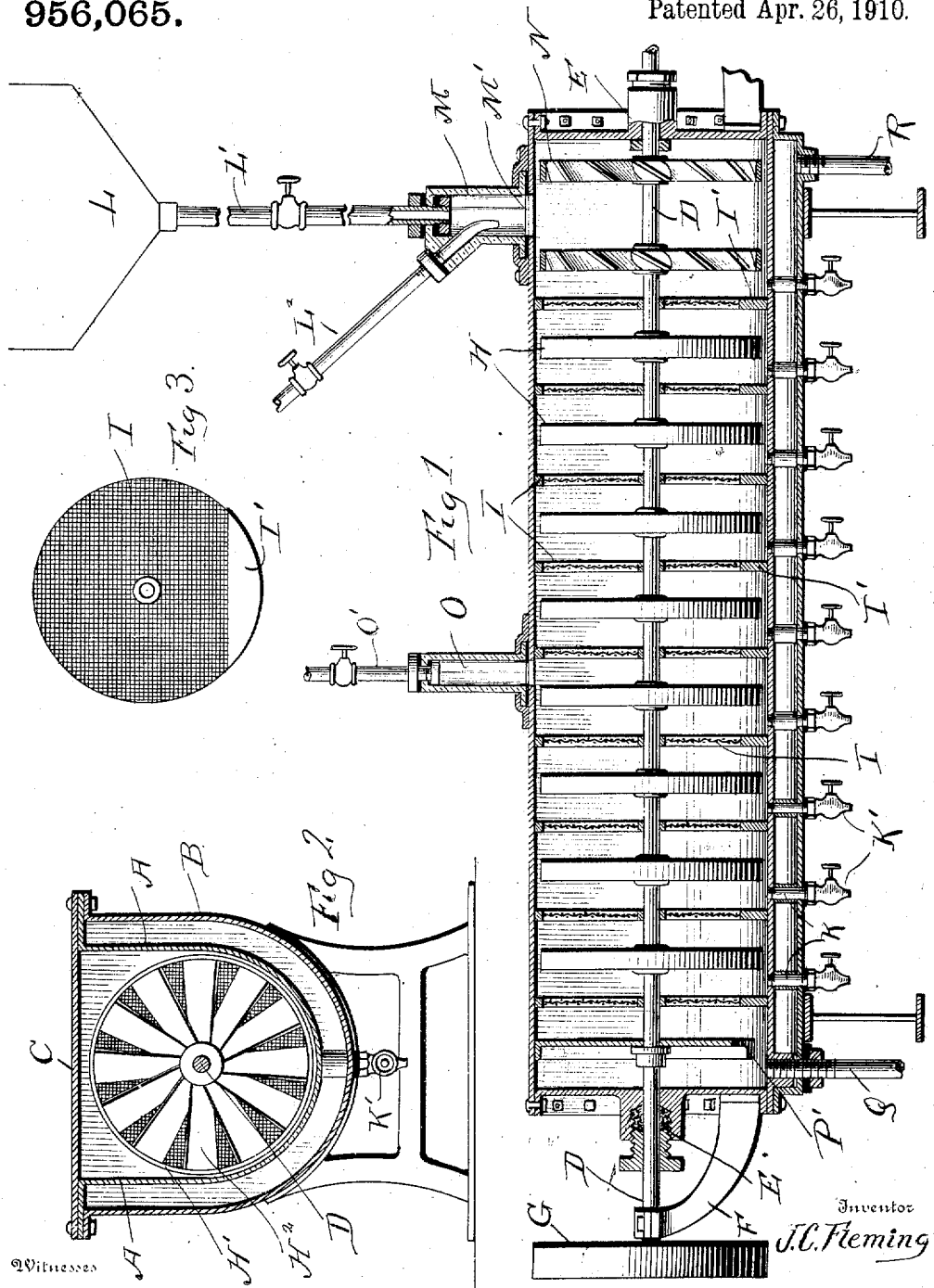


J. C. FLEMING.
 APPARATUS FOR REFINING OIL.
 APPLICATION FILED JULY 3, 1903.

956,065.

Patented Apr. 26, 1910.



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN C. FLEMING, OF WASHINGTON, DISTRICT OF COLUMBIA.

APPARATUS FOR REFINING OIL.

956,065.

Specification of Letters Patent.

Patented Apr. 26, 1910.

Application filed July 3, 1908. Serial No. 441,729.

To all whom it may concern:

Be it known that I, JOHN C. FLEMING, a citizen of the United States, at present residing in the city of Washington, District of Columbia, have invented a new and useful Improvement in Apparatus for Refining Oil, of which the following is a specification.

This invention is an improved form of apparatus for purifying and refining oils and other liquids, the object being to provide a simple and efficient form of apparatus by means of which the process of refining and purifying oils and other liquids can be quickly and easily carried out, and with these objects in view my invention consists in the novel features of construction and combination, all of which will be fully described hereinafter and pointed out in the claims.

