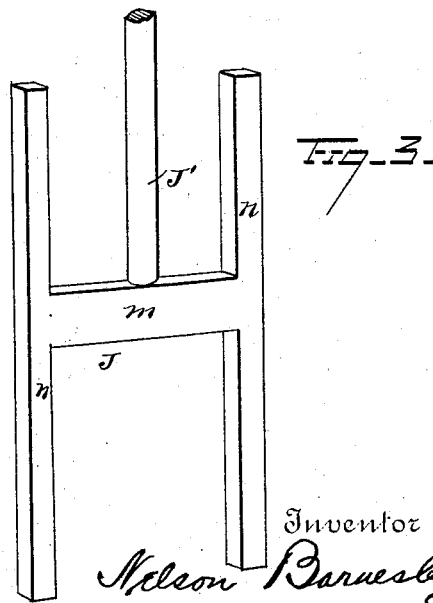
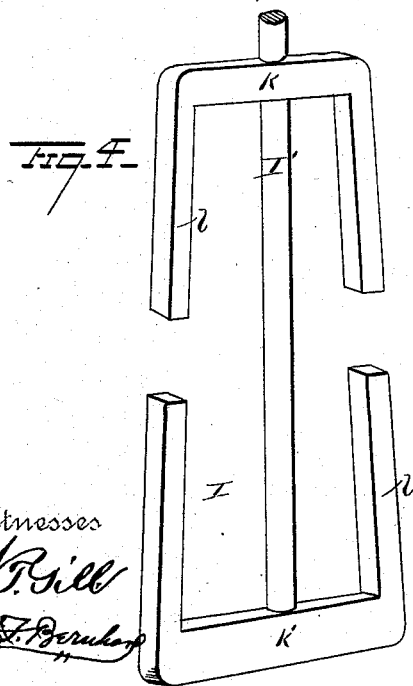
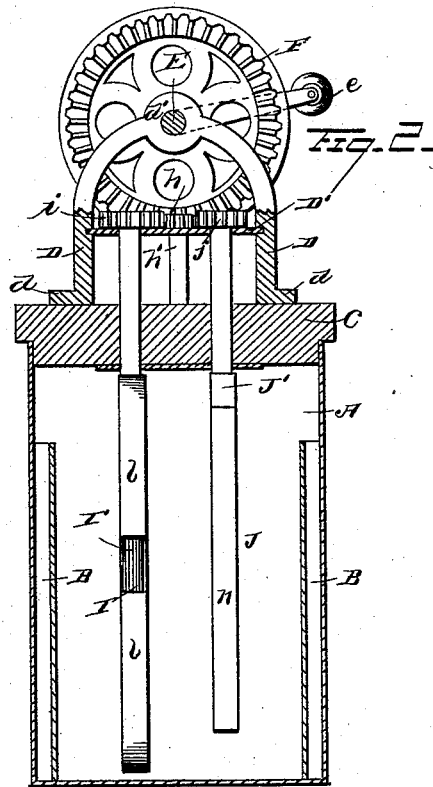


Patented Aug. 17, 1886.



H. F. Gerlach

Nelson Barnesby

By his Attorneys

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

NELSON BARNESLEY, OF ESROM, MISSOURI.

CHURN.

SPECIFICATION forming part of Letters Patent No. 347,312, dated August 17, 1886.

Application filed May 4, 1886. Serial No. 201,082. (No model.)

To all whom it may concern:

Be it known that I, NELSON BARNESLEY, a citizen of the United States, residing at Esrom, in the county of Barton and State of Missouri, have invented new and useful Improvements in Churns, of which the following is a specification.

My invention relates to improvements in rotary churns; and it consists of the peculiar and novel construction and arrangement of the various parts for service, substantially as hereinafter fully set forth, and particularly pointed out in the claims.

The object of my invention is to provide an improved churn-dasher which shall be very simple and strong in construction, and which shall be capable of creating a violent and rapid agitation in the vessel among the particles of the cream to complete the churning thereof in a very short time; and a further object of my invention is to provide a receptacle with breaker-strips that serve efficiently to increase the agitation among the particles of the cream, the dashers being rotated in the same planes of rotation by mechanism which is simple and effective, all as hereinafter described.

In the accompanying drawings, Figure 1 is a vertical sectional view through a churn-body, showing my invention in elevation. Fig. 2 is a like vertical section view through the apparatus on the line *xx* of Fig. 1. Figs. 3 and 4 are detached perspective views of the rotating dashers.

