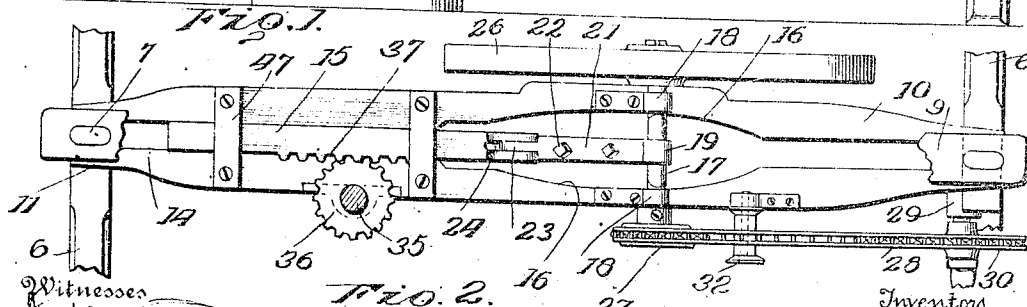
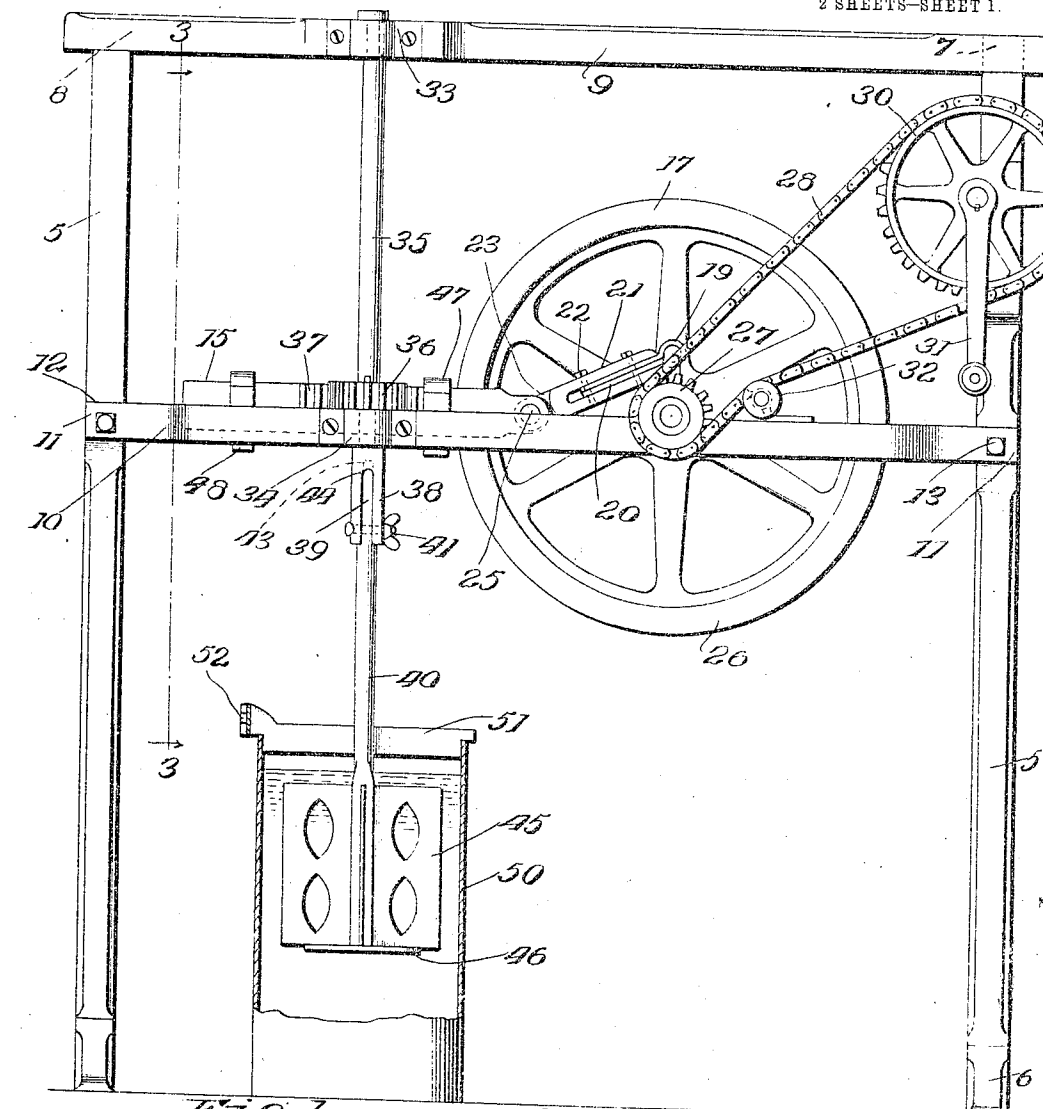


