(No Model.)

R. O. CARTER.

APPARATUS FOR DISTILLING CRUDE TURPENTINE.

No. 526,613. Patented Sept. 25, 1894.

FIG. 1.

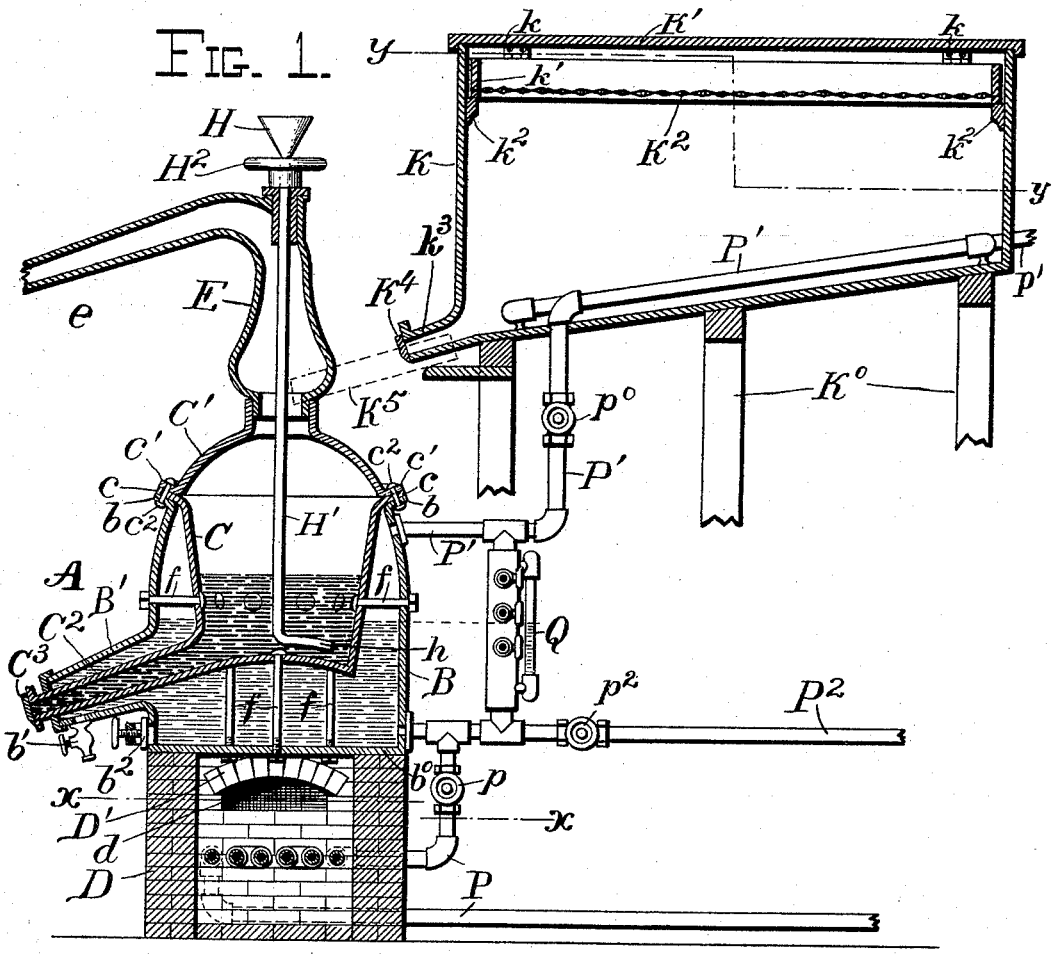


FIG. 2.

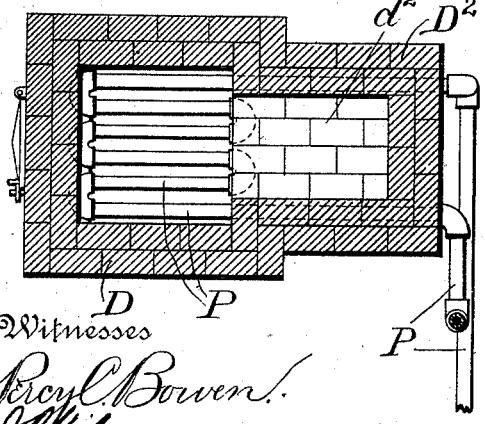
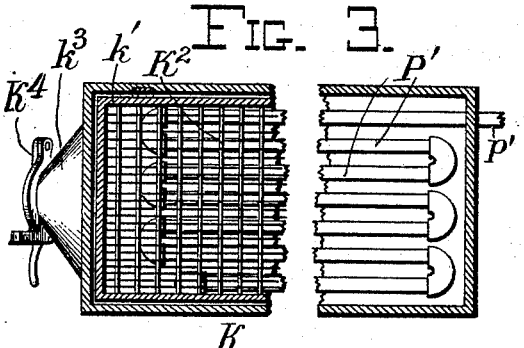


FIG. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

REDIN OSCAR CARTER, OF KIRKLAND, GEORGIA.

APPARATUS FOR DISTILLING CRUDE TURPENTINE.

SPECIFICATION forming part of Letters Patent No. 526,613, dated September 25, 1894.

Application filed April 27, 1894. Serial No. 509,206. (No model.)

To all whom it may concern:

Be it known that I, REDIN OSCAR CARTER, a citizen of the United States, residing at Kirkland, in the county of Coffee and State of Georgia, have invented certain new and useful Improvements in Apparatus for Distilling Crude Turpentine; 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 distilling crude turpentine, and for whisky, brandy, alcohol, &c., and it consists of certain novel features hereinafter described and claimed.

Reference is had to the accompanying drawings, in which the same parts are indicated by the same letters throughout the several views.

