

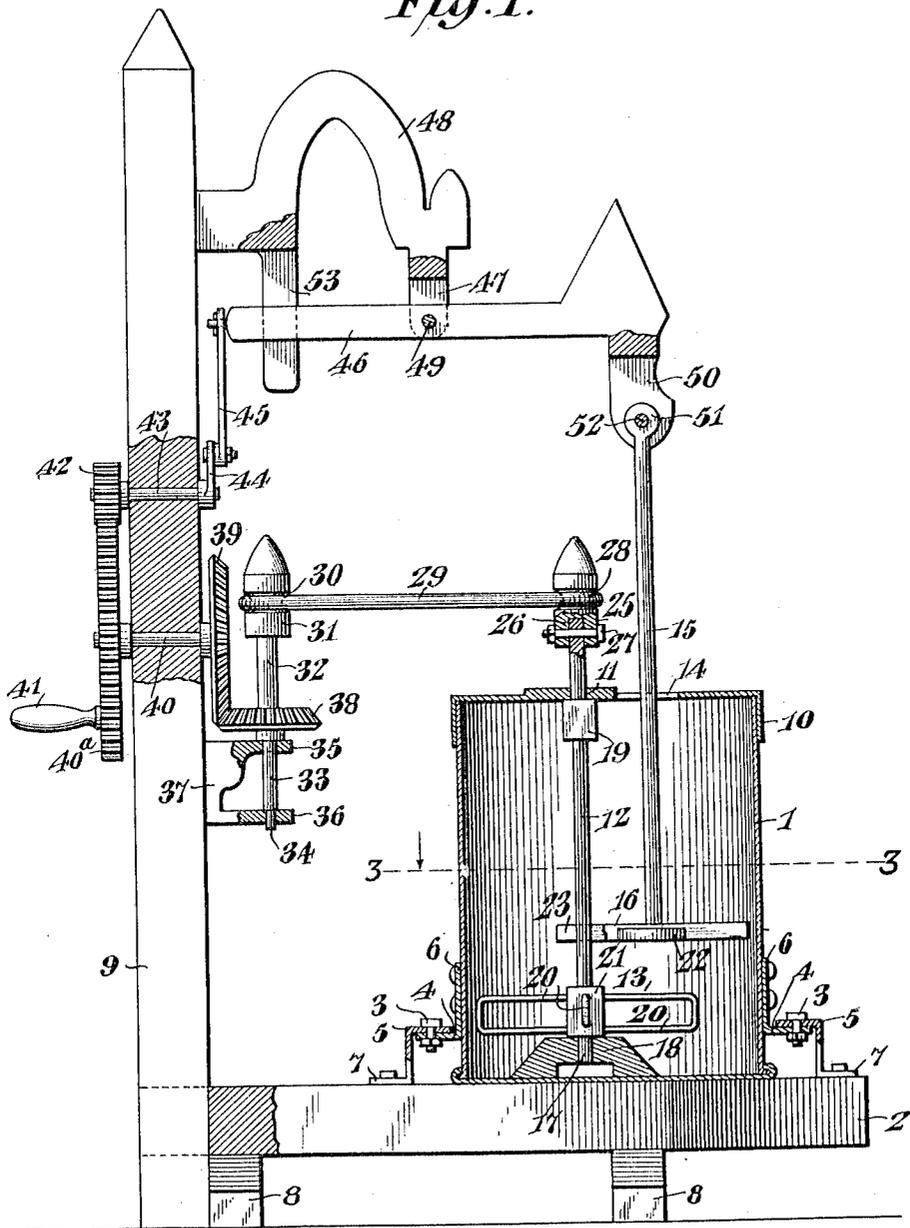
W. B. SIMPSON.
CHURN.
APPLICATION FILED MAY 28, 1914.

1,117,455.

Patented Nov. 17, 1914.

2 SHEETS-SHEET 1.

Fig. 1.



