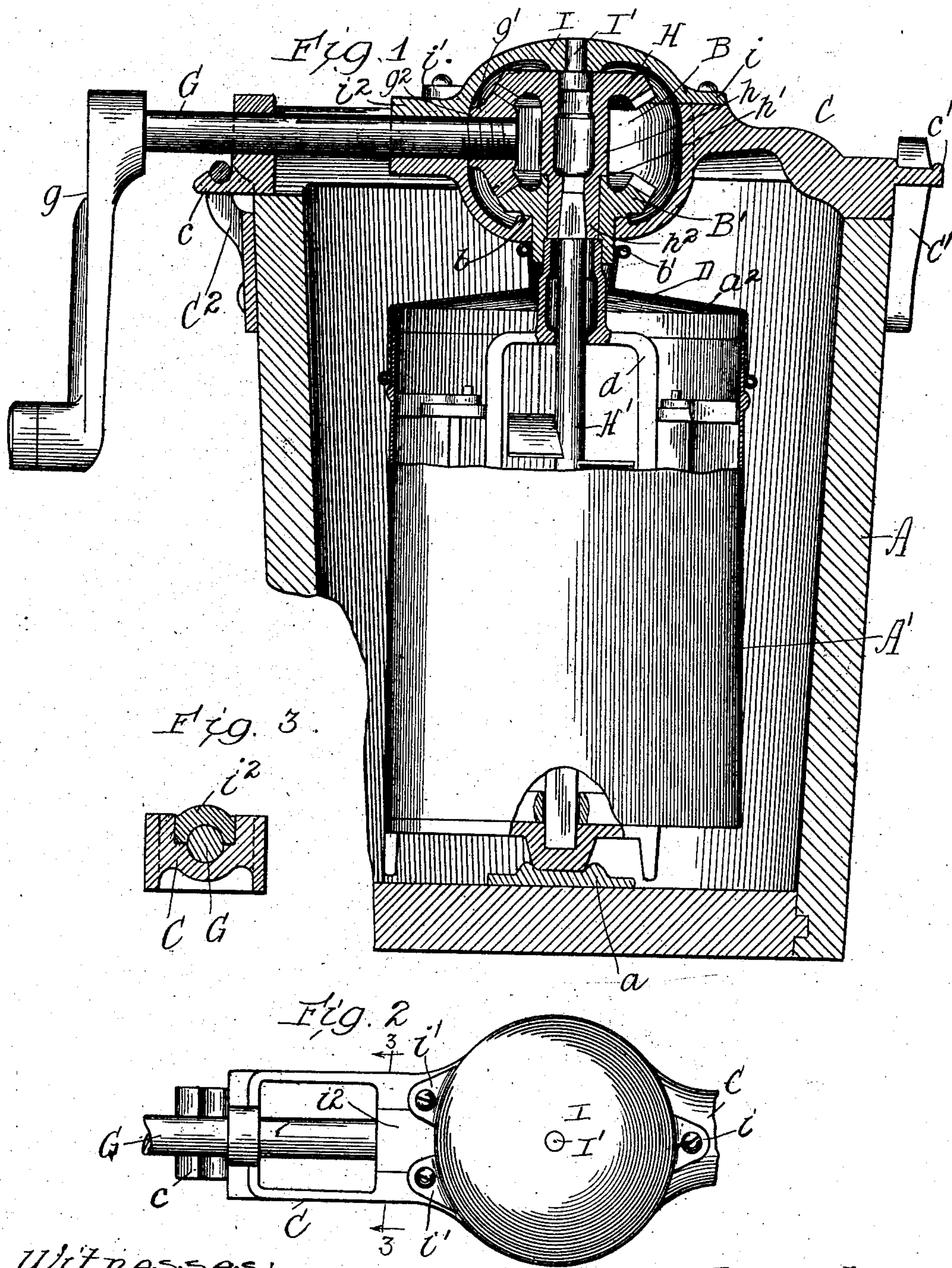


No. 840,171.

