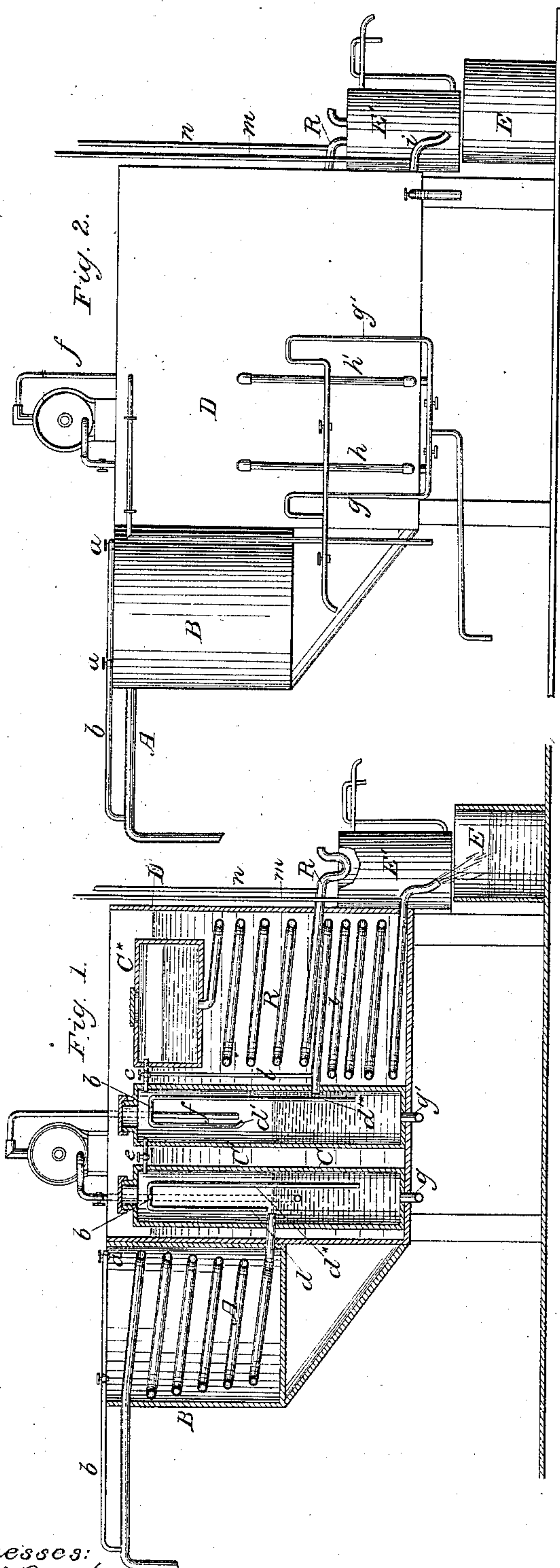


A. THIRAULT.
Distilling Petroleum.

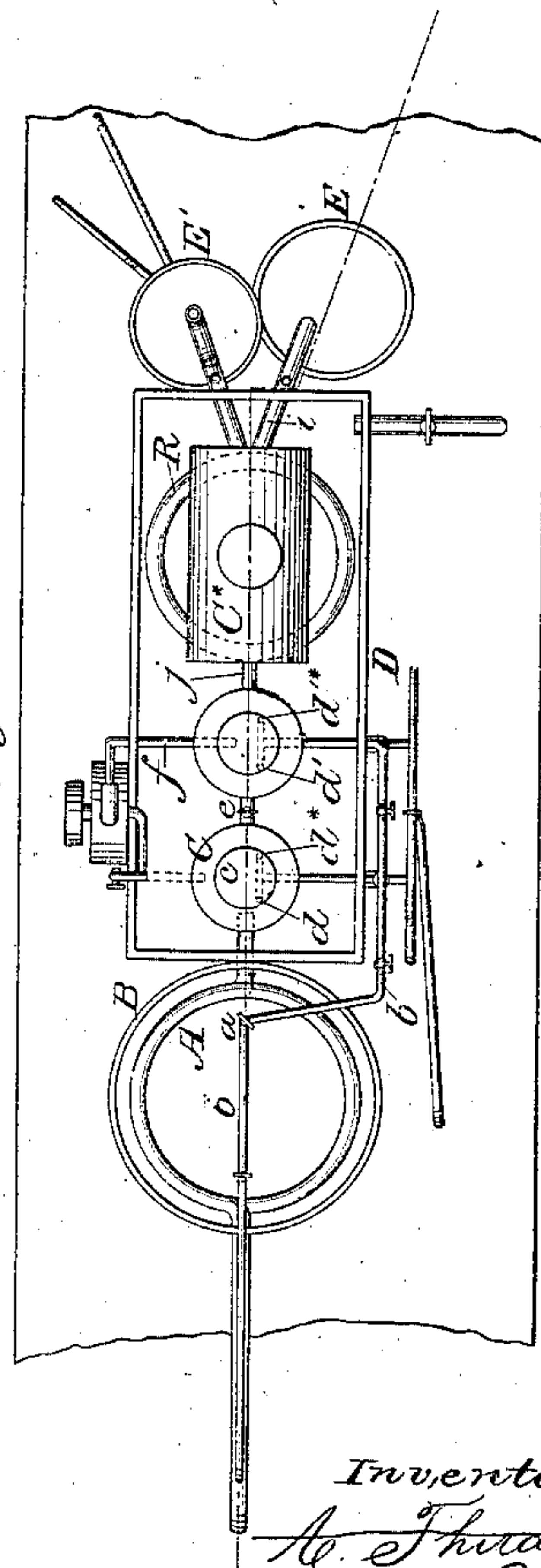
No. 63,963.

