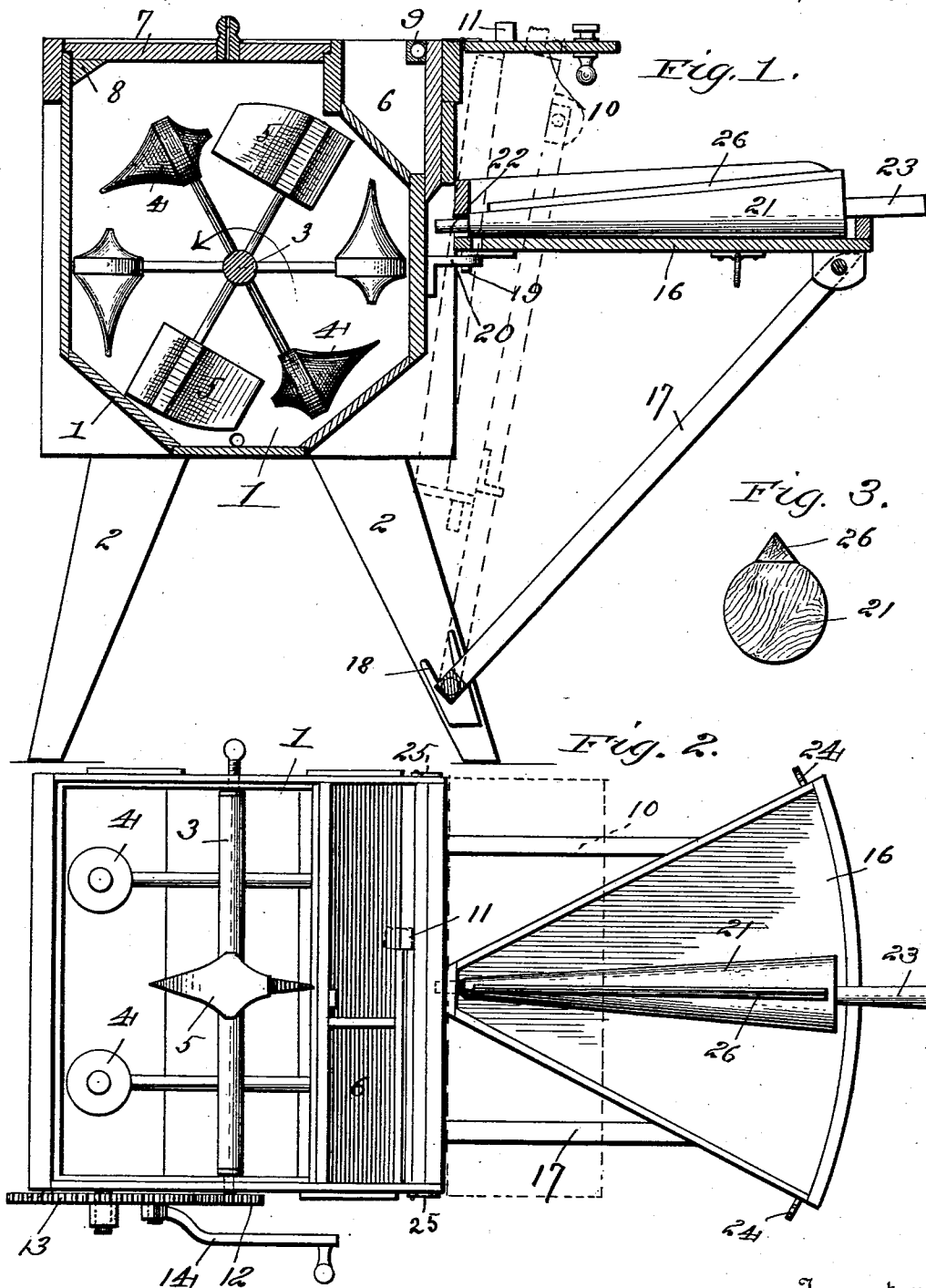


J. F. CLASS.
CHURN.

No. 563,222.

