

UNITED STATES PATENT OFFICE.

ISAAC WHITTEN WALTER, OF NEWBERRY, SOUTH CAROLINA.

CHURN.

SPECIFICATION forming part of Letters Patent No. 339,505, dated April 6, 1886.

Application filed January 12, 1886. Serial No. 138,340. (No model.)

To all whom it may concern:

Be it known that I, ISAAC WHITTEN WALTER, of Newberry, in the county of Newberry and State of South Carolina, have invented certain new and useful Improvements in Churns; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification, in which—

Figure 1 is a side view of my invention applied to a churn. Fig. 2 is a central vertical section of the same on line *x x*, Fig. 1. Fig. 3 is a horizontal section on line *y y*, Fig. 1. Figs. 4 and 5 are details.

This invention relates to improvements in churn attachments, and has especial reference to that class by which the agitating of cream in alternate opposite directions is effected; and it consists in the novel construction and arrangement of the parts hereinafter described, and pointed out in the claim.

In the drawings, A represents the cast-iron upright frame, which supports the churn-dasher and its actuating mechanism. This frame is of sufficient height to admit of a vessel in which the milk is to be churned to rest beneath its top bar upon a floor or board, A', to which the lower ends of the frame A are suitably bolted.

To the side pieces, *aa*, of frame A, near the center thereof, are bolted the ends of a strip or band of metal, *b*, which is bent in proper shape to hold therein one half of a churn-can. At one side of the can, on band *b*, is suitably hinged a strap, *b'*, the free end of which is adapted to be connected to the band *b* by a suitable adjustable retaining device at the opposite side of the can, as shown in the drawings.

By means of bands *b* and *b'* it is obvious that cans or vessels of different diameters may be securely held in position within the frame A during the operation of churning, and may be easily and readily removed therefrom when desired. The preferable manner of forming the said retaining device is by so connecting the hinge end of strap *b'* to strap *b* that it will open easily outward. Then, by introducing the headed bolt or screw *b''* through openings in

the straight extensions *b³ b⁴* of the straps *b b'*, and putting on the threaded end of the said bolt a thumb-nut, *b⁵*, the straps can be opened or closed to receive cans of varying diameters. 55

From the upper horizontal bar, *a'*, of frame A, over the center thereof, rises an inverted Y-shaped bracket, C, which is cast integral with the frame, the bifurcations of this bracket forming, with bar *a'*, an opening, C², in which 60 plays a pinion, D, hereinafter referred to. The upper end of bracket C is formed into a proper bearing for the journal of a segmental rack, F, hereinafter described.

At the top of opening C² is formed, in bracket 65 C, a vertical journal-bearing for the upper end of a short shaft, C', which has its lower journal in a bearing formed in the bar *a'*. On this shaft C', above bar *a'*, is secured a pinion, D, which serves both to support the shaft vertically and rotate the same. The lower end of shaft C' passes through bar *a'*, and is formed into a socket, *e*, angular in cross-section, and provided with a thumb-screw or similar device for securing the upper end of the churn- 75 dasher E within the same, as shown.

F designates a segmental rack, which has its bearing journaled in the upper end of bracket C, as described, and suitably secured therein by a washer and nuts. The rack F is 80 preferably but a quarter of a circle in size, and its cogs engage the pinion D when in position, and thereby actuate the same when the rack is vibrated by means of its handle *d*. This handle *d* may be cast integral with rack 85 F; but is preferably made separate and bolted thereto, as shown. This admits of a new handle being substituted should the old one be broken without necessitating the purchase of both handle and rack. The outer arms, *ff*, 90 of rack F are provided with lugs *f'*, which impinge on a flange of bracket C, as shown, and serve to prevent the rack from being forced out of engagement with pinion D when the rack is vibrated.

G designates a short bracket, adapted to be 95 secured to the side of the bar *a'* within the bifurcations of brackets C. This bracket G is formed with an upward extension or arm, *g*, which is preferably cast integral with the same, 100 but may be made separate and secured thereto. This arm *g* acts against the lower outer side

of the rack F, and serves to prevent the rack from becoming disengaged from pinion D, as shown.

The churn dasher E is preferably of the form shown in Fig. 1, with two or more depending arms or beaters, *e'*, which gradually lessen in thickness from top to bottom. The upper end, *e*, of the dasher is formed to correspond with the interior of the socket *c*, in which it is secured by the described means. It will be observed that the lower ends of the dasher-blades are unsupported in the churn-can, and that therefore various kinds and sizes of cans may be used. On the part *e*, below the socket *c*, may be placed a washer, *e²*, which prevents splashing of milk upon the operator.

The operation of the invention is as follows: The can or vessel containing the milk to be churned is placed in position within the frame and secured by the bands, as described. The dasher, having the cover of the churn slipped over its arm *e* and the washer *e²* placed on it, is then inserted in the can, and secured by the described means to the socket of the shaft C. Then by raising and depressing the handle of the segmental rack, which operates the pinion and shaft C, and consequently the dasher, rapidly in alternate directions, the milk is forcibly agitated and butter quickly formed.

I contemplate making the frame, as described, with its accompanying parts, and selling the same as an article of manufacture independent of the milk vessel or churn.

I am aware that churn attachments have been made combining some features of the invention. Therefore I make no broad claims; but,

Having described my invention, I claim—

The combination of the cast-iron frame A, having a base, A', and securing-bands *b b'*, and Y-shaped bracket C, cast integral with the frame, segmental rack F, provided with stop-lugs *f'*, journaled in the upper end of said bracket shaft C', journaled in the lower portion of bracket C and in the top bar of the frame, pinion D, engaging rack F, a suitable retaining device formed on the end of shaft C', for securing the churn-dasher thereto, and bracket G, having an arm, *g*, to prevent lateral disengagement of the rack and pinion, all substantially as and for the purpose specified.

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

ISAAC WHITTEN WALTER.

Witnesses:

SAMUEL D. CHERRY,
SAML. WARD YOUNG.