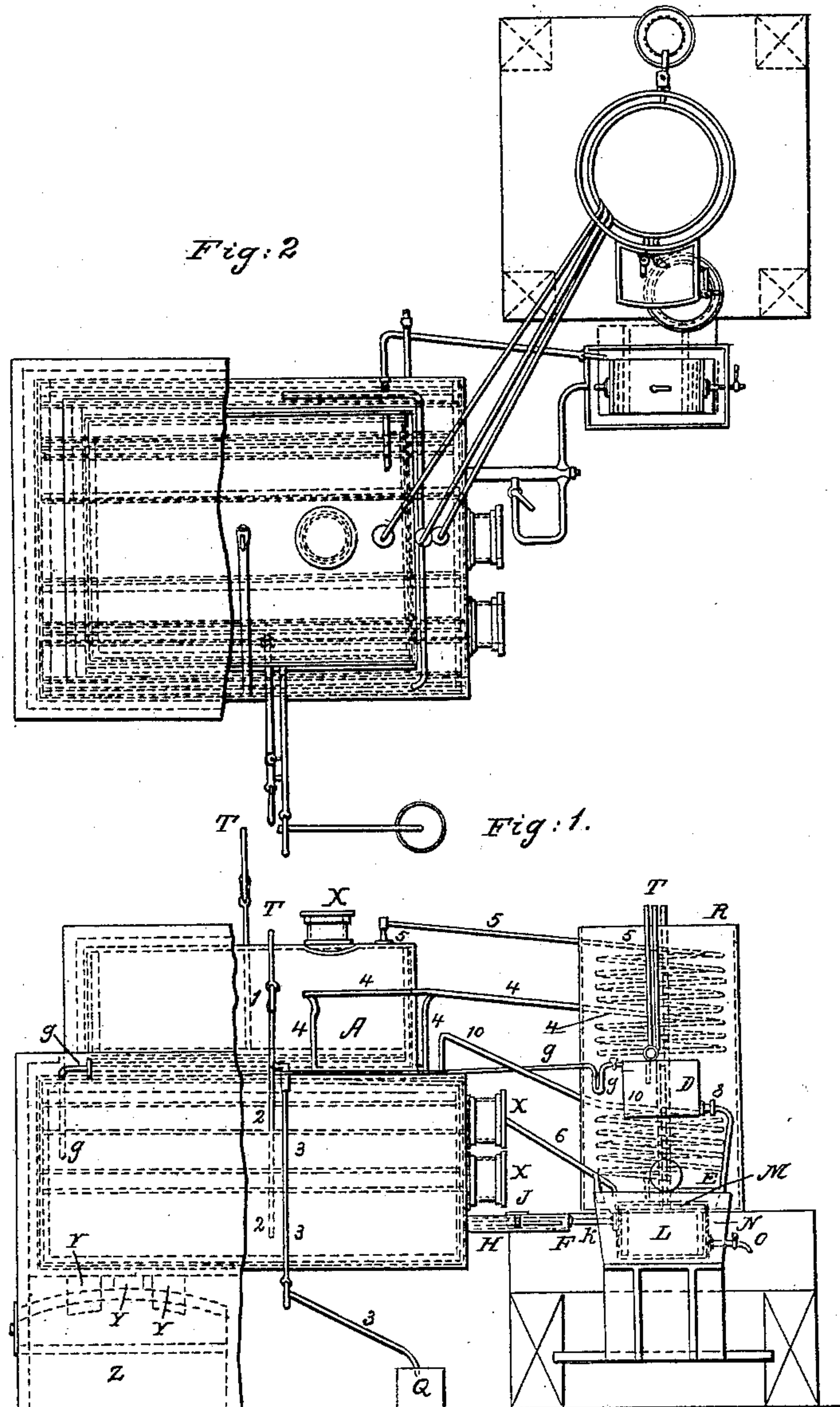


A. THIRAULT.

Apparatus for Treating Petroleum.

No. 61,120.

Patented Jan'y 8, 1867.



