R. BULLYMORE.

Apparatus for Refining Lard.

No. 200,252. Patented Feb. 12, 1878.

Fig. 1.

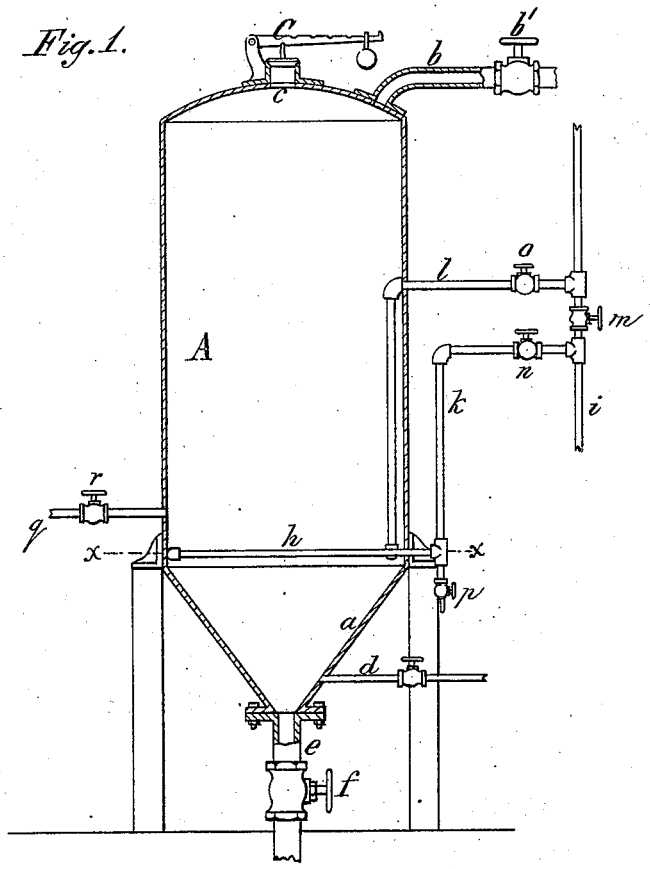
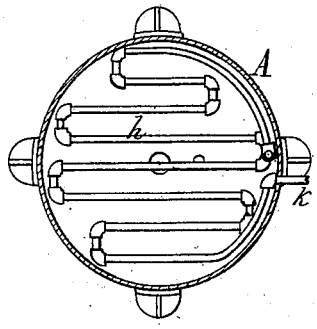


Fig. 2.



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UNITED STATES PATENT OFFICE.

RICHARD BULLYMORE, OF BUFFALO, NEW YORK.

IMPROVEMENT IN APPARATUS FOR REFINING LARD.

Specification forming part of Letters Patent No. **200,252**, dated February 12, 1878; application filed August 25, 1877.

To all whom it may concern:

Be it known that I, RICHARD BULLYMORE, of the city of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Apparatus for Refining Lard, which improvements are fully set forth in the following specification, reference being had to the accompanying drawings.

In the manufacture of lard it is of the greatest importance to separate from the lard all the water, blood, fragments of membranes, and other impurities which the lard contains when it leaves the rendering-tank.

The object of my invention is to accomplish this purpose in a most expeditious and perfect manner; and its nature will be fully understood from the following description.

In the accompanying drawings, Figure 1 is a sectional elevation of the improved apparatus for carrying my improved process into effect; and Fig. 2 is a horizontal section in line *x x*, Fig. 1.

Like letters of reference refer to like parts in each of the figures.

A represents the refining or purifying tank, consisting of a closed vessel of any suitable form, but preferably made cylindrical, with a conical or funnel-shaped bottom portion, *a*. *b* is a pipe, which connects with the upper portion of the tank A, and by which the liquid lard is conducted from the rendering-tank into the refining-tank. *c* is an opening formed in the cover of the tank A, and provided with a suitable safety-valve, C, preferably so constructed that it will blow off at a pressure of about five pounds to the square inch. *d* is a pipe connecting with the bottom *a*, for admitting steam into the tank A; and *e* is a discharge-pipe arranged at the lowest point of the bottom *a*, and provided with a stop-cock or valve, *f*. *h* is a coil of steam-pipe, arranged horizontally in the tank A, at or near the point where the bottom *a* joins the body of the tank. The coil *h* may be supplied with steam from a pipe, *i*, by means of a supply-pipe, *k*, and the steam may be returned from the coil *h* to pipe *i* by means of a pipe, *l*. *m*, *n*, and *o* are stop-cocks, arranged, respectively, in the pipes *i*, *k*, and *l*, for regulating the flow of steam through the coil *h*. *p* is a cock arranged in the pipe *k* below the coil *h*, for discharging the steam and condensed water from the coil *h* and pipes *i k*. *q* is the discharge-pipe, through which the refined lard is drawn from the tank A, and *r* a stop-cock or valve arranged in the pipe *q*.

The stop-cocks *f* and *r* of the discharge-pipes *e* and *q* being closed, a weak solution of sal-soda—made preferably in the proportion of about three or four ounces of sal-soda to a gallon of water—is introduced into the tank A through the opening *c* in the top, the valve C being opened for that purpose. The quantity of solution employed is so regulated that the level of the solution will be slightly below the steam-coil *h*. The liquid lard is now run from the rendering-tank into the purifying-tank A through the pipe *b* until the tank is filled to within a short distance from its top, when the cock *b'* of the pipe *b* is closed. Steam is then admitted to the tank A through the pipe *d*. The steam, in rising through the liquid contained in the tank, heats the liquid to a temperature corresponding with the pressure which the safety-valve C permits to be carried, and at the same time agitates the liquid and thoroughly mixes the solution of sal-soda with the liquid lard, bringing the solution in intimate contact with the lard, thereby enabling the solution to combine with the impurities contained in the lard.

When the liquid in the tank A has been so heated and agitated for a sufficient length of time—say from two to five minutes, according to the condition of the lard which is to be purified—the steam is shut off from the pipe *d* and admitted to the coil *h*, and the safety-valve C is opened. The liquid contained in the tank immediately passes from a state of agitation to a state of rest, which permits the solution of sal-soda to settle in the lower portion of the tank, below the coil *h*, carrying the impurities and water contained in the lard with it, as the oily consistency of the lard at a high temperature permits a speedy and complete separation of the watery matters from the lard. The heat radiated from the coil *h* expels from the lard all the steam and vapors contained therein after the steam is shut off from the pipe *d*, thereby thoroughly drying the lard before it leaves the purifying-vessel, and preventing

the subsequent condensation of these vapors when the lard is drawn off. The steam is permitted to pass through the coil *h* until the heat escaping from the opening *c* feels dry to the hand, when the steam is shut off, and the lard is withdrawn through the pipe *q* and packed in an ordinary manner.

By my improved apparatus the lard is thoroughly purified and dried in a very short time, and at comparatively small expense, thereby permitting all parts of the hog containing fatty matter to be utilized by rendering, and producing a uniform grade of lard of the finest quality in respect to taste, color, and grain.

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

The combination, with the refining-vessel A, of the pipe *d*, for admitting steam to the lower portion of the tank, steam-coil *h*, arranged in the vessel A, substantially as described, whereby a space is left below the coil for the settling of the cleansing solution and impurities, and another space above the coil for the refined lard, steam-supply and escape pipes *i k l*, discharge-pipes *e q*, and vapor-escape *c*, substantially as and for the purpose set forth.

RICHARD BULLYMORE.

Witnesses:
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