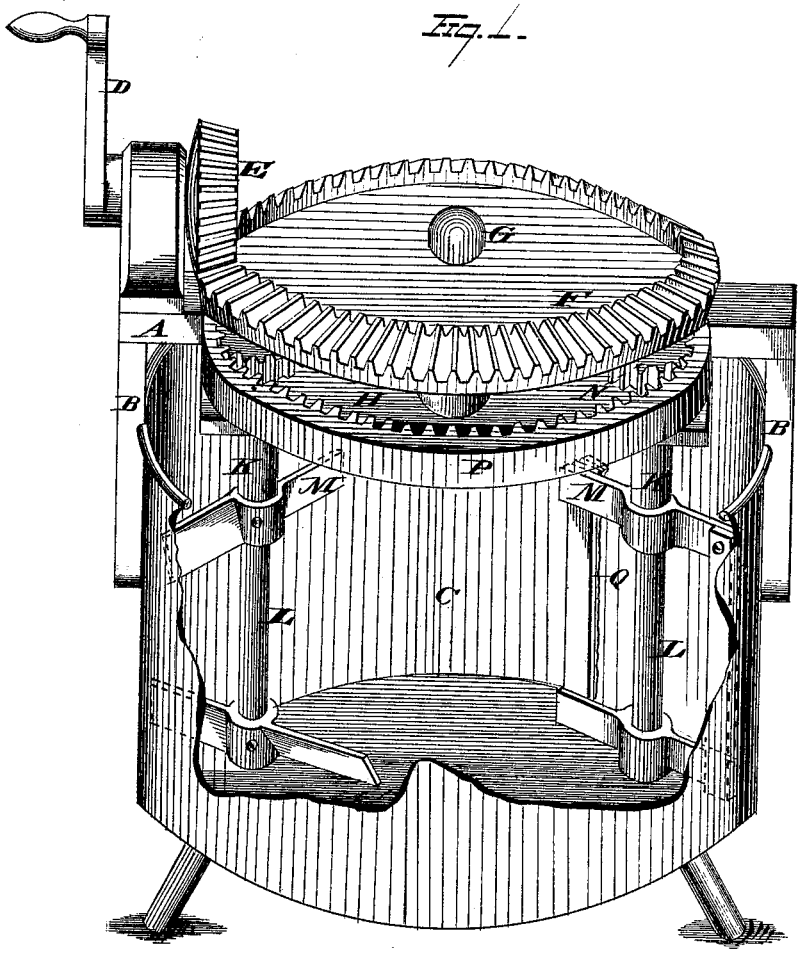
2 Sheets—Sheet 1.

H. RIEMAN.

LARD-COOLERS.

No. 195,535. Patented Sept. 25, 1877.

Fig. 1.



WITNESSES

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2 Sheets—Sheet 2.

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Fig. 2.

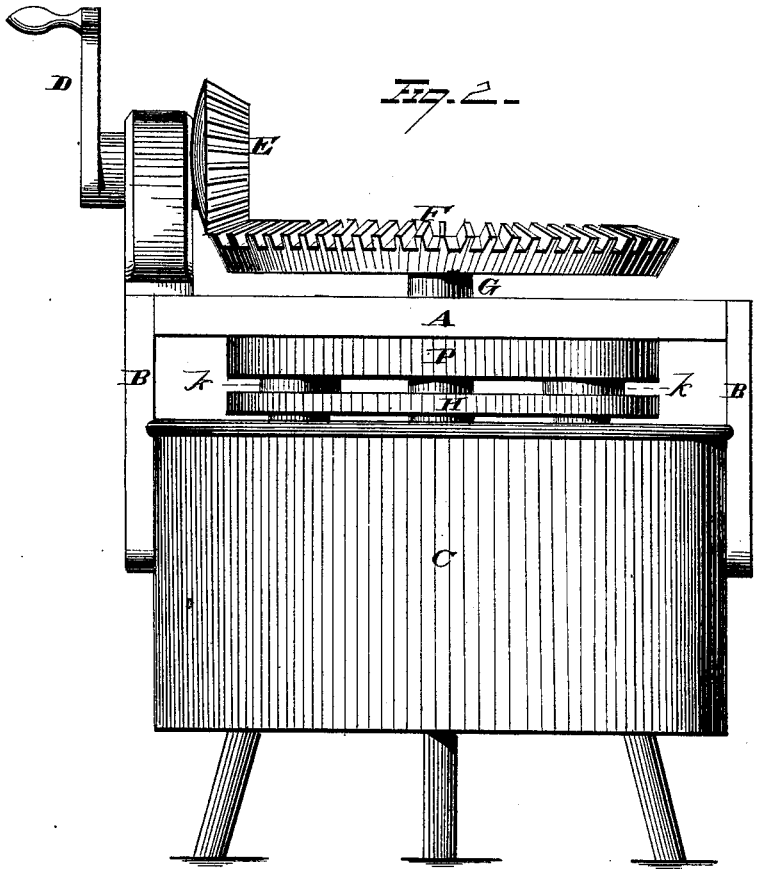
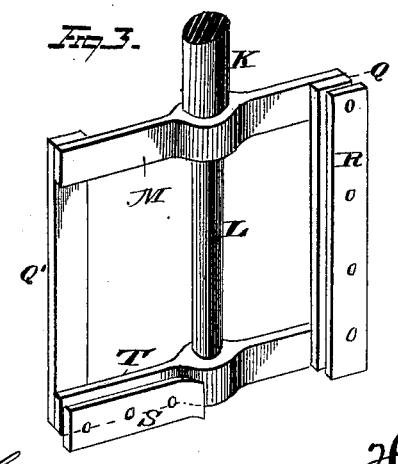


Fig. 3.



