T. SANDS.

Ice-Cream Freezers.

No. 149,072. Patented March 31, 1874.

Fig. 1.

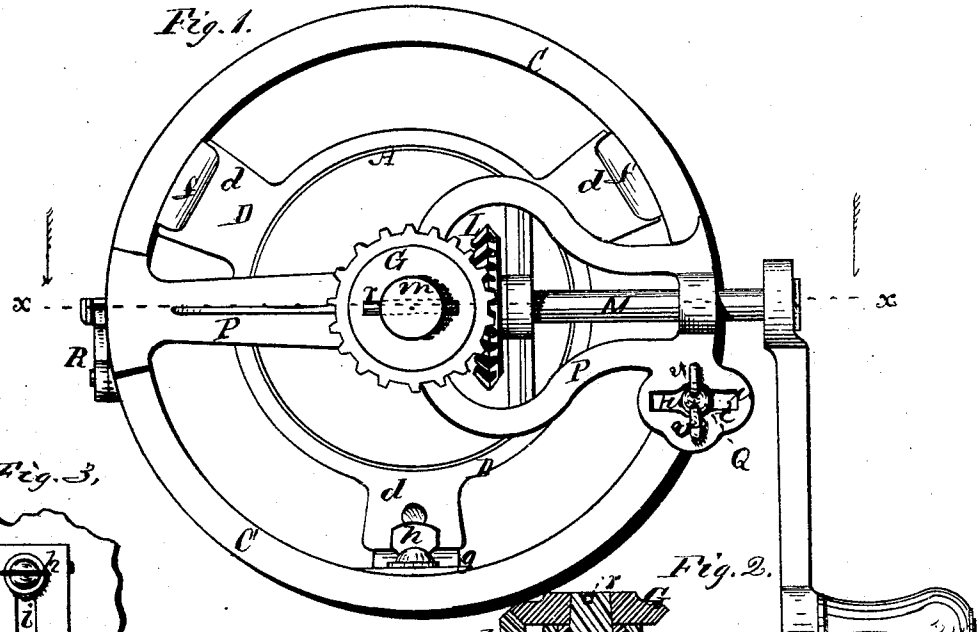


Fig. 3.

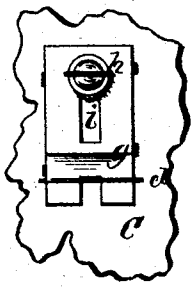
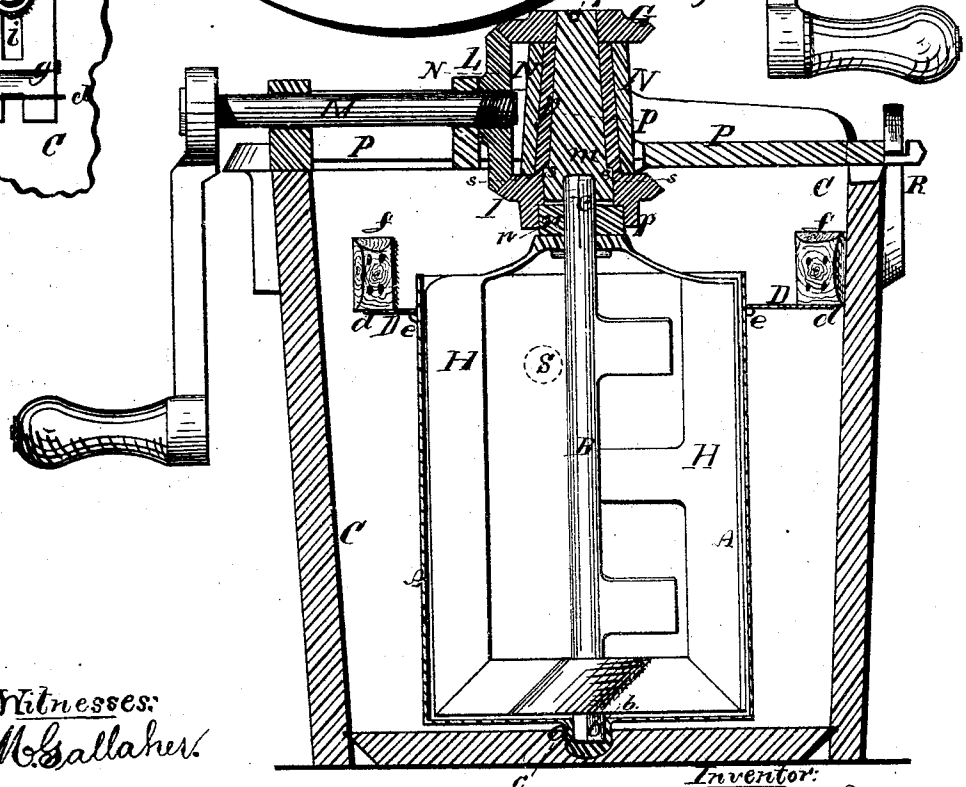


Fig. 2.



Witnesses:
E. McGallaher.
Stephen W. Wood.

Inventor:
Thomas Sands
By his atty
L. S. Brown.

UNITED STATES PATENT OFFICE.

THOMAS SANDS, OF LACONIA, NEW HAMPSHIRE.

IMPROVEMENT IN ICE-CREAM FREEZERS.

Specification forming part of Letters Patent No. **149,072**, dated March 31, 1874; application filed August 8, 1873.

To all whom it may concern:

Be it known that I, THOMAS SANDS, of Laconia, in the county of Belknap and State of New Hampshire, have invented certain Improvements in Ice-Cream Freezers; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings making part of this specification—

Figure 1 being a top view of an ice-cream freezer provided with my improvements; Fig. 2, a central vertical section thereof in a plane indicated by the line *x x*, Fig. 1; Fig. 3, view of a part detached.

