

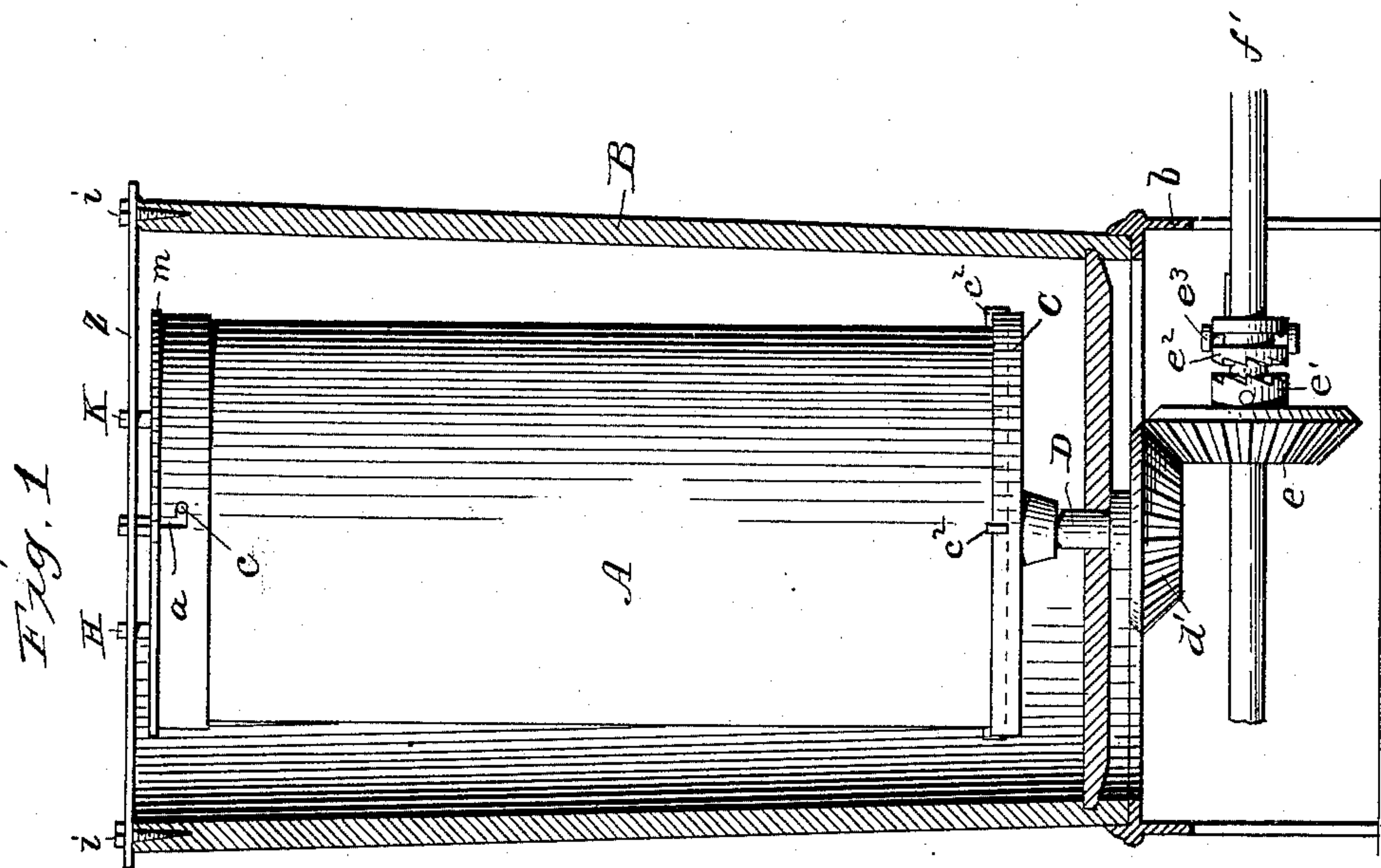
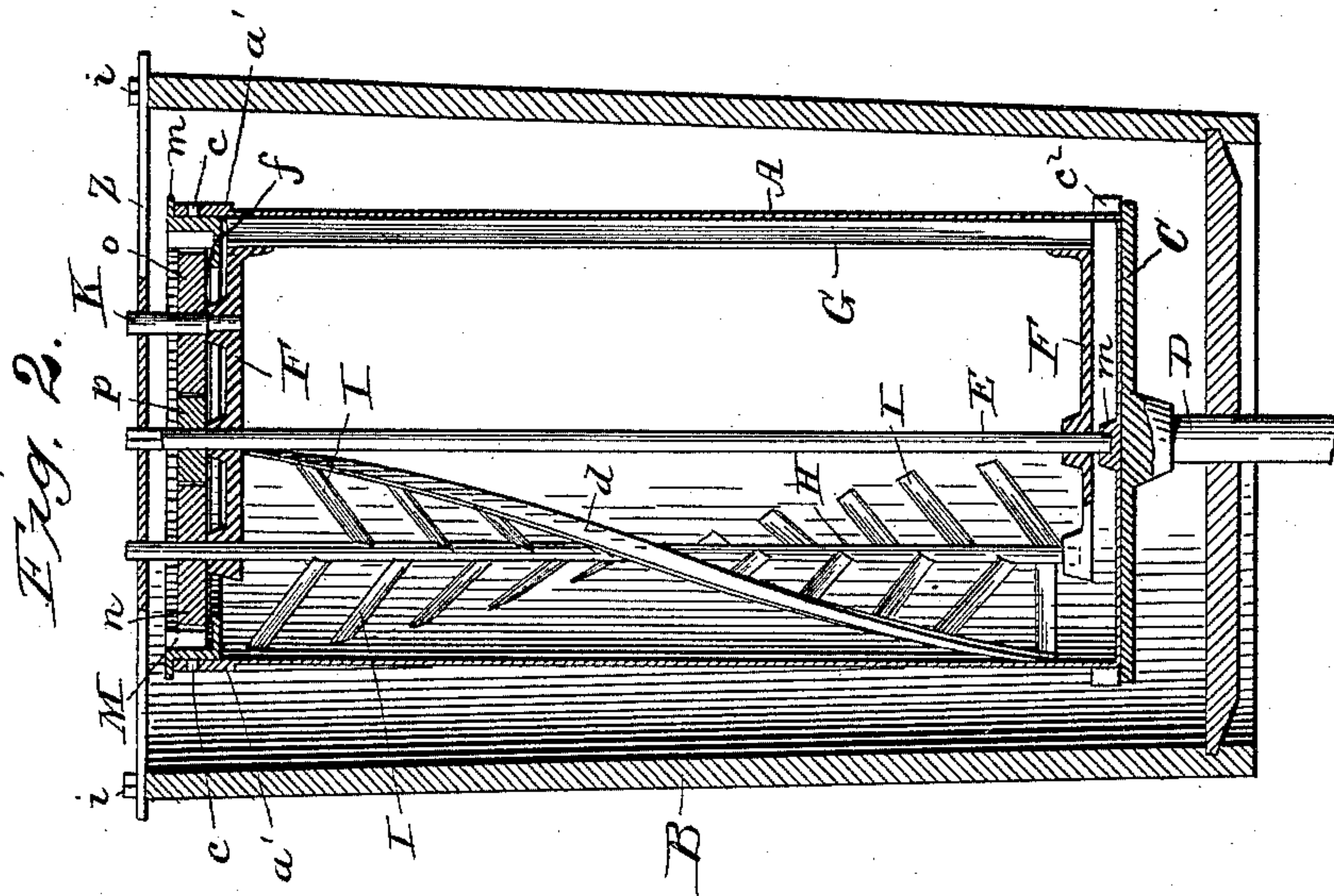
(No Model.)

