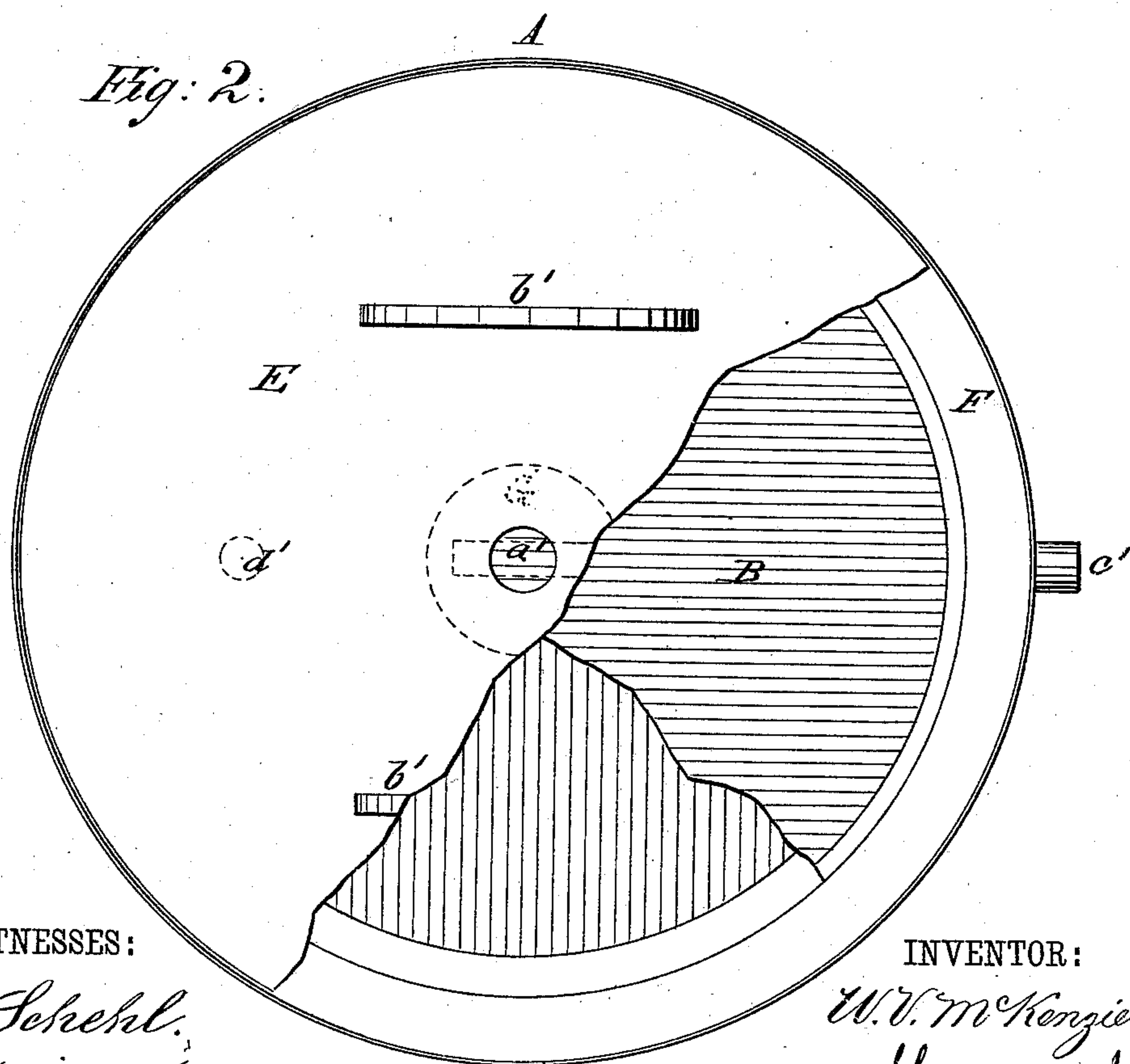
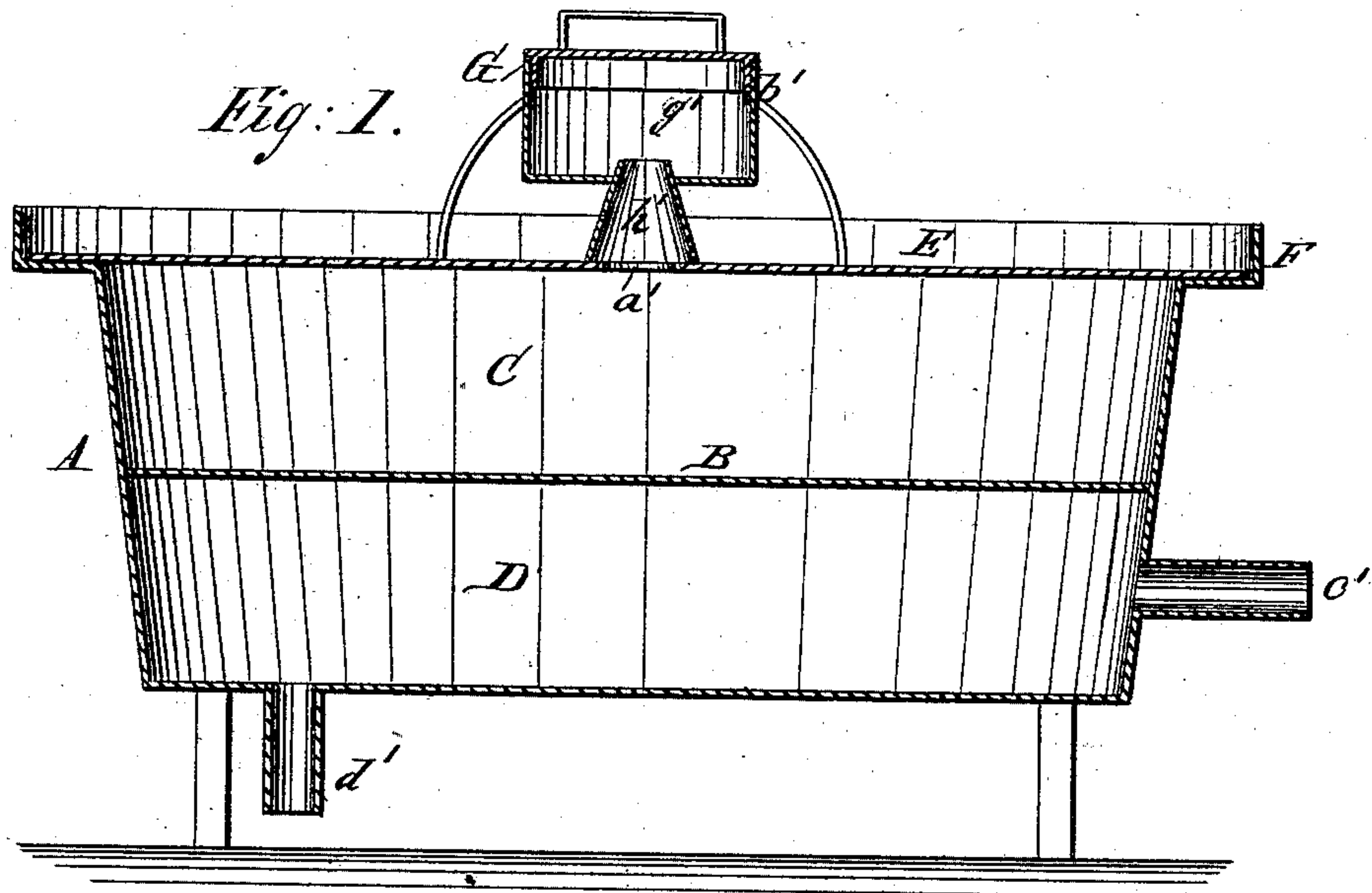