Patented June 30, 1896.



Witnesses
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Inventor
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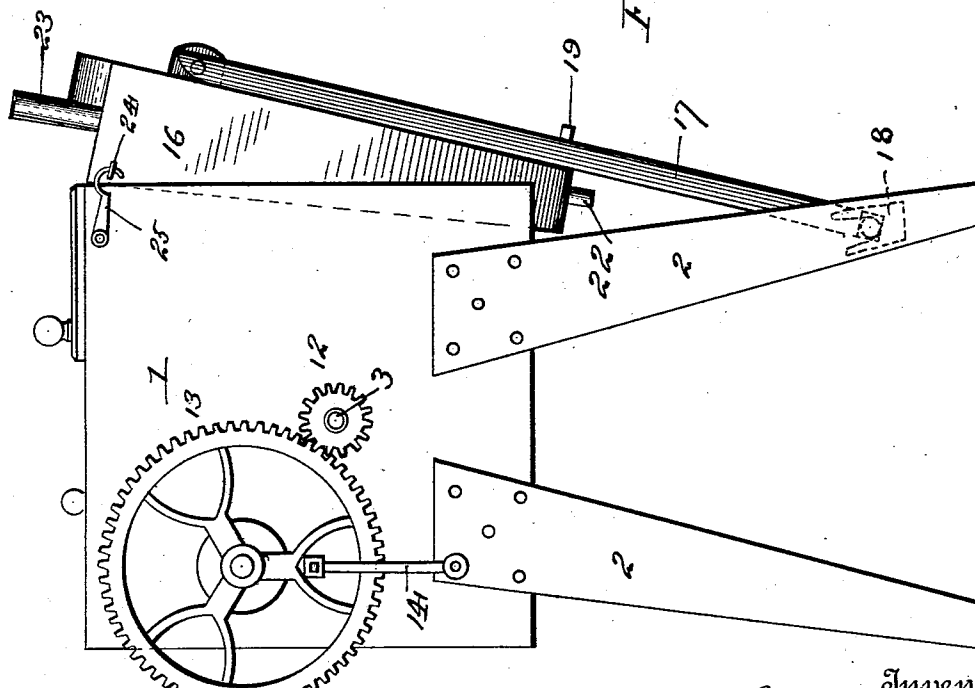
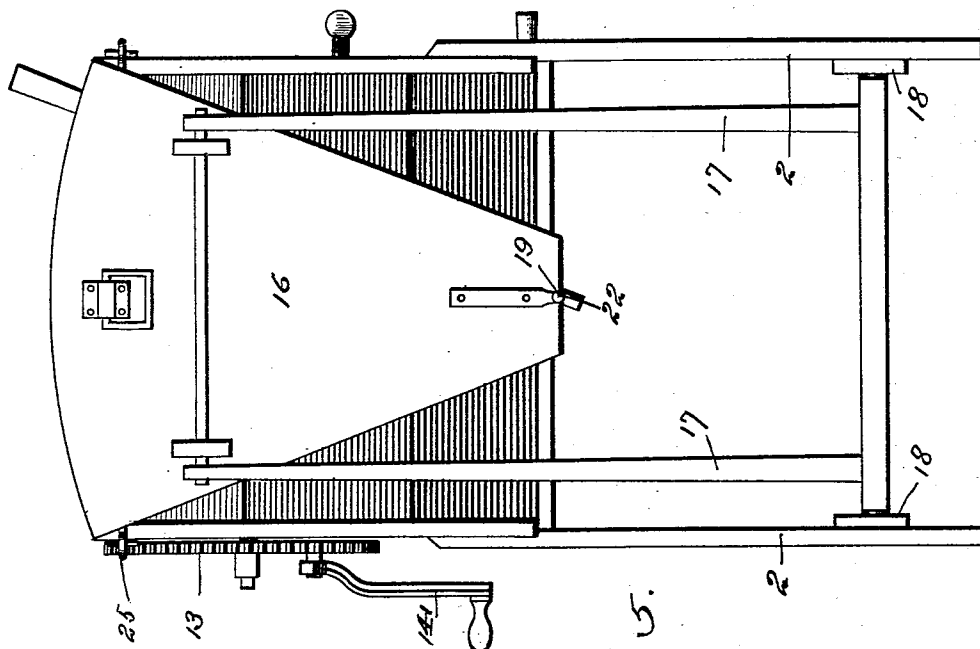
(No Model.)