2 Sheets—Sheet 1.

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

No. 431,345.

Patented July 1, 1890.



Witnesses

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C. P. Pearday

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C. H. A. Gerding

By his Attorney

H. N. Low

(No Model.)

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Fig. 4.

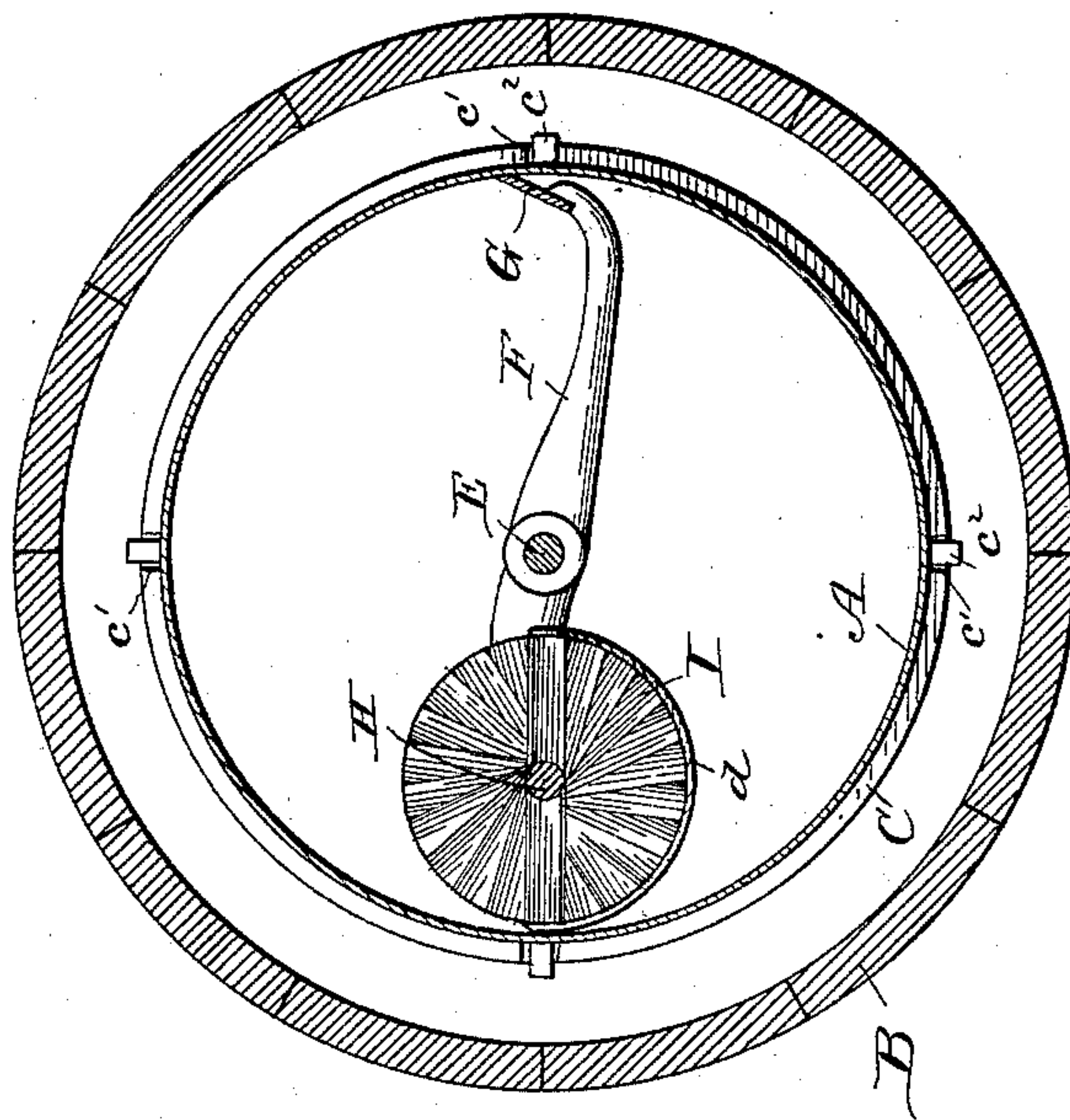
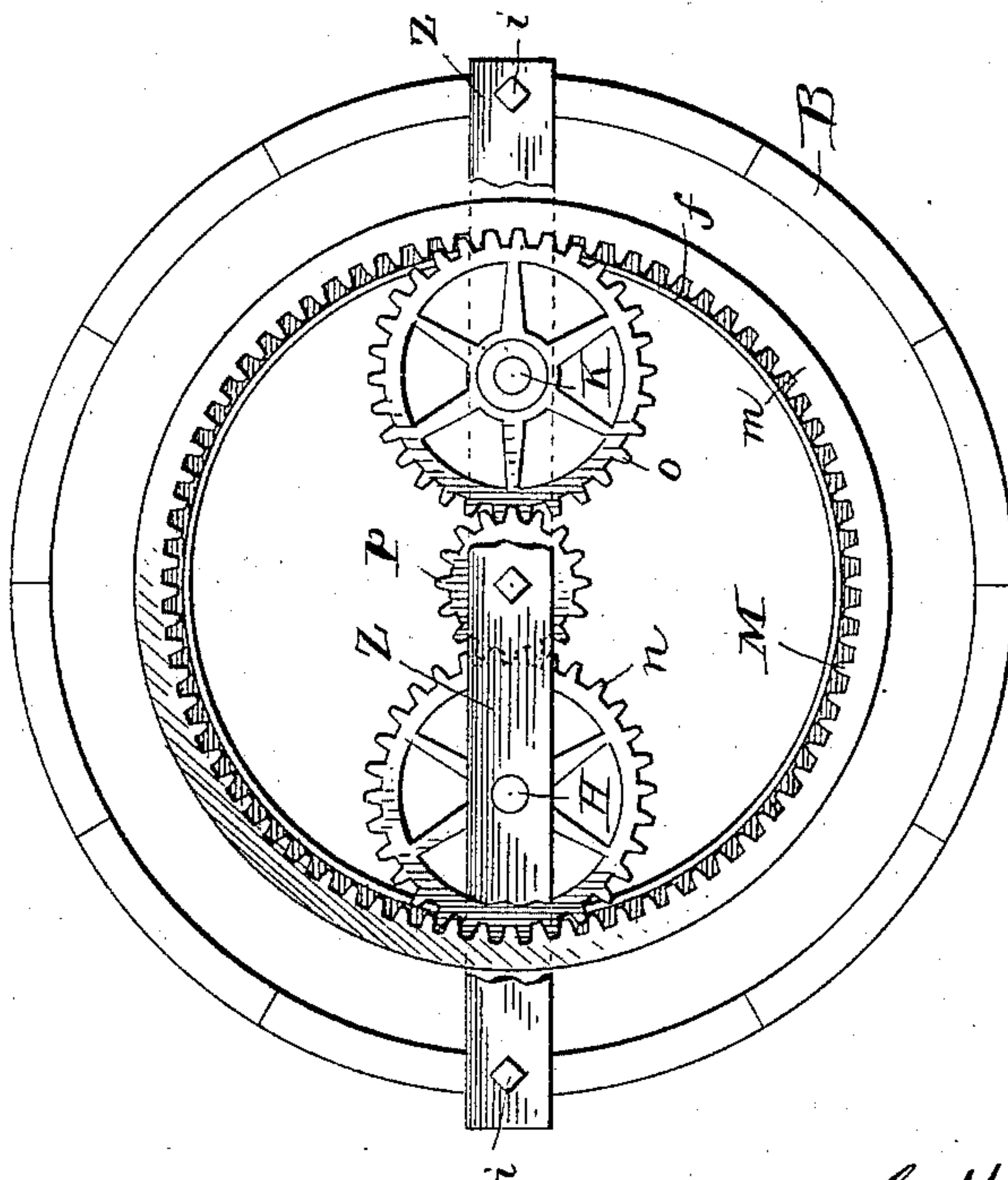


