M. A. ROLLMAN.

ICE CREAM FREEZER.

APPLICATION FILED AUG. 17, 1908

1,011,247.

Patented Dec. 12, 1911.

3 SHEETS—SHEET 1.

Fig. 1.

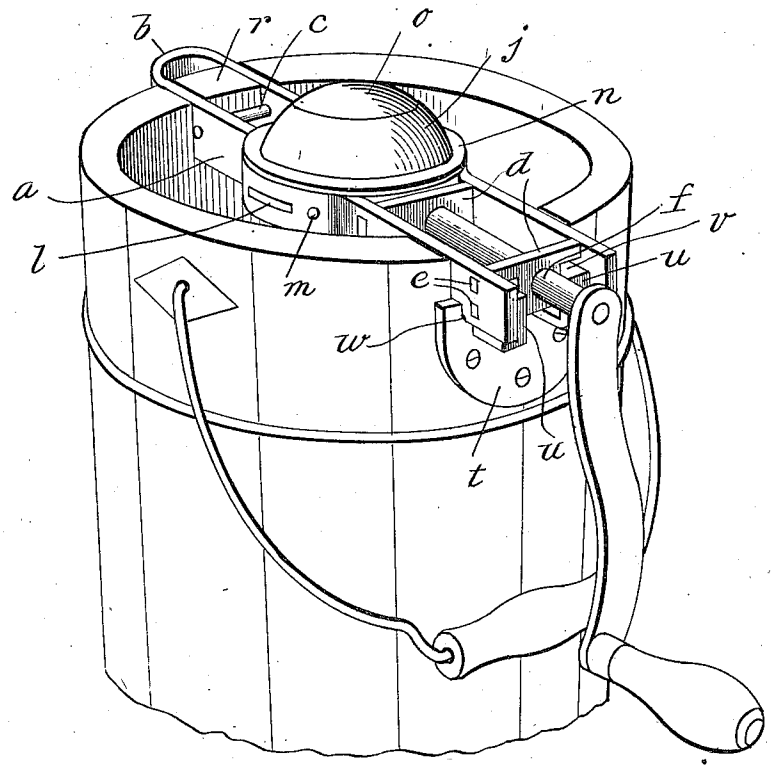
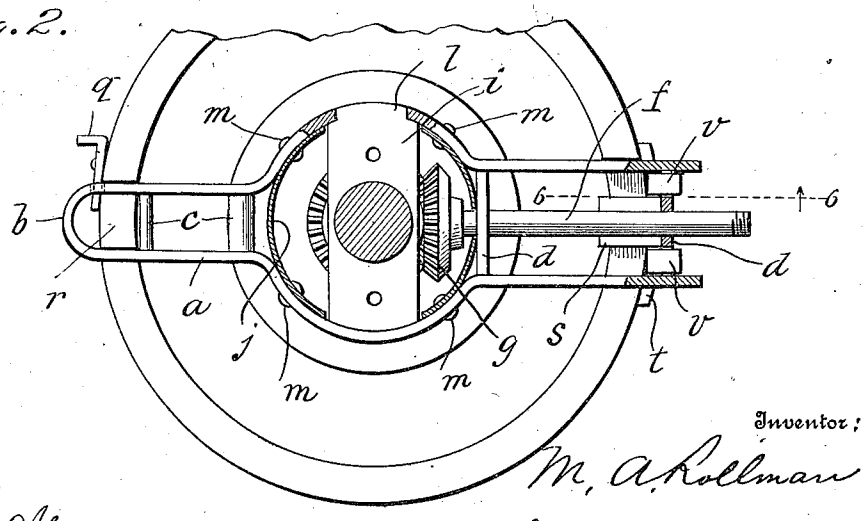


Fig. 2.



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3 SHEETS—SHEET 2.

Fig. 3.

