

G. C. CASSARD.
Improvement in Lard-Coolers.

No. 131,847.

Patented Oct. 1, 1872

Fig. 1.

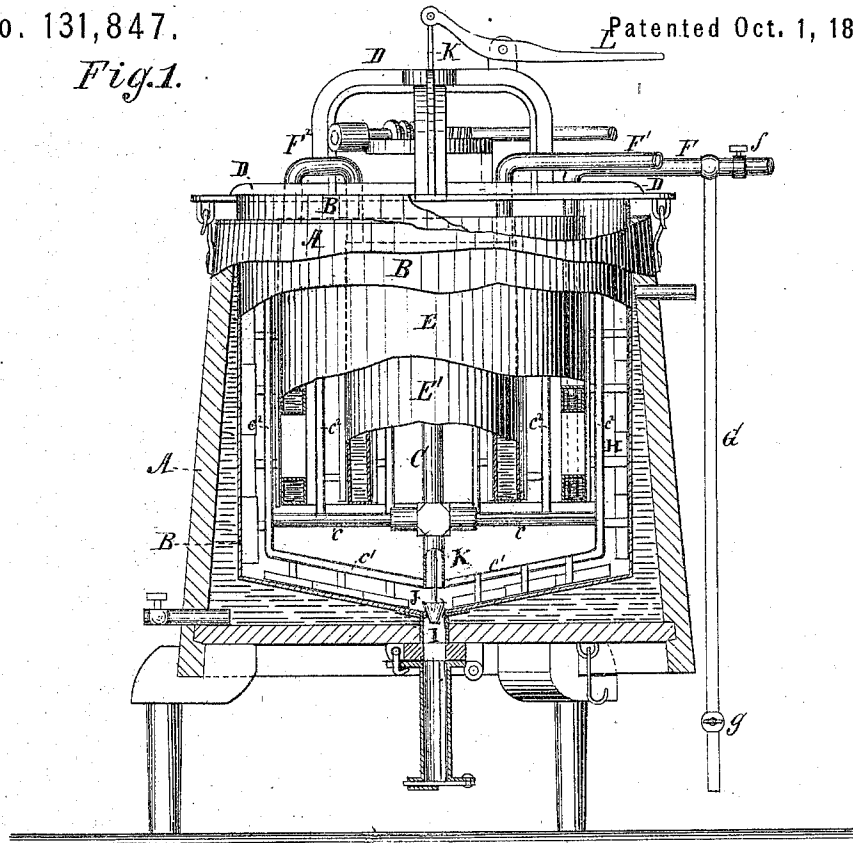
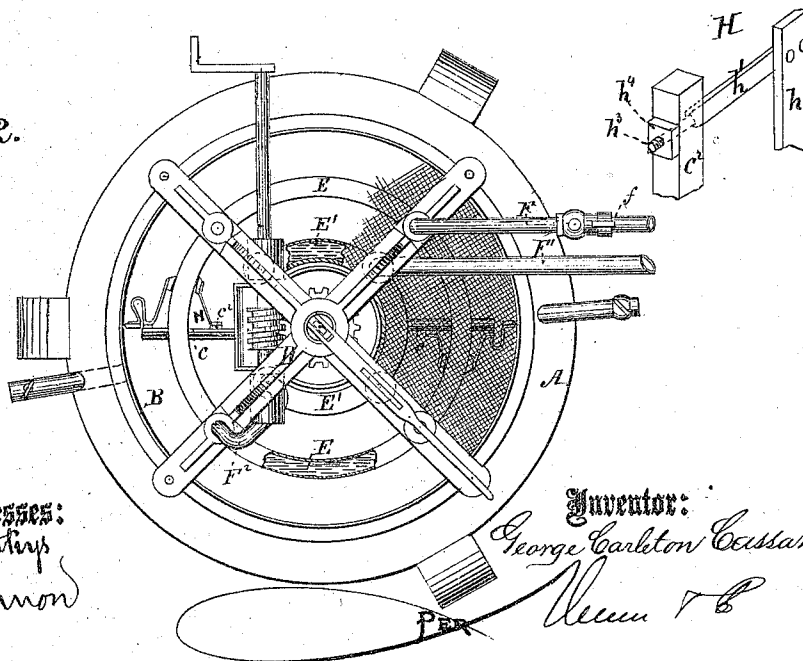


Fig. 2.



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UNITED STATES PATENT OFFICE.

GEORGE C. CASSARD, OF BALTIMORE, MARYLAND, ASSIGNOR TO HIMSELF,
L. CASSARD AND J. L. CASSARD, OF SAME PLACE.

IMPROVEMENT IN LARD-COOLERS.

