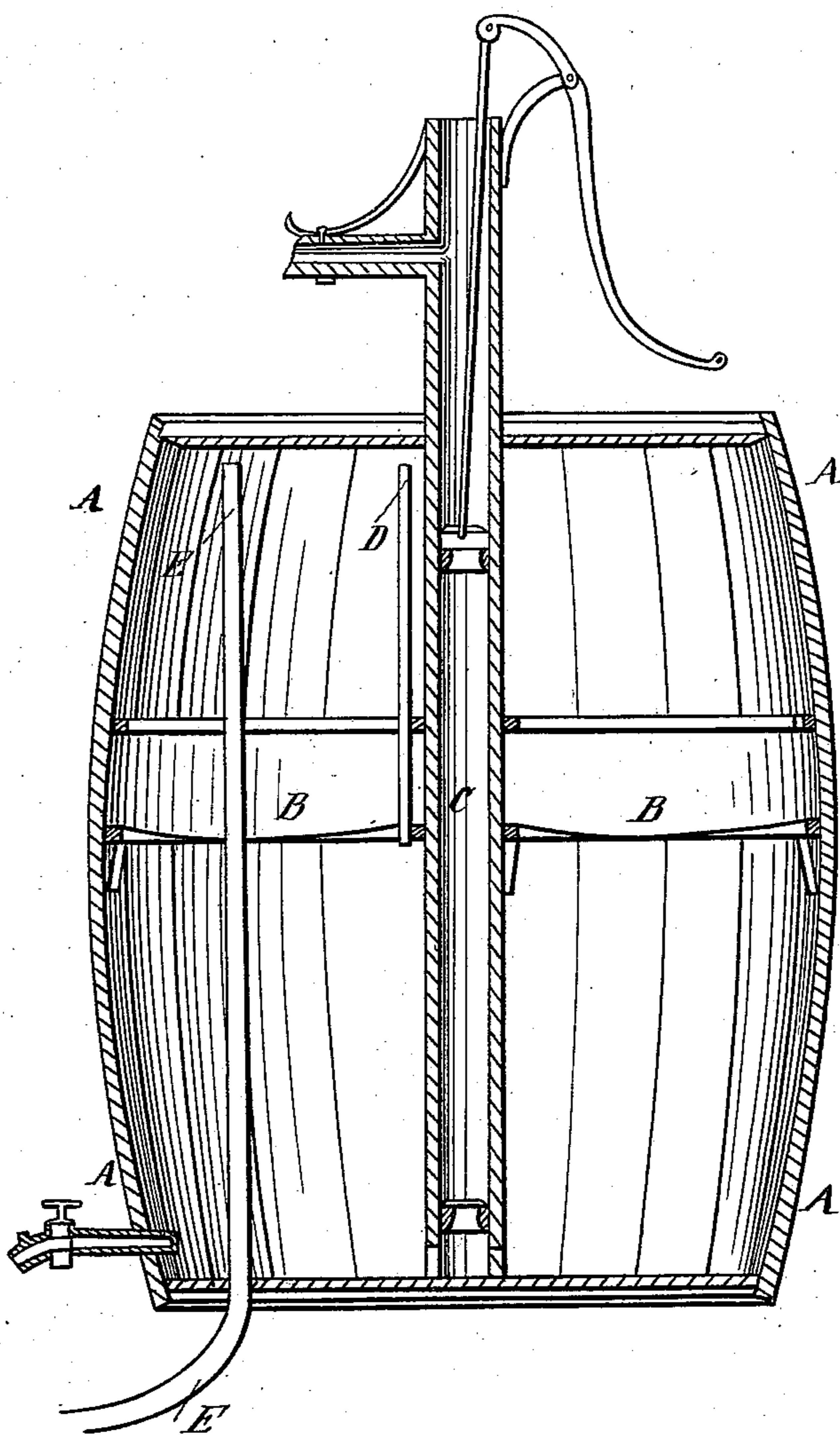


T. BISHOP.
Ageing Liquors.

No. 2,892.

Patented Dec. 31, 1842.



UNITED STATES PATENT OFFICE.

THOMAS BISHOP, OF DOBB'S FERRY, NEW YORK.

IMPROVEMENT IN FILTERS.

Specification forming part of Letters Patent No. 2,892, dated December 31, 1842.

To all whom it may concern:

Be it known that I, THOMAS BISHOP, of Dobb's Ferry, in the county of Westchester and State of New York, have invented a new and improved mode of combining the action of a filtering-machine and suction-pump and for filtering in an air-tight cask or barrel by means of an air-tube; and I do hereby declare that the following is a full and exact description of the construction and operation of the same, reference being had to the annexed drawing, making a part of this specification, representing a perpendicular section of the said combination and tube.

I take a cask of proper size, air-tight, (any other vessel of sufficient strength may be used,) and place it upon one head, as is seen by the letters A A A A. I divide the cask into two chambers or parts by a hair or other cloth drawn across it parallel to its heads, so as to entirely separate the two parts, and fastened to the circumference of the cask about three inches below the middle of the cask, as seen at the letters B B. I then introduce through the upper head and the cloth a common suction-pump, to pass to the lower head of the cask, with apertures at the foot of the pump for the water to pass from the lower chamber into the pump. The pump is represented by the letters C C. I then introduce through the cloth a small tube, passing from the bottom of the cloth to near the top of the cask, so as to open a circulation for the air between the two chambers, as shown by letter D. I then introduce through the lower head of the cask and through the cloth a pipe, passing from the cistern or other reservoir to near the top of the cask, as seen at the letters E E E. I then place upon the cloth any filtering substance, as sand, charcoal, &c., say, about six inches thick, and place over it another cloth to break the fall of the water from the pipe. When the pump is operated, the air is drawn from the lower chamber and the tube allows the air to pass from the upper to the lower chamber, thus keeping the air in the two chambers equally exhausted. When the air in the two chambers is sufficiently exhausted, the water from the reservoir passes through the pipe E, to supply the vacuum occasioned by the exhaustion of the air. As the water

comes in the air in the upper chamber passes through the tube D into the lower chamber, and as the upper chamber fills with water all the air is driven from it through the tube to the lower. The water by its own weight passes through the filter into the lower chamber and the air is returned through the tube to the upper chamber. If the pump is now operated, the water is drawn out from the lower chamber and the air from the upper chamber again passes to the lower, to supply the place left vacant by the water drawn out, and the water will again pass from the reservoir, through the pipe E, to refill the upper chamber.

To strengthen the heads of the cask, I have made shoulders to the pump, which are under the upper head, and support it, while the bottom of the pump strengthens the lower head.

To cleanse the filter, I have an opening in the upper head, which may be stopped by a bung or otherwise, which is large enough to admit the hand and arm, and this allows the filtering substance to be removed and renewed by the hand.

Whenever the pump is operated, the cask must be air-tight.

Instead of introducing the water as I have done, the pipe E may be carried up to the top of the cask on the outside and introduced through the side of the cask near the top.

Where the reservoir is above the cask, the filter may be used with the tube D by removing the pump or fastening down the lower valve and drawing the water by a cock at the bottom of the cask.

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

The application of the tube D to a filter in an air-tight cask or other vessel to equalize the exhaustion or pressure of air in the two chambers made by the filter, that water may filter by its own weight without being obstructed by the air in the lower chamber, and enabling the pump or cock by one operation to draw filtered water and to supply the filter anew with water to be filtered without disturbing the operation of the filter.

THOMAS BISHOP.

Witnesses:

EBENEZER YOUNG,
AMOS A. LYON.