

(No Model.)

J. M. CRITCHER, E. B. WEBBER & O. H. FRANKLIN.
CHURN.

No. 541,837.

Patented July 2, 1895.

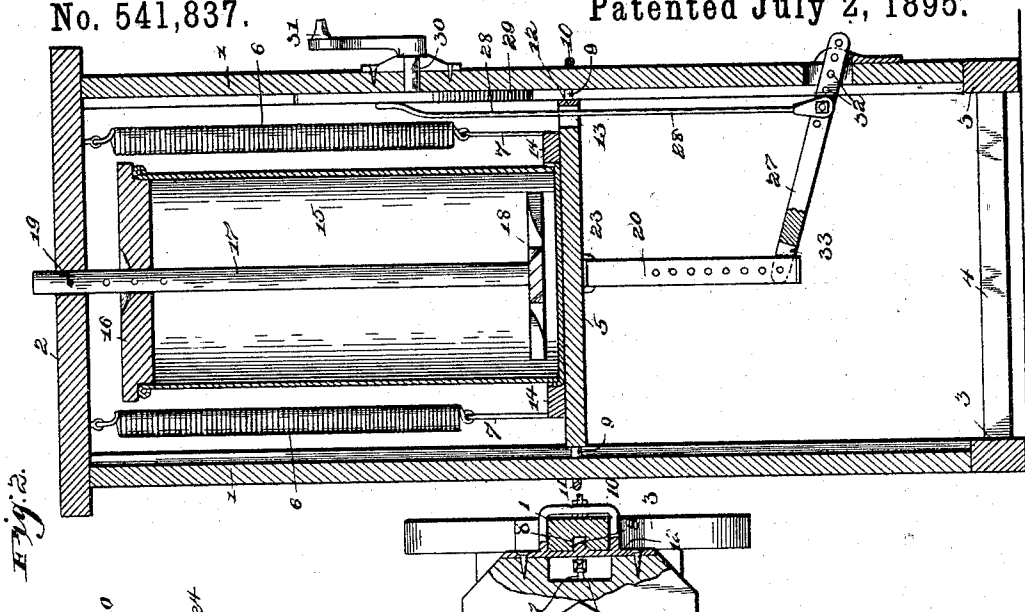


Fig. 2.

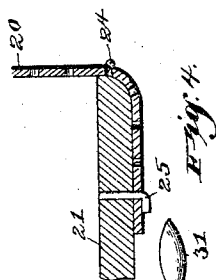


Fig. 4.

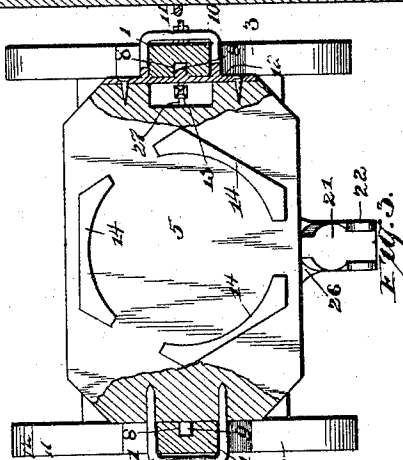


Fig. 3.

