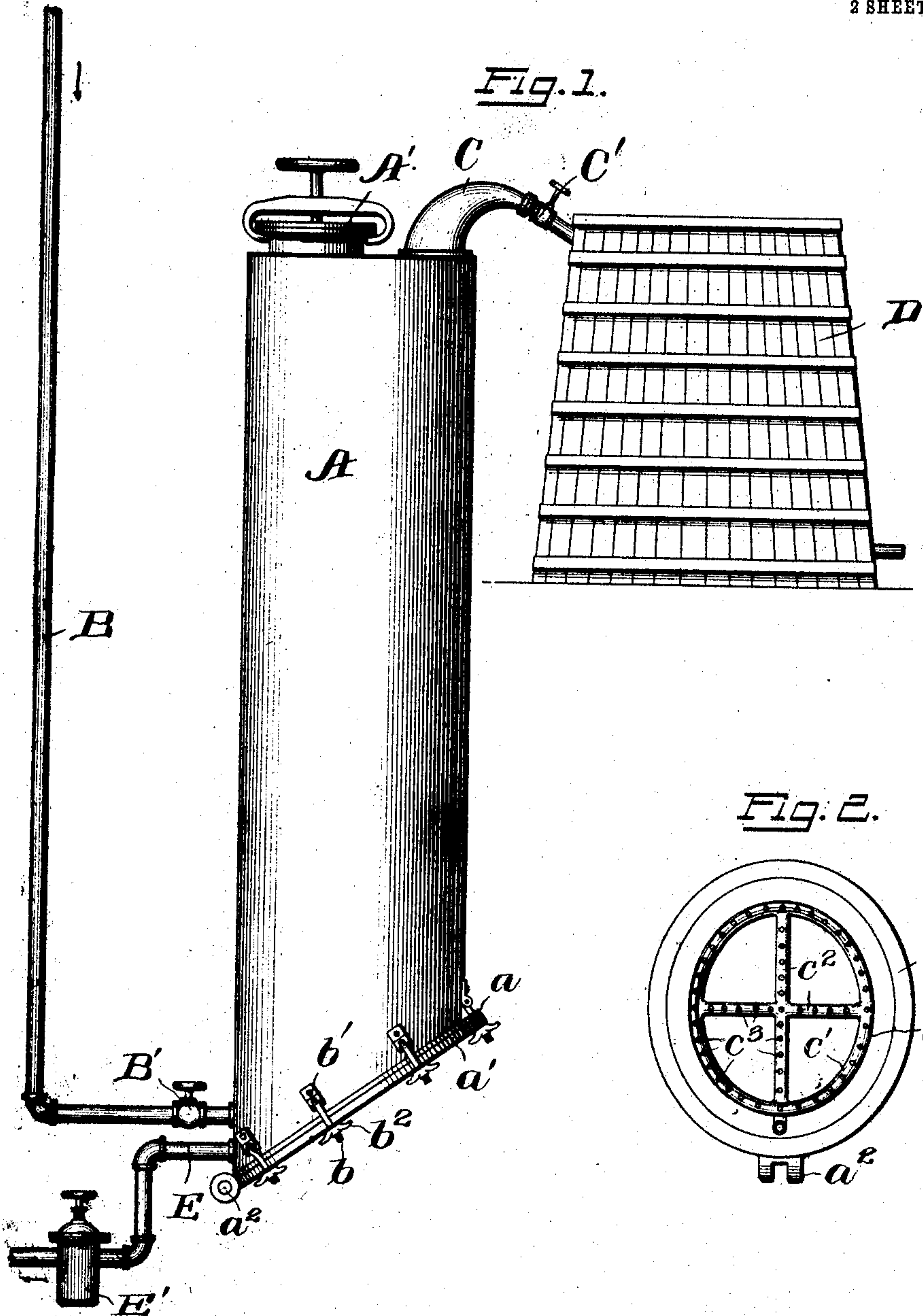


No. 864,320.

PATENTED AUG. 27, 1907.

