(No Model.)

A. HOOPER.

ICE CREAM FREEZER.

No. 368,150. Patented Aug. 9, 1887.

Fig. 2.

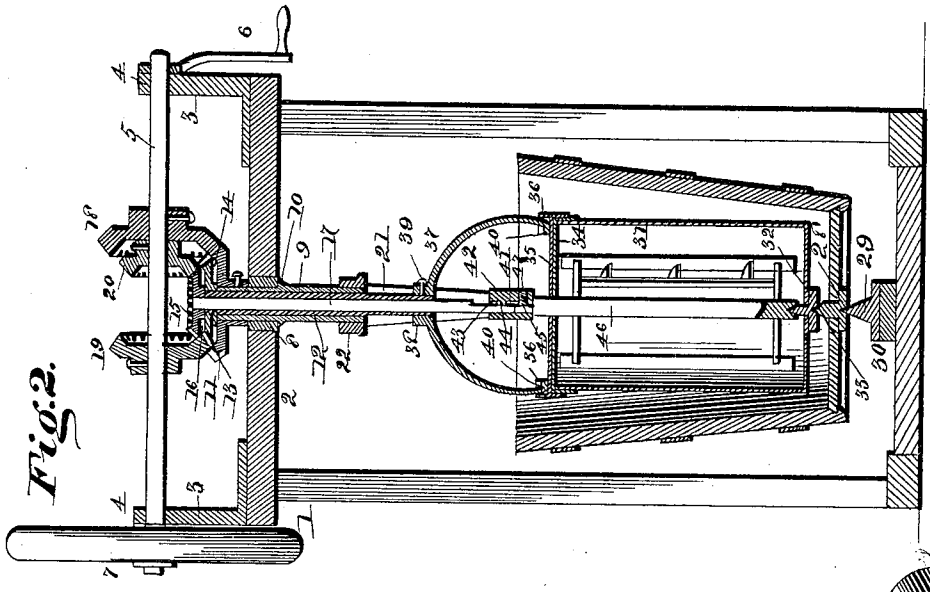


Fig. 4.

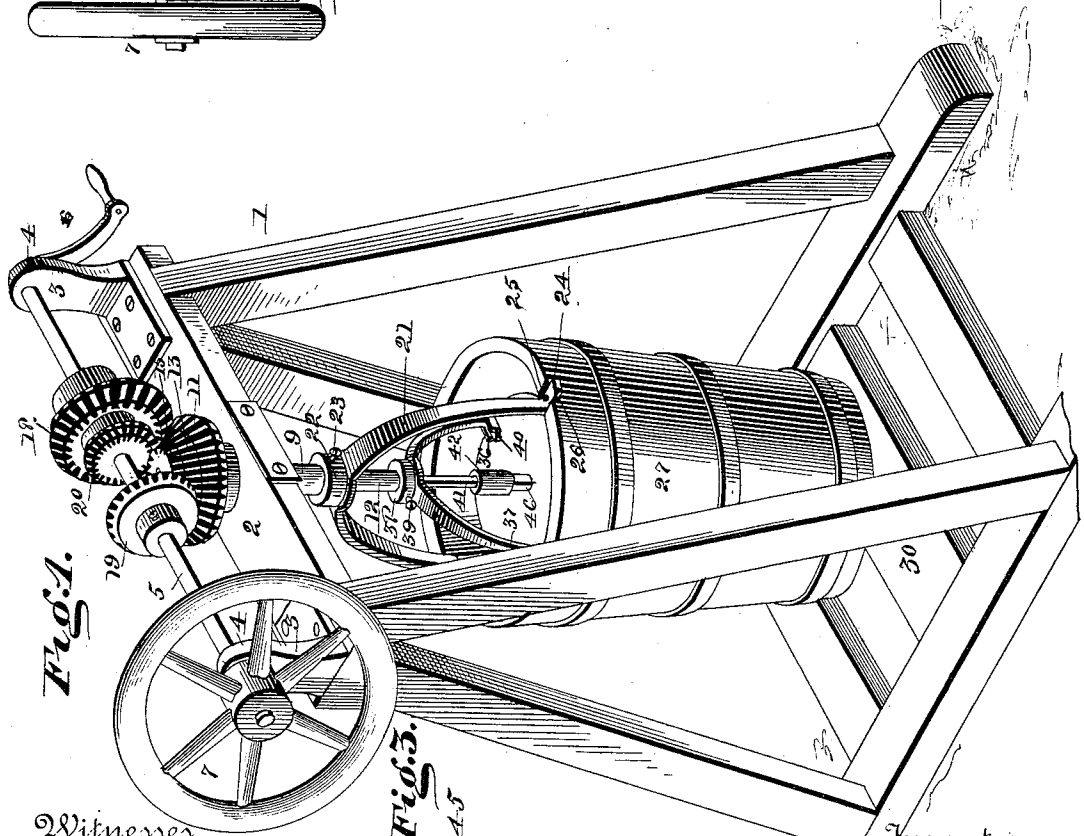
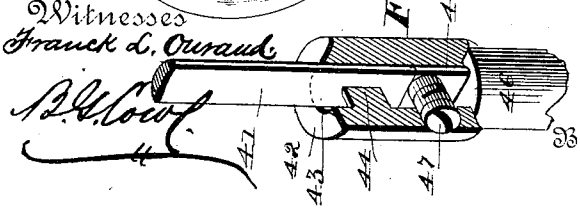