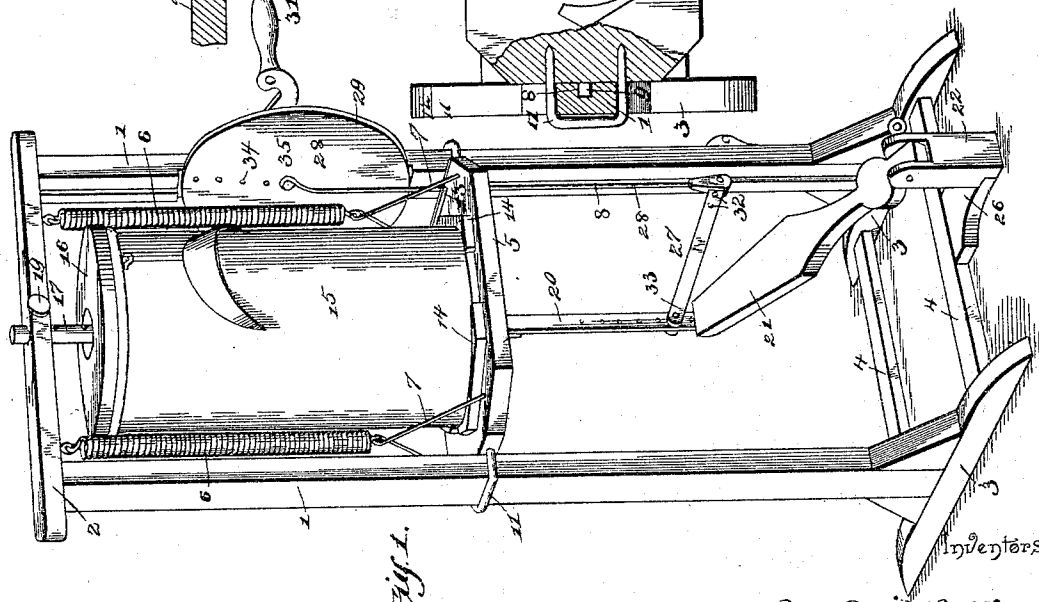


Fig. 1.

Witnesses

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By their Attorneys.

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Inventors.

UNITED STATES PATENT OFFICE.

JOHN M. CRITCHER, OF BOLIVAR, MISSOURI, EDWARD B. WEBBER, OF COLLIERVILLE, TENNESSEE, AND OLIVER H. FRANKLIN, OF INDIANAPOLIS, INDIANA.

CHURN.

SPECIFICATION forming part of Letters Patent No. 541,837, dated July 2, 1895.

Application filed November 12, 1894. Serial No. 528,600. (No model.)

To all whom it may concern:

Be it known that we, JOHN M. CRITCHER, residing at Bolivar, in the county of Polk and State of Missouri, EDWARD B. WEBBER, residing at Collierville, in the county of Shelby and State of Tennessee, and OLIVER H. FRANKLIN, residing at Indianapolis, in the county of Marion and State of Indiana, citizens of the United States, have invented a new and useful Churn, of which the following is a specification.

The invention relates to improvements in churns.

The objects of the present invention are to improve the construction of churns, to reduce the labor necessary to effect a production of butter, and to enable the stroke of the churn to be readily regulated to suit the quantity of cream being churned, and to avoid the too slow and the too rapid agitation.

A further object of the invention is to provide a churn, which may be readily operated either by foot or hand.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claim hereto appended.

In the drawings, Figure 1 is a perspective view of a churn constructed in accordance with this invention. Fig. 2 is a vertical transverse sectional view. Fig. 3 is a horizontal sectional view. Fig. 4 is a detail sectional view, illustrating the manner of attaching a strap or band adjustably to the pedal.

Like numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates uprights of a substantially rectangular supporting frame, connected at their upper ends by a top cross-bar 2, and having their lower ends secured to a substantially rectangular base, which is composed of parallel side bars 3, and front and rear cross-bars 4. The uprights 1 form guides for a horizontally disposed vertically movable churn body supporting platform 5, which is suspended from the top cross-bar 2, by means of spiral springs 6, and downwardly diverging rods 7.

The inner opposite faces of the uprights 1 are provided with vertical grooves 8, in which are arranged laterally extending lugs 9, of the platform 5, which is also provided with horizontally disposed rectangular loops or keepers 10 and 11, receiving the uprights 1. The loop 10 has its terminals secured to a metal plate 12, which is secured to the adjacent edge of the platform 5, and which spans an opening 13, and carries the adjacent lug or projection 9 for engaging the groove of the adjacent standard.

