

(No Model.)

O. LEONARD.
MILK COOLER.

No. 471,646.

Patented Mar. 29, 1892.

Fig. 1.

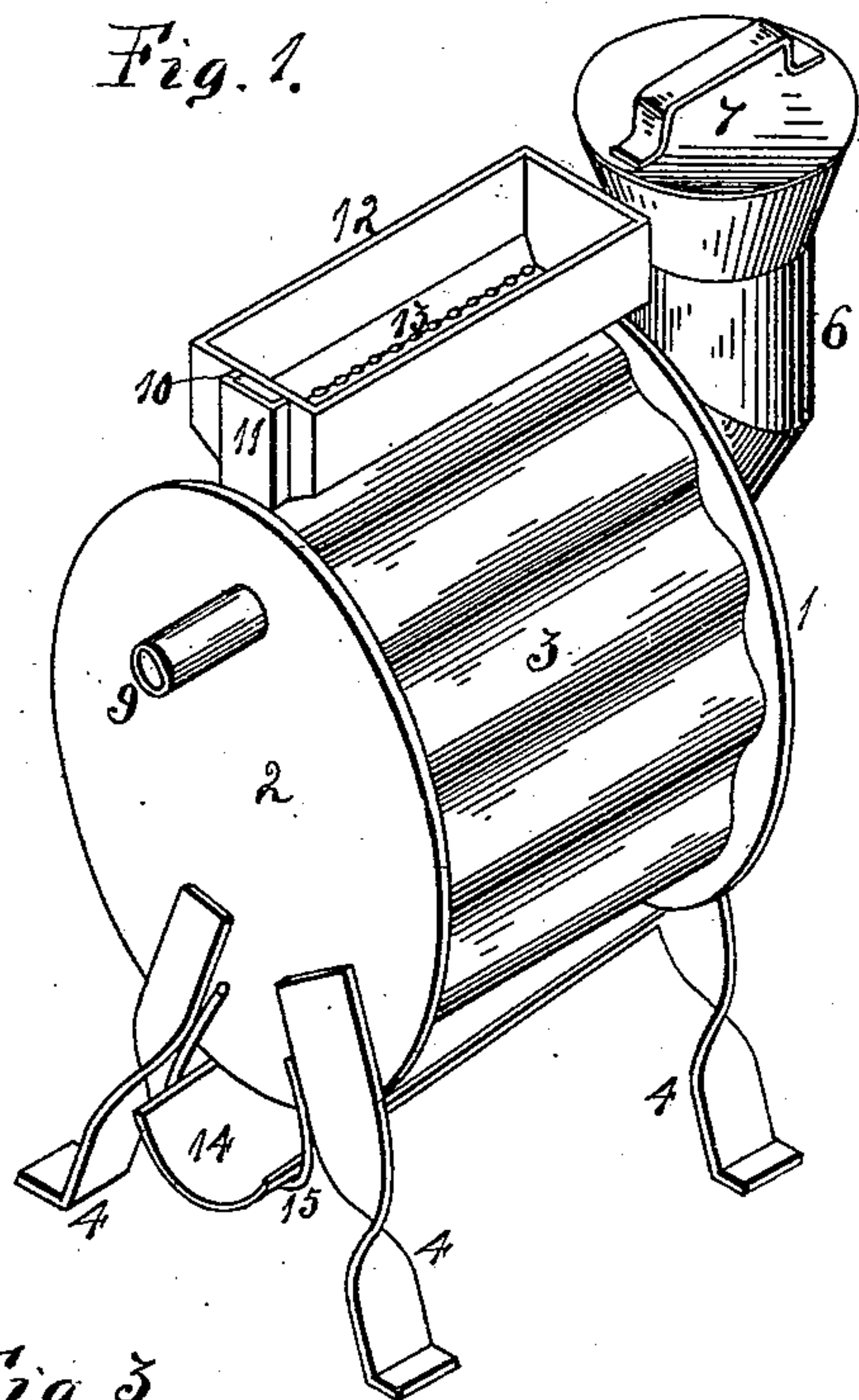


Fig. 3.

