(No Model.)

T. J. NEWSOME.

FLUID SEPARATOR.

No. 405,047. Patented June 11, 1889.

Fig. 1.

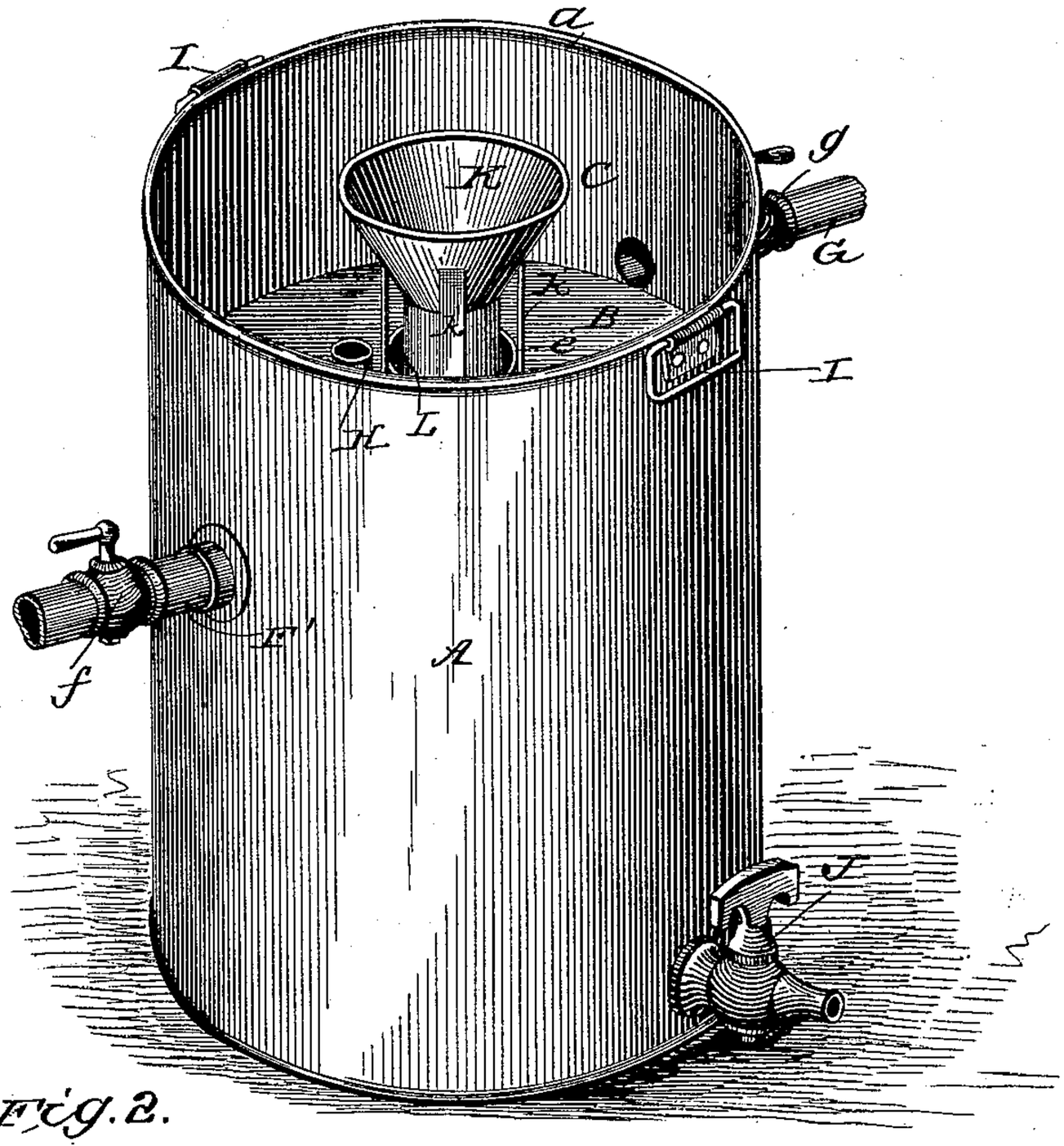
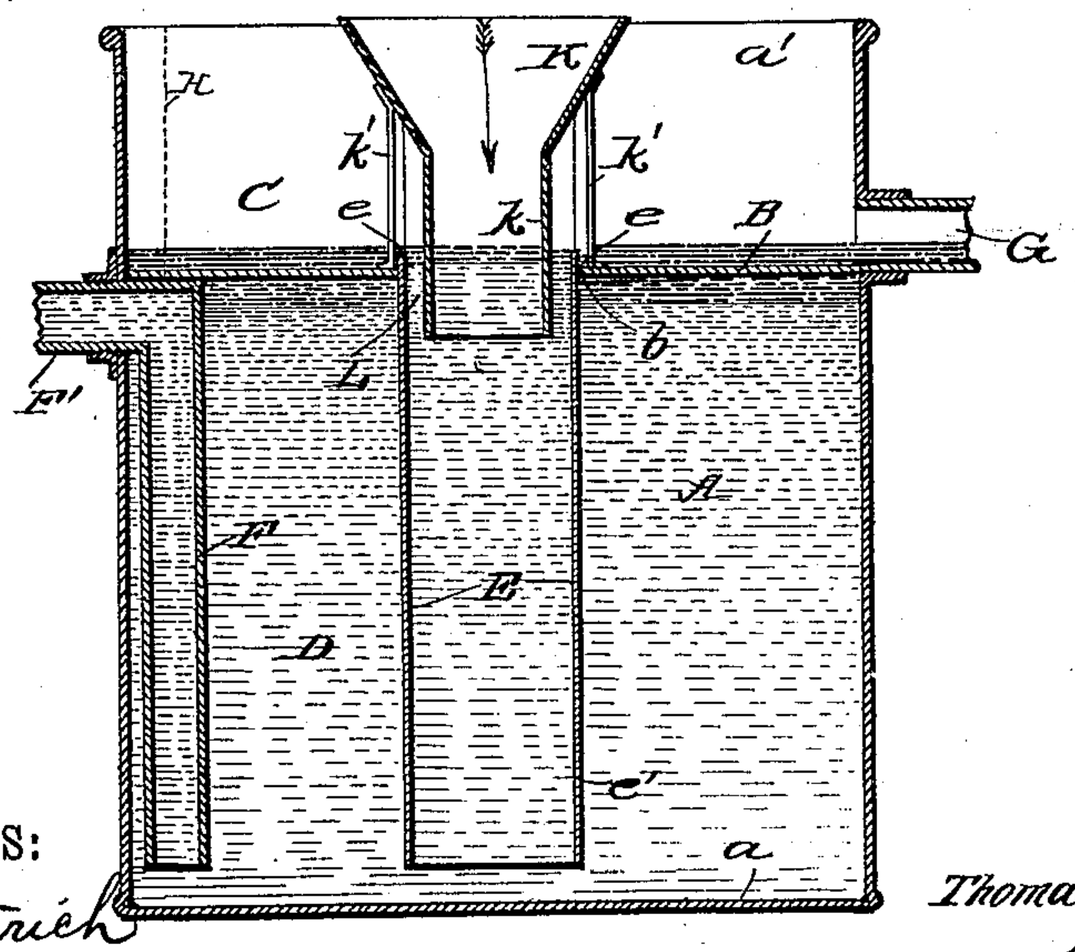