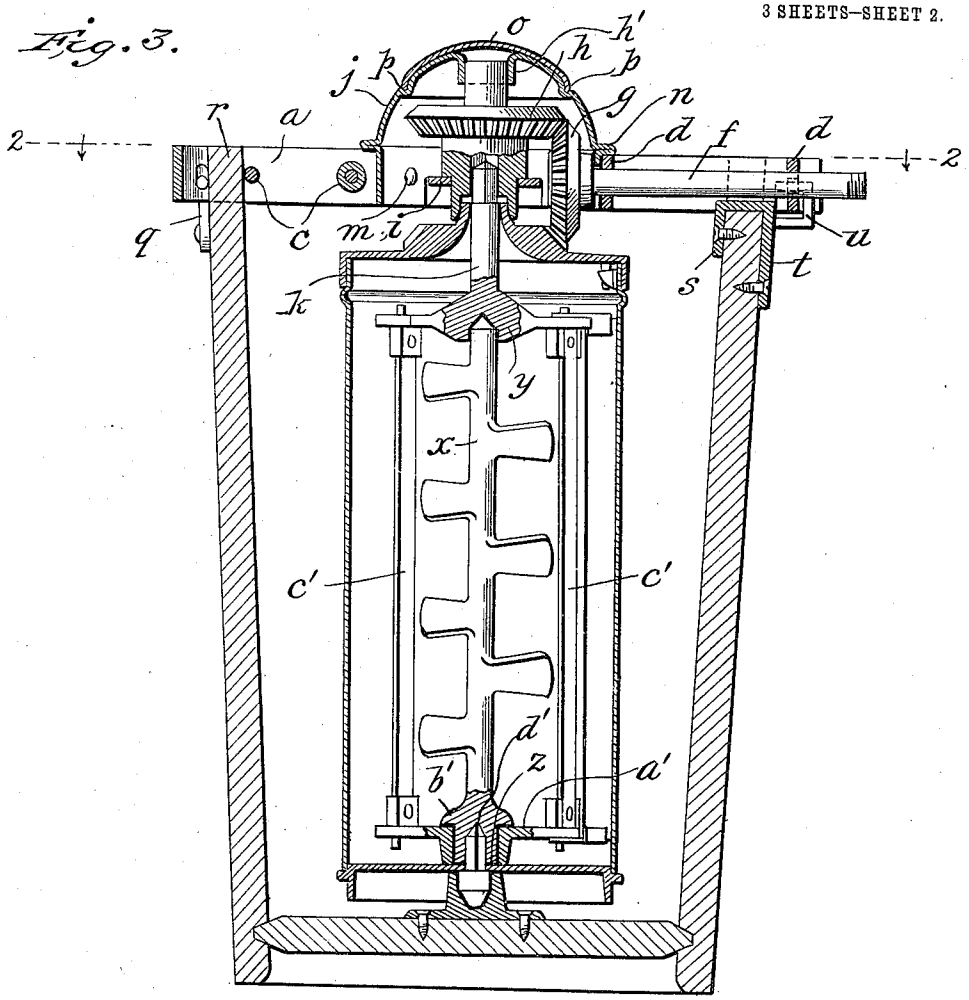
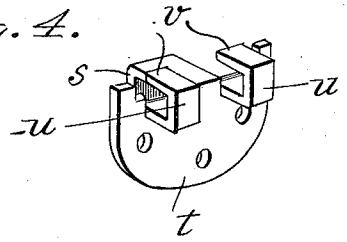


Fig. 4.



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3 SHEETS—SHEET 3.

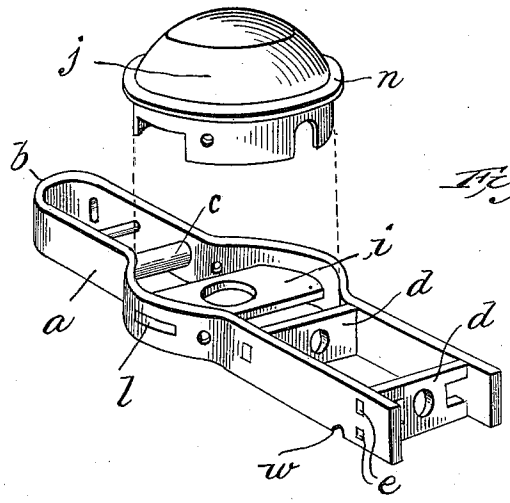
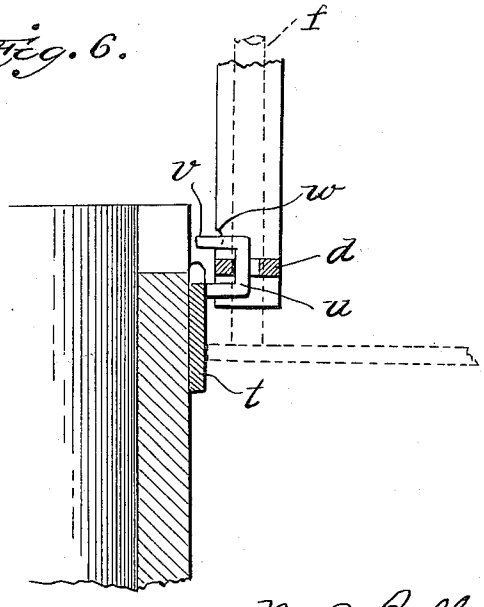