Fig. 3.



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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. 431,345, dated July 1, 1890.

Application filed July 15, 1889. Serial No. 317,531. (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 and 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 invention to render the operation of freezing the cream more convenient, rapid, and certain, and also to provide for the ready removal of the working parts of the device when the cream is ready for use.

To these ends my invention consists in certain parts and combinations thereof, herein-
after described and claimed.

In order to make the invention more clearly understood, I have shown in the accompanying drawings means for carrying the same into practical effect, though I wish it to be understood that my invention extends to other equivalent constructions.

In said drawings, Figure 1 is a side view of a freezer and actuating mechanism embodying my invention, the tub being in section. Fig. 2 is a vertical sectional view. Fig. 3 is a top view. Fig. 4 is a horizontal section.

Referring to the drawings, B indicates the tub mounted upon a base or support *b*, which will admit of the passage beneath the tub of a shaft *f'*. The latter is provided with a loose miter-gear *e*, having a clutch member *e'*, and with a sliding clutch member *e²*, which is splined upon the shaft or otherwise caused to revolve therewith. A shifting-lever *e³* engages the member *e²* and is adapted to throw the same into gear with member *e'*, thereby connecting gear *e* with and causing it to be revolved by the shaft *f'*. As many freezers as may be desired will be arranged along the line of shaft *f'*, and the latter will be kept in rotation by any suitable motor.

D is the main actuating-shaft of the freezer, carrying at its lower end a miter-wheel *d'*, which gears with wheel *e*, passing upward through the bottom of the stationary tub B,

and carrying at its upper end a horizontal flange or plate C, which revolves with the shaft.

A is the freezer-can, adapted to rest upon and fit plate C, and having lateral lugs *c²*, which engage corresponding notches *c'* in the rim of the plate, whereby the revolution of the can by the plate is insured. On the bottom and inside the can is secured a central socket *m*, which is loosely fitted by the foot of a stationary shaft E. At its upper end and outside the can said shaft has a bearing in a cross-bar or brace Z, secured to the edges of the tub by pins or screws *z*. The upper end of the shaft and said bearing are squared to prevent rotation of the shaft.

F F indicate arms securely fastened to shaft E and adapted to remain stationary therewith while the can revolves. They carry at their outer ends a blade G, which is held in close proximity to the inner face of the can, and which constantly removes the cream as fast as it becomes hardened by the neighboring ice.

