No. 702,995. Patented June 24, 1902.

# J. W. POWELL.

## CHURN.

(Application filed Nov. 30, 1901.)

(No Model.)

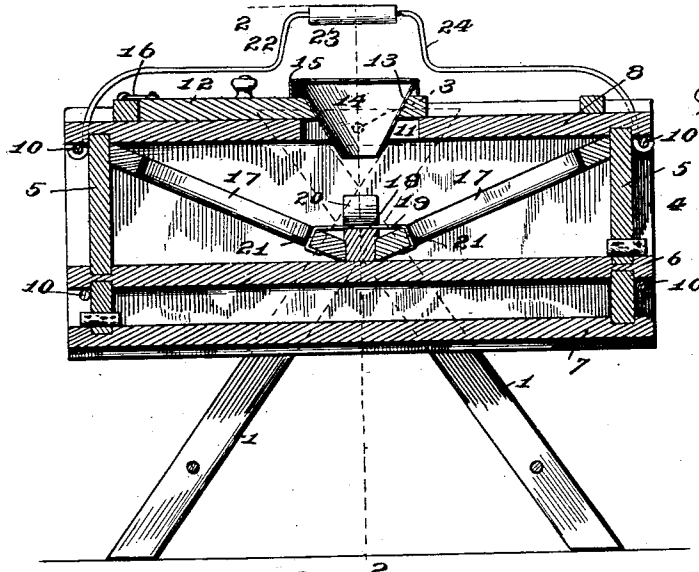

Fig. 1.

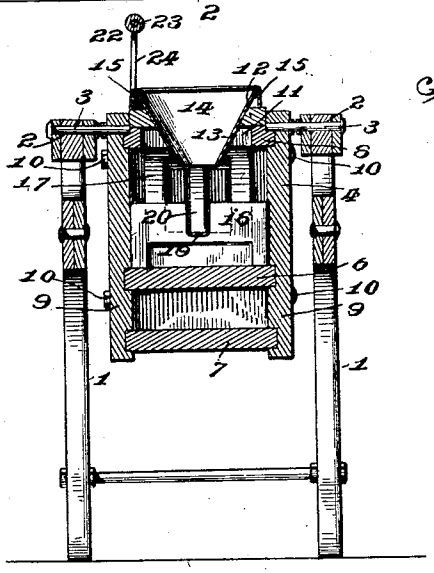

Fig. 2.

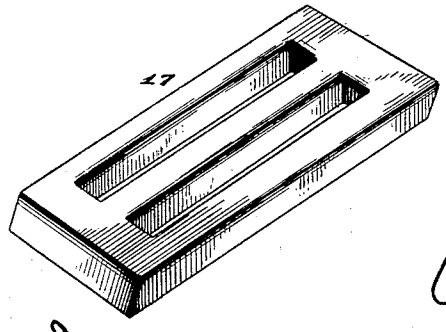

Fig. 3.

Witnesses
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# UNITED STATES PATENT OFFICE.

JULIUS W. POWELL, OF CHERRYVALE, KANSAS.

## CHURN.

SPECIFICATION forming part of Letters Patent No. 702,995, dated June 24, 1902.

Application filed November 30, 1901. Serial No. 84,178. (No model.)

*To all whom it may concern:*

Be it known that I, JULIUS W. POWELL, a citizen of the United States, residing at Cherryvale, in the county of Montgomery and State of Kansas, have invented certain new and useful Improvements in 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.

My invention relates to churns of the type known as "working-body" churns; and it consists in the improvements in construction and arrangement hereinafter described, and pointed out in the claims.

In the drawings, Figure 1 is a longitudinal vertical section. Fig. 2 is a transverse section taken on line 2 2 of Fig. 1. Fig. 3 is a perspective view of one of the "riffles" detached.

Referring to the drawings, 1 represents a stand or support of any desired form provided with bearings 2, in which are journaled gudgeons 3, secured to the churn-body 4 near the top thereof. The body 4 is preferably of oblong box form, as shown, and may be constructed of any suitable material, as wood or metal. In the drawings the body is shown as made of wood, and when this material is used I prefer that it be constructed as shown, the end pieces 5 5, the bottom boards 6 and 7, and the top 8 being seated in grooves in the side pieces 9 9 and the whole secured together by bolts or rods 10 10, extending through and uniting the side pieces at points exterior to the end pieces. By such construction a perfectly smooth interior is secured and the churn-body adapted to be readily taken apart for shipment or storage. As shown, the bottom of the churn is preferably made double, so that the intermediate space may be filled with a tempering fluid to produce the proper temperature within the churn. Suitable drain-vents are formed in both chambers.

