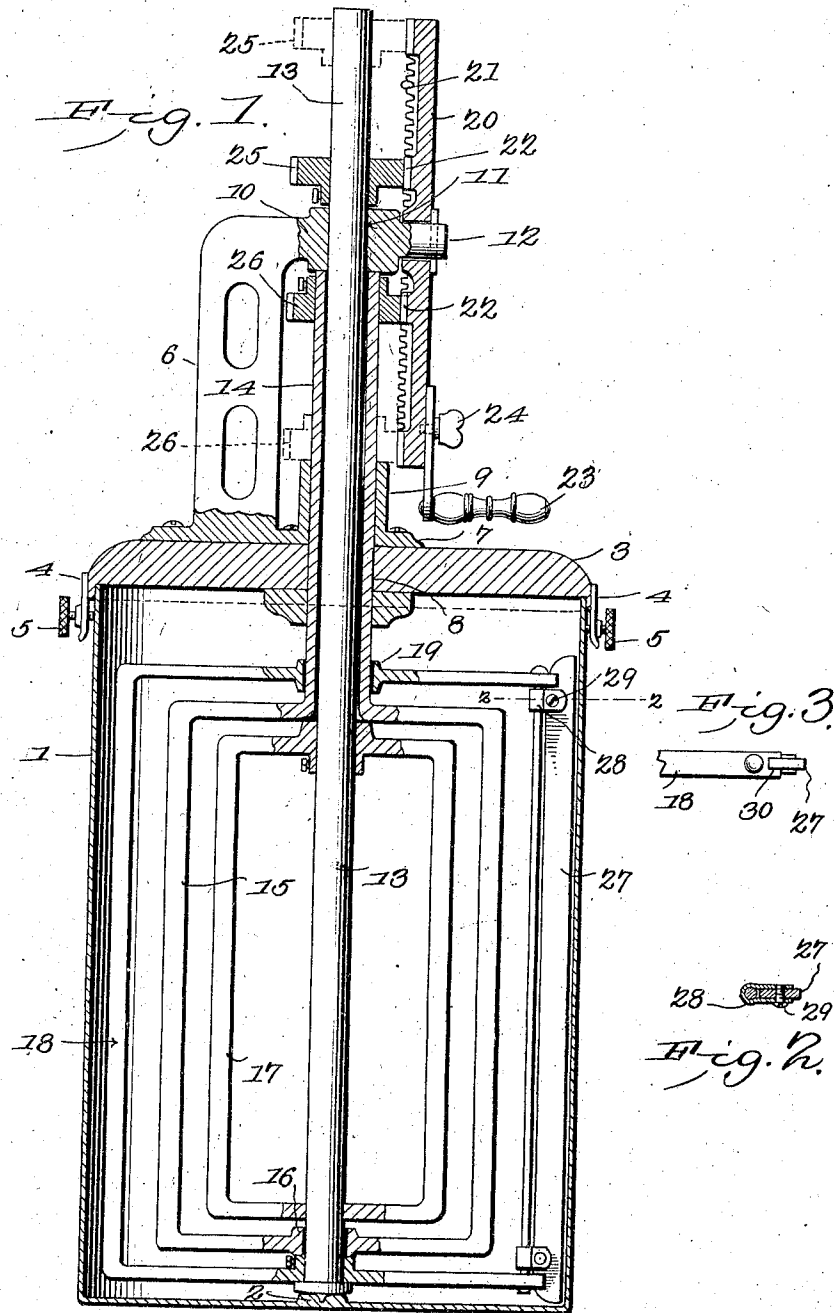


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PATENTED JUNE 19, 1906.

D. D. & E. F. MAYFIELD.
COMBINED CHURN AND ICE CREAM FREEZER.
APPLICATION FILED OCT. 10, 1904.



Witnesses
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UNITED STATES PATENT OFFICE.

DANIEL D. MAYFIELD AND ELLA F. MAYFIELD, OF THAYER, MISSOURI.

COMBINED CHURN, AND ICE-CREAM FREEZER.

No. 823,612.

Specification of Letters Patent.

Patented June 19, 1906.

Application filed October 10, 1904. Serial No. 227,925.

To all whom it may concern:

Be it known that we, DANIEL D. MAYFIELD and ELLA F. MAYFIELD, citizens of the United States, residing at Thayer, in the county of Oregon and State of Missouri, have invented a new and useful Combined Churn and Ice-Cream Freezer, of which the following is a specification.

The object of the present invention is to provide a combined churn and ice-cream freezer, and in this connection to facilitate the conversion from either form of apparatus to the other without requiring any material change in the device.

A further object of the invention is to obtain a rapid rotation of the dasher members when the device is arranged as a churn and to effect a convenient adjustment of the actuating means so as to obtain a comparatively slow movement of the dashers with correspondingly-increased power when the device is arranged as an ice-cream freezer.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claim, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claim without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a vertical longitudinal sectional view of the device of the present invention arranged as an ice-cream freezer. Fig. 2 is an enlarged detail sectional view taken on the line 2 2 of Fig. 1. Fig. 3 is a detail plan view illustrating the connection between the scraper-blade and one of the dashers.

Like characters of reference designate corresponding parts in each and every figure of the drawings.

