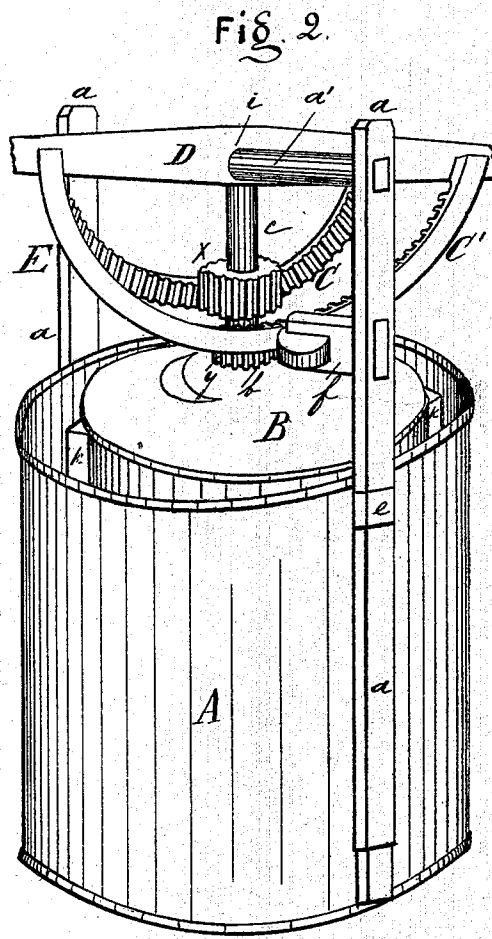
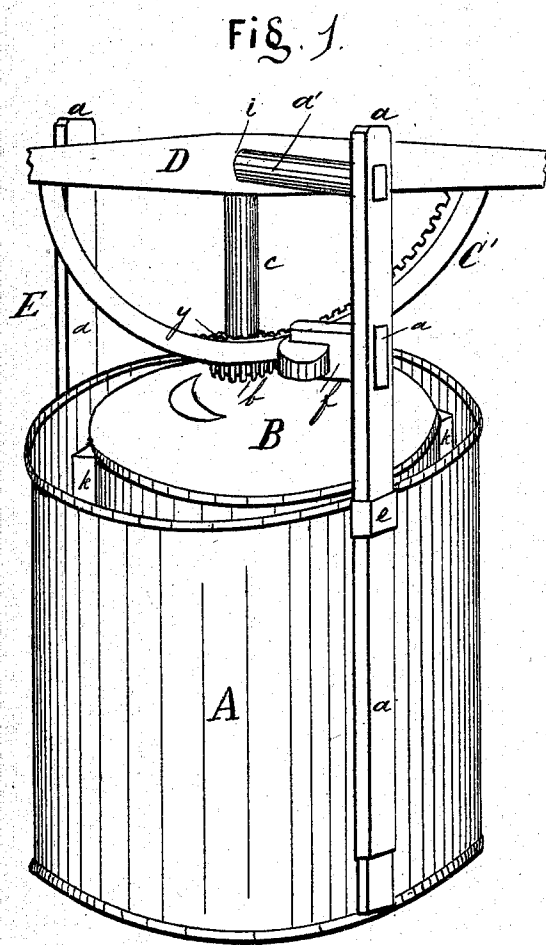


H. B. CAMPBELL.
Ice-Cream Freezers.

No. 139,453.

Patented June 3, 1873.