2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

JOHN F. CLASS, OF PLEASANT HILL, OHIO.

CHURN.

SPECIFICATION forming part of Letters Patent No. 563,222, dated June 30, 1896.

Application filed February 24, 1896. Serial No. 580,417. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. CLASS, a citizen of the United States, residing at Pleasant Hill, in the county of Miami and State of Ohio, have invented certain new and useful Improvements in Churns, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to a new and improved combined churn and butter-worker, and it has for its object to provide a simple device which may be easily operated, and to provide a folding butter-worker which is carried by the churn and may be folded up against the side thereof when desired.

The invention consists in the combination and arrangement of parts hereinafter referred to, and particularly pointed out in the claims appended.

In the drawings, Figure 1 is a vertical sectional view of the churn. Fig. 2 is a plan thereof. Fig. 3 is a cross-section of the butter-working roller. Fig. 4 is a side elevation showing the butter-worker folded up against the churn. Fig. 5 is an end view thereof, showing the butter-worker in a similar position.

Referring to the various parts by numerals, 1 designates the churn-body, which is supported on suitable legs 2, and is provided with a horizontal dasher-shaft 3, extending longitudinally through the same. On this shaft is mounted three sets of dashers, the two outer sets carrying the conical dasher 4 and the inner or central set carrying the flat wedge-shaped dashers 5.

Formed in the churn-body is a trough 6, which is divided into two or more compartments for the reception of salt or any other thing which may be useful in the process of making butter, and the lower inclined side of this trough forms one of the sides of the churn-body.

A cover 7 closes the open end of the churn, and is provided on its rear edge, at the inner side thereof, with an inwardly-extending strip 8, which forms a tight joint between the cover and the churn and prevents the cream from working out. Suitable air-holes are formed in the cover to admit air into the cream during the process of churning. In the trough 6 is secured a horizontal ther-

mometer-box 9, into which the usual dairy thermometer may be slipped for safe keeping when the churn is out of use. A cover 10 is provided for the trough 6, and a block 11 is secured thereon, said block closing the open end of the thermometer-box when the cover 10 is closed. The dasher-shaft is revolved by means of the gears 12 and 13 and crank 14, as is manifest.

A butter-working table 16 is supported at the rear of the churn by means of a frame 17, whose lower end is journaled in suitable sockets 18, carried by the rear pair of legs of the churn, its upper end being journaled in a suitable manner to the outer end of the table 16. Secured to the bottom of the table 16, at the inner end thereof, is a depending hook 19, which is adapted to removably engage a projection 20, carried by the churn on its rear side. The table 16 is an arc of a circle whose narrowest portion is at its inner end, and it is provided with vertical sides, and at its inner end it is formed with a draining-aperture. Working upon the table 16 is an approximately conical roller 21, whose smaller end is provided with an extension 22, which passes loosely through an aperture in the rear vertical side of the table, the outer and larger end of said roller being provided with a handle 23. Formed on this roller is a V-shaped longitudinal rib 26, which extends approximately the entire length of the roller.

