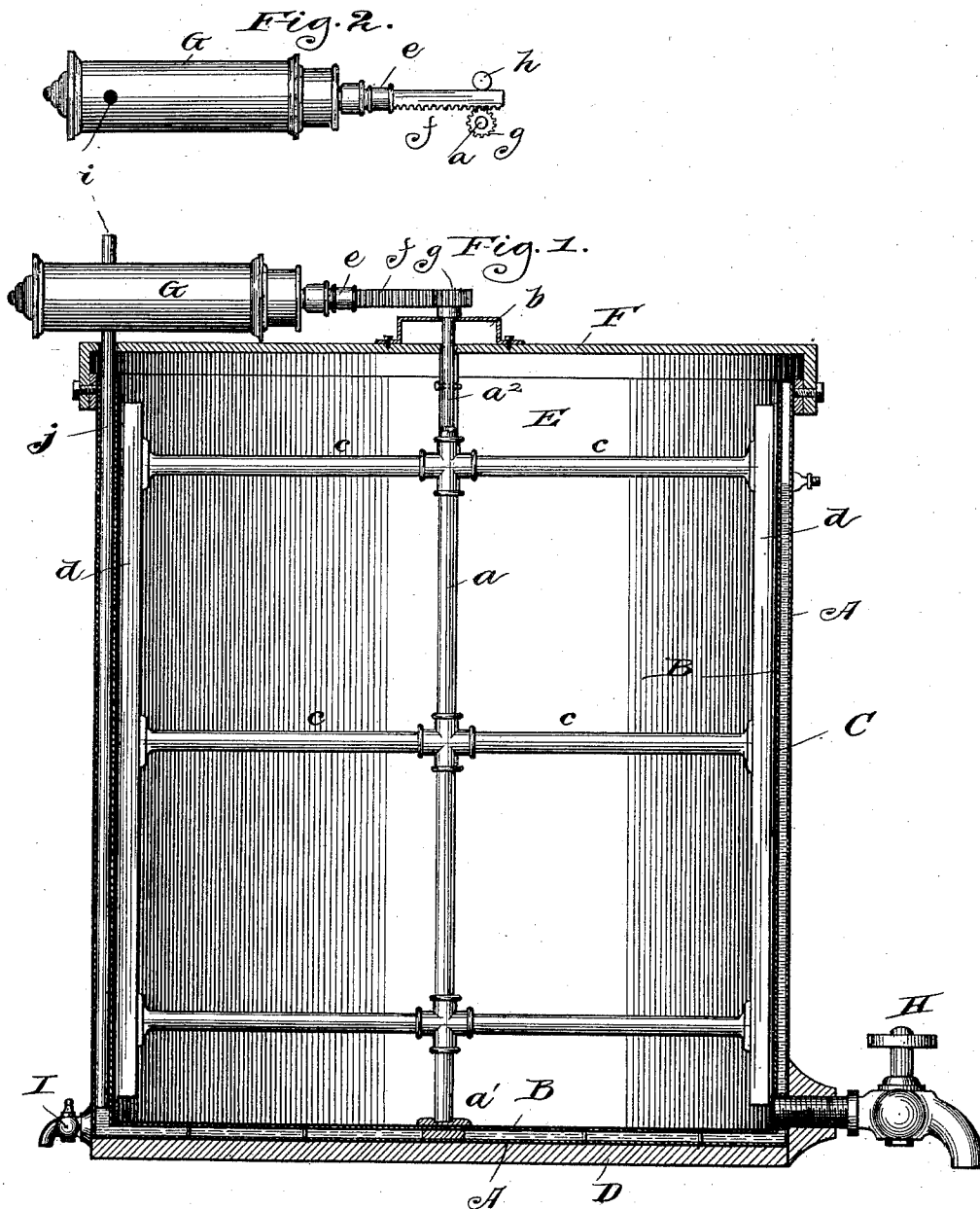


(No Model.)

B. ROSENTHAL & O. D. NOBLE.
LARD COOLING TANK.

No. 469,305.

Patented Feb. 23, 1892.



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BENJAMIN ROSENTHAL AND ORVILLE D. NOBLE, OF CHICAGO, ILLINOIS.

LARD-COOLING TANK.

SPECIFICATION forming part of Letters Patent No. 469,305, dated February 23, 1892.

Application filed April 28, 1891. Serial No. 390,847. (No model.)

To all whom it may concern:

Be it known that we, BENJAMIN ROSENTHAL and ORVILLE D. NOBLE, citizens of the United States, and residents of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Lard-Cooling Tanks, of which the following is a specification.