Fig. 3.



Witnesses
Franck L. Ouraud
B. B. Lovett

Inventor
Amsey Hooper,
By his Attorneys
Louis Bagger & Co.

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

AMSEY HOOPER, OF ATHENS, OHIO.

ICE-CREAM FREEZER.

SPECIFICATION forming part of Letters Patent No. 368,150, dated August 9, 1887.

Application filed March 19, 1887. Serial No. 231,486. (No model.)

To all whom it may concern:

Be it known that I, AMSEY HOOPER, a citizen of the United States, and a resident of Athens, in the county of Athens and State of Ohio, have invented certain new and useful Improvements in Ice-Cream Freezers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view of my improved ice-cream freezer. Fig. 2 is a vertical sectional view of the same; and Fig. 3 is a perspective detail view, with portions broken away, of the coupling for the beater-shaft.

Similar numerals of reference indicate corresponding parts in all the figures.

My invention has relation to ice-cream freezers; and it consists in the improved construction and combination of parts of a freezer, in which the tub or receptacle for the ice and the beater are revolved in the same direction and the can in the opposite direction, as hereinafter more fully described and claimed.

In the accompanying drawings, the numeral 1 indicates an upright frame, the top piece, 2, of which is formed with two upright brackets, 3, having horizontal bearings 4 at their upper ends, and a shaft, 5, is journaled in these bearings and is provided at one end with a crank, 6, or other means for revolving it, and at the other end with a fly-wheel, 7, which, however, may be dispensed with when rotary motion is conveyed to the shaft from a motor having a steady rotary motion.

The top piece of the frame is formed with a vertical bearing, 8, in which a sleeve, 9, is journaled, having a shoulder, 10, bearing against the lower end of the bearing, and a bevel-pinion, 11, is secured to the sleeve above the bearing. The sleeve 9 has another sleeve, 12, journaled within it, and the latter has a bevel-pinion, 13, secured to its upper end and revolving in a recess, 14, in the lower pinion, and a third and still smaller pinion, 15, located in the recess 16 in the center of the middle pinion, is secured to a shaft, 17, journaled in the inner sleeve, the three pinions having their beveled cogged faces forming one conical plane and the inner sleeve projecting below the end of the outer sleeve, and the lower end of the shaft projecting below the end of the inner sleeve.

Correspondingly shaped and sized bevel-pinions 18, 19, and 20 are secured to the shaft, the largest pinion, 18, engaging the largest pinion upon the outer sleeve at one side, whereupon the second pinion, 19, meshes with the second pinion upon the inner sleeve, and is secured to the shaft facing the other pinions, the smallest pinion meshing with the pinion upon the vertical shaft. In this manner it will be seen that the outer sleeve and the vertical shaft will be revolved at the same speed and in the same direction, while the inner sleeve will be revolved in the opposite direction, but with the same speed.

