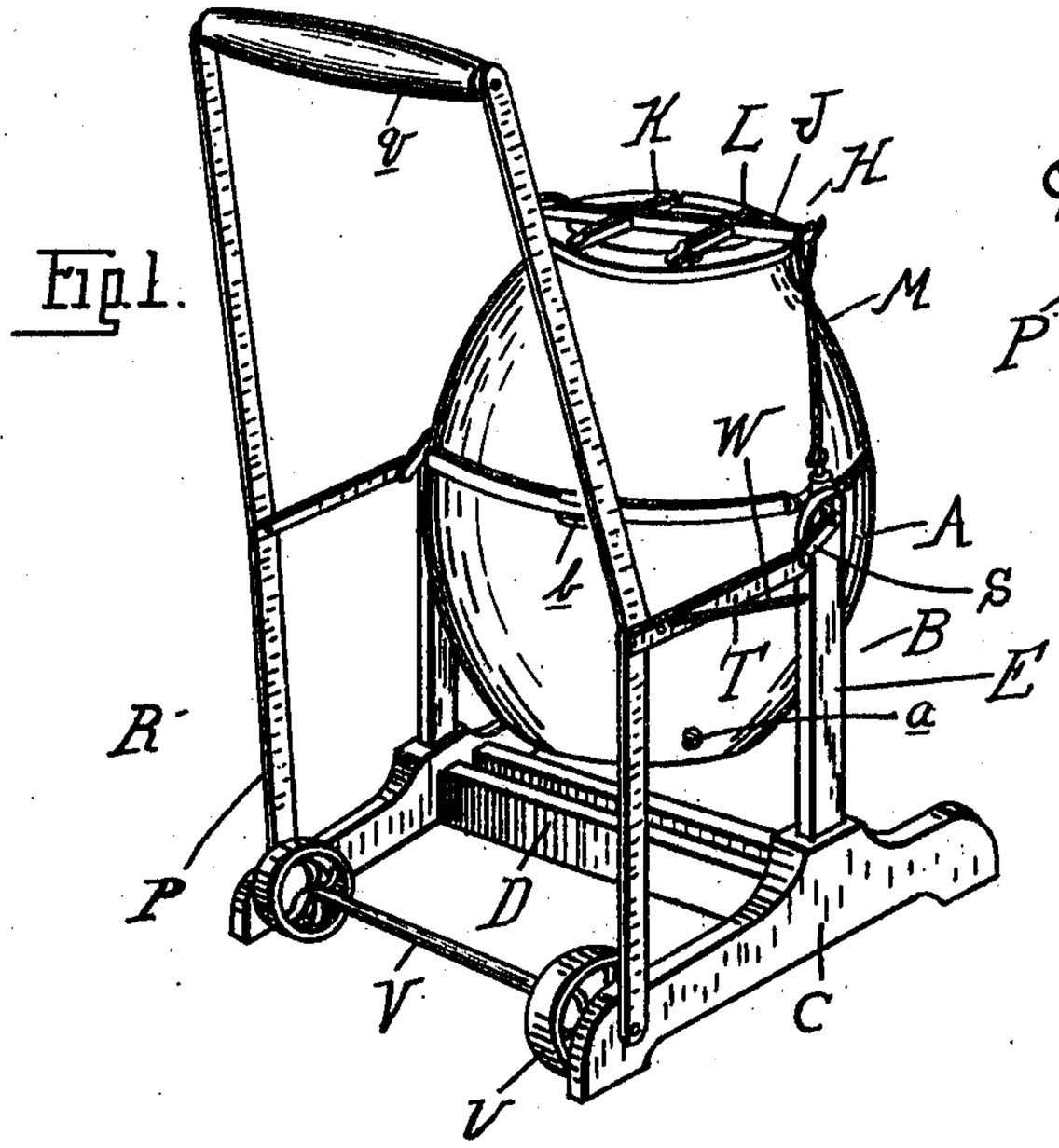
C. N. CHOATE.

CHURN.

APPLICATION FILED AUG. 2, 1909.

978,562. Patented Dec. 13, 1910.

Fig. 1.



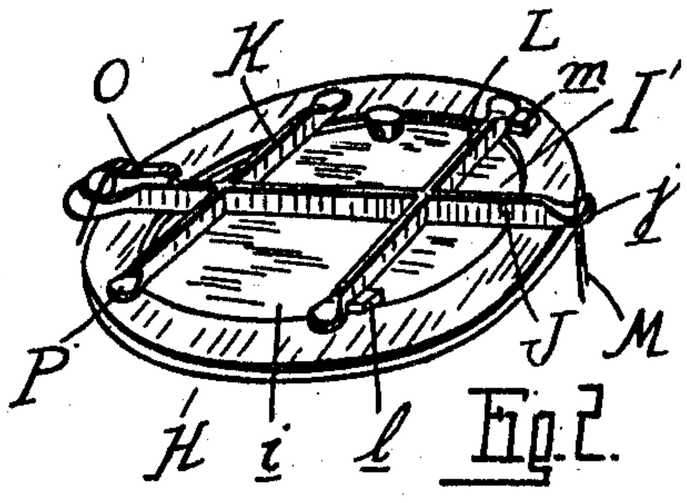


Fig. 2.

