

(No Model.)

C. H. A. GERDING.
ICE CREAM FREEZER.

No. 517,114.

Patented Mar. 27, 1894.

Fig. 1.

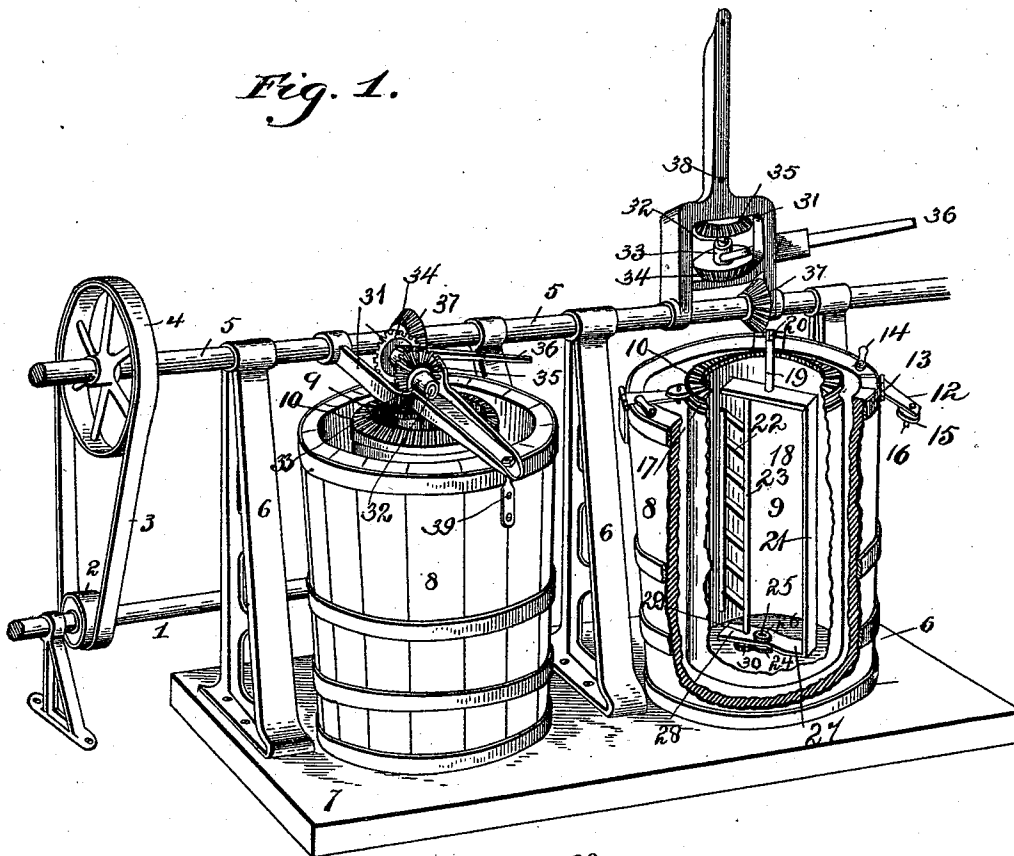
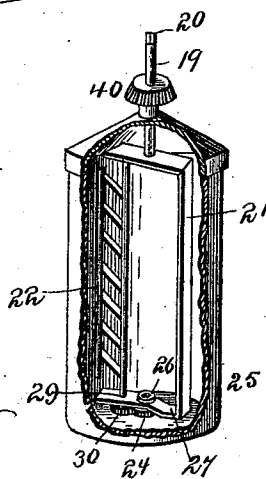


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

CHARLES H. A. GERDING, OF NASHVILLE, TENNESSEE.

ICE-CREAM FREEZER.

SPECIFICATION forming part of Letters Patent No. 517,114, dated March 27, 1894.

Application filed July 25, 1893. Serial No. 481,430. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. A. GERDING, a citizen of the United States, residing at Nashville, in the county of Davidson, State of Tennessee, have invented certain new and useful Improvements in Ice-Cream Freezers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

It is the object of my present invention to effect certain improvements upon the construction of freezer patented to me July 1, 1890, No. 431,345.

Among others the objects of my present improvements are to enable a number of freezers to be run from a single power shaft with economy and efficiency in operation, at the same time enabling the cans of such freezers to be readily disconnected from the operating gearing and removed for the purpose of selling or distributing their contents.

