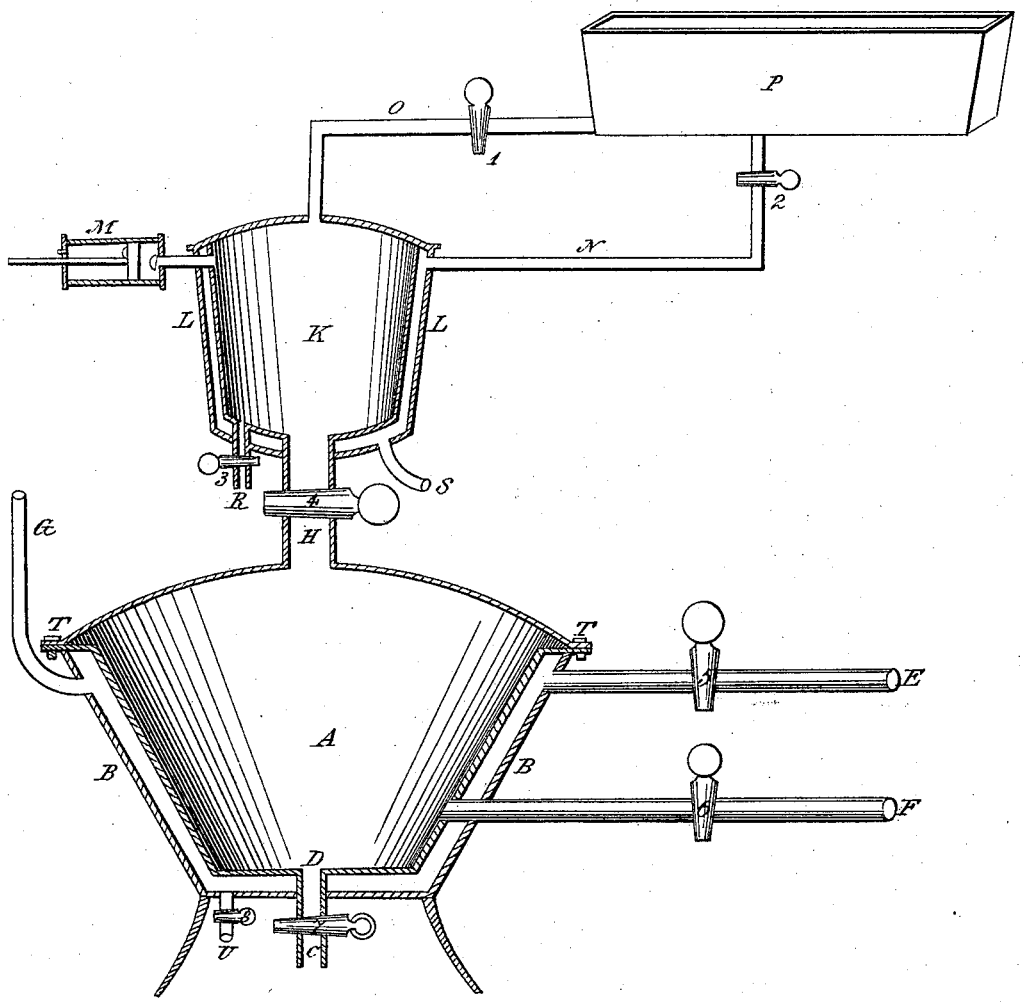
E. BRAGGINS.

Oil Still.

No. 46,633. Patented Mar. 7, 1865.



Witnesses:

A B Richmond

Ira H. Pierce

Inventor:

Edward Braggins

UNITED STATES PATENT OFFICE.

EDWARD BRAGGINS, OF TITUSVILLE, PENNSYLVANIA.

IMPROVED APPARATUS FOR DISTILLING PETROLEUM, &c.

Specification forming part of Letters Patent No. **46,633**, dated March 7, 1865.

To all whom it may concern:

Be it known that I, EDWARD BRAGGINS, of Titusville, in the county of Crawford, State of Pennsylvania, have invented a new and Improved Machine and Mode of Distillation for the Distillation of Petroleum or Rock Oil; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawing and the letters of reference marked thereon.

The drawing represents an internal view of my invention with all the parts adjusted in working order.

B B is a steam tub or jacket surrounding an oil-retort, A. U is a tube to draw off the condensed steam. G is an escape-pipe; F, a tube into the retort, by means of which oil may be pumped by a force-pump into the retort A. E is a steam-tube letting the steam into the tub B B between the tub and the retort. H is a tube from the cover T T of the retort A. K is a condenser surrounded by the jacket L L. M is an air-pump to be used to assist in forming a vacuum in K, if necessary. P is a water-tank, from the bottom of which is a tube, N, to fill the jacket L L with water around the condenser K. O is another tube to fill the condenser K with water, and R is a tube by means of which the condenser K may be emptied. 1 2 3 4 5 6 7 8 are stop-cocks.

My invention operates as follows, to wit: Stop-cock 4 is closed and 1 opened, which fills the condenser with water, the retort A having first been filled with oil. The cock 3 in the tube R is now opened and cock 1 closed. This tube R may and should be a number of feet in length, and it then "draws" on the water in K with a force like the long leg of a siphon; but the water in K cannot run out, as it would thereby leave a vacuum in the upper part of K. Stop-cock 5 is now opened and steam let in around the retort A until the oil in the same is heated to the desired degree of temperature. Now open the cock 4 and the "vapor" of the heated oil will ascend through the tube H and fill the condenser K, taking the place of the water. By this arrangement the oil may be distilled at a much lower temperature than by any other method, as the water in its effort to escape from the condenser K through the opened tube R "pulls" on the oil in the retort, and, as it were, assists the heat of the steam which pushes from below, thereby bringing two forces in operation to assist in the volatilization of the oil. The air-pump may be used, worked by an engine to create a vacuum in K, in the place of water. By this method of distillation the oil is distilled at a very low temperature, thereby avoiding the discoloration of the refined oil. This method is much safer, as no fire is near the oil.

The retort A may be constructed of any size or shape best adapted to heating by steam; and the condenser may be of any size desired, as the larger the size and the greater number of discharge-tubes like R there is in the same the greater the force exerted on the oil in retort A. When the distillation is finished, the residuum of the oil or tar may be drawn off through the tube C by opening the cock.

What I claim as my invention, and desire to secure by Letters Patent of the United States is as follows, to wit:

I do not claim the distillation in vacuum as a novelty, for it has been done before; but

I claim—

1. The method described of producing a vacuum in the condenser K by water, in the manner described, when done by the aforesaid combination, for the purposes set forth.

2. The combination of the water-tank P with the tubes O and N, the condenser K, the tube R, and the retort A with the tubes E F C, when the same are constructed as described and in the aforesaid combination, for the purposes set forth.

EDWARD BRAGGINS.

Witnesses:

A. B. RICHMOND,

IRA H. PIERCE.