H is a revolving shaft mounted in arms F, preferably on the opposite side of shaft E from that on which the blade G is situated. At its upper end shaft H may be steadied by having a bearing in the cross-bar Z.

n is a gear-wheel secured to shaft H and engaging with an internal gear-wheel M, secured to the inner side of the freezer-can at or near its mouth. Said wheel M is preferably constructed or formed with a horizontal flange *m*, adapted to rest upon the edge of the can, and is provided with pins *c*, which engage slots *a* in the can. The wheel is thus readily removable. For greater strength and stiffness the can is thickened or provided with an external collar at its upper end, as shown at *a'*. It will thus be readily seen that the revolution of wheel M around wheel *n* will cause the latter, together with its shaft H, to be rapidly turned. In order to balance or equalize the strain which tends to separate wheels M and *n* and to displace the upper end of the can toward the right in Fig. 2, two idler-gears may be employed, the one *p* mounted loosely on the upper end of shaft E and engaging gear *n*, and the other *o* mounted

in diametrical line with shafts H and E on a stud-shaft K, carried by the upper of arms F and engaging gears *p* and M.

I indicates paddles or flights secured to and
5 revolved by shaft H and extending upward and outward therefrom. Said paddles are arranged spirally, and are inclined so that their lower edges are, as they revolve, in advance of their upper edges. They thus act
10 most effectually both to thoroughly stir the cream, mix pure air with it, expel all impurities, throw inward and upward the hard cream which has been frozen and has been removed by blade G, and cause the soft cream to reach
15 the sides of the can, there to be frozen, and then in turn removed by said blade.

d is a supplemental blade or scraper, which may be employed, connecting and carried by the ends of a helical series of the flights I, and
20 which also acts to remove the hardened cream from the surface of the can, and, its lower end being in advance of its upper, to force or work upward the cream which it encounters, after the manner of a conveyer.

At *f* is shown an inwardly and upwardly extending flange formed upon gear-wheel M along the lower faces of its teeth, which is adapted to arrest any metallic discoloring matter which might otherwise drop from the
30 cogs into the cream.

The operation of freezing has been sufficiently indicated.

In order to remove the stirring or agitating mechanism from the freezer-can, it is simply
35 necessary to partially rotate the flanged gear M, bringing pins *c* into the vertical parts of slots *a*. Bar Z and said wheel may then be removed, and subsequently or at the same time the arms F and parts carried thereby
40 may be taken out.

It will be seen that according to my invention the top of the freezer-can is open, allowing ready inspection of the contents during the freezing operation. All danger of making
45 butter and spoiling the cream is thus obviated.

What I claim is—

1. In an ice-cream freezer, the combination, with the freezer can or receptacle, of a scraper-blade mounted within said can, one of the
50 said parts having a rotary movement relatively to the other, and a stirrer and vertical con-

veyer, also mounted in the can, rotary independently of said can and adapted to give a vertical movement to the frozen cream removed by the scraper, substantially as set forth. 55

2. In a freezer, the combination of the can, means for revolving the same, a central stationary shaft having lateral arms, a scraper-blade carried thereby, a revoluble shaft journaled on said arms near the side of the can, paddles situated one above the other and carried by said revoluble shaft, and means for revolving the latter shaft, substantially as
60 set forth. 65

3. The combination of the can, the internally-gearred ring M, removably connected therewith, and removable stationary central shaft E, arms F, eccentric revoluble shaft H, having a vertical series of paddles one above
70 the other, gear *n*, and supporting-gears *p* and *o*, substantially as set forth.

4. In an ice-cream freezer, the combination of a rotary can, a stationary central shaft
75 therein, a support for the upper end of said shaft, arms on said shaft carrying an eccentric stirrer-shaft, an internal gear on the can, a pinion engaging said gear and secured to the said stirrer-shaft, an idler-pinion, also engaging the internal gear, and a second idler-pinion mounted loosely on the central shaft
80 and engaging said first-mentioned pinions, substantially as set forth.

5. The combination of the open can A, the
85 removable internal gear M, fitting within the can and having an external horizontal flange *m* and internal flange *f*, whereby the contents of the can are protected from discoloration from said gear M, a rotary shaft within the
90 can, and gearing connecting said gear M with said shaft, substantially as set forth.

6. In a freezer, the combination, with the can, of an eccentrically-mounted shaft therein, and a series of inclined flights I, carried
95 thereby, having the helical scraper-blade *d*, connecting their ends, substantially as set forth.

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

CHS. H. A. GERDING.

Witnesses:

FRED C. DORIDER,
WM. M. SIDEBOTTOM.