An essential feature lies in the peculiar shape of the dashers 4. It will be observed that each dasher projects at substantially right angles to the radial arm carrying it, its main portion being substantially cylindrical in cross-section, and from the cylindrical part it tapers toward its forward end to a point, the taper part being approximately conical. The rear portion of the dasher, behind the cylindrical portion, tapers off, so as to offer no obstruction behind the dasher, but on the contrary tend to form a vacuum behind it, into which cream shall whirl as the dasher moves through it. The operation of the conical dasher is peculiar. It will be observed the pointed end enables it to cleave the cream and pass through it with the least amount of resistance, while the peculiar conical shape (the side of the cone being slightly concave, preferably) serves to deflect the cream in all

directions or rather in a circular spray, each dasher on the shaft being the center of one of these circular sprays. This action of the dashers will therefore throw the cream not only 5 against the bottom and ends and sides of the churn-body, but will also throw it inward against the intermediate flat-faced dashers 5 and against the rotating arms of the shaft. In this way a violent agitation of the cream 10 is kept up, and it is continually being dashed against the surrounding surfaces, whereby the globules will be more readily and more thoroughly broken up.

Another essential feature is the novel means 15 for supporting and folding the butter-worker. It will be observed that the construction of these devices permits the table to be dropped down at its inner end upon the supports 17, so that when the butter-worker is folded up 20 against the churn-body the upper or working face of the table will be inward next to the churn-body, the side flanges of the table fitting against the adjacent side of the same. In this way the butter-worker is not only 25 folded up close out of the way, but is protected from dust and dirt.

Secured to the outer sides of the table 16, near the outer end thereof, are two rings 24, and pivoted on the churn-body, one on each 30 side thereof, are two hooks 25, which are adapted to engage the rings on the table 16 when the same is folded against the rear side of the churn, as shown in Figs. 2 and 3.

The operation of my invention is as follows: Cream is put into the body of the churn, and the dasher-shaft revolved in the direction indicated in Fig. 1. The central wedge-shaped dashers throw the cream toward either 35 side of the churn, while the two pairs of side conical dashers throw the cream in all directions. By means of these peculiar forms of dashers an exceedingly violent agitation of the cream is obtained and butter is formed in a very short time. After the butter is formed 45 it is placed upon the table 16 and worked by the roller 21, the water running off through the draining-aperture in the table. After the butter is sufficiently worked and has been removed from the table 16, the said table is 50 scraped by the V-shaped longitudinal rib on the roller 21. This rib is also used in working the butter, and is of great advantage in

gathering the butter from the outer edges of the table and bringing it toward the center. When the churning and the working of the butter is complete, the hook 19 is detached 55 from the extension 20, and the table is lowered to the frame 17. It is then folded up against the churn and supported in its folded position by hooks 25 engaging rings 24. 60

Having thus fully described my invention, what I claim is—

1. In a churn, the combination of a casing, a horizontal shaft extending therethrough, a series of arms carried by the shaft, and a 65 dasher on the end of each arm at right angles thereto, said dasher being substantially circular in cross-sections and being of considerable diameter tapered to a point toward its forward end, whereby each dasher will 70 cleave the cream readily and will form a continuous circular spray as it passes there-through, substantially as described.

2. In a churn, the combination of a casing, a horizontal shaft therethrough, carrying a series of radial arms, the arms midway the length of the shaft carrying a series of wedge-shaped dashers having broad opposite sides, and the arms at each end of the shaft carrying 80 dashers of considerable diameter and circular in cross-section and tapering gradually toward their forward pointed ends, substantially as described.

3. The combination with a churn-body, of the butter-working apparatus, comprising a 85 swinging support 17 pivoted at its lower end to the churn-frame at its rear side, a butter-working table 16 pivotally supported at its outer end upon the upper outer end of the support 17 and removably supported at its 90 inner end upon the adjacent side of the churn, said table being provided with side flanges and adapted to swing down at its inner end upon the support 17 and be folded therewith up against the churn, and devices for holding 95 and locking the table up against the churn-body and in its outer working position, substantially as described.

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

JOHN F. CLASS.

Witnesses:

JNO. W. WHITMER,
DANIEL BROWN.