In carrying out the present invention there is provided a body 1, preferably in the nature of a metallic can which has an open top and is provided upon its bottom with a step-bearing 2. A removable cover 3 normally closes the top of the body and is provided at diametrically opposite points with pendent ears or brackets 4, pierced by set-screws 5, which engage the body of the device, so as to detachably hold the cover in place. Upon the top of the cover is a standard or bracket 6, having a base extension 7, extending across the

central opening 8 in the cover, said extension being pierced by an opening which is registered with the opening in the cover and having an integral upstanding boss or bearing sleeve 9 arising from the walls of the opening in the base extension. At the top of the standard or bracket is a substantially horizontal arm 10, pierced by a bearing-opening 11, aligned with the boss or sleeve 9 and terminating at its outer end in a cylindrical spindle or gudgeon 12.

An upstanding drive-shaft 13 has its lower end supported in the step-bearing 2, while its upper portion rises through the cover, the boss or sleeve 9, and the bearing-opening 11 in the arm 10. A tubular shaft 14 embraces the shaft 13 and extends downwardly from the arm 10 into the interior of the body. This sleeve or tubular shaft is mounted to rotate loosely upon the inner shaft and carries at its lower end a substantially rectangular dasher member 15, having its lower end provided with a tubular bearing 16, loosely embracing the shaft 13. Within the dasher member 15 is a similar and smaller dasher member 17, connected rigidly at opposite ends to the shaft 13, while an outer dasher member 18 has its lower end rigidly connected to the shaft 13 and its upper end provided with a tubular bearing 19, loosely embracing the tubular shaft. It will here be noted that the inner and outer dasher members 17 and 18 are carried and rotated with the main or inner shaft, and it is proposed to simultaneously rotate these dasher members in a direction opposite that of the intermediate dasher 15.

The operating mechanism for the present device consists of an upstanding crown-gear 20, mounted to rotate upon the spindle or gudgeon 12, having an outer set of teeth 21 and an inner set of teeth 22, formed upon the inner face of the gear next to the shaft 13. Upon the outer side of this gear is a crank-handle 23, which is capable of radial adjustment by means of an adjusting-screw 24. A pinion 25 is fast upon the upper portion of the shaft 13 and capable of adjustment longitudinally thereon for alternate engagement with the teeth 21 and 22, while a similar gear 26 is adjustably fixed upon the tubular shaft 14 and capable of alternate engagement with the sets of teeth 21 and 22.

When the device is used as a churn, the gears 25 and 26 are adjusted to mesh with the set of teeth 21 upon the crown-gear 20, as in-

indicated in dotted lines, in order that rapid rotation will be imparted to the shafts, and as these pinions engage the gear at diametrically opposite points they turn simultaneously in opposite directions, thereby rotating the shafts and the dashers carried thereby in reverse directions to effect a rapid gathering of the butter.

To provide for converting the device into an ice-cream freezer, it is proposed to provide the outermost dasher 18 with a scraper-blade, which has been shown at 27 and is located between the dasher and the inner wall of the can or body, so as to scrape therefrom the accumulations of ice in the manner of ordinary freezers. This scraper is detachably connected to one of the upright dasher-blades by means of terminal substantially U-shaped clips 28, which embrace the adjacent upright member of the dasher and also embrace the back edge of the scraper 27, each clip and the scraper being pierced by a detachable fastening 29 to permit removal of the scraper and the clips when the device is to be used as a churn. The scraper projects above and below the dasher, and each upper and lower member of the latter is provided with a terminal notch or seat 30 to receive the back edge of the scraper and thereby hold the latter against loose movements and also form a rigid part of the dasher. When using the device as an ice-cream freezer, the pinions 25 and 26 are adjustable to mesh with the inner set of teeth 22 of the gear 20, thereby to reduce the rate of rotation of the dashers and at the same time to increase the power of the operating means, which is of course desirable when the cream begins to freeze and offers greater resistance to the dashers.

From the foregoing description it will be understood that the present device is made up of comparatively few parts which may be readily assembled and also taken apart for convenience in cleansing and repairing the device. Moreover, the device may be readily converted from a churn to an ice-cream freezer, and vice versa, without materially altering the device beyond the application and

removal of the scraper-blade and the adjustment of the pinions 25 and 26 to engage the respective sets of teeth of the drive-gear.

In some instances it may be desirable to have the dasher members rotate at different rates of speed, and this may be accomplished by engaging one of the pinions with the outer set of teeth of the gear 20 and the other pinion with the inner set of teeth, from which it will be understood that either dasher member may be run at a greater rate of speed than the other.

Having fully described the invention, what is claimed is—

A convertible churn and ice-cream freezer comprising a receptacle, a top therefor, a bracket upon the top and provided with a horizontally-disposed arm, a dasher-shaft rotatably piercing the top and the arm and rising above the latter, a dasher carried by the shaft, a tubular shaft embracing the dasher-shaft and rotatably piercing the top with its upper end engaging the under side of the arm, a dasher carried by the tubular shaft, a drive-gear mounted upon the outer end of the arm and provided with two concentric sets of teeth, a pinion carried by the dasher-shaft above the arm and adjustable into engagement with the respective sets of teeth of the drive-gear, another pinion carried by the tubular shaft between the arm and the top of the churn and adjustable into engagement with the two sets of teeth of the drive-gear independently of the first-mentioned pinion, a sleeve carried by the top and embracing the tubular shaft with its upper end disposed to form a stop for limiting the downward adjustment of the pinion upon the tubular shaft and to support the same in engagement with the outer set of the teeth.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

DANIEL D. MAYFIELD.
ELLA F. MAYFIELD.

Witnesses:

E. J. LOOP,
JNO. PARHAM.