William B. Simpson, INVENTOR

WITNESSES

Jas. E. McLaughlin
H. F. Riley

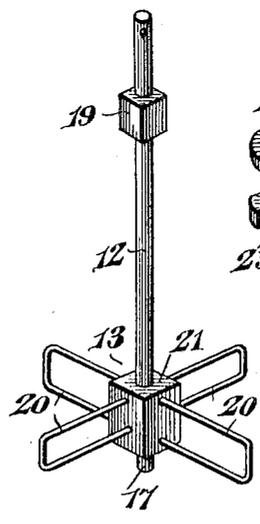
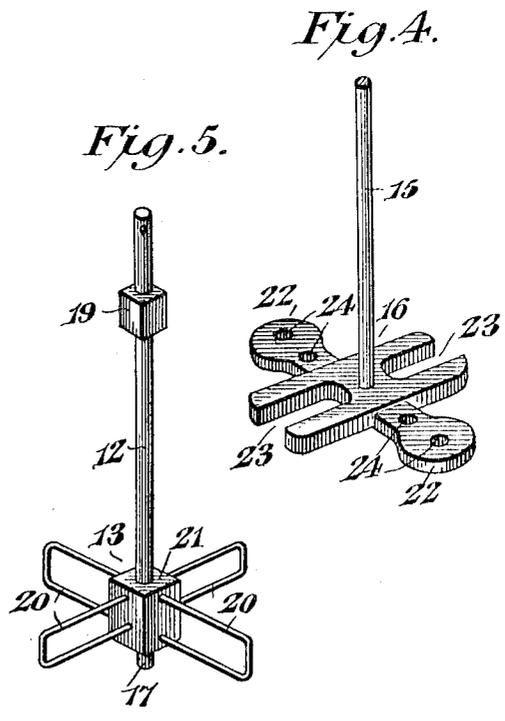
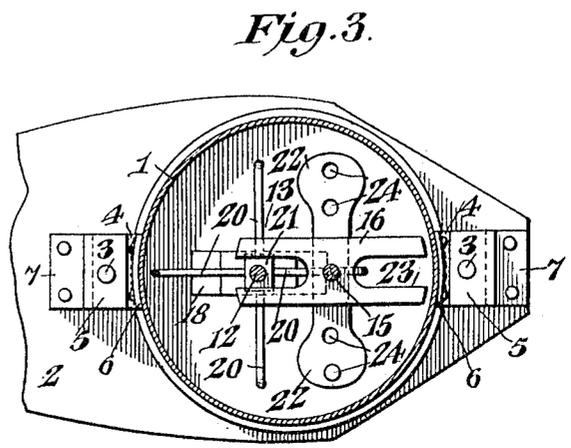
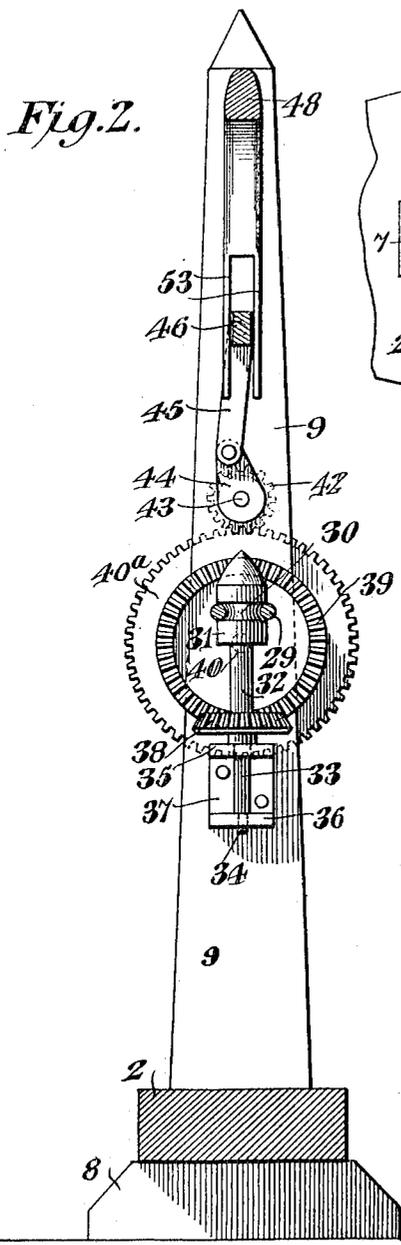
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 2 SHEETS-SHEET 2.