Witnesses:
Samuel H. Lee
David Crawford

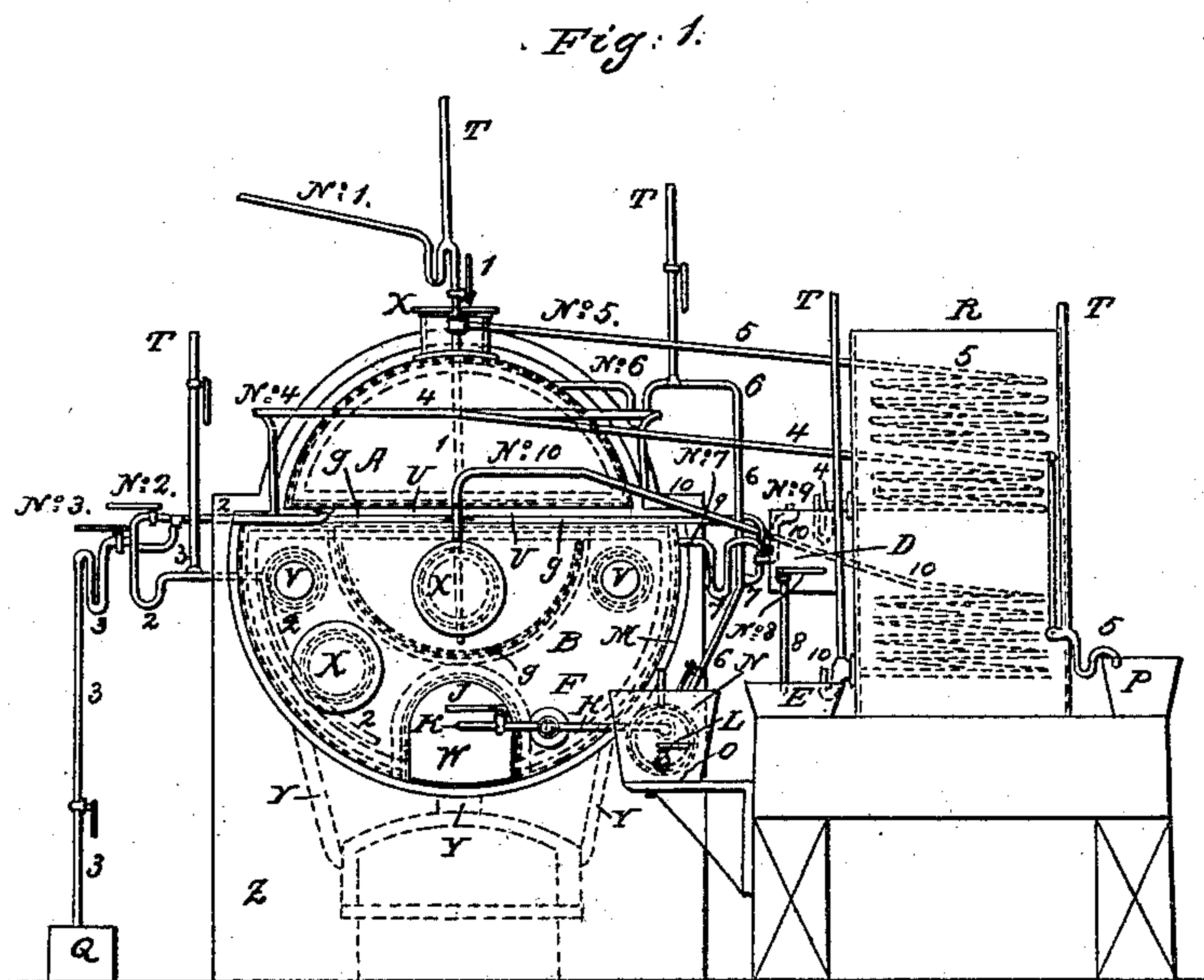