J. D. ELDER & P. LAFFOON.
 COMBINED CHURN AND WASHER.
 APPLICATION FILED SEPT. 13, 1912.

1,060,896.

Patented May 6, 1913.

2 SHEETS—SHEET 1.



Witnesses
Richard A. Bay
John H. Hume

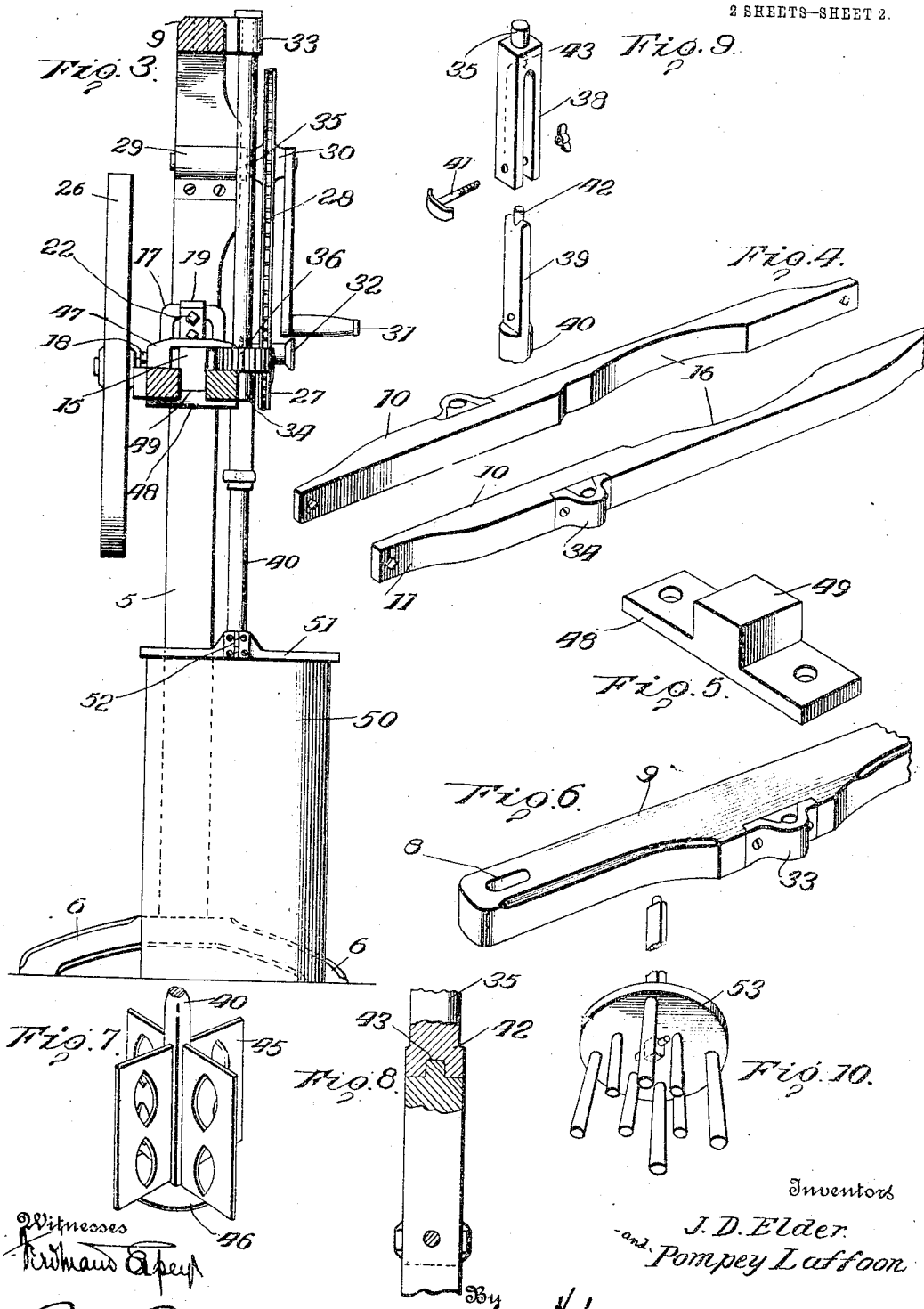
Inventors
J. D. Elder
Pompey Laffoon
Attorneys