Fig. 5.

Fig. 6.



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UNITED STATES PATENT OFFICE.

MICHAEL A. ROLLMAN, OF MOUNT JOY, PENNSYLVANIA, ASSIGNOR TO RICHMOND CEDAR WORKS, OF RICHMOND, VIRGINIA, A CORPORATION OF VIRGINIA.

ICE-CREAM FREEZER.

1,011,247. Specification of Letters Patent. Patented Dec. 12, 1911.

Application filed August 17, 1908. Serial No. 448,872.

To all whom it may concern:

Be it known that I, MICHAEL A. ROLLMAN, a citizen of the United States of America, and a resident of Mount Joy, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Ice-Cream Freezers, of which the following is a full and clear specification, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view showing the manner of attaching the gearing frame to the tub; Fig. 2 is a plan view thereof partly in horizontal section; Fig. 3 a vertical sectional view of the freezer; Fig. 4 is a detail perspective view of the hinge plate or clip; Fig. 5 is a perspective view in detail showing the gearing frame and the casing dome separated; and, Fig. 6 is a detail vertical sectional view showing more clearly the manner of hinging the frame to the tub.

The object of this invention is to simplify and cheapen as well as to strengthen the construction of the freezer and it consists of certain novel features of construction and arrangement of parts hereinafter described and claimed.

Referring to the drawings annexed by reference characters, *a* designates the main gearing frame or support which consists of a flat strip of metal such as steel bent transversely at *b*, midway its length, the two bars or plates thus formed being separated from each other but rigidly connected together by suitable cross-stays *c* and *d*, the two latter cross-stays being of approximately the same width as the bar *a* and being riveted at its ends thereto, the rivets *e* being integral with the cross-stays and extending through the two members of the main bar. In this way a rigid light frame is constructed which is less expensive than the usual cast frame.

The drive shaft *f* is journaled in the cross-bars *d*, and the driving gear on this shaft is geared into the dasher driving gear *h* whose vertical shaft is journaled at its lower end in a transverse plate *i* and at its upper end in a tubular bearing depending from the gear casing *j*. The shaft of the upper gear engages the squared end of the scraper shaft *k* in the usual manner in triple motion freezers, while the gear *g* engages in the usual manner in a gear formed on the can cover.

The supporting bar or plate *i* has its shouldered or tenoned ends *l* engaging in recesses in the opposite bars of the frame, so that this bar is held in place and is supported by the frame. Midway their length the side bars of the frame are bulged outwardly to receive between them the depending rim of the hemispherical casing *j*, and to rigidly fasten the casing to the frame a series of rivets *m* are passed through the frame bars and the casing at suitable points. To more securely brace the casing an annular flange *n* is formed thereon at a point where it will bear upon the upper edges of the curved portions of the frame bars. I prefer stamping or drawing the casing out of sheet metal, as shown, the bearing *h'* for the upper end of the shaft of the inner gear being formed by forcing inwardly a portion of the metal casing, as shown. The hole that is formed in the top of the casing is preferably closed by a sheet metal disk *o* whose edges are crimped into the casing dome at *p*. In this way a rigid and light and inexpensive gear casing is provided.

It will be observed that the gearing frame is set down in notches cut in the rim of the tub, the notches being sufficiently deep to bring the upper edges of the frame bars approximately flush with the rim and the notches also being sufficiently wide to closely embrace the outer side faces of the frame bars. In this way the frame is braced and protected sufficiently on all sides to greatly reduce breakage in handling and transportation. Another advantage of thus letting the frame down into the tub body is that with a given height of freezer, measuring from the bottom of the tub to the top of the gear casing, a larger ice space is provided above the top of the can; this is important in that in an effective freezer space must be provided to pack the ice on top of the can as the cream in the top of the can is the most difficult to freeze readily.