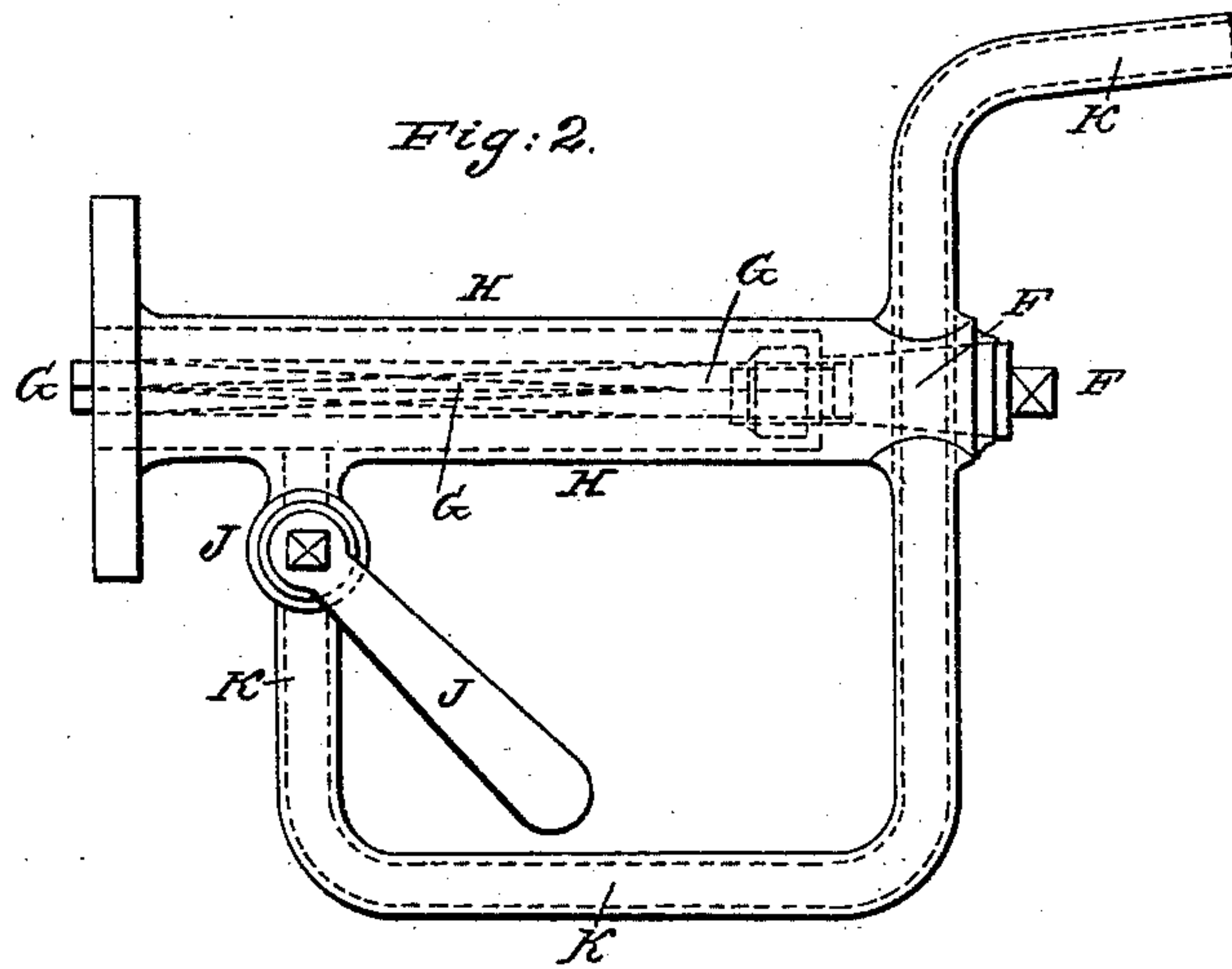
Inventor:
A. Thirault