J. D. ELDER & P. LAFFOON.
 COMBINED CHURN AND WASHER.
 APPLICATION FILED SEPT. 13, 1912.

1,060,896.

Patented May 6, 1913.

2 SHEETS—SHEET 2.



Witnesses
William A. [unclear]
Am. [unclear]

Inventors
 J. D. Elder
 and Pompey Laffoon
Ham. [unclear] Attorneys.

UNITED STATES PATENT OFFICE.

JOHN D. ELDER, OF WATTSBORO, AND POMPEY LAFFOON, OF ORAL OAKS, VIRGINIA.

COMBINED CHURN AND WASHER.

1,060,896.

Specification of Letters Patent.

Patented May 6, 1913.

Application filed September 13, 1912. Serial No. 720,296.

To all whom it may concern:

Be it known that we, JOHN D. ELDER and POMPEY LAFFOON, citizens of the United States, residing at Wattsboro and Oral Oaks, respectively, in the county of Lunenburg and State of Virginia, have invented certain new and useful Improvements in a Combined Churn and Washer, of which the following is a specification.

This invention relates to churns and has for its object the provision of a comparatively simple and thoroughly efficient device of this character by means of which butter may be produced more expeditiously and with less labor on the part of the operator than heretofore.

A further object of the invention is to provide a churn, the construction of which is such that by substituting an agitator or pounder for the churn dasher, the device may be used as a washing machine.

A further object of the invention is to provide a churn including a supporting frame having a rack mounted for reciprocation in a horizontal plane thereon and adapted to mesh with the teeth of a pinion secured to a vertical operating shaft, the latter being provided with means for detachable connection to a dasher or agitator so that as the rack is reciprocated, an intermittent oscillatory movement will be imparted to the churn dasher.

A still further object of the invention is generally to improve this class of devices so as to increase their utility, durability, and efficiency.

Further objects and advantages will appear in the following description, it being understood that various changes in form, proportions, and minor details of construction may be resorted to within the scope of the appended claims.

For a full understanding of the invention, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a side elevation of a combined churn constructed in accordance with the present invention, a portion of the body of the churn being broken away to show the construction of the dasher; Fig. 2 is a top plan view with a portion of the top bar of the main frame broken away to show the construction of the reciprocating rack and its associated parts; Fig. 3 is a vertical sectional view taken on the line 3—3 of Fig. 1

and looking in the direction of the arrow; Fig. 4 is a perspective view of the spaced longitudinal bars constituting the auxiliary frame; Fig. 5 is a similar view of one of the spacing members detached; Fig. 6 is a perspective view of a portion of the top bar; Fig. 7 is a perspective view of the dasher; Fig. 8 is a vertical sectional view, showing the manner of attaching the dasher to the vertical shaft; Fig. 9 is a perspective view with the dasher staff slightly separated from the lower end of the vertical shaft; Fig. 10 is a perspective view of the agitator.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The combined churn and washing machine forming the subject matter of the present invention comprises a main supporting frame including spaced uprights 5 having their lower ends provided with feet 6 and their upper ends reduced to produce tenons 7 adapted to fit in corresponding mortises 8 in a top piece or bar 9 so as to form a firm rigid structure.