In the drawings forming a part of this specification:—Figure 1 is a vertical sectional view partly in elevation of an apparatus constructed in accordance with my invention. Fig. 2 is a transverse sectional view, and Fig. 3 is a face view of one of the screens.

In carrying out my invention I employ a trough-shaped receptacle A which is made any suitable length and is surrounded upon the sides and bottom by means of a jacket B, said jacket and trough closed at the top by means of a cover C. The trough and jacket are both closed at the ends, and passing horizontally through the trough is a shaft D working in stuffing boxes E and journaled in brackets F, and rotated from a band-wheel or pulley G mounted upon either end of said shaft. This shaft has a series of dashers H mounted thereon, each dasher consisting of a circular rim H¹ and a plurality of radiating blades H², said blades being so arranged as to rapidly force the liquid from the right-hand end of the trough toward the left hand end. Between each pair of dashers I arrange a screen I, through which the liquid is rapidly forced, thereby breaking up the liquid and separating the impurities therefrom; and for the purpose of forcing the liquid through the wire screen, I make the lower portion of each screen solid as most clearly shown at I¹.

Adjacent each partition, a pipe K, is tapped into the bottom of the trough, said pipe extending through the jacket and at its lower end is provided with a discharge cock K¹. The liquid to be purified is fed from a

hopper L through the pipe L¹, into a glass tubulure M mounted upon the top of the receptacle adjacent the right-hand end and directly over the opening M¹ produced in the top of the receptacle and another pipe L² also leads into this tubulure for the purpose of introducing the proper chemicals in with the liquid to be purified. A supplemental dasher N is arranged adjacent the end of the receptacle upon the opposite side of the opening M¹ for the purpose of starting the liquid toward the opposite end of the receptacle thereby bringing it immediately under the influence of the series of dashers and screens.

About midway the length of the receptacle I preferably arrange a second glass tubulure O into which leads a pipe O¹ through which gas, air or any other fluid may be passed for the purpose of carrying out the purifying process.

A partition P is arranged adjacent the left-hand end of the receptacle, this partition is cut away at the lower end as shown at P¹ so that the purified liquid can be drawn off through the discharge pipe Q. R indicates a pipe communicating with the jacket and by means of which a heating or cooling liquid can be introduced into the jacket whenever desired, and also drawn off.

In the use of this apparatus the oil or other liquid is fed into the right-hand end of the machine and rapidly passed through the various screens by means of the series of dashers, and by the use of the solid portions the liquid is forced through the wire screens; and by means of the pipes K and cocks K¹ every portion of the receptacle can be drained.

It will thus be seen that I provide a simple and highly efficient form of machine for the mixing of purifying agents with oils or other liquids as well as providing for a thorough mixing and atomizing of the ingredients.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In a machine of the kind described, a receptacle provided with inlet and outlet means, a horizontal rotary shaft passing through the receptacle, a series of dashers mounted upon said shaft, a series of screens arranged within the receptacle, each screen being adjacent a dasher, the lower portion of each screen being solid, a draw-off pipe

tapped into the bottom of the receptacle adjacent each screen and a supplemental dasher arranged adjacent the feed end of the receptacle, as set forth.

5 2. In a device of the kind described, a covered receptacle, vertically arranged screens dividing said receptacle into a plurality of compartments, means arranged adjacent each screen for forcing a liquid
10 through said screen, a tubulure arranged upon said receptacle at one end, the forcing means above mentioned forcing the liquid in a direction away from said tubulure, a hopper, a discharge pipe connecting said
15 hopper with the tubulure and a second pipe leading to the tubulure discharging therein for the purpose of introducing suitable chemicals into the liquid, and means for introducing a fluid into the receptacle at a
20 point midway its ends, as and for the purpose set forth.

3. In a machine of the kind described, a receptacle provided with a jacket, a tubulure through which material is passed to the
25 receptacle, a horizontal rotary shaft passing through the receptacle, a series of dashers mounted thereon, a series of screens arranged within the receptacle, each screen

being adjacent a dasher, the lower portion of each screen being solid, a draw-off-pipe 30 tapped into the bottom of the receptacle adjacent each screen, and a supplemental dasher arranged adjacent the feed-end of the receptacle as set forth.

4. In a machine of the kind described, a 35 receptacle provided with a jacket and having a cover, said cover having openings through which liquid and gas can be introduced into the receptacle, glass tubulures connected to the cover of the receptacle, a 40 horizontal rotary shaft passing through the receptacle, a series of dashers mounted upon the said shaft a series of stationary screens arranged within the receptacle adjacent each dasher, the lower portion of each screen 45 being solid, a draw-off pipe tapped into the bottom of the receptacle adjacent each screen, and a supplemental dasher arranged adjacent the feed-end of the receptacle, and a discharge pipe all arranged and adapted 50 to operate substantially as described.

JOHN C. FLEMING.

Witnesses:

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