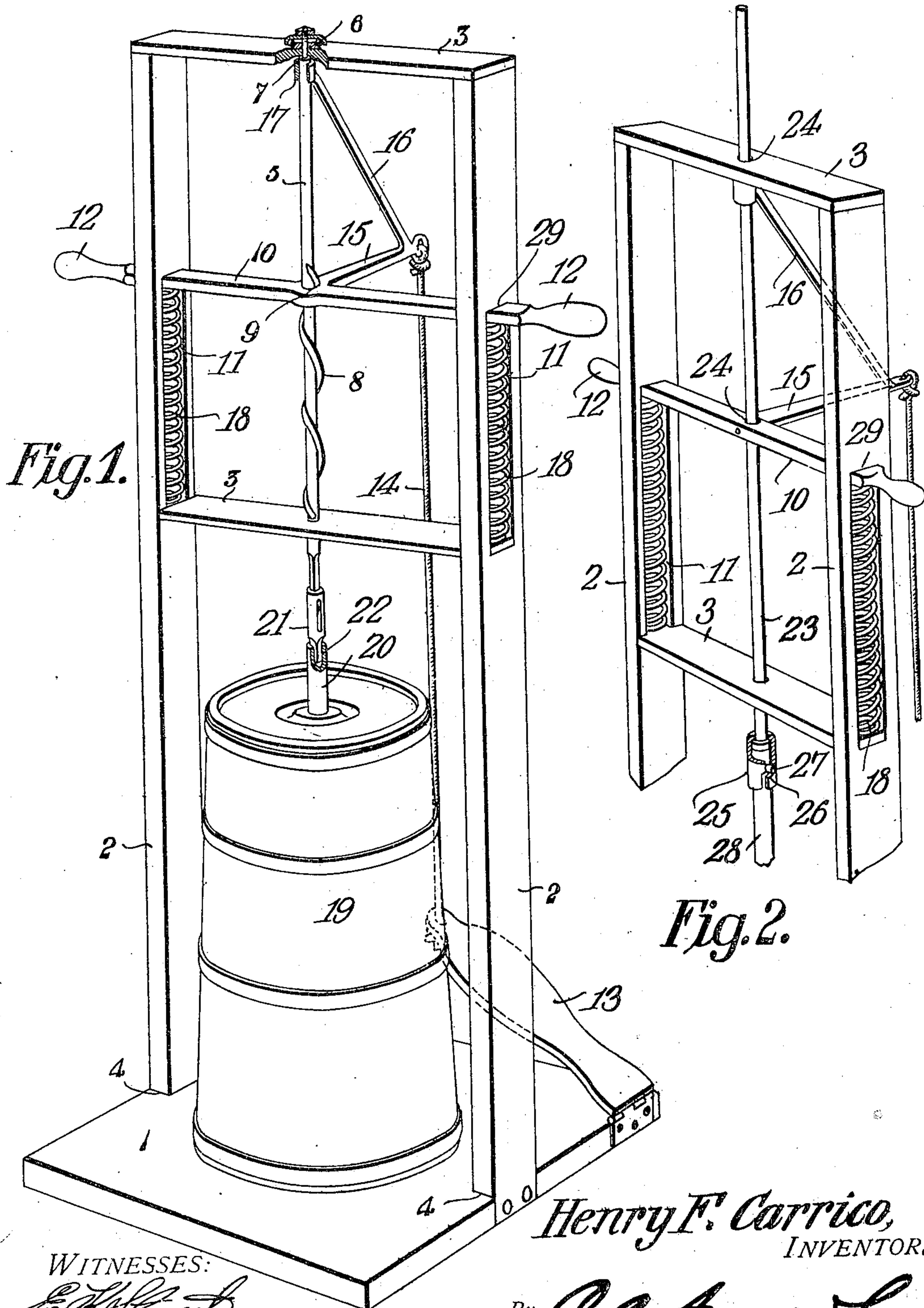


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H. F. CARRICO.  
POWER MECHANISM FOR CHURNS.

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# UNITED STATES PATENT OFFICE.

HENRY F. CARRICO, OF PADUCAH, KENTUCKY.

## POWER MECHANISM FOR CHURNS.

No. 837,606.

Specification of Letters Patent.

Patented Dec. 4, 1906.

Application filed September 26, 1906. Serial No. 336,286.

*To all whom it may concern:*

Be it known that I, HENRY F. CARRICO, a citizen of the United States, residing at Paducah, in the county of McCracken and State of Kentucky, have invented a new and useful Power Mechanism for Churns, of which the following is a specification.

The invention relates generally to churns, and more specifically to mechanism for actuating the paddle of the churn, which mechanism is of the manually-actuated type and adapted to be operated by hand or foot power, or both.

The invention has for one of its objects to improve and simplify the construction and operation of apparatus of this character, so as to be inexpensive and easy to manufacture, reliable and efficient in use, and requiring comparatively little power or effort on the part of the operator.

A further object of the invention is to provide an operating mechanism having features that readily adapt it to churns having paddles of either the oscillating or reciprocating type.