Secured to the main frame in spaced relation to the top piece 9, is an auxiliary frame, preferably formed of spaced longitudinally disposed bars 10 having their opposite ends inclined or beveled to produce reduced portions 11 which fit in recesses 12 formed in the adjacent faces of the uprights 5, there being transversely extending openings formed in the reduced portions 11 of the bars 10 and the standards 5 for the reception of bolts or similar fastening devices 13. The bars 10 forming the auxiliary frame are preferably spaced apart throughout their entire length, the space 14 at one end of the auxiliary frame forming a slot or seat in which is mounted for reciprocation a rack bar 15. The inner faces of the longitudinal bars 10 near the center of the auxiliary frame are cut-away at 16 to accommodate a crank shaft 17, the latter being journaled in suitable bearings 18 mounted on the upper faces of the bars 10, as shown. Encircling the crank of the shaft 17, is an eye 19 provided with spaced arms 20 which fit in a recess formed in a pitman 21, the parts being firmly clamped together by bolts 22. One end of the pitman 21 is reduced to form a tongue 23 which fits in a recess 24 formed in the adjacent end of the rack bar 15, there being a pin 25 extending through the tongue and

rack bar so as to form a pivotal connection between said rack bar and pitman.

Mounted on one end of the crank shaft 17, is a fly wheel 26, while the other end of said crank shaft is provided with a sprocket wheel 27 for engagement with a sprocket chain 28.

Secured to one of the uprights 5 of the main supporting frame, is a bracket 29 in which is journaled a stub shaft carrying a relatively large sprocket wheel 30, the latter being provided with a hand crank 31 so that by rotating said crank, motion may be transmitted through the medium of the sprocket chain to the slide 15 to reciprocate the latter. The sprocket chain 28 preferably passes over the sprocket wheel 27 and thence over a roller or idler 32 for engagement with the sprocket wheel 30, the roller 32 being preferably arranged in a plane above the sprocket wheel 27, so as to act as a tightener for the sprocket chain.

Secured to the top piece 9, is a bearing 33 which registers with a similar bearing 34 fastened to one of the longitudinal bars of the auxiliary frame, said bearings serving to accommodate a vertically disposed operating shaft, indicated at 35. Secured to the shaft 35, is a pinion 36 which meshes with the teeth 37 on the rack bar 15 so that as said rack bar is reciprocated, an oscillatory movement will be imparted to the vertical shaft. The lower end of the vertical shaft is bifurcated to form spaced arms 38 adapted to receive the reduced end 39 of a churn dasher or agitator 40, said dasher or agitator being detachably secured to the shaft 35 by means of a bolt 41 which passes through registering openings in said shaft and dasher, respectively. The reduced end 39 is provided with a terminal lug 42 which fits in a socket 43 formed in the lower end of the shaft 35, said lug defining oppositely disposed shoulders, preferably curved to conform to and adapted to bear against the adjacent curved walls 44 at the bifurcated end of the vertical shaft. The dasher or agitator shaft 40 is provided with intersecting blades 45, preferably disposed at right angles to each other and having their lower ends secured to a flat disk 46, said blades being preferably formed with openings to permit the passage of cream and milk through the blades as the dasher is oscillated.

Connecting the upper faces of the longitudinal bars 10, are spaced keepers 47 which extend across the rack bar 15 and serve to assist in preventing accidental displacement thereof. Arranged beneath the bars 10 and secured thereto in any suitable manner, are transverse braces 48 having upstanding spacing blocks 49 secured thereto which fit within the seat 14 and serve to support the rack bar 15 and prevent the teeth 37 on the rack bar from becoming disengaged from

the teeth on the pinion. It will here be noted that the reduced ends 11 of the longitudinal bars constituting the auxiliary frame, are slightly resilient and are spaced apart a distance slightly less than the distance between the walls of the recesses 12, so that when the auxiliary frame is placed in position on the main frame with the reduced ends 11 thereof seated in the recesses 12, the inherent spring action of the arms will hold the frame to its place, while the bolts or fastening devices 13 are being positioned thereon.

The vessel or container 50 is provided with a cover 51, preferably formed in two sections hinged together at 52 so as to facilitate removing the cover when it is desired to detach the dasher or agitator from the vertical operating shaft.