Specification forming part of Letters Patent No. 131,847, dated October 1, 1872.

To all whom it may concern:

Be it known that I, GEORGE CARLETON CASSARD, of Baltimore, in the county of Baltimore and State of Maryland, have invented a Lard-Cooler, of which the following is a specification:

The invention relates to that special class of machines in which melted lard is received and stirred continuously until cooled by the application of air, water, or other medium.

The invention consists in immersing, at intervals, within the lard or receptacle one or more hollow cylinders, or sections of cylinders, in which are placed a cooling-fluid or other heat-absorbent. It also consists in forming the scrapers, which are employed to prevent adhesion of the lard to the cylinders, of straight vertical slats and straight springs, arranged as hereinafter described. It also consists in combining the lard-outlet valve with a rod passing through but not in contact with the rotating shaft of the machine and operating it by means of a lever located on the top of the machine.

Figure 1 is a sectional elevation; Fig. 2 is a longitudinal plan view; and Fig. 3 is a detail view of the scrapers.

A in the drawing represents a tank, in which is placed a receptacle, B, for the lard. Between the two is a space filled with some cooling-fluid. C is a tubular rotary shaft having two horizontal and laterally perforated tubes, *c c*, through which air may be introduced into the hot lard. Beneath these tubes are two horizontal bars, *c¹ c¹*, which have upright arms *c² c²*. These devices, and others connected therewith, may be found elaborately described in reissue patent No. 3,358. D is a spider from which are pendent hollow cylinders or sections of cylinders E E', which fall within the lard-receptacle B. These cylinders are extended as low as possible without interfering with working parts, and so as never to come in contact with receptacle B. A circulation is allowed by openings in side of cylinder, as illustrated in cylinder E, or by making the top low enough to permit the matter cooled to overflow, as illustrated in cylinder E'. F is a pipe which connects the cavities of these cylinders (or parts of cylinders) with the water-reservoir; and F¹, an overflow-pipe, which

is provided with cocks *f'* to shut off the inlet or outlet of the liquid. G is a connecting-pipe which couples with pipe F, and has a cock, *g*, by which the outlet of water from the cylinder may be secured.

The operation is as follows: The molten lard being introduced into receptacle B and the shaft C rotated, different particles of lard are continually brought in contact with the metallic surfaces on both sides of the cylinders. These, being good conductors of heat, readily absorb the caloric from the lard, and as readily part with it to the water in the cylinders. The large exposure of cooling-surface presented by these cylinders causes a rapid absorption of caloric from the lard, and enables it to be cooled and drawn off with great rapidity. As a lard-tank of any capacity may be employed, and as the number of cooling-cylinders may be multiplied in proportion, it follows that instead of operating upon two or three tons of lard, which is about the maximum at present, almost any number of tons may be cooled at one and the same time by the introduction of my hollow cylinders. These cylinders E E' may be connected by pipes, as at F², so that the water entering pipe F will pass through cylinder E into cylinder E' and out at pipe F¹, thus producing a continuous circulation of water and carrying off the latter as fast as it becomes warm. When it is desired to empty the cylinders of the liquid the cock *f'* is closed and the cock *g* opened. As the pipe G is longer than the cylinders, and passes through top of cylinder between walls and nearly to bottom, it will act as a siphon and cause the liquid to flow therefrom. This operation will be the same whether two or more cylinders are connected.

H are the scrapers, which consist of straight boards *h*, of the same length as cylinders, and straight springs *h¹*, which maintain them in position. These are attached to the upright arms *c²* by end-threaded shanks *h³* and nuts *h⁴*, so that the board-edges will move forward and be presented obliquely to the cylinders, scrape the lard from thence, and give it a tendency toward the middle of space. This is very important, as greater attention is required to remove the lard as it thickens when it impinges against the oblique surfaces of scrapers.

The discharge-spout I is provided with a valve, J, which is attached to a valve-rod, K, that extends through the hollow shaft C, and is operated by a lever, L, on the top of the machine. By the obliquity of these faces the action of the lard only tends to keep them closer to the cylinder. The valve J is placed immediately over gate, but entirely within the lard-receptacle B, because the lard was found in my patented machine to become stiff in the neck between chamber and valve.

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

1. One or more hollow cylinders, E E', pro-

vided with a cooling-liquid, and applied within a lard-receptacle, B, as and for the purpose described.

2. A movable scraper, H, consisting of vertical straight slats *h* held by springs *h*¹, and applied as and for the purpose set forth.

3. The lever L, connected with the discharge-valve J by means of the intermediate rod K passing through the hollow shaft C, as specified.

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Witnesses:

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