In order to enable a freezer of the character referred to, namely that patented heretofore to me, to be successfully run and disconnected as above indicated I have found certain important changes and modifications in gearing heretofore employed for the operation of ice-cream freezers to be necessary.

With such object in view my improvement consists in the parts and combinations thereof hereinafter more particularly set forth and claimed.

In order to make my invention more clearly understood I have shown in the accompanying drawings means for carrying the same into practical effect, without limiting myself in its useful applications, to the particular construction which, for the sake of illustration, I have delineated.

In said drawings—Figure 1 is a perspective view showing a continuous power shaft or shafts, and two of a series of freezers connected therewith, one of said freezers being broken away to better illustrate the mode of construction, operation of the parts, and connection with the said power shaft. Fig. 2 is a perspective view, partly broken away, of a slightly modified form of can, adapted however to be operated in substantially the same manner as the can shown in Fig. 1, or in any equivalent manner.

Referring to the drawings, 1 indicates a power shaft driven by any suitable motor. 2 is a pulley thereon connected by a belt 3 with a larger pulley 4 mounted upon the continuous freezer operating shaft 5. The latter is mounted in suitable bearing brackets 6 secured to a stand or base 7, the latter being adapted to receive such number of freezer tubs as may be desired. The latter are indicated at 8 and are removably connected with the base 7 in any suitable manner so that their upper ends will be in a row parallel with and near the shaft 5. These tubs are adapted to receive the freezing material, that is to say the ice and salt, or equivalent substance, and contain at their centers the cream cans 9. According to my invention the latter are rotary, and are provided with stationary dashers and scrapers hereinafter more particularly referred to.

10 is a beveled gear mounted peripherally upon the top of the can 9.

12 indicates a series of hinged arms, say three in number, which are pivoted or hinged to the tub 8 at 13 so as to be adapted to be turned over into a horizontal position extending toward the can, or to be thrown back out of engagement as indicated at the right hand of Fig. 1.

14 is a pin or catch upon the edge of the tub 8, one of which catches is provided for each of the arms 12, and which is adapted to hold the arm down in its operative position.

15 is a roller mounted upon a vertical pin or shaft 16 at the free end of each of the arms 12. These rollers serve to engage the outer surface of the cream can at or near the top thereof at three or more points, preferably just beneath the slightly projecting edge of the bevel gear 10. For the engagement of said rollers I prefer to form a slightly depressed track or groove 17 extending around the cream can as indicated and which may be formed in the casting of which the gear 10 is a part. When it is desired to remove the cream can the catches 14 are released and the can lifted up, whereupon the arms 12 will rise sufficiently to permit the can to be readily removed. In cleaning or filling the tub 9 the arms 12 may be thrown back out of the way as indicated at the right hand of Fig. 1. When it is desired to replace the can

the lower end of the same is inserted in the tub, the arms 12 are thrown over with their rollers in approximate engagement with the surface of the can, and the latter is then lowered to its final position, in which latter the rollers will fall into their groove or track 17.

The beater frame of the cream can is indicated at 18 and is provided at its upper end with a vertical stud 19 having a squared head 20 by which the beater frame is adapted to be held stationary as hereinafter set forth. One side of the beater frame constitutes a scraper 21 which is adapted to rest in contact with the inner surface of the cream can and remove therefrom the frozen cream as the can is revolved. The cream so removed is incorporated with the body of cream in the freezer, and partially frozen cream or unfrozen cream substituted in contact with the inner surface of the can by means of a beater 22 of any preferred character such for instance as that set forth in my patent hereinbefore referred to, and the vertical supporting and operating shaft of which is indicated at 23 and is mounted in the beater frame 18. The bottom of the cream can is provided with a gear 24 which is soldered upon or otherwise secured to the center of the bottom of the can and is provided on its upper side with a pin 25 which engages a bearing 26 in the lower portion of the beater frame 18. The lower portion of the frame 18 contiguous to the vertical scraper forms a horizontal scraper 27 which is adapted to remove the frozen cream from the bottom of the can, and from said horizontal scraper the beater frame extends upward and then horizontally over the gear 24 as indicated at 28. The horizontal arm 28, and the upper portion of the beater frame are provided with vertical bearings 29, in which are journaled the upper and lower ends of the beater shaft 23. The lower end of the latter below the arm 28 is provided with a gear wheel 30 meshing with the wheel 24 and adapted to be revolved thereby, thus producing the revolution of the beater.

