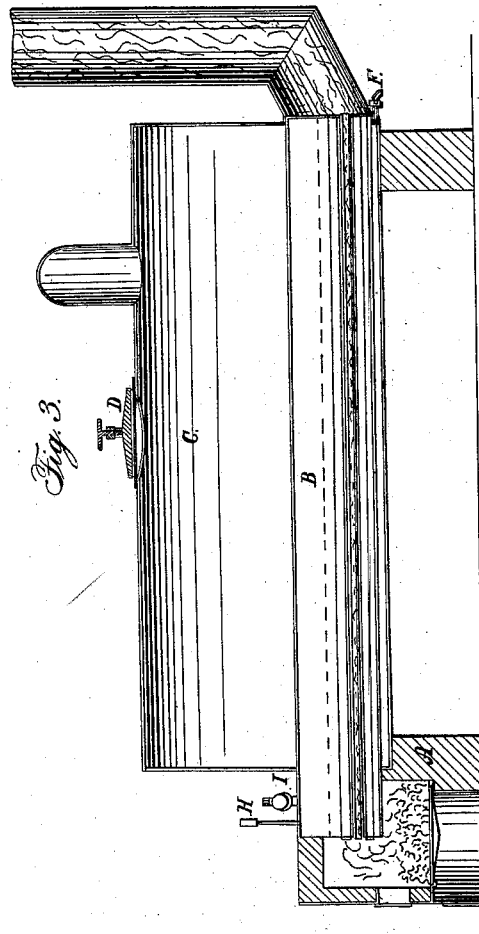
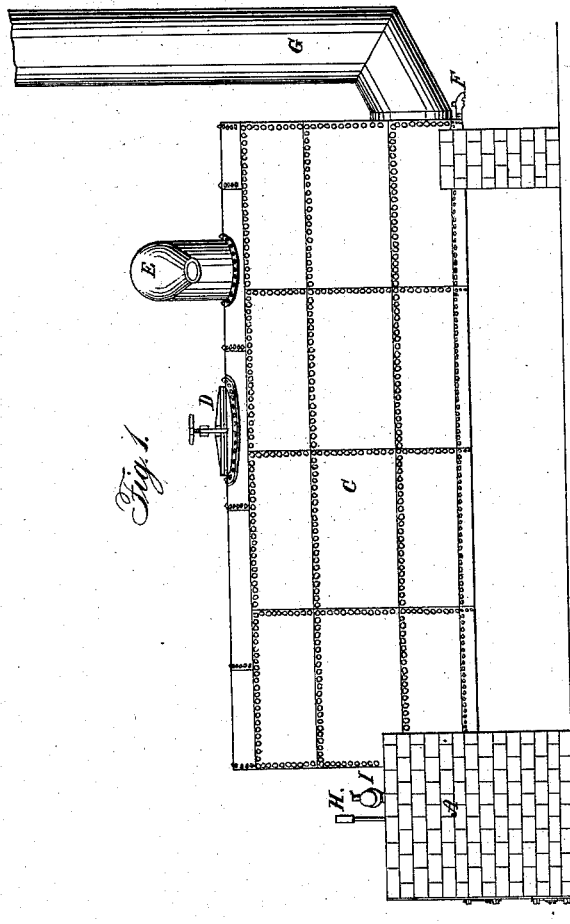
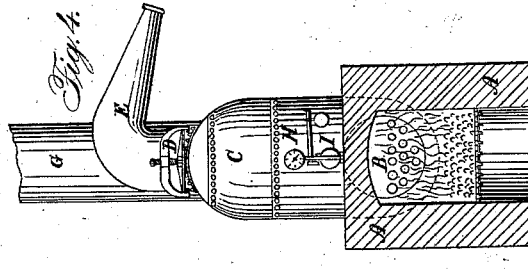
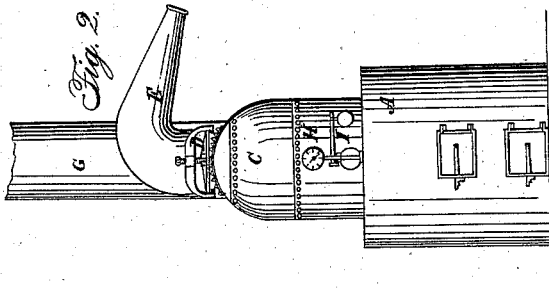


A. DUBREUIL.

Oil Still.