WITNESSES
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UNITED STATES PATENT OFFICE.

WILLIAM BUTLER SIMPSON, OF SHREVEPORT, LOUISIANA.

CHURN.

1,117,455.

Specification of Letters Patent.

Patented Nov. 17, 1914.

Application filed May 28, 1914. Serial No. 841,519.

To all whom it may concern:

Be it known that I, WILLIAM B. SIMPSON, a citizen of the United States, residing at Shreveport, in the parish of Caddo and State of Louisiana, have invented a new and useful Churn, of which the following is a specification.

The invention relates to improvements in churns.

The object of the present invention is to improve the construction of churns and to provide a simple, practical, and efficient churn, of strong, durable, and inexpensive construction, capable of easy operation, and adapted to rapidly produce butter and gather the same.

A further object of the invention is to provide a churn of this character equipped with a plurality of dashers and adapted to be advantageously employed for various operations requiring a dasher, such as the making of ice cream, cake batter, beating eggs, and whipping cream, etc.

With these and other objects in view the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended, it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:—Figure 1 is a central vertical sectional view of a double dasher churn constructed in accordance with this invention. Fig. 2 is a transverse sectional view of the same. Fig. 3 is a horizontal sectional view on the line 3—3 of Fig. 1. Fig. 4 is a detail perspective view of the vertical reciprocating dasher. Fig. 5 is a similar view of the rotary dasher.

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

In the accompanying drawings, in which is illustrated the preferred embodiment of the invention, 1 designates a churn body mounted upon a base 2 and preferably detachably secured upon the same by means of bolts 3 or other suitable fastening devices, which are arranged in registering perforations of horizontal flanges 4 of the churn body and approximately L-shaped arms 5 of the base. The flanges 4 are preferably

formed by angle plates 6 secured to the exterior of the churn body near the bottom thereof, but the flanges may be constructed in any other desired manner. The L-shaped arms 5, which consist of vertical upwardly extending portions and horizontal top portions, are provided with bottom attaching portions 7, which are bolted or otherwise secured to the upper face of the base 2. Any other suitable means, however, may be employed for rigidly securing the churn body in position on the base. The base, which is provided at its lower face with transverse supporting cleats 8, is recessed at its rear end to receive the lower portion of a standard 9, which has its lower end arranged in flush relation with the adjacent supporting cleat 8.

The churn body is equipped with a cover 10 provided with a bearing opening 11 for the shaft 12 of a lower rotary dasher 13, and the said cover 10 is also provided with a slot 14, through which passes the stem 15 of an upper vertically reciprocating dasher 16. The shaft 12 has its lower end 17 stepped in a suitable bearing 18, and it is provided at its upper portion with a collar or enlargement 19, which fits against the lower face of the lid or cover of the churn body, whereby the shaft 12 is held against vertical displacement and maintained in proper position while the churn is in use. The rotary dasher 13 consists of a plurality of radially arranged approximately U-shaped arms 20, which are secured to and extend from a lower polygonal enlargement 21 of the shaft 12. The polygonal portion 21 of the shaft rests upon the lower bearing 18, which is suitably secured to the bottom of the churn body. The upper dasher 16 consists of a horizontally disposed approximately oblong body portion and horizontal blades 22, extending from opposite sides of the body portion. The body portion is provided with opposite recesses 23, and the blades 22 have apertures 24. One of the recesses 23 receives the shaft 12 of the rotary dasher, which is adapted to operate as a guide for the vertically reciprocating dasher.