Thus it will be seen that by rotating the crank, the rack bar 15 will be reciprocated in a horizontal plane, while the dasher will be oscillated in a vertical plane, thus to thoroughly agitate the cream and milk and produce butter with very little labor on the part of the operator.

When it is desired to use the churn as a washing machine, the churn dasher or agitator is detached and an agitator 53 of the construction shown in Fig. 10 fastened to the lower end of the vertical shaft, the shaft of the agitator being provided with a lug and shoulders, similar to the lug and shoulders on the churn dasher or agitator for engagement with the socket and curved walls at the bifurcated end of said vertical shaft.

By removing the bolts 13, the auxiliary frame and top piece may be readily detached from the standards and the device compactly folded for transportation or shipment.

Having thus described the invention, what is claimed as new is:

1. A device of the class described including a main frame comprising spaced uprights having seating recesses formed therein, an auxiliary frame formed of spaced longitudinal bars having their opposite ends seated in the recesses in the uprights, a rack mounted for reciprocation between the bars of the auxiliary frame, a vertical shaft journaled on the main frame and one of the bars of the auxiliary frame, a pinion carried by the vertical shaft, an agitator carried by the vertical shaft, and means operatively connected with the rack for reciprocating the latter, thereby to oscillate the dasher.

2. A device of the class described including a main frame formed of spaced uprights connected by a top bar, said uprights being provided with recesses, an auxiliary frame formed of spaced longitudinal bars having their opposite ends seated in the recesses in the uprights, bearings secured to the top bar and one of the longitudinal bars

of the auxiliary frame, respectively, a rack bar mounted for reciprocation between the longitudinal bars of the auxiliary frame, a vertical shaft journaled in said bearings, a pinion carried by the vertical shaft and engaging the rack bar, an agitator depending from the vertical shaft, a crank shaft operatively connected with the rack bar, a fly wheel secured to one end of the crank shaft, a sprocket wheel secured to the other end of said crank shaft, a relatively large sprocket wheel mounted on one of the uprights, a sprocket chain extending over said sprocket wheels, and a crank secured to said large sprocket wheel.

3. A device of the class described including a main frame, an auxiliary frame detachably secured to the main frame and including spaced longitudinal bars, keepers secured to the upper faces of said bars, transverse bars secured to the lower faces thereof and provided with spacing blocks extending between said bars, a rack mounted for reciprocation between the longitudinal bars and resting on the spacing blocks, a vertical shaft having a pinion meshing with the rack, an agitator detachably secured to the vertical shaft, and means for reciprocating the rack, thereby to oscillate the agitator.

4. A device of the class described including a main frame, an auxiliary frame detachably secured to the main frame and including spaced longitudinally disposed bars, a rack mounted for reciprocation in a horizontal plane between said bars, a crank shaft journaled on the bars, a fly wheel carried by one end of the shaft, a relatively small sprocket wheel secured to the other end of the shaft, the inner walls of the longitudinal bars at the crank shaft being cut-away, a

vertical shaft journaled in the main frame and auxiliary frame, respectively, and provided with a pinion meshing with the teeth on the rack, an agitator carried by the vertical shaft, a relatively large sprocket wheel mounted on the main frame, an idler spaced from the small sprocket wheel, a pitman forming a connection between the crank shaft and rack, and a sprocket chain passing over the idler and engaging said sprocket chain.

5. A device of the class described including a knock down main frame formed of spaced uprights having their upper ends provided with tenons, a top bar forming a part of the main frame and provided with mortises for the reception of said tenons, said uprights having their opposite sides provided with recesses, an auxiliary frame detachably secured to the main frame and formed of spaced longitudinal bars having their ends reduced and fitting in said recesses, fastening devices extending through the reduced ends of the longitudinal bars and engaging the uprights, a rack mounted for reciprocation in a horizontal plane between the longitudinal bars of the auxiliary frame, a vertical shaft journaled on the main and auxiliary frames, respectively, and provided with a pinion meshing with the rack, an agitator carried by the vertical shaft, and means for reciprocating the rack.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN D. ELDER. [L. s.]
POMPEY LAFFOON.

Witnesses:

HARRY J. LOVE,
L. A. HARDY.