Figure 1 represents a longitudinal vertical section of my improved apparatus. Fig. 2 represents a horizontal section along the line $x\ x$ of Fig. 1, and Fig. 3 represents a section made along the broken line $y\ y$ in Fig. 1, and looking down.

A designates the still, composed essentially of the boiler B, retort C, and furnace D. The retort or still proper, C, is placed inside of the boiler B, and is suspended by a flange c around its upper edge, which rests upon a flange b around the upper edge of the boiler. The top C′ of the retort C has a flange c' around its lower edge which rests upon the flange around the upper edge of the retort, and the three parts are secured firmly together by rivets c^2 thus forming a steam-tight joint. Stay-bolts f passing through the bottom and sides of the retort and the boiler, are used to hold the retort firmly in place within the boiler.

The discharge pipe C^2 extends outward from the retort C through one side of the boiler, and has at its outer end a discharge gate C^3 for letting out the resin, and other viscous or solid products from the bottom of the retort after distillation.

The removable escape pipe E bent downward as at e carries off the products of distillation to the condenser, which not being a part of my invention is not shown herein.

When necessary, water may be admitted into the retort through the funnel H, and feed pipe H′; and the pipe H′ may be rotated by means of the hand wheel H^2, thus causing the water to become thoroughly distributed through the contents of the retort. The pipe H′ is bent at its lower end as at h for this purpose.

The boiler B rests on its base b^0 on the walls of the furnace D, and is closed at its top by the flanges c and walls of the inclosed retort C. A man-hole b^2 at one side of the base of the boiler enables it to be cleaned out with facility.

The boiler B has an extension B′ to allow the water to encircle the discharge pipe of the retort, and this extension has a blow-off cock b' near its outer end.

The furnace D communicates by the passage d beneath the arch D′, with the smoke stack D^2, the base d^2 only of which is shown in the drawings.

Water is admitted into the boiler B by means of the pipe P which enters under the furnace D, and passes from end to end therethrough to form the grate bars. Thus the water is partially heated before entering the boiler. A valve p is provided in the pipe P for shuting off the warm water if desired.

P′ is a steam pipe from the boiler B, which is controlled by the valve p^0. This pipe passes upwards into a tank K, extends back and forth through this tank, several times, and passes out through one end thereof as at p', where the steam escapes into the air or passes through a second and third tank, if desired. This tank K rests upon a suitable frame K^0 and is provided with a removable top K′. A screen K^2 is hinged at k inside of the upper edge of the tank, and its frame k' rests upon the cleats k^2. The screen is thus arranged so that it may be turned over the edge of the tank in order to empty the refuse, chips, &c., outside of the tank C. The liquids are drawn off through spout k^3 and valve k^4 into the trough K^5 shown in dotted lines in Fig. 1. When this trough is used to fill the retort C, the part E is raised upward or wholly removed, and the liquids are run into the orifice in the top of the cap C′.

P^2 is a pipe for letting cold water into the boiler, which pipe is controlled by a valve p^2.

Q designates the usual water gage.

The operation of my invention is as follows:—The resin or gum is poured over the screen K^2, and the liquid portion thereof drips down into the tank K, in which may be placed suitable chemicals for clearing and refining the same. This mass is partially heated by the steam pipe P′ passing through the tank, thus rendering the mass more fluid and allowing it to pass more freely through the discharge pipe k^3 and into the retort C, where it is heated by the hot water and steam in the boiler B, and the turpentine in the form of vapor passes up through the top of the retort into any suitable condenser. After all the turpentine or other substances has been distilled from the mass in the retort, the resin or other substances may be drawn off through the discharge pipe C^2 and valve C^3.

Should the retort become sufficiently hot to injure the resin or other substance, cold water may be admitted into the boiler by the pipe P^2, and the water from pipe P may be shut off by means of the valve *p*. Hot water may be let out of the boiler by means of the blow off cock *b*′. Thus it will be seen that by being able to cool the retort immediately, I provide against injury to the resin by excessive heat.

By use of my improved apparatus, a mixture of the first, second, and third years' yield, may be made to give results approximately equal to those from the "virgin dip."

It will be seen that the herein described apparatus presents a simple, cheap, and safe method of treating the inflammable materials being distilled; and at the same time prevents the contents of the retort from being heated to an excessive degree.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In an apparatus of the character described, the combination with a furnace and a boiler mounted thereon, of a retort inclosed in said boiler and shutting in the top thereof, a cap mounted over said retort, a detachable pipe mounted over said cap and carrying off the vapors of distillation, a tank provided with a sloping bottom, a heating coil mounted in the bottom of said tank, and means for withdrawing fluids from the lower portion of said tank and emptying them into said retort, substantially as and for the purposes described.

2. In an apparatus of the character described, the combination with a furnace and a boiler mounted thereon, of a retort inclosed in said boiler and shutting in the top thereof, with means for carrying off the vapors distilled from said retort, a water pipe P leading from the source of water supply, bent to form the grate of the furnace, and then leading upward into the boiler, and provided with the valve *p*, and the cold water pipe P^2 leading into the base of the boiler, substantially as and for the purposes described.

3. In an apparatus of the character described, the combination with a furnace and a boiler mounted thereon, of a retort inclosed in said boiler and shutting in the top thereof, with means for carrying off the vapors distilled from said retort, a water pipe P leading from the source of water supply, bent to form the grate of the furnace, and then leading upward into the boiler, the tank K to receive the crude material, and the steam pipe P′ leading from the steam space in the boiler and forming a steam coil in the base of said tank, substantially as and for the purposes described.

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

REDIN OSCAR CARTER.

Witnesses:
W. A. J. SMITH,
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