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Apparatus for Treating Petroleum.

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Patented Jan'y 8, 1867.



Witnesses:

James H. Thompson.
David C. Crawford.

Inventor:

A. Thirault.

United States Patent Office.

ALEXIS THIRAULT, OF NEW YORK, N. Y.

Letters Patent No. 61,120, dated January 8, 1867.

IMPROVEMENT IN DISTILLING PETROLEUM.

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

Be it known that I, ALEXIS THIRAULT, of the city, county, and State of New York, have invented a new and useful Machine or Apparatus for Distilling Petroleum Oil; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing, making a part of the specification, in which—

Figure 1, in plate 1, represents a front view of the apparatus.

Figure 2, in same plate, the top view of a tar-cock.

Figure 1, in plate 2, a perspective view of the apparatus; and

Figure 2, in same plate, a top view of the same.

A B C are three different-sized boilers, forming a still, connected together, the use of each of which is as follows: The boiler A is employed for the purpose of heating the crude oil and separating the benzine from the same, before it is allowed to enter into the boiler B. The boiler B is employed for distilling continually the oil, which is allowed to flow into it from the boiler A. The boiler C is used for the purpose of redistilling certain colored parts of oil, which would flow out of the boiler B undistilled, on account of the pressure the oil sometimes undergoes in its passage from the boiler A into boiler B, and which colored parts of oil, after being prevented, by means of a cock, from mixing with the clear oil previously distilled, are forced into boiler C for redistillation. D and E are tubs to receive the oil after it is distilled. F is a tar-cock, the use of which consists in enabling to clear the still of the tar and residuum remaining in it during the operation without stopping the distillation. It consists of a pipe, H, of about three feet in length, placed at the bottom of the boiler B, which pipe H encloses a square iron rod, G, attached to the plug of the cock F. This iron rod penetrates into the still, for the purpose of breaking and removing the dry residuum remaining in the pipe H, thereby securing free egress for the tar. In connection with the pipe H there is another crooked pipe, K, communicating at one end with the cock F, and at another end with another cock, J, which is joined to the pipe H as near the still as possible, which cock J is only opened to allow the tar to follow through the pipe K after the residuum has been broken by the square iron rod attached to cock F, and this cock F being left open, to allow the tar and residuum to flow freely into the iron box or cylinder L, where it will cool by means of the refrigerator N. M is a small, crooked pipe, to regulate the pressure of the air in the iron box L. O is a cock to empty the box L. P is a tub for receiving benzine from the still. Q, ditto water. R, condenser for oil and benzine. T, pipes for the escape of the gas from the different parts of the still. U, hot-air chamber conveying the heat to the bottom of boiler A. V, hot-air pipe. W, arch or cylinder for the hot air at the bottom of part B. The construction of the boilers A B and C is such as to leave an open space between the bottom of the boiler A and the top of boilers B and C, the space being called a hot-air chamber, U. The object of this chamber is to convey the heat to the bottom of boiler A and to the top of the boilers B and C, in connection with the hot-air space surrounding the whole still. At the side of the boiler B are two cylinders or pipes, V, and at the bottom of the same boiler is an arch or cylinder, W, being both passing through the entire length of the boiler B, the arch or cylinder W being in connection with the hot-air passage Y, at the centre of the arch of the furnace Z, and also with the hot-air space surrounding the entire still, the object of which is to prevent the direct action of the fire in the bottom of the still, and for regulating the heat, by means of dampers placed in the brick-work in front of the arch cylinder. X, man-holes. Y, hot-air passages. Z, furnace, brick-work, &c. No. 1, pipe, with siphon, cock, and gas pipe, to fill boiler A with crude oil. No. 2, pipe, with siphon, cock, and gas pipe, to lead the boiling oil from boiler A into boiler B. No. 3, pipe, with siphon and cocks, to draw the water from boiler A. No. 4, four connecting leading pipes and serpentine, for the escape of burning oil. No. 5, pipe and serpentine, for the escape of benzine. No. 6, gauge-cock, with siphon and gas pipe, for boiler A. No. 7, gauge-cock, with siphon, for boiler B. No. 8, pipe and cock leading the oil from the receiving tub D into the receiving tub E. No. 9, pipe, cock, and siphon, to lead the colored oil into boiler C. No. 10, escape pipe and serpentine, for the redistilled oil from boiler C.

The operation of the apparatus is as follows: I first fill the boilers A and B with crude oil, through the pipes Nos. 1 and 2. After the benzine or naphtha has escaped from the boiler B through pipe No. 4, and that contained in A through pipe No. 5, I send the contents of boiler A into boiler B through the pipe No. 2, being

guided by the gauge-cock No. 7; and after boiler A has been emptied into boiler B, I again fill boiler A with crude oil, and prepare it for boiler B by separating the benzine from it, and then allow it, as before, to flow into boiler B through pipe No. 2, thereby securing a continuous distillation. When, on account of the pressure the oil sometimes undergoes in its passage from boiler A into boiler B, it flows out colored through pipe and serpentine No. 4, I prevent it from mixing with the oil already distilled by closing the cock 7 of the receiving tub D; then, by opening the cock of the pipe No. 9, I cause the oil to flow into the boiler C, where it is redistilled and allowed to flow out through pipe No. 10 into the receiving tub E. When I judge it necessary to take out the tar and residuum from the still, I slacken the fire for a moment, causing thereby the boiling oil to rest and the tar to depose in the bottom of the still, and then I cause the tar and residuum to flow out of the still, by means of the tar-cock F, in the manner hereabove described in the construction of the said cock F.

Claim.

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

1. The apparatus constructed as above described, the object of which is to secure a continuous distillation by one single operation, being a combination of boilers A B C and the tar-cock F with the hot-air chamber U, and all the pipes and other parts composing the said apparatus.
2. I claim separately as my invention the still composed of boilers A B C as to their form and combination, for the use and purpose above described.
3. I claim separately as my invention the tar-cock F, as to its construction, the object being to clear the still of all residuum without retarding the distillation.

A. THIRAULT.

Witnesses:

DAVID CRAWFORD,

THOMAS McKIERAN.