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UNITED STATES PATENT OFFICE.

HOWARD RIEMAN, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN LARD-COOLERS.

Specification forming part of Letters Patent No. **195,535**, dated September 25, 1877; application filed August 3, 1877.

To all whom it may concern:

Be it known that I, HOWARD RIEMAN, of Baltimore, in the county of Baltimore and State of Maryland, have invented certain new and useful Improvements in Lard-Coolers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in lard-coolers, and is designed to furnish a mechanical means for the agitating and cooling of lard, which will be light, simple, and of ready construction, at the same that it accomplishes the general purpose of all machines of this class in an improved manner.

Referring to the drawings, Figure 1 represents, in perspective, my invention as applied to a tank or vessel of lard, the latter being in section for better view. Fig. 2 is a side elevation of the same. Fig. 3 shows certain parts disconnected from the main machine.

This lard agitating and cooling mechanism is adapted to be readily applied to or disengaged from any receptacle or tank suitable for the purpose. It is supported upon the transverse piece A, connecting by uprights B with a tank or lard-holding vessel, C. The crank-arm D is preferably employed; but a pulley may be substituted for the handle, and the machine run by mechanical power, if desired. The pinion E gears in the crown-wheel F, which latter operates the short vertical driving-shaft G. Through the opposite extremities of cross-bar H, rigidly secured or detachably keyed to the lower extremity of this driving-shaft, pass the journal-sleeves K. These sleeves are of any suitable length, and provided at their upper extremities with the annular flanged shoulders *k*, which rest on the upper face of cross-bar H, and give vertical bearing to the sleeves as the latter receive the weight of the shafts L. The agitating-wings or paddle-frames M are secured to these shafts L, so that the same turn together under the gearing of pinions N with the internally-toothed stationary spur-gear P. Said gear P is fixed to the under side of the transverse piece A, and, as it cannot be turned by engagement of pinions N, it follows that the latter are revolved in a movement independent of that about the main central axes of the machine. These pinions carry the shafts L and agitating-frames M about together with them, whereby the latter are given, first, a circular movement, having the vertical center of the machine as its axis of rotation, and, secondly, a movement about their own axes independent of the former movement.

In this way all portions of the lard are thoroughly acted upon, whether in the center or about the margin of the tank. Hence no portion of the lard is left without action, and the same equally cools in all parts of the tank. By making the shafts L pendent from cross-bar H, having their vertical bearing upon the annular shoulders of the sleeves K, the frame is rendered light and simple in construction, and without unnecessary frame-work extending down along the sides and over the bottom of the tank, upon which to support the agitating-frames. At the same time the lard in the tank is left free from such cumbersome frame-work, and the interior of the tank only receives the agitating or paddle frames. This relieves the lard contained in the tank from coming in contact with a driving-shaft, which, in such instance, would extend vertically downward to the bottom of the tank, there to be stepped in a lower cross-frame work; also, the side frame is dispensed with, which would otherwise be required in order to support the moving cross-frame, in which latter likewise are stepped the shafts of the agitating-frames. Fastened lengthwise upon the upright strip Q of one of the paddle-frames is secured the leather scraper R, which may also be fastened in a similar manner to the opposite upright Q'; or such a leather scraper may be put upon either or both of the two agitating-frames, as may be desired, instead of as shown in the drawing. Its object is to come in contact with the inner wall of the tank, and, by lightly brushing it at suitable intervals during the double revolution of the agitating-frames, prevent the gathering of material thereon.

This centripetal and intermittent brushing action is one of the main features of my invention, and possesses advantages over a constant uninterrupted pressure of a brush against the

wall of the vessel containing the lard, for the following reason: The latter can only obtain by having a side frame built extending down into the tank, which frame would have but a single revolutionary movement. In such case the lard is simply brushed off in a line of direction parallel with the horizontal curved plane of the tank. Hence the lard is not caused to be thrown out from the wall into the center of the mass. The scrapings consequently fall in a straight line merely by their gravity, and gather about the circumference or bounds of the tank, while my improvement gives them a quick and well-defined centripetal movement, which, while clearing the wall, at the same time causes the scrapings to be thrown in among the central mass. The centripetal force thus received prevents the scrapings from falling down at the side of the tank, and remaining inactive on its bottom at such points, but, on the contrary, causes the lard to be thrown centerward, where it is constantly acted upon by the agitating-frames, and all portions of it in this way be equally acted upon.

The scraper or cleaner S may be secured to the cross-bar F of one or both of the agitating-frames M, if desired, or the same be omitted. So, too, such a scraper may be made to extend across part or the entire cross dimension of either of the agitating-frames, so as to come in contact with the bottom of the tank during the revolution of said frames.

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

In a lard-cooler, the combination of the actuating-pinion E, bevel crown-wheel F, upright shaft G, and cross-bar H with the shafts L, pinions N, journal-sleeves K, and suitable agitators or stirrers, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 1st day of August, 1877.

HOWARD RIEMAN.

Witnesses:
S. H. WIEMAN,
CHAS. BENNER.