(No Model.)

J. SMITH.

BARREL CchurN.

No. 344,503. Patented June 29, 1886.

Fig. 2.

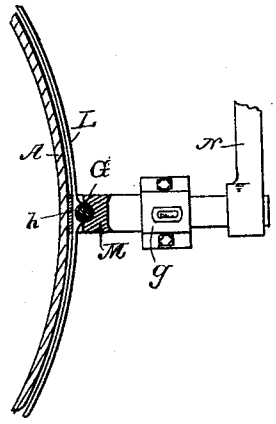
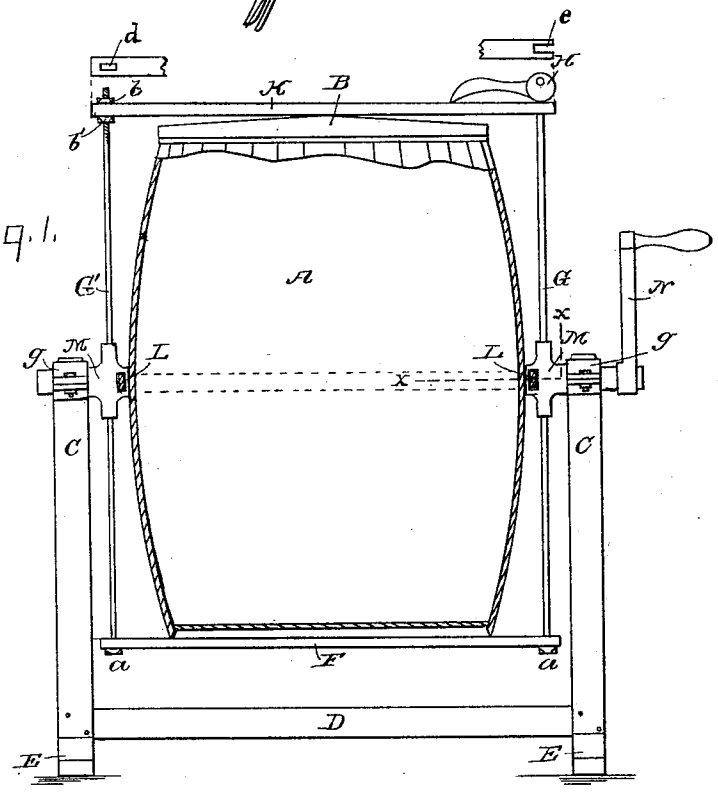


Fig. 1.



WITNESSES:

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N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

JULIUS SMITH, OF ROCK FALLS, ILLINOIS, ASSIGNOR OF ONE-HALF TO ANDREW S. GOODELL, OF SAME PLACE.

BARREL-CHURN.

SPECIFICATION forming part of Letters Patent No. 344,503, dated June 29, 1886.

Application filed November 30, 1885. Serial No. 184,349. (No model.)

To all whom it may concern:

Be it known that I, JULIUS SMITH, a citizen of the United States, residing at Rock Falls, in the county of Whiteside and State of Illinois, have invented certain new and useful Improvements in Barrel-Churns; 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 appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention has reference to barrel-churns, and pertains more especially to certain novel mechanism for supporting the churn and rigidly locking the lid.

In barrel-churns in which, as in mine, the process of churning is carried on by rotating the entire churn, and thereby dashing the cream from one end to the other of the barrel, it is of the utmost importance that every portion of the junction between the lid and body of the churn be made perfectly tight, otherwise the agitation of the cream, as well as its centrifugal force, will force portions of the cream between the lid and body of the churn, causing some loss of the contents, but more particularly soiling the churn and floor.

In such churns as heretofore constructed the pressure of the lid upon the body of the churn has been applied at intervals around the periphery of the lid, and it has been substantially impracticable to make such pressure uniform around the entire lid, and an excess of pressure at one point would have the effect of tilting the lid at the opposite side; also, the intervals between the points of pressure would receive pressure from the side only, and of course in a less degree. This objection I have overcome by applying the pressure primarily to the center of the lid, and thence equally throughout the entire edge thereof; again, instead of, as heretofore, clamping but one end of the churn against the lid, the pressure is inward from both extremities of the churn, and thus both the entire lid and the entire body of the churn are included within the compressing mechanism.