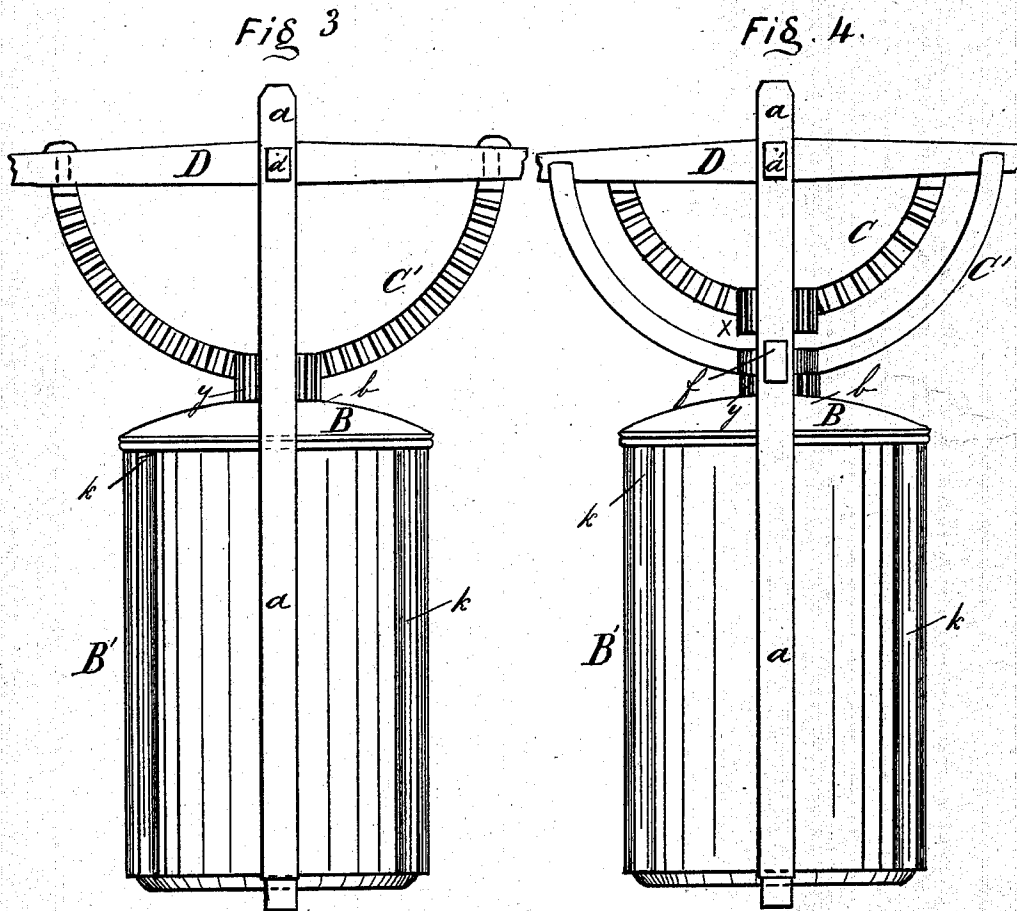
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FIG. 5.

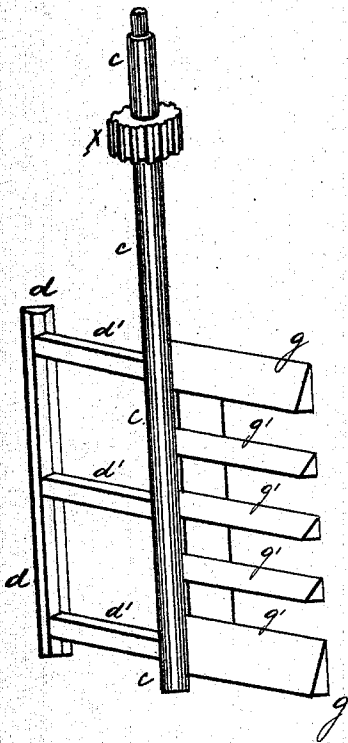
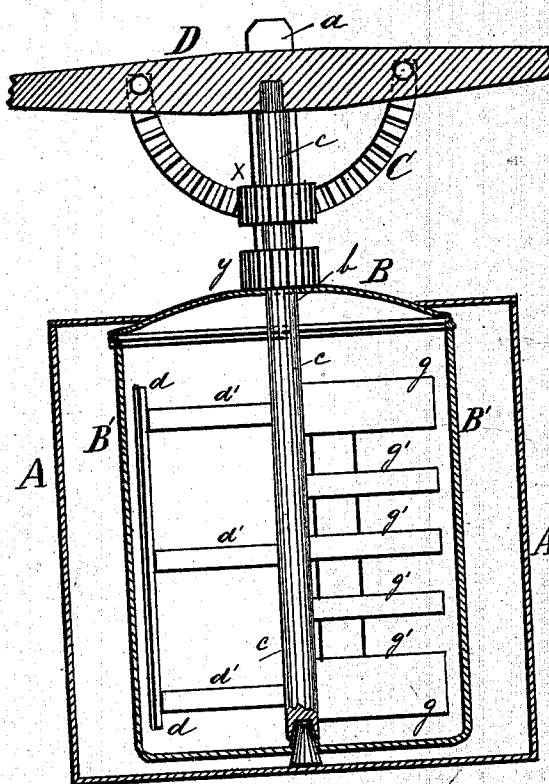


FIG. 6.