Fig. 2.



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FLUID-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 405,047, dated June 11, 1889.

Application filed February 23, 1889. Serial No. 300,989. (No model.)

To all whom it may concern:

Be it known that I, THOMAS JEFFERSON NEWSOME, residing at Wilmington, in the county of New Hanover and State of North Carolina, have invented certain new and useful Improvements in Fluid-Separators, of which the following is a specification.

My invention has for its object to provide a simple and effectual means for separating turpentine, oil, or any other fluid lighter than water from the water, and which is more especially adapted for separating the aforesaid fluids when the same are being distilled or running from the still.

To this end my invention consists in the peculiar arrangement and novel combination of parts, as will hereinafter be fully described in the annexed specification, and particularly pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my improvement, and Fig. 2 is a vertical section of the same.

In the drawings, A denotes a vessel formed of a cylindrical vertical body provided with a closed bottom *a* and open at the top, as at *a'*. This vessel is formed preferably of sheet metal of various sizes and of the proportions shown in the drawings. Near the upper end of the body a horizontal diaphragm B is formed, dividing the receptacle or tank into upper and lower compartments C D. The diaphragm B is provided with a central opening *b*, in which is fitted a central tube E, the upper end of which projects slightly above the diaphragm B, as shown at *e*, while its lower end *e'* is extended to within about one inch of the bottom *a* of the tank. Disposed within the lower chamber D, and arranged near one side of the tank, is a pipe F, the lower end of which extends to about one inch of the bottom, while its upper end extends up to the diaphragm and connects with an outlet-pipe F', which may be provided with a suitable cock *f*, as shown.

G is an outlet-pipe connected with the upper chamber at the upper face of the diaphragm B, said pipe being provided with a cock *g*, as shown.

H is an air-tube, which projects up through the upper chamber and connects with the lower chamber.

I I are suitable hand-holds for conveniently handling the tank, and J is a discharge-faucet for emptying the tank when desired.

K denotes a removable funnel, which is provided with a short depending tube *k*, of a less diameter than the tube E, and with a series of depending legs *k' k'*. In adjusting this funnel for use the tube *k* is inserted in the top of the tube E, the legs resting to the sides of the central opening on the diaphragm B. By forming the tube *k* of a less diameter than the tube E an annular opening L is formed between said tubes, for a purpose which will presently be described.

My improved separator operates as follows: The several stop-cocks being closed the mixed water and turpentine or other oily fluid is fed into the funnel. As the mixed fluid fills up the lower compartment, the oily portion thereof will remain on top and gradually rise up in the central tube, and continue to rise as the water fills the interior of the chamber. When the water rises up to the diaphragm, it forces the oily fluid up through the space between the funnel-tube *k* and the central tube out into the upper chamber, where it accumulates. The cocks *g* and *f* are then opened, and as the spirits and water are run in the funnel together in about equal quantities the water will continually discharge at the pipe F', while the spirits or oily fluid will remain on top and rise into the upper chamber and discharge through the pipe G. When the tank is first being filled, some of the oily fluid will of course enter the bottom chamber; but by extending the water-pipe to within a short distance of the bottom the oily fluid will not be discharged through the pipe, the same remaining on the top of the water within the lower chamber. By extending the central tube above the diaphragm, as described, it permits the fluid to rise above the outlet for the water before the oily fluid escapes out of the top of the diaphragm. It also admits of the ready drainage of said fluid out through the pipe G.

From the foregoing description, taken in connection with the drawings, the advantages of my improvement will be readily understood. By it great waste and evaporation are avoided.

It is simple in construction, cheap as to cost, and effectual in its desired operation.

Having thus described my invention, what I claim as new is—

1. A fluid-separator consisting of a vessel or tank provided with a horizontal diaphragm forming an upper and lower chamber, a central tube communicating at its upper end with the upper chamber, its lower end extended within the lower chamber near the bottom thereof, a discharge-pipe connected with the lower chamber above the lower end of the central tube, a discharge-pipe connected with the lower portion of the upper chamber, and a funnel or tube adapted to enter the upper end of the central tube and projected therein to a point below the diaphragm, substantially as and for the purpose described.

2. The combination, with the vessel A, provided with a horizontal diaphragm forming an upper and lower chamber, a discharge-pipe connected with the upper chamber just above the diaphragm, and a discharge-pipe connected with the lower chamber just below the diaphragm, of the tube E, centrally disposed within the lower chamber, its upper end projected above the diaphragm, its lower end extended to near the bottom of the vessel, and a funnel or tube K for leading the mixed fluid into the said vessel, said tube K projected within the upper end of the central tube a short distance below the diaphragm, said tube K being of a less diameter than the central tube E, substantially as and for the purpose described.

3. The hereinbefore-described improvement in fluid-separators, consisting of the vessel A, provided with a horizontal diaphragm forming an upper and lower chamber, a central tube communicating with the upper chamber and extended to near the bottom of the vessel A, a discharge-pipe F, connected with the lower chamber near the upper end thereof, and an outlet-cock J at the lower end thereof, a discharge-pipe G, connected with the lower portion of the upper chamber, and a funnel or tube K for leading the mixed fluid to the vessel, said tube projected within the central tube to a point below the diaphragm, said tube K being of a smaller diameter than the tube E, all arranged substantially as and for the purpose described.

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