As is usual, a suitable locking device or hook *q* is provided at the outer or bent end of the frame, the bent or rounded end of the frame projecting beyond the exterior of the tub. This outer end of the frame is preferably set down into two notches formed in the rim of the tub, as shown, so that the upstanding portion *r* of the stave between the notches forms in connection with the outer stay-rod *c* a sort of stop to prevent

endwise shifting of the frame in transportation and operating the freezer; but it is obvious that if desired I may cut out this portion r entirely, the same as shown for the inner end of the frame. This inner end of the frame is hinged to the tub in any suitable manner but I prefer the device shown, which consists of a metal clip fitting over that portion of the tub rim forming the bottom of the notch and having its depending inner and outer portions s and t fastened to the respective faces of the tub wall by suitable screws. Projecting outwardly from this clip are a pair of separated hooks u, which hooks extend outwardly and upwardly and inwardly, their inner free extremities v terminating approximately in vertical alinement with the main plate t. The bends in the hooks are preferably angular, as shown, and they work through a pair of openings formed in the inner cross-stay d. These hooks when engaged in the openings in the cross-bar form a loose hinge connection which when the frame is down on the tub assists in holding it rigidly there and which when the frame is swung upwardly to a vertical position as shown in Fig. 6, locks the frame to the tub. This hinge connection permits detachment of the frame but to detach it the frame must be adjusted to a special angle with reference to the top of the tub, it being thereby impossible to detach the frame while it is either down on the tub or swung up to its vertical position. It is supported in its vertical position by the handle on the drive shaft striking against one of the clip plates t, as shown in dotted lines in Fig. 6. When the frame is down on the tub the notches w in the lower edges of the frame bars engage over the upper edges of the adjacent clip plate t, and thus assist in preventing endwise dislodgment of the frame.

It will be observed that the frame construction I have shown and described is exceedingly light and rigid as compared with the usual cast frame, and besides may be manufactured at a lower cost. It is especially valuable in that it enables the parts to be standardized and interchangeably used for the various types (triple motion, double motion, and single motion) of freezers. Owing further to the strong construction of the frame and the manner in which it is set down in the tub frame, breakage in shipping is entirely done away with.

The paddle shaft x is journaled in its upper end in the upper cross-head y of the scraper frame in the usual manner and its lower end has a cylindrical boss z formed on it on which is journaled the cross-bar a' at the lower end of the scraper frame, an annular flange b' being formed on the paddle shaft to engage the upper surface of the cross-bar. The parts are locked together by vertical frame bars c' which are preferably constructed of steel and are riveted to suitable lugs on the cross-bars y and a'. In this manner, that is by employing separate rods c' to connect the cross-bars of the scraper frame and by providing the paddle shaft with the shoulder b', the dasher apparatus is assembled in a simple and efficient manner, avoiding the use of lock pins and other devices to hold the paddle shaft within the scraper frame. The paddle shaft is locked directly to the can by means of an upstanding angular stud d' which engages an axial angular recess in the lower end of the paddle shaft so that the paddle shaft will rotate with the can as is usual in triple motion freezers.

Where the term "sheet metal" is used in the specification and claims it will be understood that I use that term to define that the parts of my frame are made of rolled metal as distinguished from cast metal, it being one of the objects of my invention to do away with the casting of the frame by constructing it of bars or plates made by the rolling or equivalent method so that the frame may have great strength in comparison with its weight and be practically non-breakable under any of the ordinary strains of transportation and use.

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

1. In combination with a tub having notches formed in its rim at diametrically opposite points, of a gearing frame bodily fitted down in said notches and engaging the sides thereof, for the purpose set forth.

2. A gearing frame of the type set forth comprised of a pair of sheet metal bars set vertically edgewise and means rigidly spacing and connecting them together, a gear supporting plate embraced by and engaging said bars, and a gear cover or dome carried by said bars over said gear plate, said connecting and spacing means consisting of separate plates or bars set vertically edge-wise and having their ends abutted against the inner faces of the frame bars.