Another object is the provision of a driving mechanism for the paddle or dasher in which power is applied only in one direction of the operator, automatic means being included in the said mechanism for returning the dasher to its initial position, thereby relieving the operator of a great amount of work.

With these objects in view and others, as will appear as the nature of the invention is better understood, the invention comprises the various novel features of construction and arrangements of parts, which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawings, which illustrate certain of the embodiments of the invention, Figure 1 is a perspective view of a churn provided with a power mechanism adapted to an oscillating or back-and-forth rotary dasher. Fig. 2 is a fragmentary perspective view showing a modified form of mechanism adapted for use in connection with a reciprocating dasher.

Corresponding parts in both figures are indicated throughout by similar characters of reference.

Referring to the drawings, 1 designates the base of the supporting-frame, on which are secured two spaced parallel uprights or

chambers 2, braced and spaced apart by the cross-bars 3. The lower ends of the standards 2 are set in notches 4 on two opposite sides of the base 1, the supporting-frame being firm and substantial.

The operating mechanism comprises a vertical spindle 5, extending through central openings in the cross-bars 3 and suspended from its top end by the bearing 6. The spindle is mounted to have rotary motion, but prevented from moving longitudinally. Any suitable means may be provided for preventing longitudinal movement of the spindle—such, for instance, as the shoulder 7, that engages the under face of the top cross-bar, and the bearing 6, arranged on the top side of the cross-bar. The shoulder 7 prevents the spindle from moving upwardly, while the bearing 6, which is preferably of the ball-bearing type, prevents the spindle from moving downwardly. The spindle 5 is provided with a thread 8, which is of comparatively coarse pitch, so that a nut traveling axially of the spindle on the thread can rotate the spindle with comparatively little friction. This nut or threaded portion that is adapted to engage the thread 8 is indicated at 9 on a horizontally-extending depressible bar 10. The ends of the bar 10 extend into vertically-disposed grooves 11, provided in the standards 2 at a point adjacent the lower cross-bar. These grooves serve as guides for the depressible bar 10 and also prevent the same from turning by the reacting thrust between the worm or thread 8 and nut 9. The bar 10 may be actuated by a treadle movement or by hand, or both. For this purpose the bar 10 extends at its ends through the vertical guide-grooves 11 and terminates in handholds 12, that are located on opposite sides of the frame, so as to be conveniently gripped one in each hand. When foot power is also to be used, the bar 10 is suitably connected with the treadle 13, hingedly connected to the base 1.

The operating connection between the treadle and bar 10 comprises a cord 14, extending upwardly from the treadle, and a rearwardly-extending arm 15 on the bar 10 and connected with the said cord. In order to prevent the bar from having a tendency to turn and bind in the grooves 11 by the operation of the foot mechanism, a brace 16 extends from the outer end of the arm 15 and sleeves at 17 on the spindle, thereby assisting



to guide the movement of the depressible cross member 10. Thus it will be seen that the spindle 5 can be conveniently rotated back and forth or oscillated either by hand or foot power, or both, according to the desire of the user. To render the work more easy for the operator, helical compression-springs 18 are assembled in the guide-slots 11 on one side or the other of the bar 10, so that the operator is required to actuate the said bar in only one direction, since by so doing the springs are compressed and cause the bar to be returned when the power is removed from the handholds or treadle. In the preferred arrangement the springs are located so as to abut at their upper ends the under side of the member 10, and the said member is adapted to be depressed by the operator. If desired, however, the arrangement may be reversed, so that the power-stroke is required to be done by the operator pulling upwardly on the member.

The churn-tub or cream-holder 19, which may be of any approved form, is adapted to rest on the base 1 and is provided with a dasher adapted to have a back-and-forth rotary movement. The shaft 20 of the dasher extends upwardly through the top of the holder 19 and is preferably detachably connected at the lower end of the spindle 5, so as to facilitate the placing and removal of the tub on the churn-frame. For this purpose a coupling-sleeve 21 is feathered on the lower end of the spindle 5 and at its bottom portion has a squared end arranged to fit in the squared end 22 of the dasher-shaft. Thus by lifting the coupling-sleeve the shaft is disconnected from the spindle, and by lowering the sleeve when the churn is properly placed the shaft will be connected with the spindle, so as to receive rotation therefrom.

In the modified form of the invention shown in Fig. 2 the power mechanism is the same as that hereinbefore described, except that the screw and nut are dispensed with and a reciprocating spindle 23 substituted for the spindle 5 of the previous construction. The reciprocating member 23 moves up and down in the bearings 24 of the cross-bars 3 and is rigidly connected with the actuating member 10. The lower end of the member 23 is provided with a coupling-sleeve 25, swiveled on the said member and provided with a sloping slot 26, in which it is adapted to interlock the pin 27 on the dasher-shaft 28. By this means the dasher and reciprocating member are suitably connected, so as to move up and down together or to be detached in a convenient manner. The construction and operation of the hand and power mechanism used in connection with this modified form are the same as that described in connection with Fig. 1, so that further explanation is deemed unnecessary. The upper end walls 29 of the guide-slots 11

limit the upward movement of the actuating bar 10. Furthermore, they serve as abutments engaging the said bar, so that the churn device as a whole can be picked up by the handholds 12 and carried from place to place as occasion requires.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily understood by those skilled in the art to which the invention appertains, and while I have described the principle of operation, together with the apparatus which I now consider to be the best embodiment thereof, I desire to have it understood that the apparatus shown is merely illustrative and that various changes may be made when desired as are within the scope of the invention.