Patented April 16, 1867.



Witnesses:
Alex. T. Roberts
J. M. Connelley

Fig. 3.



Inventor:
A. Thirault

United States Patent Office.

ALEXIS THIRAULT, OF WILLIAMSBURG, NEW YORK, ASSIGNOR TO HIMSELF AND B. S. HILTON, OF NEW YORK CITY.

Letters Patent No. 63,963, dated April 16, 1867; antedated April 5, 1867.

IMPROVED APPARATUS FOR TREATING PETROLEUM.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, ALEXIS THIRAULT, of Williamsburg, in the county of Kings, and State of New York, have invented a new and improved Apparatus for Treating Petroleum; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents a longitudinal vertical section of this invention, the line $x\ x$, fig. 3, indicating the plane of section.

Figure 2 is a side elevation of the same.

Figure 3 is a plan or top view of the same.

Similar letters of reference indicate like parts.

This invention relates to an apparatus which receives the oil as the same leaves the still, and which is composed of a condensing coil from which the oil passes into one or more tanks. These tanks are closed, and they are provided with steam pipes extending down to different depths so that by letting steam into the oil an agitation is produced whereby the light parts are carried off and separated from the heavy parts, and at the same time the waste of a portion of the useful constituents of the oil is prevented.

A represents a condensing worm which is enclosed by the water jacket B. Through this worm passes the oil as the same runs from the still, and on discharging from the coil the oil collects in a cylindrical tank, C. While passing through the coil the oil is exposed to the action of steam which is introduced through one or more pipes a , branching off from the steam pipe b . The steam acting on the oil in the condensing coil chases the same ahead and causes the still to run freely. The tank C is provided with a closely fitting cover, c , and the oil in the same is permitted to rise to about a level with the discharge spout of the coil A. On discharging from this coil the oil is met by a jet of steam which is introduced into the tank C, through a pipe, d , branching off from the steam pipe b and terminating opposite the discharge spout of the coil. Another pipe, d^* , which also branches off from the steam pipe b , extends down below the level of the oil in the tank C, and the steam issuing from that pipe serves to agitate the oil in the tank. Said tank is situated in a water jacket, D, through which a current of cold water passes so that the vapors, or a portion thereof, and the steam which enter the tank are condensed. Those portions of the oily vapors, which do not condense in the tank C pass through the pipe e into the tank C', which is similar to the tank C, and situated close to the same in the water jacket D. The liquid contents of the tank C, or, more properly speaking, the oil which accumulates in the same, is pumped over into the tank C', and on issuing from the pipe f it meets a jet of steam which is introduced through a pipe, d' , branching off from the steam pipe b . Another pipe, d'^* , which also branches off from said steam pipe, extends below the level of the oil in the tank C', and the steam issuing from the same serves to agitate the contents of said tank. The water resulting from the condensation of the steam in the tanks C C' is drawn off through the pipes $g\ g'$, and these pipes form siphons, as shown in fig. 2, so as to prevent the escape of gases from the tanks. Suitable stop-cocks in the several pipes serve to regulate the flow of the liquids and of the steam. The height of the liquid in the tank C C' is observed by means of glass gauges $h\ h'$, which are attached to the outside of the jacket D and communicate with the tanks, as shown in figs. 2 and 3 of the drawing. By this treatment the light parts of the oil are completely separated from the heavy parts. The heavy parts collect in the lower portion of the tank C', and they pass off through the coil i , the end of which extends through the end of the jacket D and causes the liquid to discharge into the barrel or receiver E. The light parts of the oil which accumulate in the upper portion of the tank C' escape through the pipe j into the tank C*, which is lower and of a different shape than the tanks C C', but which may be made similar to said tanks or in any other suitable form or shape. In this tank, which is also enclosed in the jacket D, and surrounded by the cooling medium contained in said jacket, the light vapors are condensed, and the products resulting from this condensation are carried off through the coil k , the discharging end of which passes through the end wall of the jacket, and carries the oil running from it into a barrel or receiver E'. The gaseous parts which may still be mixed with the oil, as the same flows from the tank C' through the coil i , are allowed to rise through the pipe l which connects with the pipe j , and such vapors which are still mixed with the oil as the same discharges from the coil i escape in the

open atmosphere through the pipe *m*. A similar pipe, *n*, carries off the uncondensed vapors mixed with the oil escaping from the coil *k*. By this apparatus the distillation of petroleum oil and other liquids can be greatly facilitated, the flow of the stills being accelerated by the action of the steam; and furthermore, by the steam acting on the vapors and liquid while the same are condensing or about to condense, a thorough separation of the oil takes place and none of the heavy parts are allowed to escape with the light and non-condensable vapors. The yield of oil is thereby increased and all danger arising from the explosive vapors is avoided, and furthermore by the action of the steam the oil is deodorized and a pure white product is the result.

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

1. The arrangement of one or more steam jets *a*, in combination with the condensing coil *A*, constructed and operating substantially as and for the purpose set forth.
2. The steam jets *d* or *d'*, applied in combination with tanks *C* or *C'*, and with the pipes carrying the oil into said tanks, substantially as and for the purpose described.
3. The jets *d** or *d'**, in combination with the tanks *C* or *C'*, constructed and operating substantially as and for the purpose set forth.
4. The combination of the coil *A*, tanks *C* *C'* *C**, steam jets *a* *d* *d** *d'* *d'**, and coils *k* *i*, all constructed and operating substantially as and for the purpose described.

A. THIRAUULT.

Witnesses:

M. M. LIVINGSTON,
W. HAUFF.