The platform is provided on its upper face with cleats 14, having inner curved edges, and forming a seat for a cylindrical churn body 15; but any other configuration of churn body may be employed if desired. The churn body is provided with a detachable cover, having a central opening, through which passes a stem 17 of a stationary dasher 18. The cover 16 of the churn body may be secured by any suitable means, and its central opening conforms to the configuration of the dasher rod or stem, which serves as a guide for the churn body in its vertical reciprocation. The stem or rod of the dasher, which may be of any desired configuration, is secured by means of a set screw 19 in a perforation of the top cross-bar 2 of the supporting frame; and the dasher rod or stem is provided with a series of perforations to receive the said set-screw, whereby the stationary dasher may be readily adjusted to suit the quantity of cream being churned.

The platform is connected by a strap or band 20, with a pedal 21, which is fulcrumed at its outer end on a short post or standard 22 of the base of the supporting frame. The upper end of the strap or band is secured to an eye or loop 23 of the platform 5, and the lower end of the strap or band passes through a loop or keeper 24 of the pedal, and is secured to the lower face of the same by means of a projection or pin 25. The strap or band 23 is provided with a series of perforations for engaging the projection or pin 25, for limiting the stroke of the churn to suit the contents of the churn body. The short post or standard 22 is secured to the front end of a cen-

trally arranged arm 26, extending from the adjacent cross-bar 4 of the base of the supporting frame.

The churn is operated by hand by means of a lever 27, fulcrumed on one of the uprights at its outer end and connected at its inner end to the strap or band, and having attached to it at a point intermediate of its ends a pitman 28. The pitman 28 is eccentrically connected at its upper end to a crank disk 29, which is mounted on a shaft 30; and the latter is journaled on the adjacent upright in suitable bearings thereof, and has a crank handle 31 secured to its outer end. The lower end of the pitman is bifurcated, and is adjustably secured to the lever 27, which is provided with a series of perforations 32, by a removable pin or bolt, adapted to engage any one of the perforations, to regulate the length of the stroke of the churn. The inner end of the lever 27 is bifurcated at 33, to receive the strap or band, and is detachably secured to the same by means of a pin passing through one of the perforations thereof. Either the hand or foot mechanism may be employed, and when the pedal is used, the lever 27 is detached, or disconnected, from the strap or band, which moves vertically in the bifurcation of the lever, the latter forming a guide for the strap or band.

The pitman 28 operates in the opening 13 of the platform 5, and the particular construction and arrangement of the plate 12, the adjacent loop 10, and the lug, enable the pitman to operate at the inner side of the lug, and permit the operating mechanism to be arranged as shown. The manner of mounting the loop 11 and the adjacent lug, would, if placed at the other side of the churn, interfere with the operating mechanism.

The crank disk is adapted to operate as a balance wheel, and it is provided with a radial series of perforations 34, adapted to receive a screw or wrist pin 35, which passes

through an eye or opening at the upper end of the pitman, and adjustably connects the latter to the crank disk.

The stroke of the churn may be readily regulated to suit the quantity of cream to be churned, and to produce a regular reciprocating motion, and to avoid agitating the milk either too fast or too slow, and to thereby reduce the labor necessary to churning.

It will be seen that the churn is simple and comparatively inexpensive in construction, and that it is capable of rapidly producing butter at the expenditure of a minimum amount of labor.

Changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

What we claim is—

In a churn, the combination of a supporting frame having opposite uprights provided at their inner faces with vertical grooves, a platform arranged between the uprights and provided with projections or lugs for engaging the grooves thereof, springs for supporting the platform, the rectangular loops or keepers secured to the platform and receiving the uprights, one of the keepers being provided with a plate attached to the adjacent edge of the platform and carrying the adjacent lug or projection, and means for operating the platform including a pitman passing through the platform at the inner side of said plate, substantially as described.

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

JOHN M. CRITCHER.
EDWARD B. WEBBER.
OLIVER H. FRANKLIN.

Witnesses:

J. S. DITTO,
EMMETT RANKIN.