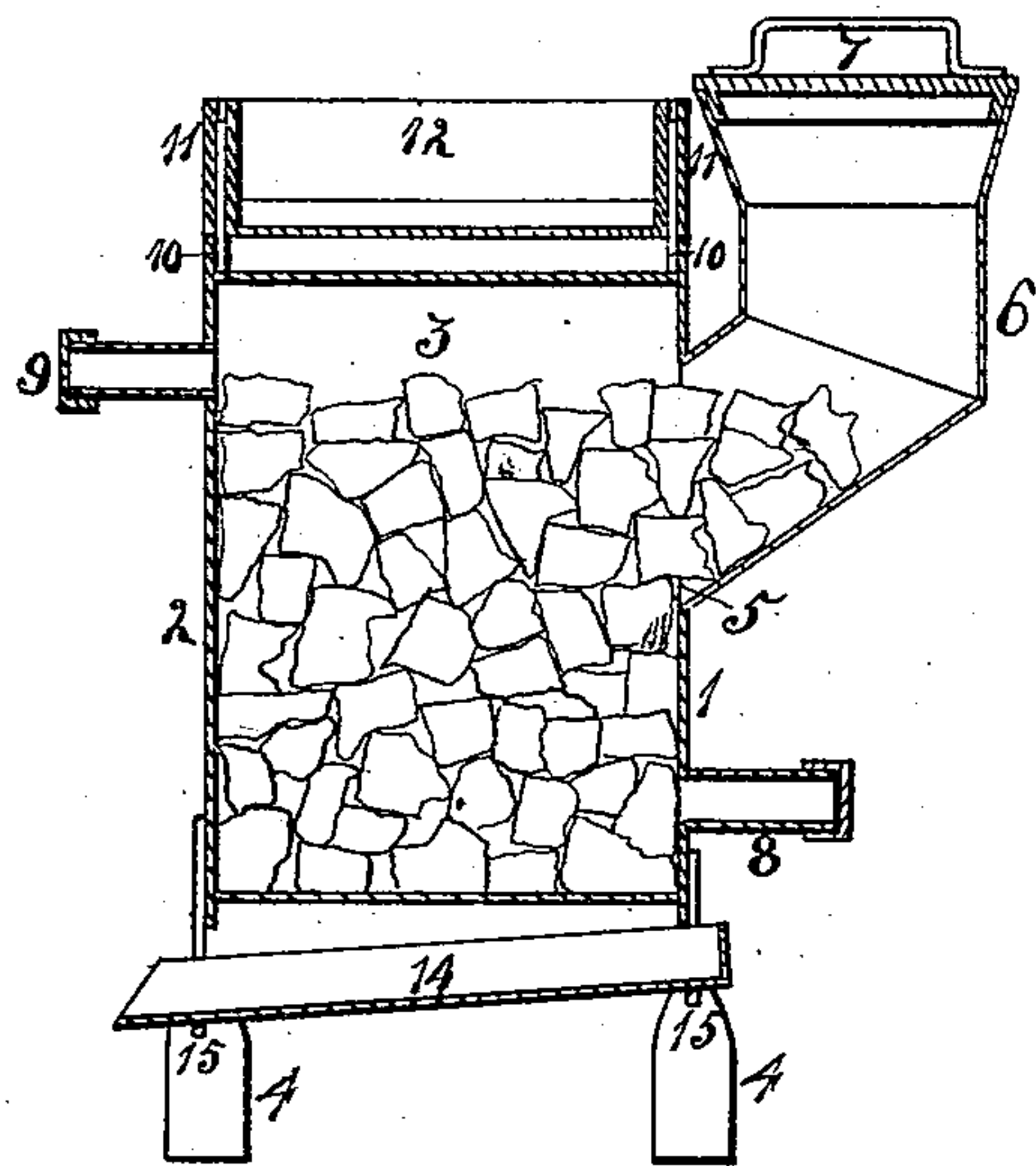