Referring to the drawings, in which like letters of reference denote corresponding parts in all the figures, A designates the churn body or vessel, which is preferably cylindrical in form or shape and provided at diametrically opposite points in its periphery with vertically-arranged breaker-strips B, which project inwardly into the chamber of the churn-body, and are suitably secured to the latter very firmly and rigidly, to prevent displacement under the action of the cream thereon.

C designates the cover of my improved churn, which is snugly and detachably fitted on the vessel A, and on the cover C is secured the standard D, which is provided with the lugs *d*, that are secured at their lower ends by bolts or screws to the cover and at their upper ends with a bearing or box, *d'*, for the

driving-shaft E, that is journaled therein and carries a crank-handle, *e*, for its convenient rotation by hand, and a master gear-wheel, F, that is arranged to one side of the standard and secured at one end of the shaft. This master gear-wheel meshes with and rotates a pinion, *h*, that is journaled on a shaft, *h'*, the lower end of which is journaled in the cover C, while the upper end thereof is journaled in a bridge-plate, D', of the standard D. The pinion *h* meshes with and rotates the pinions *i* and *j* of the vertically-disposed dasher-staffs J' I' of the dashers I and J, the said shafts being extended through the bridge-plate D' and the cover C of the churn. When the master-gear is rotated by the action of the crank and driving-shaft, it rotates the pinion *h*, and the latter rotates the pinions *i* and *j* in one direction simultaneously, so that the dashers I and J are rotated in the same plane, as will be very readily understood.

The dasher-staff I' is extended the entire length of the churn body or vessel, so that the lower end thereof is out of contact with the bottom of the said vessel, and at its upper and lower ends the dasher staff or rod is provided with horizontal cross-heads *k* and *k'*, the free ends of which carry integral arms or beaters *l*, that are arranged parallel with the dasher-staff and themselves, the free ends of the beaters or arms being separated from the arm adjacent thereto on the same side of the dasher-rod by an intermediate space.

It will be observed that a space is provided between the side arms or beaters of the dasher I and the staff thereof, through which work the side beaters of the dasher J, and between the ends of the dasher-arms or beaters *l* another space is provided for the free passage therethrough of the cross-head of the dasher J, as will be more fully described presently.

The dasher rod or staff of the dasher J extends into the churn-body above one-half of the length of the latter, and at its lower end it is provided with a cross arm or head, *m*, and the free ends of the cross-head *m* are provided with vertical arms or beaters *n*, that are arranged parallel with the dasher-staff and with each other, the arms *n* extending nearly the entire length of the churn-body.

The arms *n* are adapted to pass between the arms *l* and the dasher-staff I' of the dasher I

when the dashers are in one of their positions, and the cross-head *m* passes through the space between the free ends of two adjacent arms, *l*, while the arms *l* move through the space intermediate of the dasher-rod and the arms *n* of the dasher J, as will be very readily understood. The above-described operation or movement of the parts takes place each time the dashers have made a half-revolution, and at the end of the remaining half of the revolution the dashers are arranged parallel with each other, and are separated from each other, each dasher intercepting a circle described by the other. By means of this peculiar construction and arrangement of the dasher-blades the cream is violently and thoroughly agitated to complete the churning operation in a short space of time, and the dashers can be readily and easily removed from the churn-body to permit the latter and the blades to be cleaned.

I attach especial importance to the peculiar form and arrangement of the dasher-blades, as therein lies the gist of my invention.

The operation of my invention will be readily understood from the foregoing description, taken in connection with the drawings.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the vessel having the breaker-strips inclosed within the same and arranged at diametrically-opposite points, the cover, the standard secured to the cover and having the bearing, the driving-shaft jour-

naled in the bearing, and having the master-gear and the crank-handle, the pinion *h*, journaled on a shaft that is secured in a bridge-plate of the standard, the dashers I and J, having their staffs extended through the cover and bridge-plate, and provided with the pinions *i* and *j* that mesh with the pinion *h*, which rotates them simultaneously and in the same direction, the dasher I having the cross-heads at its ends, each carrying the vertical blades, and the dasher J having the cross-head at its lower end, which is provided at its free end with vertical extended arms, the whole arranged and combined substantially as described.

2. In a churn, the combination of the dashers I J, arranged to rotate simultaneously and intercept the path of a circle described by one another, the dasher I having the cross-heads *k k'* at or near the extremities thereof, and provided at their free ends with vertically-disposed arms *l*, and the dasher J, having a single cross-head, *m*, at its lower end that is adapted to pass between the extremities of the arms carried by the cross-heads *k k'*, and provided with vertical arms *n*, substantially as described, for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

NELSON BARNESLEY.

Witnesses:

JAS. H. HARKLESS,

CHAS. R. LOVE.