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IMPROVEMENT IN ICE-CREAM FREEZERS.

Specification forming part of Letters Patent No. **139,453**, dated June 3, 1873; application filed May 3, 1873.

To all whom it may concern:

Be it known that I, H. B. CAMPBELL, of Racine, in the county of Racine and State of Wisconsin, have invented certain new and useful Improvements in Ice-Cream Freezers; and I do hereby 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

The first part of my invention relates to the manner of operating ice-cream freezers; and has for its object to produce an easily-operated and easily-adjustable motion; and the second part of my invention relates to the peculiar construction of the dasher or agitator inside the cream-can, in the manner and for the purpose hereinafter more fully set forth.

On the accompanying three sheets of drawings, Figure 1 represents a perspective view of my improved single-gear freezer. Fig. 2 is a perspective view of my improved double-gear freezer. Figs. 3 and 4 show the attachments to provide for the double lever reversible motions with the cream-can, but detached from the outside vessel or casing of my improved single and double geared freezer respectively. Fig. 5 shows the inside agitator or dasher detached from the cream-can; and Fig. 6 is a vertical section of one form of my improved freezer.

Similar letters of reference indicate corresponding parts.

The first part of my invention has two different applications, viz: First, it relates to ice-cream freezers having a stationary dasher, and in which the freezing is effected by causing the cream-can to revolve rapidly and by turns in opposite directions. Second, it relates to freezers in which both the dasher and cream-can are made to rotate, but in opposite directions and with a reversible motion, so that the motion of the two may be alternated, in the manner and for the purpose hereinafter shown and described.

A is the outside casing or vessel which contains the freezing-mixture, and which may be made of stone, metal, wood, or any other suitable material. I prefer to use an earthen vessel for freezers up to six gallons' capacity,

and a wooden vessel for freezers of greater capacity. B is the cover of the inner revolving vessel or cream-can B', which has a pivot at its lower end, resting and turning in a socket in the bottom of the outer vessel in the usual manner. The cover B is fastened to the can B' in such a manner that when a revolving motion is imparted to the cover the can will revolve with it; and is provided with a sleeve or opening, *b*, in the center, through which passes the shaft *c* of the dasher. E is a frame consisting of the uprights or standards *a a*, and the transverse bar *a'*. When it is desired to use my improved freezer, this frame is placed in the position shown in Figs. 1 and 2, the uprights *a a* passing down along the sides of the outer vessel, to which they are firmly secured by means of two or more metallic bands, having sleeves or slots *e*, which admit of the insertion of said uprights; or they may be held in place in any other suitable manner. The transverse bar *a'* is mortised, or otherwise firmly secured, at both ends to the uprights *a a*, or it may be found convenient to hinge or pivot it at the points where it is attached to the uprights without departing from the spirit of my invention. It may also be found desirable to provide the standards with the guides *f*, shown in Figs. 1, 2, and 4, to regulate the movements of the semicircular bevel-wheels, or segmental racks O O', which are attached to the double-lever D opposite to each other in such a manner that their centers will fall in the transverse bar *a'*. The wheels or segments are provided with cogs or teeth on the side facing the shaft of the dasher, which gear into corresponding cogs on the wheels or pinions *x* and *y*, the former of which is firmly secured to the rotating dasher-shaft *c*, and the other is attached to the top of the cover, around the sleeve, which admits of the passage of the shaft *c*.