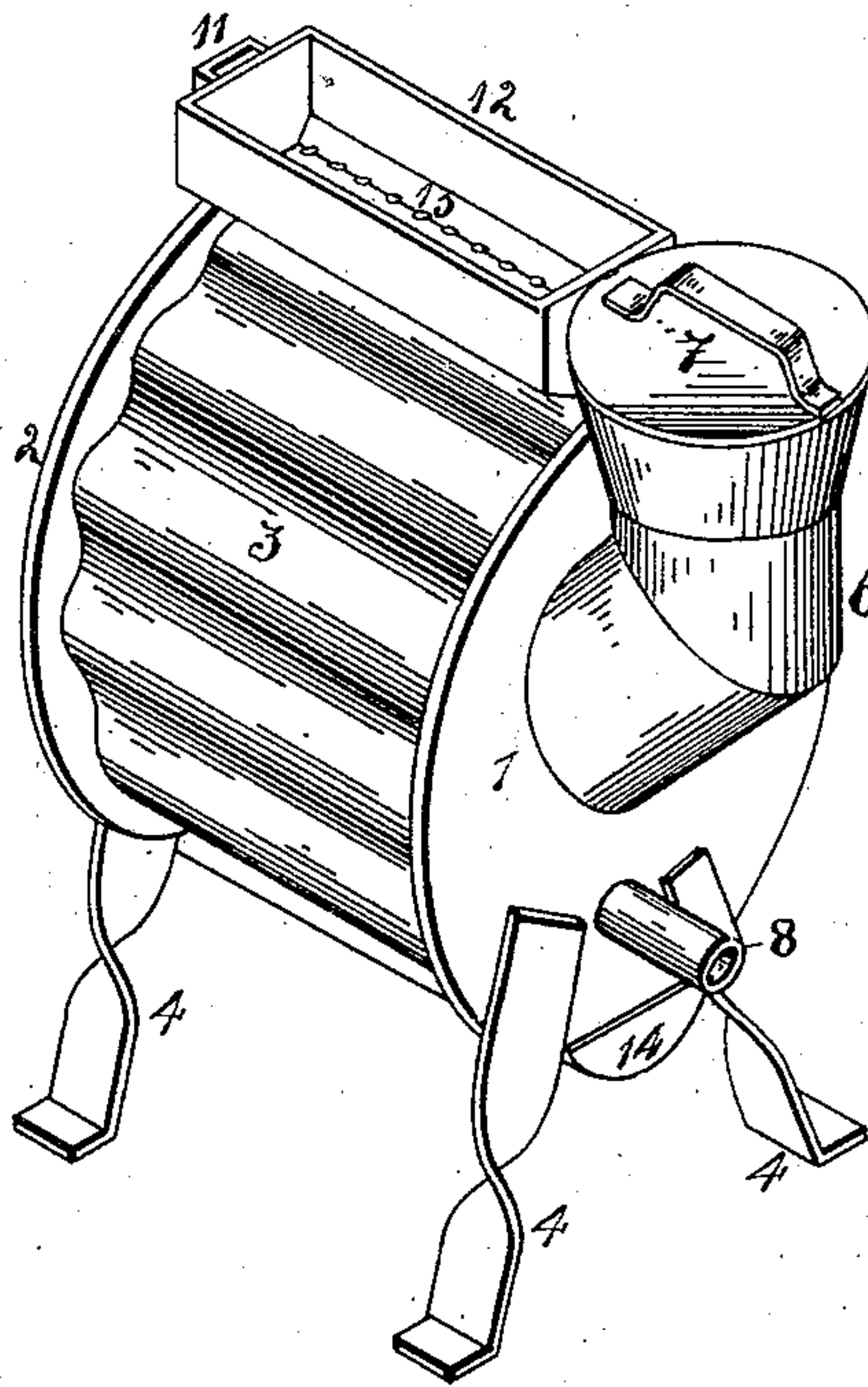


Fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

ORIN LEONARD, OF BELVIDERE, ILLINOIS.

MILK-COOLER.

SPECIFICATION forming part of Letters Patent No. 471,646, dated March 29, 1892.

Application filed July 6, 1891. Serial No. 398,613. (No model.)

To all whom it may concern:

Be it known that I, ORIN LEONARD, a citizen of the United States, residing at Belvidere, county of Boone, and State of Illinois, have
5 invented certain new and useful Improvements in Cream-Coolers, of which the following is a specification.

The object of my invention is to rapidly cool cream after it comes from the separators
10 in order to place it in condition for churning. This result I accomplish by allowing the cream to run in a thin sheet over a considerable surface of sheet metal in the form of a receptacle, which is cooled by filling with ice or allowing
15 a stream of cold water to run through it.

In the accompanying drawings, Figure 1 is a perspective view of my cream-cooler as seen from the rear. Fig. 2 is also a perspective view of my cooler, showing a front view of
20 the same. Fig. 3 is a longitudinal vertical section of my cooler.

In the construction of my improved cream-cooler I build of sheet metal a receptacle, the ends or heads 1 and 2 of which are of elliptical
25 form. Between these two elliptical heads I place a side wall 3, also of sheet metal and corrugated to present to the cream a greater cooling-surface than would be encountered if the walls were smooth or of a regular outline.
30 This drum, it will be understood, must be made with water-tight joints, and this result I effect by soldering them securely. I mount my drum upon four legs 4 at any convenient height above the floor. In the forward end of
35 this water-tight drum I cut an opening 5 and solder into it the tube 6, through which I have access to the inside of the drum, and which tube is closed at its upper end by the cover 7.

Directly below the opening 5 in the forward
40 head of my drum I insert the pipe 8, and in the opposite head 2 and near the upper part of the drum I place a like pipe 9, both of which pipes communicate with the inside of the receptacle.

The walls of my improved receptacle do not at any point come to the edge of the heads, but are set back, leaving the edge of the heads to project outward some little distance beyond the walls, the object of which will be
50 hereinafter explained.

From the upper edge of each of the heads of my drum projects an ear 10, entering a

loop 11 on each end of a trough 12, thereby holding the trough in position above the water-tight drum. The length of the trough
55 is such that it just fits between the two heads, and in its bottom are two series of perforations 13.

Directly below the drum and extending with its length is a trough 14, supported upon
60 brackets 15, slanting toward the rear of the cooler and projecting some little distance beyond the legs, which trough catches the cream after it has passed over the cooling-surface of the drum. 65

Now having fully described the construction of my improved cream-cooler, I proceed to give the method of using it, which is as follows: If ice is to be used to cool the cream, I break it into small pieces and fill the drum of
70 the cooler through the tube 6 with the ice so broken and close the pipes 8 and 9 with caps, as shown in Fig. 3. Then allowing the cream to run into the trough 12, it feeds onto the walls of the drum through the series of
75 perforations 13 in the trough-bottom, spreading the cream in a thin sheet over the outer surface of the walls of the drum, which have been made extremely cold by the ice within. The walls, being corrugated, present a large
80 cooling-surface to the cream, and by the time it drops from the bottom of the drum into the inclined trough 14 it is at a low temperature. From this trough the cream may run directly
85 into the vats, where it remains until ready for the churning process. When cold water is to be used to cool the cream, connection with the supply is made to the interior of the drum through the pipe 8, and as the water absorbs
90 heat from the cream and is thereby rendered warm it rises and escapes through the pipe 9 in the opposite end of the drum. The elliptical heads, being of somewhat greater size than the sides of the drum, retain the cream on the
95 corrugated surface and causing the cream to drop into the trough 14. When large quantities of cream are handled, the cooler may be set into a tank, the trough 14 removed, and the cream allowed to drop directly into the
100 tank, from which it may be drawn into the churns.

I claim as my invention—

In a cream-cooler, an ice-receptacle, curved corrugated side walls therefor having heads

or ends tightly secured to the side walls and projecting beyond the latter to confine the cream to the surface of the side walls, a pipe near the bottom of the receptacle for admitting cold water, a pipe near its top for the escape of the water, providing a circulation through the receptacle, an opening to the interior of the receptacle, a spout leading from the opening to a point above the receptacle, a cover for the upper end of said spout, brackets on the receptacle, a perforated feeding-

trough supported above the receptacle on the brackets, feet for supporting the receptacle above the floor, and a receiving-trough below the receptacle for collecting the cooled cream, said trough supported on brackets between the supporting-feet. 15

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Witnesses:

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