What is claimed is—

1. The combination of a pair of spaced uprights having vertically-disposed slots, cross-pieces connected with the uprights, bearings in the cross-pieces, a spindle mounted in the bearings, a cross member disposed between the cross-pieces and extending at its ends through the slots of the uprights to be guided by the latter, means for actuating the spindle by the cross member, handholds on the ends of the cross member and disposed at the outside of the uprights, and springs housed in the slots and bearing against the cross member.

2. The combination of a pair of spaced uprights having vertically-disposed slots, a spindle mounted between the uprights, a cross member engaging at its ends in the said slots and guided thereby, springs housed in the slots and bearing against the cross member, handholds formed on the extremities of the cross member and disposed at the outside of the uprights, an arm extending from the cross member, a treadle, and a connection between the arm and the treadle.

3. The combination with a churn and a rotatable dasher therefor, of a member connected with the dasher for actuating the same, means arranged to prevent longitudinal movement of the dasher, and separate mechanisms connected with the member and adapted to operate singly or in conjunction to actuate the said member.

4. The combination with a churn and a rotatable dasher therefor, of a member connected with the dasher for actuating the same, means arranged to prevent longitudinal movement of the dasher, a mechanism arranged to operate the member in one direction, and an elastic means arranged to move the member in the opposite direction.

5. The combination with a churn and a rotatable dasher therefor, of a vertically-movable member, a rotatable element receiving motion from the member and detachably connected with the dasher for actuating the



same, and hand and foot operated devices arranged and adapted to operate singly or together to actuate the said member.

6. The combination with a churn and a dasher therefor, of a bodily-movable member connected with the dasher for operating the same, separate mechanisms arranged and adapted to operate singly or in conjunction to actuate the member in one direction, one of said mechanisms including a cord, and means energized by the said mechanisms for actuating the member in the opposite direction.

7. The combination of a frame having parallel guide-slots, a member extending through the slots, handholds rigid on the ends of the member, and a device actuated by the said member.

8. The combination of a frame having parallel guide-slots, a member extending at its ends through the slots, means connected with the member for moving the same, elastic devices in the slots and engaging the member, and means operated by the member.

9. The combination of a frame, a member guided thereby and provided with a central arm, elastic devices on the frame and operating on the said member, means connected with the arm for moving the member bodily in opposition to the said devices, and means operated by the member.

10. The combination of a frame, a vertically-disposed spindle movably mounted thereon, a vertically-movable member guided on the frame and connected with the spindle for actuating it, means for moving the member in one direction, and springs for moving the member in the opposite direction.

11. The combination of a frame, a vertically-disposed spindle movably mounted thereon, a vertically-movable member guided on the frame and connected with the spindle for actuating it, a ball-bearing mounted on the frame for the shaft, handholds on the member, and means coupled with the spindle for actuation thereby.

12. The combination of a frame, a vertically-disposed spindle movably mounted thereon, a vertically-movable member guided on the frame and connected with the

spindle for actuating it, a foot mechanism on the frame for moving the member in one direction, said mechanism comprising a treadle on the frame and a cord connecting the treadle with the said member, and separate means on the frame for moving the member in the opposite direction.

13. The combination of a frame, an element movably mounted thereon, a member extending transversely of the element and connected therewith for actuating it, handholds on the member whereby the frame can be lifted, abutments on the frame which the member engages when the frame is lifted, and means for actuating the member.

14. The combination of a frame, a vertically-disposed element movably mounted thereon, a vertically-movable member extending transversely of the element and connected therewith for actuating the same, means on the frame for guiding the movement of the member, a treadle mechanism connected with the member, an arm on the member to which the treadle mechanism is connected, and a brace between the arm and the said element for rigidly connecting them.

15. A frame comprising a base, uprights mounted thereon, and cross members carried by the uprights, in combination with a churn and its dasher seated on the base in a position between the uprights and below the cross members, and a mechanism for actuating the churn-dasher, said mechanism comprising a vertically-disposed element, bearings on the cross-bars in which the element is movably mounted, a transverse member mounted on the frame for vertical movement and connected with the element for actuating it, handholds on the member, a foot-actuated mechanism connected with the member for actuating it in one direction, springs on the frame which abut the member for actuating the same in the opposite direction, and a coupling device between the said elements and the churn-dasher.

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

HENRY F. CARRICO.

Witnesses:

T. L. CRICE,  
BERTHA LEMING.