No. 48,265.

Patented June 20, 1865.



Witnesses:

E. Refininger
W. C. Hayward

Inventor:

Ant. D. Dubreuil

UNITED STATES PATENT OFFICE.

A. DUBREUIL, OF BALTIMORE, MARYLAND.

IMPROVED APPARATUS FOR DISTILLING PETROLEUM.

Specification forming part of Letters Patent No. 48,265, dated June 20, 1865.

To all whom it may concern:

Be it known that I, ARISTIDE DUBREUIL, a citizen of France, but now residing in the city of Baltimore and State of Maryland, have invented a new, useful, and Improved Apparatus for Distilling Petroleum or Rock-Oil; and I do hereby declare that the following is a full and accurate description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

By the present system of distillation of petroleum by dry heat the material in contact with the iron immediately over the fire is subjected to a destructive distillation, forming a dry gas, which will not condense in its passage through the worm. This inflammable gas in its escape into the air renders the process dangerous. That portion of the material so in contact with the iron, though not sufficiently heated to generate a gas, becomes burned and discolored. By my apparatus and process I avoid the generation of any gas, and send the vapor over, to the last moment of distillation, pure and white.

My improved apparatus consists in introducing a boiler or steam-generator inside the retort or still in which the material is placed for distillation.

To enable others skilled in the art to make and use my improved apparatus, I will proceed to describe its construction and operation.

I construct the still or retort to contain the petroleum of light boiler-iron, of any required form to economize space and heat, with cast-iron heads. Near the bottom of the still I insert a boiler, extending the entire length of the still, sufficiently raised from the bottom to allow the petroleum to surround the boiler and to give room to clean any impurities that might lodge upon the bottom. I prefer a tubular boiler as the most economical. At either end the boiler rests upon the cast-iron head of the still, through which it passes. The center is supported by a cast-iron chair. In front the boiler projects over the fire-surface or furnace. To this end is affixed the water-gage, safety-valve, and injector.

In the accompanying drawings, forming part of these specifications, Figure 1 is an upright perspective view of the retort as set. Fig. 2 is an upright end view of the retort as set with furnace and furnace-doors closed. Fig. 3 is a

longitudinal vertical section of the retort, generator or boiler, and furnace. Fig. 4 is an end view of a still as set, showing the fire-surface, with end view of the tubular boiler, steam-gage, and safety-valve.

In these drawings the same letters represent corresponding parts of the apparatus in each.

A represents the furnace, with the flues *a' a'' a'''*, through the boiler B, discharging into the smoke-stack G. The retort or still C, in which the petroleum is placed, surrounds the boiler G. The man-hole D allows an entrance into the still to clean out and remove impurities, if any are deposited as sediment upon the bottom of the still. The vapor of petroleum is carried off through the goose-neck E, as in ordinary distillation, and is condensed in a worm. The tar, or that portion of the material too heavy to pass off in vapor, but remaining liquid while warm, is drawn off at the waste-cock F.

The operation is as follows: The still or retort is filled with petroleum, leaving space, however, for the expansion of the material, and the man-hole fastened down. The boiler, being supplied with water, is heated from the furnace to the required degree of temperature, and communicates its heat to the surrounding oil. The exact degree of heat required to vaporize the material is thus attained and kept constantly under control. No dry gas is generated. All the light oils in vapor are condensed in their passage through the worm.

I do not claim as new the process or apparatus above described as applied to the distillation of any substance other than petroleum or rock-oil. It is a reversal of the process known among chemists as the "bain marie" or "water bath." This I do not claim as new, except in its application to the distillation of petroleum or rock-oil; but

What I do claim as new, and desire to secure by Letters Patent, is—

The use of boiling water inside the retort or still to vaporize the material known as "petroleum" or "rock-oil," substantially in the manner and for the purposes hereinbefore shown and described.

ARISTIDE DUBREUIL. [L. S.]

In presence of—

E. R. SPRAGUE,
W. H. HAYWARD.