PATENTED JAN. 1, 1907.

L. STURGES.
ICE CREAM FREEZER.
APPLICATION FILED JAN. 22, 1906.



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UNITED STATES PATENT OFFICE.

LEE STURGES, OF CHICAGO, ILLINOIS.

ICE-CREAM FREEZER.

No. 840,171.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, LEE STURGES, a citizen of the United States, and a resident of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Mechanism for Actuating Ice-Cream Freezers; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to actuating-heads for ice-cream freezers, and more particularly to that portion of the mechanism whereby the cream-containing can or vessel and certain internal beaters are revolved independently and oppositely. In constructions heretofore devised for this purpose it has been a common fault that the dirt and grease from the operating mechanism fall into the tub or into the can when open, thus contaminating the product and depreciating its quality and value. Furthermore, the constructions heretofore devised for the purpose have been more or less complicated and difficult to construct and assemble and soon become unsightly, because they are more or less open either at the top or bottom, permitting dust and dirt to gather in the mechanism to such an extent as to render the same offensive and as well increase the wear and render the device unsanitary in character.

The object of this invention is to afford a mechanism for actuating the can and the beaters therein in opposite directions and which is easily kept in sanitary condition, inasmuch as the mechanism is entirely inclosed to prevent dust and dirt finding its way therein or grease or the dirt of journal wear falling therefrom into the freezer.

It is furthermore an object of the invention to afford a strong, cheap, and durable construction of the class described of such simplicity that it may be readily assembled and is not likely to get out of order.

The invention consists in the matters hereinafter described, and more fully pointed out and defined in the appended claims.

In the drawings, Figure 1 is a large vertical section of a device embodying my invention. Fig. 2 is a top plan view, partly broken, of the actuating-head. Fig. 3 is a section taken on line 3 3 of Fig. 2.

As shown in the drawings, A indicates a

freezer-tub of usual construction adapted to contain the salt and ice or other refrigerant.

A' indicates the revolving can for the cream, which, as shown, is supported and journaled upon a suitable central bearing *a* in the bottom of the tub.

Removably secured diametrically across the top of the tub is the operating mechanism or head C, which, as shown, comprises a bar of cast metal or other suitable material of any suitable width and which is shaped at one end to project beyond the side of the tub, as shown at *c*, and to engage in a suitable clip or eye C', engaged upon the side of the tub. At the opposite end of said bar is also provided an extension *c'*, adapted to engage beneath a hook C', pivotally engaged on the tub and whereby said bar is firmly held from movement when in place. Positioned centrally in said bar is an enlarged circular gear-case comprising, as shown, a relatively deep cavity or chamber B, which is open at the top and entirely closed at the bottom except for a central cylindric aperture about which is provided a raised fillet or flange *b*, thus affording an annular groove or compartment surrounding said flange or fillet *b* at the bottom of the gear-case.

Seated in the chamber is a beveled gear B', provided with a large axial bore therethrough and which is provided with a cylindric hub *b'*, which fits in the central aperture in the gear-case and extends below the same and, as shown, is apertured in its lower end to afford a rectangular seat to engage the angular head D of the rotating scraper *d*, which fits within the can and acts to scrape the congealing cream from the side walls thereof. Extending longitudinally through the end of said bar C and into the chamber or gear-case B is a shaft G, provided with a crank *g* or other means for rotating it on the outer end thereof, and on the inner end of which is rigidly secured a beveled gear or pinion *g'*, which is threaded on the end of said shaft, which is afterward riveted down to hold the same firmly in place. Said beveled gear or pinion *g'*, as shown, is provided with a short circular hub *g''*, which runs against a corresponding face of the gear-case, and said pinion meshes with the beveled gear B' and also with a corresponding gear H, which, as shown, is faced downwardly in the gear-case to mesh with said pinion and is provided with a cylindric tubular integral shaft *h*,

which is reduced in diameter toward its lower end and to afford a reduced end h^2 and a downwardly-facing bearing-shoulder h' , which bears upon a complemental face surrounding the bore in the gear B' , into which extends said reduced cylindric end h^2 of said shaft. Said shaft h is provided with an angular bore therein to receive the angular head of the beater H' . Said beater may be of any familiar type, such as shown in Fig. 1, and engages at its lower end with an angular complemental seat in the bottom of the can or cream-receptacle to rotate the same therewith.