In Figs. 1 and 3, which embrace the first application of the first part of my invention, are shown only one semicircular bevel-wheel, O', which gears into the pinion *y*, attached to the top of the cover of the cream-can. In this form of my invention the dasher and dasher-shaft are stationary, the latter being firmly held in place by being formed square

at the top, and fitted into a corresponding square slot in the transverse bar *a'*; while the lever *D* is pivoted at a point, *i*, on the said transverse bar a little to one side of the square slot for the reception of the dasher-shaft. It will be readily observed that by working the double-lever *D* a reciprocating motion is given to the semicircular bevel-wheel *C* around the pivot *e*, causing the pinion *y*, and with it the cover of the cream-can *B* and the can *B'* itself, to revolve in alternate directions, as one end of the lever is depressed or raised. The outer vessel and dasher, during this operation, remain stationary.

In Figs. 2 and 4 are shown the second application of the first part of my invention, viz., the double-gearred reversible motion, by which the dasher and cream-can are both rotated, but in directions opposite to each other, the outer casing or vessel only remaining stationary. In this form of my invention the bevel-wheel *C*, which acts upon the pinion *x*, which is attached to the rotating shaft *c*, is of a diameter so much smaller than the diameter of the bevel-wheel *C'*, acting upon pinion *y*, as the distance between the respective upper surfaces of these two pinions, so that when the two bevel-wheels *C* and *C'* are made to revolve by operating the lever *D* one will act upon the dasher by means of pinion *x* and shaft *c*, and the other upon the cream-can by means of pinion *y* and the cover *B*, thus causing both the dasher and can to revolve in directions opposite to each other, which motions are reversed every time the motion of the bevel-wheels, by means of the reciprocating-lever *D*, is reversed.

By this feature of my invention a reversible double-revolving motion may be given to the dasher and cream-can by simply operating the lever *D* in a natural and easy manner. By this motion, aided by the shape of my improved cream-can and dasher, as hereinafter shown, the contents of the cream-can are violently agitated, the particles thereof being brought in frequent and repeated contact with the inner side of the vessel, which is immersed in the freezing-mixture; and the operation of freezing accordingly requires much less labor and time than in freezers not having my improvements.

The second part of my invention has reference to the peculiar formation and construction of the dasher, which is of the form shown in Fig. 5, and which I prefer to make of iron, or any other metal that can be cast and is of

sufficient stiffness, when hard, to be used for the purpose.

This dasher consists of the central rod or shaft *c*, the double knife-edge or scraping-blade *d*, and the slotted parallelogram *g*. The scraper is attached to the shaft *c* by means of the arms *d'*; and the blade *g* has rectangular slots *g'*, so formed that they slant toward the central shaft and toward the bottom part of the dasher, respectively, in the manner shown in Fig. 5.

By employing a dasher of this construction I obtain, in combination with the reciprocating revolving motion of the cream-can, and of the cream-can and dasher, respectively, a more thorough and effective trituration of the contents of the cream-can than is possible in ice-cream freezers as ordinarily constructed.

Having thus described the nature of my invention, and the manner in which the same may be carried into practical operation, I desire it to be understood that I do not confine myself to the precise details herein specified, provided that the general character of my said improvements is retained; but

I claim to be new and desire to secure by Letters Patent—

1. The frame *E* having the uprights *a a*, transverse bar *a'*, lever *D*, and bevel-wheel or segmental rack *C'*, in combination with the pinion *y*, cream-can *B'*, and stationary dasher-shaft *c*, all arranged and operating substantially as and for the purpose shown and described.

2. The frame *E* having the uprights *a a*, transverse bar *a'*, lever *D*, and two bevel-wheels or segmental racks, *C* and *C'*, one of a smaller diameter than the other, with or without the guides *f* or their equivalent, in combination with the pinions *x* and *y*, cream-can *B'*, and rotating dasher-shaft *c*, all arranged and operating substantially as and for the purpose shown and described.

3. The dasher, consisting of the central shaft *c*, scraper *d*, and slotted parallelogram *g*, arranged, constructed, and operating substantially as and for the purpose shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 28th day of April, 1873.

H. B. CAMPBELL.

Witnesses:

W. H. HAMILTON,
R. T. LOMBARD.