The top of the churn is provided with an opening 11 to give access to the interior, said opening being provided with a cover 12, arranged to partially close the same, the cover being itself provided with an aperture 13, registering with the opening in the churn, but of smaller size than the latter. The aperture 13 is designed, primarily, to admit air to the churn during its operation and is preferably circular, its edge being beveled, as shown, to afford support to a cone or funnel 14, the lower end of which extends a suitable distance below the level of the top of the churn, forming a flange to prevent the contents from splashing out when the churn is in operation. The funnel 14 also preferably extends slightly above the top of the cover 12 to receive a protective cap 15, having a top of wire-gauze to exclude dust and admit the air. The cover 12 is preferably of such size as to bear at its side edges against the side pieces of the churn-body and at one end against a suitable cleat secured to the top. To prevent the cover from moving during the operation of the churn, suitable holding devices, such as a latch 16, may be employed.

Within the churn are disposed a pair of riffles 17 17 and a retaining-key 18. These riffles are grids of wood or other suitable material, preferably somewhat narrower than the interior width of the churn and of a length slightly greater than half that of the churn-body. They are arranged in the churn in the manner shown, with their upper edge bearing against the opposite ends of the body at the top and their lower ends resting upon the churn-botton near the middle thereof. To retain them firmly in place when the churn is in use, I employ a key 18 of a size adapted to wedge them tightly against their end and top abutments. The key is arranged to fit snugly the width of the churn and is sufficiently wide to project above the lower ends of the riffles, so that it may be easily removed from above. It is also preferably provided with recesses near its lower edge to receive the ends of the riffles or grids and secure them against lateral movement. If desired, a clamp or retainer 19 may be employed to further secure the riffles, such clamp comprising a metallic spring-catch taking through recess 20, formed in the top of the key 18, and apertures in the grids and having depending spring ends 21 21 to engage the under sides of the riffles and securely fasten them and the key together, as illustrated in Fig. 1.

To operate the churn, a handle 22 is provided consisting of a suitable handpiece 23, centrally carried by a bail 24, secured at its ends to the cross-bolts 10 10 or other firm

supports near the ends of the churn and extending lengthwise of the body. The handle is preferably arranged at one side of the body to be out of the way of the cover and in a position most convenient for the operator.

The churn is operated in the usual manner, the lower chamber being first filled with water at a proper temperature to temper the milk. The churn is then filled and is oscillated on its bearings, the milk being thereby agitated and thoroughly broken up by the combined action of the riffles and its being dashed against the walls of the churn. Air is constantly supplied through the cover, whereby the milk is thoroughly aerated. When the butter has "come," the churn is tilted, so that all of its contents are at one end. The cover is then taken off, the key removed, and the riffles taken out. The butter may then be removed in the usual manner and the churn drained.

While I have herein described the preferred form of my invention, I do not thereby intend to limit myself to the exact form of my invention shown, as numerous changes might be made therein without departing from the spirit of my invention.

What I claim, and desire to secure by Letters Patent, is—

1. In a churn, the combination with an oscillating body, having an opening in the top thereof, of a registering member extending through said opening to form flanges above and below the top, and a reticulated cap overlying the exterior flange and covering the opening; substantially as described.

2. In a churn, the combination with a body having a relatively large opening therein, a cover for said opening having a relatively small registering opening, a conical member extending through the opening above and below the cover, and a reticulated strainer-cap removably seated upon the exteriorly-extended portion of the conical member; substantially as described.

3. In a churn of the character described, the combination with the body having portions forming fixed abutments, of a pair of grids or riffles contained therein, said riffles each bearing at one end against a fixed abutment in the churn-body, and converging toward a common point, and a removable key interposed between the adjacent ends of said riffles to force them into holding engagement with their respective abutments, substantially as described.

4. In a churn of the class described, the combination with the body, of a pair of grids or riffles contained therein, said riffles being inclined so as to bear against the opposite ends of the churn-body at the top, and to converge toward the middle of the churn at the bottom, a removable key interposed between the lower adjacent ends of said riffles and means for securing the key and riffles in such relation, substantially as described.

5. In a churn of the class described, the combination with a body having an opening in the top thereof, a pair of riffles within the body converging from the ends thereof toward a point below the opening and means for retaining the riffles in place removably interposed between the adjacent ends of said riffles, whereby said parts may be removed through said opening; substantially as described.

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

JULIUS W. POWELL.

Witnesses:
S. J. HOWARD,
REVILO NEWTON.