H. A. MACKIE.
DISTILLING APPARATUS.
APPLICATION FILED NOV. 10, 1906.

2 SHEETS—SHEET 1.



Witnesses
W. Max Durrall
Myron L. Clear

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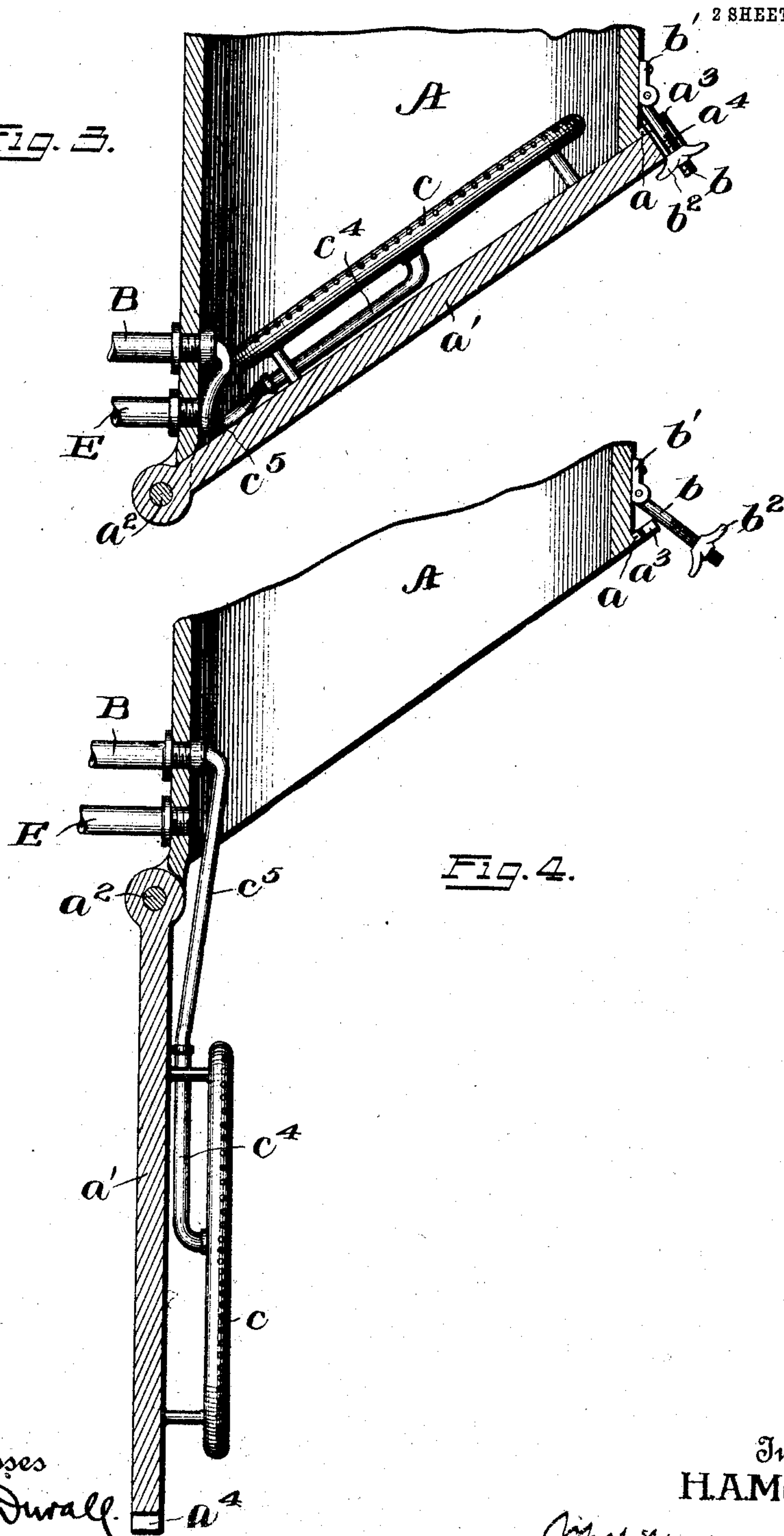
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2 SHEETS—SHEET 2.

Fig. 3.



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UNITED STATES PATENT OFFICE.

HENRY A. MACKIE, OF NEW ORLEANS, LOUISIANA.

DISTILLING APPARATUS.

No. 864,890.

Specification of Letters Patent.

Patented Aug. 27, 1907.

Application filed November 10, 1906. Serial No. 342,890.

To all whom it may concern:

Be it known that I, HENRY A. MACKIE, a citizen of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented certain new and useful Improvements in Distilling Apparatus; and I 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 appertains to make and use the same.

My invention relates to apparatus for extracting turpentine and other products from wood, and consists in the improvements hereinafter described, for facilitating the reception and ejection of the mass to be operated upon, with certain improvements in the manner of introducing steam and the connections thereof.