An arched frame, 21, is formed with a sleeve, 22, at its middle, which sleeve is secured by means of a set-screw, 23, to the lower end of the outer sleeve, and the ends of this frame are bent to form perforated ears 24, which fit upon pins 25 in notches 26 in the edge of the tub 27, containing the ice. This tub is formed with a hollow conical cap, 28, in the center of its bottom, with which it fits upon a conical step, 29, projecting from the bottom piece, 30, of the machine-frame, the said step being concentric with the sleeves and shaft in the top piece of the frame, so that when the outer sleeve is revolved the tub may be revolved by it.

The can 31, containing the cream, has a hollow conical bearing, 32, in its bottom, with which it is pivoted upon a central step, 33, upon the upper side of the bottom of the tub, and this can is provided at its open top with a removable lid or cover, 34, and with a lid or cover, 35, fitting upon the inner lid, and formed with two seats or sockets, 36, at diametrically-opposite sides of the edge, both lids or covers having central perforations for the passage of the beater-shaft.

An arched frame, 37, is formed with a sleeve, 38, at its center, with which it fits upon the lower end of the inner sleeve, having a set-screw, 39, for securing it, the ends of this frame being bent inward, as shown at 40, and fitting in the seats or sockets upon the upper or outer cover of the can.

The lower end of the vertical shaft is halved,

as shown at 41, and a sleeve, 42, fits with its cylindrical bore 43 upon this halved portion, having a lug, 44, in its bore bearing against the flat side of the same, and this sleeve fits with its lower end upon the halved portion 45 of the upper end of the beater-shaft 46, having a set-screw, 47, bearing against the flat side of the same, the sleeve thus connecting the vertical shaft and the beater-shaft causing them to revolve together.

It will thus be seen that when the horizontal shaft is revolved the ice-tub will be revolved in the same direction as the beater-shaft, and the can containing the cream will be revolved in the opposite direction, the cream being thus stirred and beaten while the can is brought in very rapid contact with the revolving ice mass, causing a rapid cooling and a consequent rapid freezing of the cream, the rapid freezing of the cream causing the latter to be light and palatable on account of its being frozen while beaten up, the yield of frozen cream being thus comparatively large to the amount of solid cream employed in its manufacture.

When it is desired to take the machine apart for the purpose of filling or cleaning it, the sleeves of the arched frames are loosened by their set-screws upon the sleeves of the pinions, and the small sleeve upon the shaft and beater-shaft is loosened and slid up upon the shaft, when the frames may be raised and secured in this position upon the sleeves and the tub and can removed and cleaned or filled.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In an ice-cream freezer, the combination of a frame having a vertical bearing in its top, a shaft, and an inner and an outer sleeve journaled within said bearing, a beveled pinion upon the upper end of each of said sleeves and said shaft, a horizontal shaft journaled upon the top of said frame, beveled pinions upon said horizontal shaft engaging, respectively, with the pinions upon the sleeves and vertical shaft, an ice-tub secured to the lower end of the outer sleeve, a can secured to the lower end of the inner sleeve, and a beater secured to the lower end of the vertical shaft, said tub, can, and beater being pivoted upon central steps at their bottoms, one within the other, substantially as shown, and for the purpose set forth.

2. In an ice-cream freezer, the combination of an ice-tub having diametrically-opposite notches in its edges provided with pins, an arched frame having its outwardly-bent ends secured by perforations upon the pins in the notches and having a sleeve at its middle, an outer sleeve, a can pivoted at its bottom upon a central step in the tub and having a removable inner cover and a removable outer cover formed with diametrically-opposite sockets or seats, an arched frame having its inwardly-bent ends fitting in the sockets and having a sleeve at its middle, an inner sleeve, and a dasher or beater having its upper end halved and having a sleeve fitting with its cylindrical bore upon the halved ends of the shafts, having a lug bearing against the flat side of one shaft end, and a set-screw bearing against the other shaft end, and means, substantially as described, for rotating said sleeves and shaft, as and for the purpose shown and set forth.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

AMSEY HOOPER.

Witnesses:
J. M. WOOD,
JOHN GRAHAM.