3. A gearing frame for ice cream freezers, etc., consisting of a pair of parallel sheet metal bars set vertically edge-wise and means rigidly spacing them apart, said spacing and connecting devices affording bearings for a drive shaft, a plate for supporting the driven gear, said plate being embraced by and attached to said bars, said connecting and spacing means consisting of separate plates or bars set vertically edge-wise and having their ends abutted against the inner faces of the frame bars.

4. In an ice cream freezer, the combination of a tub and a gearing frame provided with a cross bar at its inner end, and a clip provided with open hinge hooks for engag-

ing said cross bar, said clip being rigidly and permanently fastened to the rim of the tub and provided with a hook-like extension which engages over and fits down on the upper edge of the rim and against the inner wall of the tub, thereby rigidly clasping the rim of the tub.

5. In combination with a tub having notches cut out of its upper edge, of a gearing frame having its opposite ends bodily fitting down in said notches, the sides of the frame abutting the sides of the notches and the upper edge of the frame coming substantially flush with the upper edge of the tub, and means for preventing end-wise movement of the frame on the tub.

6. In combination with a tub having notches cut in its upper ends and a hinge plate fastened to the exterior of the tub below one of the notches and having hinge hooks terminated below the top edge of the tub, of a gearing frame set down in said notches and being constructed at its hinge end for engagement with said hooks.

7. In combination with a tub having notches cut in its upper edge and a hinge plate fastened to the tub below one of the notches and provided with open hinge hooks and also with an inward extension fitting against the bottom of said notch and extending down against the inner face of the tub wall, this extension rigidly clasping the tub, of a gearing frame adapted to fit down in said notches and constructed at its hinge end for engagement with said hooks.

8. In combination with a tub having a pair of notches cut in the rim of the tub adjacent to each other, and also with another notch in the rim at a point diametrically opposite said two notches, of a gearing frame constructed of a pair of bars set vertically edge-wise, said bars fitting down in said notches and abutting against the sides thereof, and means for hinging the frame at one end to the tub.

9. In combination with a tub having its rim provided at one side with a pair of notches and at its other side with a wider notch, of a gearing frame comprising parallel bars adapted to fit down in said notches and provided with a stop adapted to abut against the portion of the stave extending up between the bars of the frame, and means for hinging the frame to the tub at a point adjacent to the aforesaid wide notch, for the purpose set forth.

10. A gearing frame of the type set forth consisting of a single bar or plate of sheet metal bent upon itself about midway of its length, the two bars thus formed being rigidly connected together by cross-bars and being bent outwardly midway of their ends, a gear supporting plate embraced and engaged by said outwardly bent portions, and a gear casing or dome embraced by and attached to said outwardly bent portions of the frame bars.

11. A gearing frame for ice-cream freezers, etc., consisting of a pair of parallel metal bars and means rigidly connecting and spacing them apart, said spacing and connecting means affording bearings for the drive shaft, a plate for supporting a driven gear, said plate being embraced by and attached to said bars by having its ends tenoned or shouldered into opposite openings in said bars, whereby the securing together of the bars locks and supports the plate.

12. A gearing frame consisting of a pair of sheet metal bars set vertically edge-wise and means for rigidly connecting them together and spacing them apart, said means embodying transverse bars or plates provided with holes for a drive shaft and being tenoned into said frame bars, for the purpose set forth.

13. A gearing frame for ice cream freezers, consisting of a pair of sheet metal frame bars set vertically edge-wise and each being bent outwardly about mid-way its length, rigid cross bars connecting the frame bars at each side of the bent portions, the cross bars at one side being provided with alined holes for the drive shaft, a gearing cover or dome seated on the bent portions of the frame bars, and a separate gear-supporting plate connecting the said bent portions of the frame bars.

14. A gearing frame for ice cream freezers, consisting of a pair of sheet metal bars set edge-wise vertically and bent outwardly about mid-way their ends to form a seat for a cover or dome, means for rigidly connecting and spacing the bars, said means affording a bearing for a drive shaft, a cover or dome having its lower edge fastened within the outwardly bent portions of the bars, and a gear supporting plate positioned under the cover or dome and supported in said outwardly bent portions of the bars.

In testimony whereof I hereunto affix my signature in the presence of two witnesses this 7th day of August, 1908.

MICHAEL A. ROLLMAN.

Witnesses:
JOHN A. HIPPLE,
M. N. BRUBAKER.