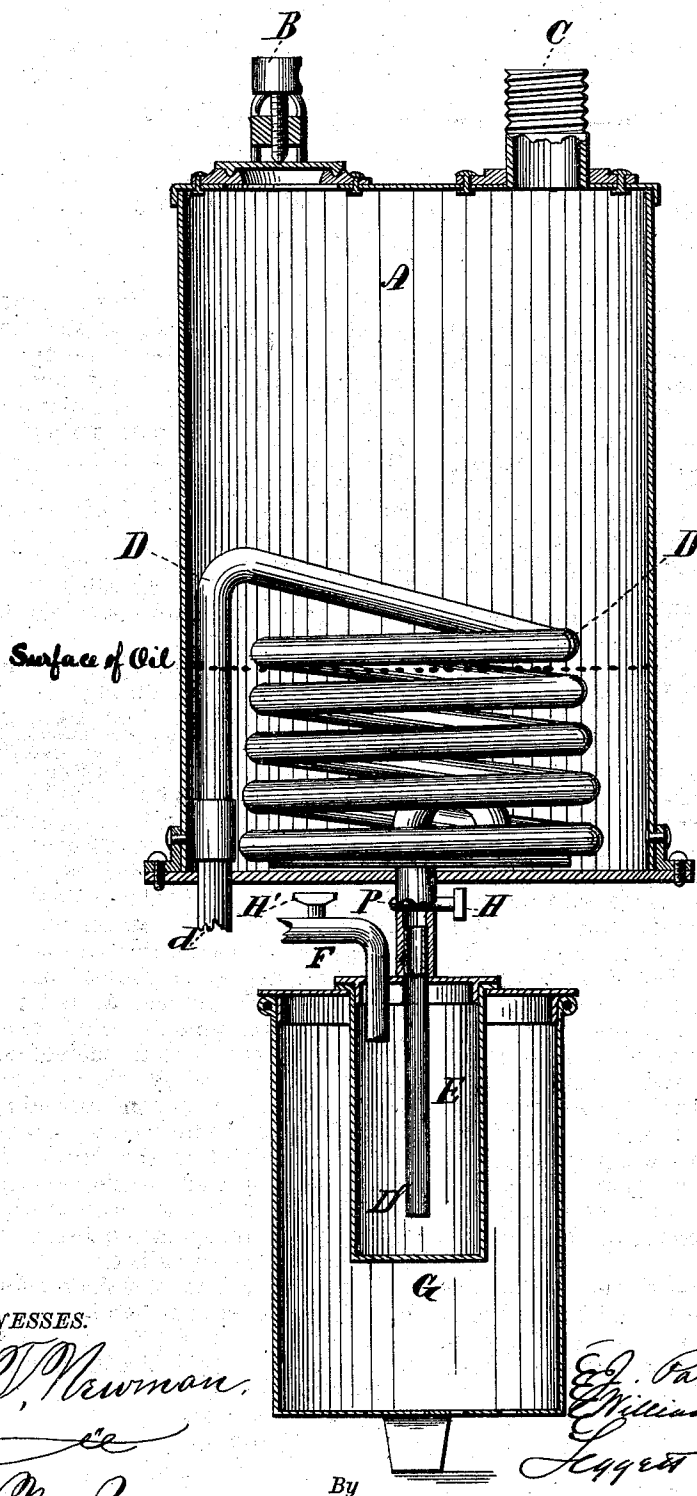


J. P. ALEXANDER & W. EBERHARD.

Oil-Stills.

No. 156,265.

Patented Oct. 27, 1874.



WITNESSES.

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UNITED STATES PATENT OFFICE.

J. PARK ALEXANDER AND WILLIAM EBERHARD, OF AKRON, OHIO.

IMPROVEMENT IN OIL-STILLS.

Specification forming part of Letters Patent No. **156,265**, dated October 27, 1874; application filed May 27, 1874.

To all whom it may concern:

Be it known that we, J. PARK ALEXANDER and WILLIAM EBERHARD, of Akron, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Oil-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 it, reference being had to the accompanying drawings, which form part of this specification.

Our invention relates to an improvement in stills for distilling crude oil; and consists in a novel device whereby the oil is dissolved by the action of superheated steam, allowed to pass freely through the same, as hereinafter set forth and claimed.

In the drawing is presented a sectional view of my invention, in which—

A is a closed still, provided with a supply-port, B, and a port, C, for the exit of the heated vapors that arise from the oil in the processes of distillation, which said outlet is connected with proper condensing apparatus. In the bottom of the chamber or still A is a coil of steam-pipe, D. This pipe extends a little above the surface of the oil in the still when the latter is properly filled. One end, D', of this pipe is connected with a superheater, E, and the other end, d, leads away to a discharge-port. A pipe, F, leads from the boiler, where the steam is generated, and discharges its contents into the superheater E, at the top of the same. The pipe D' extends nearly to the bottom of the superheater, and the superheater is surrounded by the furnace G.

It will thus be seen that steam entering the superheater will be superheated by the fire in the furnace G, and the pipe D, leading from near the bottom of the superheater, will therefore receive the steam in its hottest state, and in that condition it will pass up through the coil D.

We have discovered that, in order properly to distill the oil, the superheated steam should be allowed to pass freely through the coil D, and not be checked at any point in its passage; but the amount of superheated steam that is permitted to pass through the coil D may be regulated by a suitable valve, H, situated at any point in the pipe D before it enters the still; or a valve, H', will answer the same purpose in the pipe F before it enters the superheater; the object being to allow the steam, after it enters the coil D, to pass freely through the same, and not be checked nor impeded in its passage.

As the oil is wasted from the still A, crude oil can be admitted through the port B, so that the process may be made continuous.

In this way we find that we can work up nearly all of the tar or residuum.

What we claim as our invention is—

The combination of still A, provided with the steam-coil D, which extends a short distance above the contained oil, provided with inlet-pipe D', which extends down into and to the bottom of the superheating-chamber E; furnace G, situated a short distance below the still, and independent thereof; and cylindrical superheater E, provided at its top with inlet-pipe F and exit-pipe D', which extends down into and to the bottom thereof, said superheater placed entirely within the furnace at its top central portion, and extending from the top down into the furnace to near the bottom, whereby the heat in the furnace is made to pass all around and envelop the superheater on all sides, the whole constructed, arranged, and adapted to operate substantially as and for the purposes described.

In testimony that we claim the foregoing we have hereunto set our hands.

J. PARK ALEXANDER.
WILLIAM EBERHARD.

Witnesses:

T. F. HOMER,
L. MONEGAN.