Tightly closing the gear-case affording a part of the bearing for the gear H and the shaft G is a cap or cover I , in which is secured a central downwardly-directed stud I' , which engages in the bore of said gear H , on which the cap bears. Said cap is provided on one end with the extension i , fitted to the bar C at one side of the gear-case and apertured to receive a screw which engages the cap in place. On the opposite side are provided the extensions $i' i'$, also apertured to permit of receiving screws therethrough to engage in the bar C . Between said extensions $i' i'$ is a downwardly-projecting end i^2 , shaped on its under side to fit in a complemental seat in the said bar and also shaped to fit to the shaft G , as shown in Fig. 3, and to afford part of the bearing therefor.

The operation is as follows: With the head constructed as described and connected with the can, the beater, and scraper, as shown in Fig. 1, the can (which of course is provided with a cover a^2 , as is usual) is rotated, owing to the fact that the shaft H' , driven by the gear H , is angular at the lower end, which engages in the bottom of the can, so that the can revolves with said beater. As shown also, the gear B' rotates oppositely from the beaters and drives the scrapers so that a triple motion is thus secured. Said gears, as described, are all held in positive relation with each other in said gear-case, which fits closely thereto and being entirely closed and provided with an annular depression to receive the grease and dirt from wear can never contaminate the cream by dropping therefrom. Furthermore, the gears are easily assembled and being journaled to afford long bearings in the gear-case will run with minimum friction and no slippage or lost motion, and the action is hence at all times positive.

Obviously many details of construction may be varied without departing from the principles of my invention.

I claim as my invention—

1. In a rotating mechanism the combina-

tion with a casing having a circular aperture in its bottom and a raised seat surrounding the same, a gear journaled in the bottom of the casing with the hub extending through said opening, a pinion meshing therewith, a gear meshing with said pinion oppositely disposed from the first gear, a hub thereon extending axially through said first gear, a close-fitting cover for the gear-case, a pin therein extending into said last-named gear and affording a bearing therefor, means for rotating said pinion and angular sockets in the end of each hub for engagement with the element to be rotated.

2. In a rotating mechanism the combination with concentric inwardly-facing beveled gears, hubs integral with each and the hub of one extending axially into the other and affording a bearing for the top of the other hub, an angular socket in the end of each hub, a pinion meshing with both of said gears, means for rotating the same, a gear-case inclosing said mechanism and having an aperture through the bottom and a raised seat adjacent the same, providing an annular channel, said casing affording a bearing for both gears.

3. In a device of the class described the combination with a bar of a central casing thereon having an aperture in its bottom, a shaft journaled in said casing, a pinion on the inner end thereof, upper and lower beveled gears in said casing meshing with said pinion, a tubular hub on the lower gear extending through the aperture in said casing, a tubular hub on the upper gear extending through the lower gear and having a shoulder thereon bearing on said lower gear, and a raised annular seat in the bottom of said casing affording a cup about the same and supporting said gears.

4. An actuating mechanism comprising a casing having a removable top provided with an aperture through said top and bottom, a flange around the bottom of the casing affording a chamber, a gear journaled in said casing bearing on said flange and having a hub, a gear in said casing opposite said gear and having a hub projecting into the same, a bearing for said last-named gear in the top of the casing, means in said hubs adapted to engage the mechanism to be operated, a pinion positioned to drive said gears and means for actuating the same.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

LEE STURGES.

Witnesses:

W. W. WITHEBURY,
WM. C. SMITH.