Fig. 3.

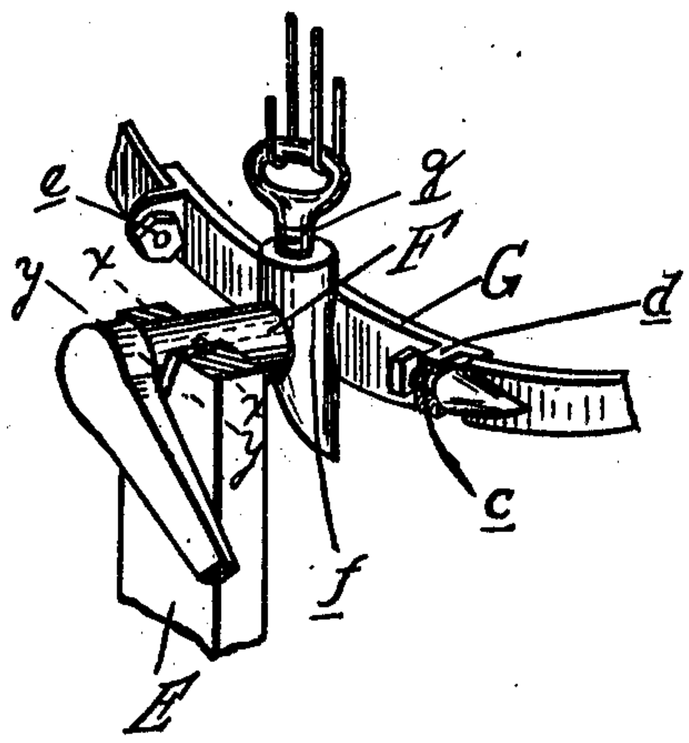
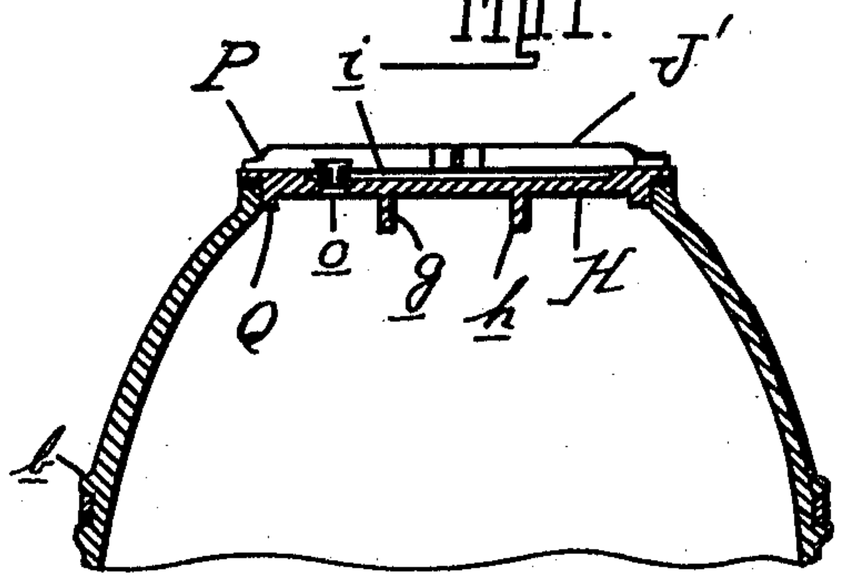


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

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CHURN.

978,562. Specification of Letters Patent. Patented Dec. 13, 1910.

Application filed August 2, 1909. Serial No. 510,755.

To all whom it may concern:

Be it known that I, CHARLES N. CHOATE, a subject of the King of Great Britain and Ireland, residing at Woodstock, in the Province of Ontario and Dominion of Canada, have invented certain new and useful Improvements in Churns, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates particularly to a barrel churn, adapted in this particular instance to be rotated end over end, and it consists in the novel construction thereof, in the peculiar arrangement and combination of parts, and in various details of construction as will be more fully hereinafter set forth.

In the drawings,—Figure 1 is a perspective view of a churn made in accordance with my invention; Fig. 2 is a detached perspective view of the churn cover or closure; Fig. 3 is an enlarged sectional perspective view, illustrating the retaining means for the closure; and Fig. 4 is a vertical central section through the upper portion of the churn body.

In the drawings thus briefly described, A designates the churn proper, which I have here shown as barrel-shaped in configuration, the receptacle being formed preferably of stoneware, and glazed on both sides so as to permit of ready cleansing. At its lower end portion formed within its side is a drain opening *a*, which allows the surplus buttermilk to be drawn off.