31 indicates a yoke or frame, one for each freezer, mounted and adapted to be oscillated upon the continuous driving shaft 5, but so held as not to be longitudinally movable thereon.

32 is a counter shaft mounted in the frame 31 and extending in a direction which is radial from the shaft 5. Upon this shaft is mounted a longitudinally movable sleeve 33 carrying at its ends inner and outer bevel gear wheels 34 and 35.

36 is a clutch lever mounted upon the frame 31 and engaging the sleeve 33 for the purpose of shifting it toward or from the shaft 5.

37 is a bevel gear wheel rigidly secured upon the shaft 5 and adapted to engage the wheel 34 when the sleeve 33 is shifted toward the main shaft.

The wheel 35 is adapted to engage, when the frame 31 is turned downward into its horizontal position, as shown at the left hand

of Fig. 1, the bevel gear rim 10 on the top of the cream can.

It remains to provide a means for holding stationary the beater while the can is revolved. This I effect by forming the frame 31 with an aperture 38 adapted to receive the squared head 20 of the shaft 19. The said aperture may however be made round and the frame 31 provided with an engaging set screw, but I prefer the first mentioned arrangement.

39 is a locking device upon the tub 8 and adapted to secure the outer end of the frame 31 when the latter is in its lowermost position, as best seen at the left hand of Fig. 1. I am thus enabled, when it is desired to stop the operation of any cream can, to disconnect the same from the operating shaft without lifting the frame 31, by merely operating the clutch lever 36.

In Fig. 2, I have shown a more usual form of can, in which the upper end of it is provided with a horizontal bevel pinion 40, adapted to be engaged by the wheel 35. In this latter construction it will simply be necessary to make the sleeve 33 somewhat longer in order to bring the wheel 35 nearer to the central vertical axis of the cream can and enable it to properly engage the wheel 40.

The operation of my improved freezer is sufficiently indicated in the foregoing description of its construction.

Having thus described my invention, what I claim is—

1. The combination, with a series of freezers, of a continuous power shaft 5 extending parallel with and contiguous to said series, a corresponding series of oscillatory frames mounted upon said shaft and carrying gear wheels as described, a gear wheel upon the freezer can adapted to be engaged by one of the wheels of said frames, and a series of gear wheels rigidly secured to said shaft and adapted to operate the other of the gear wheels of said frames, substantially as set forth.

2. The combination with a power shaft, of an oscillatory frame mounted thereon, and carrying gear wheels as described, a gear wheel rigidly secured to said shaft and adapted to operate one of the gear wheels of said frame, a gear secured to the cream can and adapted to be engaged by the other of the gears of said frame, a stationary beater in said can and engaged and prevented from movement by the said oscillatory frame, a rotary beater mounted in said beater frame and provided with a gear wheel, and a second gear wheel secured to the cream can and adapted to operate the said gear of the beater, substantially as set forth.

3. In an ice cream freezer, the combination of a power shaft, an oscillatory frame mounted thereon, a sleeve movable in said frame in a direction radial to the power shaft and provided with two gear wheels as described, a gear wheel rigidly secured to the power shaft

and adapted to be engaged by one of the gears on said sleeve, a cream can provided with a gear adapted to be operated by the other of said gears on the sleeve, and means for shifting said sleeve toward and from the power shaft, substantially as set forth.

4. In an ice cream freezer, the combination with the rotary cream can, and means for operating the same, of arms 12 hinged to said tub, and rollers carried by said arms and adapted to be engaged with the exterior of the can at different points to center the same in the tub, substantially as set forth.

5. In an ice cream freezer the combination with the can having fixed to its bottom the

gear 24, of the beater frame 18 having horizontal arms or parts carrying the scraper 21, the rotary beater mounted in said arms and having at its lower end the gear 30 meshing with said gear 24, a frame or holder engaging the beater frame to prevent its rotation, and means for rotating the can, substantially as set forth.

In testimony whereof I affix my signature in the presence of two witnesses.

CHS. H. A. GERDING.

Witnesses:

C. R. HATCH,
H. H. HATCH.