W. V. McKENZIE.
Apparatus for Refining Camphor.

No. 223,747.

Patented Jan. 20, 1880.



WITNESSES:

A. Seehl.
C. Sedgwick

INVENTOR:

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UNITED STATES PATENT OFFICE.

WILLIAM V. McKENZIE, OF RAHWAY, NEW JERSEY.

APPARATUS FOR REFINING CAMPHOR.

SPECIFICATION forming part of Letters Patent No. 223,747, dated January 20, 1880.

Application filed August 25, 1879.

To all whom it may concern :

Be it known that I, WILLIAM V. McKENZIE, of Rahway, in the county of Union and State of New Jersey, have invented a new and
5 Improved Apparatus for Refining Camphor, of which the following is a specification.

Figure 1 represents a sectional elevation of the evaporating and subliming pan used in the process. Fig. 2 is a plan of the same with
10 parts cut away to give a view of the interior.

Similar letters of reference indicate corresponding parts.

The object of this invention is to provide a more economical method of refining camphor.

15 In the drawings, A represents the metallic pan, which may be of any desired shape, provided with a horizontal diaphragm, B, that completely divides the pan into an upper and a lower chamber, C and D; respectively.

20 E is the flat cover, set within the flanged rim F of the pan, and provided with the central aperture, *a'*, for the escape of the moisture arising from the camphor during the refining process.

25 *b' b'* are the handles of the cover.

The steam-pipe *c'* and waste-pipe *d'* are entered, respectively, into the side and bottom of the lower chamber.

30 The method of using my improved apparatus consists in placing the crude camphor upon the diaphragm B and introducing steam of proper temperature from a boiler into the chamber D to cause the camphor to evaporate or sublime.

35 The moisture or a portion of it contained in the crude material passes off as steam through the aperture *a'*, while the camphor sublimes or evaporates and collects upon the under side of the cover E in a solid cake that may readily
40 be removed by slightly heating the cover. The impurities of the camphor remain behind on the diaphragm.

With one boiler and one fire I can operate scores of camphor-pans, placed at a distance
45 from the boiler in any convenient location, while by the usual method a number of fires

are required to perform the same amount of work at a greatly increased cost of labor and fuel.

By this mode of operation the temperature 50 in the evaporating-pans can be almost instantly changed by opening or closing the valves in the steam-pipes; and this facility with which the temperature can be regulated also gives the process great advantages over the 55 usual one.

I make use, with the above-described volatizer, of a condenser, G, made of glass, porcelain, or other non-oxidizable material, which is set on the cover E just over its central aper- 60 ture, *a'*. The steam and volatilized camphor escaping through the said aperture come in contact with the interior surface of this device, and most of it quickly condenses, the camphor adhering to the surface and the condensed 65 steam collecting in the bottom.

The condenser is conveniently formed of a covered cylinder, *g'*, set about a funnel or hollow cone, *h'*, the point of the cone projecting upward, so that the condensed steam cannot 70 run back into the vessel below.

I am aware that it is not new to use a vessel for subliming camphor or benzoic acid consisting of chambers for the admission of steam and compartments for the substances to be 75 operated upon, having a flat cover forming a water-seal and operating as a condenser; but I am not aware that any one has heretofore employed a condenser like mine with such a vessel; hence 80

What I claim as new and of my invention is—

The combination, with the rim-flanged pan A B C D, of the cover E, provided with the water-sealed joint, having the hole *a'*, the cone 85 *h'*, and the condenser G, as and for the purpose specified.

WILLIAM V. McKENZIE.

Witnesses:

I. I. STORER,
C. SEDGWICK.