B represents a supporting frame, upon which the churn body, or "barrel,"—as it will be hereinafter termed,—is mounted. This frame comprises preferably a pair of spaced parallelly-arranged base sections, as C, a central connection D, and spaced standards E, the upper end portions of which are provided with bearings in which are mounted the barrel trunnions F. The trunnions described are carried preferably upon a band G, which encircles the barrel intermediate its ends and is held thereto against endwise movement by pairs of lugs, as *b* (Fig. 1). The band ends are united preferably by threaded studs *c* formed integral with the band, eyes *d* through which the studs extend, and nuts *e* engaging the stud ends and having a bearing against the eyes, as shown in Fig. 3. The encircling band also carries at diametrically opposite points internally threaded vertically projecting lugs *f* adapted to receive each a screw-eye, as *g*, forming a portion of the cover retainer.

The churn barrel is open at one end, and is provided with a closure or cover H,—formed preferably of glass or other transparent material,—which allows the interior of the barrel to be inspected during the progress of the butter making, thus enabling the operator to observe the condition of the butter without removing the closure. The closure is provided on its lower surface or face with reinforcing flanges *g h*, which serve the further function of projecting ribs for breaking the cream during the operation of churning.

The cover is held in position by means of a retaining member I′ in the form of a frame section, having a longitudinally-extending member J projecting beyond the closure periphery, and cross members K and L, the extremities only of which are adapted to contact with the closure upon the peripheral portion reinforced by the barrel end, as plainly shown in Fig. 2, the closure being centrally dished, as at *i*, to permit of this contact. The member J terminates at its ends in hooks *j*, over which engage links M, the lower ends being anchored to the ring G encircling the barrel body by engagement with the screw-eyes *g*. A cam lever O is connected to one of the links and engages one of the hooks *j* for the purpose of clamping the closure in place. P represents a gasket interposed between the closure and the barrel end, acting to form a tight joint between the parts, and Q is a centering rib for the closure in the form of an annular flange adapted to fit within the barrel end. The closure is further provided with lugs *l m*, against which the retaining member I′ is adapted to bear, the lugs serving as proper centering means for the retainer, and is also provided with a plugged vent opening *o* near its periphery through which the gases within the barrel may escape.

The operating mechanism for the churn comprises essentially a pivoted lever R, cranks S upon the barrel trunnions, and link connections T between the cranks and lever. The lever is preferably in the form of a yoke, comprising arms *p* pivoted to the base

sections, and a cross bar or handle section proper *q* uniting the upper ends of the members *p*.

As constructed the operation of the churn will be obvious. Movement imparted to the lever by the operator causes the rotation of the barrel about its transverse axis, while the base sections of the framework resting directly upon the ground provide a sufficiently firm foundation for the operation of the mechanism.

In order that the churn may be moved from place to place as may be desired, I have provided means whereby it may be readily rolled over the ground, such means however being inoperatively positioned so as to be out of contact with the ground when the churn is in its working position.

U represents a pair of rollers or wheels upon an axle V journaled in the framework, so positioned as to be normally out of contact with the ground but to contact therewith when the frame is tilted. To tilt the frame, the operating lever is used as a handle, and is locked rigidly to the framework for this purpose by means of tie rods or hooks W pivoted to the standards E and connected at their opposite ends with suitable openings formed in the links T.

From the foregoing description it will be seen that after the closure for the barrel end is in place it is readily clamped in position, so as to form a tight joint with the barrel body, and that the proper joint can at all times be provided by means of the adjustable connection that the retaining links for the closure have with the barrel.

The supporting mechanism for the barrel I have shown as engaging the latter to one side of the center in the direction of the closure, so that the tendency of the barrel is to remain in a vertical position with the closure uppermost at all times.

What I claim as my invention is,—

1. In a churn, the combination with a churn barrel open at one end, of a closure for said end, spaced lugs on said closure, a retaining member for the latter having a plurality of laterally-extending arms contacting with the closure only at points reinforced by the barrel ends, and one of said arms having a bearing on said lugs, for the purpose described.

2. In a churn, the combination with a churn barrel open at one end, of a member encircling the barrel intermediate its ends, a closure for said end, and retaining means for the closure, comprising a member having a plurality of laterally-extending arms contacting with the closure only at points reinforced by the barrel end.

3. In a churn, the combination with a churn barrel open at one end, of a closure for the barrel, a member encircling the barrel and held thereto against endwise movement, of bearings carried by said encircling member, a retaining member upon the closure having projecting ends, and links engaging said projecting ends and having adjustable connections with said bearings.

4. In a churn, the combination with the churn barrel provided with trunnions, a closure for the barrel, a retaining member upon the closure having projecting ends, bearings secured to the trunnions, screw eyes having an adjustable engagement with the bearings, and links connecting said screw eyes to the projecting ends of the retaining member.

5. In a churn, the combination with a churn barrel open at one end, of a closure for said end, a member encircling the barrel intermediate its ends, pairs of spaced lugs projecting outwardly from the exterior of the barrel forming bearings for said encircling member and preventing endwise movement of the latter in relation to the barrel, and a retaining member for the closure anchored to the encircling member.

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

CHARLES N. CHOATE.

Witnesses:
NELLIE KINSELLA,
JAMES P. BARRY.