My invention resides in the features of construction described and pointed out in the accompanying drawings, in which,

Figure 1 is a side elevation of the apparatus; Fig. 2 is a top plan view of the swinging door and steam distributor removed; Fig. 3 is a part vertical section through the lower portion of the retort showing the door closed and locked; and Fig. 4 is a similar view showing the door open.

Referring to the figures, A indicates the retort vertically arranged, and provided with the steam tight man-hole A' at its upper end for the reception of the mass of material to be operated upon.

B is the steam pipe leading to the retort A and provided with a regulating valve B', and C is a tapering vapor pipe leading from the retort A to the condenser D and provided with a valve C' for regulating the pressure in the retort.

The retort A is preferably constructed slanting at its lower end to allow the premature condensation from the material to sink to the lowest point and to be drawn off when desired through a drain pipe E and trap E' of the ordinary type. The retort A is further provided with an encircling flange a on its slanting lower end, and with a swinging door a' hinged at a² and adapted to make a steam tight connection against the flange a when closed. The flange a and door a' are provided with spaced registering slots a³ and a⁴, respectively, into which are adapted to slip the threaded locking bars b, pivotally attached at one end to the retort A by means of clips b' and provided on the free ends with hand screws b² for clamping the door a' tightly closed.

c is a steam distributor suitably mounted on the door a' and comprising an outer circular pipe c' and inner crossed pipes c² provided with perforations c³ throwing the steam upwardly through the retort.

c⁴ is a steam pipe opening into the center of the distributor c and connected to the steam inlet B, by means of a flexible metallic hose c⁵ thus allowing the distributor to swing with the door a' without danger to its connections. The door a' being closed the operation is as follows: Sawdust or finely ground wood is introduced into the retort A through the man-hole A', and valve B' is operated to permit steam to enter through pipe B, flexible pipe c⁵, pipe c⁴, and the distributor c, thus projecting the steam evenly through the mass of material. The steam in forcing its way upward through the material heats and evaporates the turpentine and other products, and the vapor thus formed passes out through pipe C to the condenser D to be condensed in the well known manner, the pressure being regulated by valve C'. After the products have been extracted and the premature condensation drawn off through pipe E and trap E', the locking bars b are withdrawn by means of the hand screws b² and the door opened allowing the used material to drop out.

It will be seen that this construction does away with the necessity of raking and cleaning the retort after each operation and it also does away with the necessity of resetting the steam distributing means.

Having thus described the construction and operation of my apparatus, what I claim is—

1. In a device of the character described, a vertical retort, means for receiving the material at the upper end thereof, a hinged door mounted on the lower end of said retort to facilitate the removal of the material, a steam supply pipe, a steam distributor mounted on said door, and flexible connections between said pipe and said distributor, substantially as described.

2. In a device of the character described, a vertical retort, means for receiving the material at the upper end thereof, a hinged door mounted on the lower end of said retort to facilitate the removal of the material, locking means for said door, a steam supply pipe, a steam distributor mounted on said door, and a flexible steam pipe between said supply pipe and said distributor, substantially as described.

3. In a device of the character described, a vertical retort, a steam tight man-hole arranged at the upper end thereof for the reception of the material, said retort being constructed slanting on its lower end and provided with an encircling flange, a swinging door hinged to close tightly against said flange, locking means for said door, a steam supply pipe, a steam distributor mounted on said door, and flexible steam connections between said pipe and said distributor whereby said distributor may be swung downwardly with said door to allow the material to drop out, and may be reset when said door is closed, substantially as described.

4. In a device of the character described, a vertical retort, a steam tight man-hole arranged at the upper end thereof for the reception of the material, said retort being constructed slanting on its lower end and provided with an encircling flange, a swinging door hinged to close tightly against said flange, said door and said flange being pro-

vided with a plurality of registering, peripheral slots, threaded locking bars pivotally attached to the retort and adapted to be projected into said registering slots, hand screws adapted to be screwed upon said locking bars below
5 said door to make a steam-tight connection, a steam supply pipe, a steam distributor mounted on said door, and a flexible steam pipe communicating between said supply pipe and said distributor whereby said distributor may be swung downwardly with said door to allow the material to

drop out, and may be automatically reset when said door 10 is again closed, substantially as described.

In testimony whereof, I affix my signature, in presence of two witnesses.

HENRY A. MACKIE.

Witnesses:

FRANK T. ECHEJABAL,
J. H. RAPP.