The shaft 12 of the rotary dasher is provided at its upper end with a head 25 having a socket 26 to receive the upper end of the shaft, and secured to the same by a bolt 27. The head of the shaft constitutes a gear element, and is preferably in the form of a pulley having a groove 28, to re-

ceive a belt 29, and which is also arranged in a groove 30 of a pulley 31, carried by a vertical shaft 32. Instead of employing a plain belt or cord, sprocket gearing may be used for transmitting motion from the vertical shaft 32 to the dasher shaft 12. The vertical shaft 32 has reduced lower portions 33 and 34, journaled in suitable bearings of upper and lower arms 35 and 36 of a bearing bracket 37, which is mounted upon the standard 9, at the front face thereof. The vertical shaft carries a horizontal bevel gear 38, which meshes with a vertical bevel gear 39, mounted on the inner end of an operating shaft 40. The operating shaft 40 extends through and is journaled in a suitable bearing opening of the standard, and it has keyed or otherwise secured to its rear end a vertical spur gear wheel 40^a, provided with an eccentrically arranged handle 41 and meshing with a spur pinion 42. The spur pinion 42 is fixed to the rear end of a countershaft 43, extending through and journaled in a suitable bearing opening of the standard, and equipped at its front end with a crank element 44, which is connected by a pitman 45 with the inner end of an oscillatory lever 46. The lever 46 is pivoted at a point intermediate of its ends between depending ears 47 of an arm 48 of the standard by a pin or bolt 49. The outer end of the lever 46 is enlarged and is provided with spaced depending portions or flanges 50, between which is pivoted the upper end 51 of the stem 15 of the dasher 16. The stem 15 is provided at its upper end 51 with an eye through which passes a movable pin 52, which is also arranged in perforations of the spaced depending portions or flanges 50 of the oscillatory lever. The inner end of the lever 46 is arranged between spaced guides 53, depending from the inner portion of the arm 48, and adapted to prevent lateral movement of the lever.

When the large gear wheel 40^a is rotated, the motion is communicated simultaneously to the upper countershaft 43 and the vertical shaft 32. The countershaft oscillates the lever 46, which reciprocates the dasher 16, and the vertical shaft 32 rotates the dasher shaft 12. The slot 14 in the lid or cover 10 is of sufficient length to permit the lateral movement or play of the stem of the vertically reciprocating dasher. The upper dasher operates to beat the cream quickly into butter, and the lower dasher has a tendency to gather the cream and float it to the top, where it will be operated on by the upper dasher. The coacting upper and lower dashers are adapted to rapidly produce butter, and the upper dasher may

be removed when it is desired to use the churn for other purposes, such as the making of ice cream, cake batter, and other operations requiring an agitator. By mounting the gearing and other operating mechanism on the standard, above and beyond the churn body, the churn is especially adapted to be employed for other purposes, and other receptacles and agitators may be substituted for the churn body and the upper and lower dashers.

What is claimed is:—

1. A churn including a standard having a projecting arm provided at the inner portion with spaced depending guides, an operating lever pivoted at an intermediate point to the outer portion of the arm of the standard and having its inner portion operating between the said spaced guides, a churn body, a reciprocating dasher having a stem connected with the outer end of the lever, a rotary dasher having a shaft, a vertical shaft mounted on the standard, pulleys carried by the vertical shaft and the dasher shaft, a belt connecting the said pulleys, upper and lower shafts mounted on the standard, the upper shaft having a crank element connected with the inner end of the lever, and gearing connecting the upper and lower shafts with each other and with the vertical shaft and having operating means.

2. A churn comprising a base, a standard rising from the base and having an arm extending over the same, a churn body, a rotary dasher mounted within the churn body and having a shaft extending above the same, a vertically reciprocating dasher having a stem projecting above the churn body, a lever fulcrumed at an intermediate point at the outer end of the arm and supported by the latter, the outer arm of the lever being connected with the said dasher stem, a vertical shaft mounted on the standard, means for transmitting motion from the vertical shaft to the dasher shaft, upper and lower shafts journaled on the standard, the upper shaft being provided with a crank element connected with the inner arm of the said lever, gearing for connecting the lower shaft with the vertical shaft, and gears connecting the upper and lower shafts with each other, one of such gears being provided with operating means.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

WILLIAM BUTLER SIMPSON.

Witnesses:

R. E. WYCHE,
S. W. KERLEY.