Like letters designate corresponding parts in all of the figures.

The ice-cream freezer to which my improvements are represented as applied has the three motions described in my Letters Patent dated February 27, 1872; but, as far as applicable, the improvements may be used on other ice-cream freezers.

In my present machine, since the cream-cylinder A revolves in the same direction as the inner beater-shaft B, I find it of great advantage to couple the cylinder to the said shaft at the bottom, there being a square or angular socket, *a*, in the lower end or journal of the cylinder, to receive the lower end *b* of the said shaft fitting therein. Any form of the socket which is the equivalent of the square form, in not allowing the end of the beater-shaft to turn in it, may be used. This construction enables me to entirely dispense with any direct connection between the cream-cylinder and the driving-gear, and only the upper end *c* of the beater-shaft B is coupled to the said gear. By this means I am enabled to readily separate and reattach the gear without disturbing the cream-cylinder in the pail or tub C. This improvement enables me also to secure the cream-cylinder securely in the pail or tub, so that it cannot become displaced accidentally, and yet it can be readily removed when desired. For this purpose I employ a can supporter or holder, D, which, as represented in the drawings, consists of a ring surrounding the upper part of the cream cylinder or can just above a shoulder or enlargement, *e*, on the can, as shown in Fig. 2. From the outer periphery of this ring, three (more or fewer) projections, *d d d*, extend radially outward to the interior periphery of the pail or tub C, and are held from rising up by as many stops, *f f g*, attached to the pail or tub, as shown. One of the stops, *g*, is made removable, or movable, by means of a clamp-screw, *h*, or its equivalent, passing through a slot, *i*, in the stop, so that by loosening it the holder-ring D can be readily removed or replaced; or any equivalent device for securing the holder in place may be employed. This holder holds the cream cylinder or can down in its place in the pail or tub, and also serves as a bearing in which the upper end of the cylinder turns. Thus the cylinder also is prevented from rising out of place by the buoyancy of the water around it, after the ice has more or less melted in the pail or tub, and the ice-cream can be dished out without touching the cylinder, or disturbing it. The upper end *c* of the inner beater-shaft B, being square, or other equivalent form, fits in a socket in the lower end of a shaft, *m*, of a bevel-gear wheel, G, through which the beater is made to revolve; and the upper end, square, or of other equivalent form, of the shaft or hub *n* of the outer beater H, also fits in a socket in the lower end of the shaft *p* of another bevel-gear wheel, I, whereby the said beater is made to revolve. The two gear-wheels G and I gear into a single bevel-wheel, L, on the driving or crank shaft M. The hub or shaft *n* of the beater H is tubular or perforated, so as to surround the shaft of the inner beater, and revolve in the opposite direction around the same. Thus, by simply lifting the driving-gear, both beater-shafts are uncoupled therefrom. The shaft *m* of the gear-wheel G is slightly tapered toward the upper end, and fits inside of the tubular shaft *p* of the beater H, which latter shaft also is a little conical, and fits in a tubular slightly taper bearing, N, of a cross-bar, P, on which the driving-gear of the freezer is mounted. The shaft *m* is coupled to its gear-wheel G, which rests on the top of the bearing N by a pin, *r*, or its equivalent, and there is a shoulder, *s*, on the periphery of the shaft *m* near its lower end, which shoulder fits under a shoulder on the inner periphery of the tubular shaft *p*, as shown in Fig. 2, whereby the said tubular shaft, with its gear-wheel I,

is supported also by the upper gear-wheel G. Thus the whole gearing is very simply put together and kept in place; and since I cast the holes of the driving-gear by chilled cores, they require no turning or reaming out, and the whole gearing is rendered very simple and cheap. The cross-bar P is peculiarly constructed, and is attached to the pail or tub C. One end is provided with a hole, *t*, having lateral slot-extensions *u u*, corresponding in size and form with the wings *v v* of a key-pivot, Q, the relative positions of the winged pivot and the slotted hole being such that the cross-bar cannot be separated from the pivot except when the cross-bar is swung off from over the pail or tub, and will be securely coupled thereto at that end, when it is in the proper position thereon, as shown in Fig. 1. At the other end the cross-bar is fastened to the pail or tub by a hook, R, or its equivalent, fastening over a pin or projection on the cross-bar. When this hook is disengaged the cross-bar is freely lifted sufficiently to uncouple the gear-wheels from the beaters, and the cross-bar can be removed or allowed to hang by the pivot Q, leaving the ice-cream cylinder or can free to gain access to its interior, for putting in, examining when in, and dishing out, the ice-cream. An outlet hole or passage, S, is made in the ice pail or tub C, a little lower than the upper end of the cream-cylinder, so that as soon as sufficient water has accumulated in the pail or tub to reach the height of this outlet-hole, it can rise no higher in the pail or tub, and therefore can never be liable to run over into the cream cylinder or can, and spoil the cream therein, as frequently happens without this simple device.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The supporter or holder D, in combination with the cream cylinder or can A, substantially as and for the purpose herein specified.

2. The arrangement of the driving gear-wheels G I, with their respective shafts *m p*, in combination with the supporting-bearing N, substantially as and for the purpose herein specified.

3. The cross-bar P, constructed as described, in combination with the key-pivot Q and hook R, or its equivalent, on the pail or tub C, substantially as and for the purpose herein specified.

Specification signed by me this 28th day of March, 1873.

THOMAS SANDS.

Witnesses:

JOSEPH RUSSELL,

RICHARD GOVE.