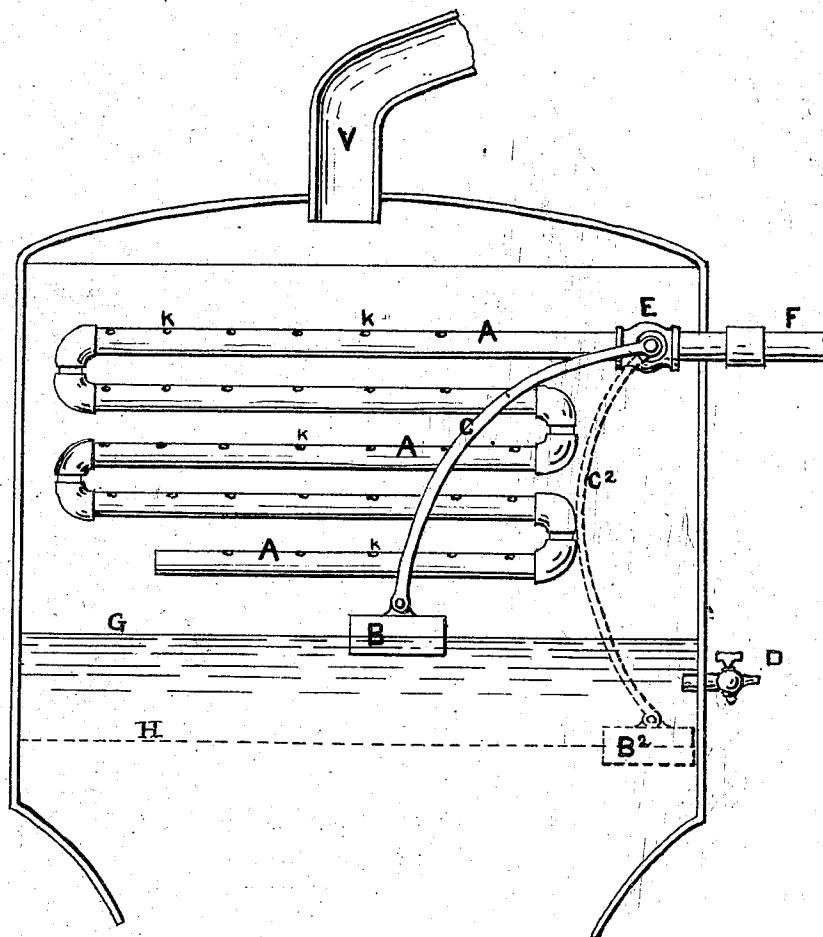


T. MCGOWAN & S. VAN SYCKEL.
Feed-Pipes for Oil-Stills.

No. 154,700.

Patented Sept. 1, 1874.



WITNESSES

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THOMSON MCGOWAN, OF MEREDITH, AND SAMUEL VAN SYCKEL, OF TITUSVILLE, PENNSYLVANIA.

IMPROVEMENT IN FEED-PIPES FOR OIL-STILLS.

Specification forming part of Letters Patent No. 154,700, dated September 1, 1874; application filed July 7, 1874.

To all whom it may concern:

Be it known that we, THOMSON MCGOWAN, of Meredith, Venango county, State of Pennsylvania, and SAMUEL VAN SYCKEL, of Titusville, Crawford county, State of Pennsylvania, have invented an Improved Feed-Pipe for Stills in the Distillation of Hydrocarbons, of which the following is a specification:

Our invention relates to the processes of distillation in which the separation of the component parts of the crude material is effected by means of heat.

The composition of hydrocarbons as ordinarily obtained, being a mechanical combination of one or more series of separate and distinct hydrocarbons having each its special proportion of carbon and hydrogen, and the difference between each of the several members of these series being very slight, it has been found, in the ordinary practice of distillation, that, in drawing off by heat applied in the usual manner to a body of crude oil or other product, it is desirable to separate perfectly and distinctly each member of the series of hydrocarbons consecutively in the order of its gravity; but in vaporizing the lighter hydrocarbons by the usual method, it is found that parts of the heavier hydrocarbons are mechanically combined and taken with them, giving a colored and imperfect distillate.

The object of our invention is to apply the heat gradually to the crude product, so that no greater heat shall reach it at any time than is necessary to free the lightest hydrocarbons of which it is composed at that time, or, in other words, that the light hydrocarbons may be removed successively in the order of their gravity, beginning at the lightest.

The drawing shows the section of an ordinary still into which our improved feed-pipe is introduced.

F is the feed-pipe of the crude product, which is regulated by the float B and the hinged lever C. When the oil in the still is low, as indicated by the position of the float and lever B² C², the stop-cock is opened by the lever, and the oil allowed to flow in. When the oil has filled the still to the line G, the action of the float and lever closes the stop-cock. After leaving the stop-cock the oil passes through the pipes A A A in two or more coils, as may be desired, and as shown.

On the upper sides of each of the horizontal pipes a series of openings, k k, are made to allow of the escape of those hydrocarbons which the heat of the pipe at that place will vaporize. As the oil passes slowly through the pipe, it receives gradually more and more heat; and when it finally falls from the pipe into the still, it is already freed from the lighter hydrocarbons, and contains only the heavier members of the series, which it will require the full heat of the still to remove.

We claim as our invention—

A perforated coil-pipe arranged within a still and connected with a feed-pipe, substantially as described, whereby the hydrocarbons introduced are vaporized and allowed to escape through the perforations in the order of their respective gravities, as the hydrocarbon traverses the pipe.

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