This invention relates to improvements in lard-cooling tanks—that is to say, in tanks in which lard in a heated and melted condition is cooled preparatory to storing and shipping.

One object of this invention is to prevent granulation while cooling the lard.

Another object is to utilize for cooling the lard the water actuating the stirring devices.

A still further object is to have a continuous circulation of water through the cooling-jacket of a lard-cooler and maintain said circulation by the force of the devices supplying the power for actuating the stirrers, and, finally, to secure other objects hereinafter described, claimed, and embodied in the devices illustrated in the accompanying drawings, in which—

Figure 1 represents a central vertical longitudinal section in a lard-cooler embodying our invention; Fig. 2, a top plan view of the actuating-motor therefor.

Similar letters of reference indicate the same parts in the several figures of the drawings.

A indicates the outer shell, and B the inner shell, of a lard-cooling reservoir, which said shells provide for a continuous water-jacket C at the sides and bottom of said tank. This tank rests upon a suitable base or platform D and is provided with an internal stirrer E, composed of a central shaft *a*, arranged axially of the tank and journaled at one end in a suitable bearing *a'* and at its upper end in a removable cover F, between which and the outer end of said shaft may be a suitable stuffing-box *b*. Radially fixed to the shaft *a* are arms *c*, carrying at their outer ends blades or paddles *d*, the length of said arms, together with the paddles, preferably conforming to the internal diameter of the tank, so as to reach the outer limit thereof and at the same time freely revolve therein. This stirrer is actuated by a water-motor G, provided with a piston of the usual construc-

tion, the stem *e* of which terminates at its outer end in a rack-bar *f*, engaging a pinion *g* on the outer and projecting end of the shaft *a*, the said rack being held in engagement with the pinion by a stud or roller *h*, between which and the pinion the rack is confined.

The motor G may be secured to and removable with the cover or cap F of the tank, but in any event is provided with a water or other fluid supply pipe *i* and a discharge-pipe *j*, projecting downwardly through the water-jacket C to near its bottom, though it may terminate nearer the top of said jacket; but is preferably near the bottom, so that the water at its coolest temperature may discharge next the bottom of the jacket, whereby the tendency of the warm water to rise in the jacket will be increased and thus accelerate the circulation of the water in the jacket, from which the water is discharged by a pipe connecting with said jacket near the top thereof, but not shown.

The tank is provided with a stop-cock H, through which lard is drawn off when properly cooled, and the water-jacket with a stop-cock I for use in discharging waste waters in cleaning the tank and jacket to remove sediment therefrom.

By the construction shown and described it will be observed that the waste or discharged water from the motor is not only used to supply the water-jacket, but the force of the discharge from the motor is also utilized to promote a rapid circulation of cooled water in the tank, and in this connection it should be understood that our invention is not limited to any special form of motor so long as these advantages are attained, for obviously any form of motor that will both supply the cooling-jacket with water and promote this circulation will embrace our invention.

In a more limited sense our invention embraces a motor of any construction that will simultaneously actuate the stirrers and at the same time supply and cause a forced circulation of water through the cooling-jacket of a lard-cooler, and to these ends it is likewise immaterial what the form or construction of the motor may be, for it is believed that we are the first to utilize the force of a motor supplying power to a mechanical de-

vice and at the same time produce a forced circulation in the water-jacket of a cooling-chamber.

In conclusion it should be understood that, while our invention is shown in connection with a device for a specific purpose—viz., a lard-cooling tank—it will be no departure therefrom to apply it to any other form of cooling-chamber and for any purpose for which such cooling-chamber may be desirable.

Our invention contemplates the use of water as the force supplying the motor and the same water as the cooling medium for the cooling chamber or jacket; but obviously any other fluid answering these purposes, or even air, would be a substitute therefor.

Instead of bodily removing the motor with the cover the shaft *a* is preferably made in two parts, one socketed within the other, as shown at *a*², so that the motor may be detached from the cover.

Having described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a lard-cooling tank, the combination, with a removable cover and a surrounding cooling-chamber, of a fluid-motor mounted on said cover and an internal stirrer engaged and actuated by said motor, the discharge pipe or passage of which motor opens into the cooling-chamber and supplies the cooling medium thereto under a forced pressure, substantially as described.

2. In a cooling apparatus, the combination, with a tank having a cooling-jacket provided with an outlet near its top and a stirrer arranged in said tank, of a fluid-motor for operating said stirrer, having its discharge-passage connected with said jacket near the bottom thereof, substantially as set forth.

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