In the drawings, Figure 1 exhibits a front elevation, with the churn in section, of a machine embodying my invention. Fig. 2 is a partial cross-section at one side of the churn.

A is the body of the churn, made in the usual mode, and having the usual cork annulus in its upper edge.

B is the lid, having a convex upper surface and an annular downwardly-extending flange to impinge upon such cork annulus. As neither the latter nor such flange are any part of my invention, nor claimed by me, I do not deem it necessary to show or further describe such features.

C C are the supporting-standards of the jack, in which the churn-frame is suspended, such standards being suitably connected at their lower ends by the cross-brace D and seated in horizontal plates E E.

F is the bottom cross-plate, upon which the churn rests. Rods G and G′, having heads *a* on their lower ends, are passed upward through the plate F a short distance above the churn A. The upper end of the rod G′ is threaded and provided with nuts *b* and *b*′. On the upper end of the rod G is eccentrically pivoted the cam-lever H.

K is a horizontal pressure-bar provided with a longitudinal slot, *d*, to receive the upper end of the rod G′, the nut *b*′ being under such bar and the nut *b* above it, and by means of such nuts the altitude of that end of the bar K can be adjusted as required. A longitudinal slot, *e*, is formed on the opposite end of the bar K, which latter slot receives the upper end of the rod G. By means of the slot *d* the bar K can be slipped back lengthwise sufficient to allow the rod G to pass out of the slot *e*, when the bar K can be turned to one side, to permit the removal and replacement of the lid B, when, by slipping the bar K in a contrary direction, its free end can be passed under the lever H. The lever H is so formed and pivoted that its eccentric side or cam will force the adjacent end of the bar K downward by an inward movement of such lever, and as such bar K presses upon the center of the lid B the pressure thereby exerted is distributed uniformly around the periphery of such lid.

L is a hoop or band passed loosely around the center of the barrel A and through ears M

M, the latter being provided with journal-bearings *g g*, respectively, and thus suitably journaled, respectively, at opposite sides of the churn A upon the supporting-standards C C. The rods G and G′ pass also through the ears M M and extend laterally into a slight recess, *h*, in the outer edge of the band L, and thus said band is prevented from revolving.

On the outer end of one of the ears M is fitted the crank N, by means of which the churn is rotated.

The advantages of my invention are, that the churn is compressed its entire length, supported at both ends by extraneous mechanism, and that the lid is held in place by a uniformly-distributed pressure.

For the convexity of the lid B, a cleat having a convex upper side can be fastened to the top of such lid under the bar K.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. The combination, with a churn, A, and lid B, of the plate F, rods G and G′, the bar K, and lever H, substantially as shown, and for the purpose described.

2. In combination with the body and lid of a churn, the plate F, rods G and G′, bar K, cam-lever H, band L, and ears M M, substantially as shown, and for the purpose described.

3. The combination, with the churn A and lid B, of the plate F, rods G and G′, the bar K, provided with slots *d* and *e*, and the lever H, substantially as shown, and for the purpose described.

4. In combination with the churn A and lid B, the plate F, rods G and G′, the latter provided with nuts *b* and *b′*, the bar K, provided with slots *e* and *d*, and the lever H, such lid B having an upper convex surface, and thus adapted to receive pressure at its center from said bar K, substantially as shown, and for the purpose specified.

5. The combination of the ears M M, suitably supported and journaled upon the standards C C, the band L, passed through such ears, the rods G and G′, slightly engaging such band, the bar K, lever H, lid B, churn A, and crank N, whereby such churn is suitably supported, compressed, and adapted to be rotated, substantially as shown, and for the purpose described.

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

JULIUS SMITH.

Witnesses:
WALTER N. HASKELL,
JOHN G. MANAHAN.