

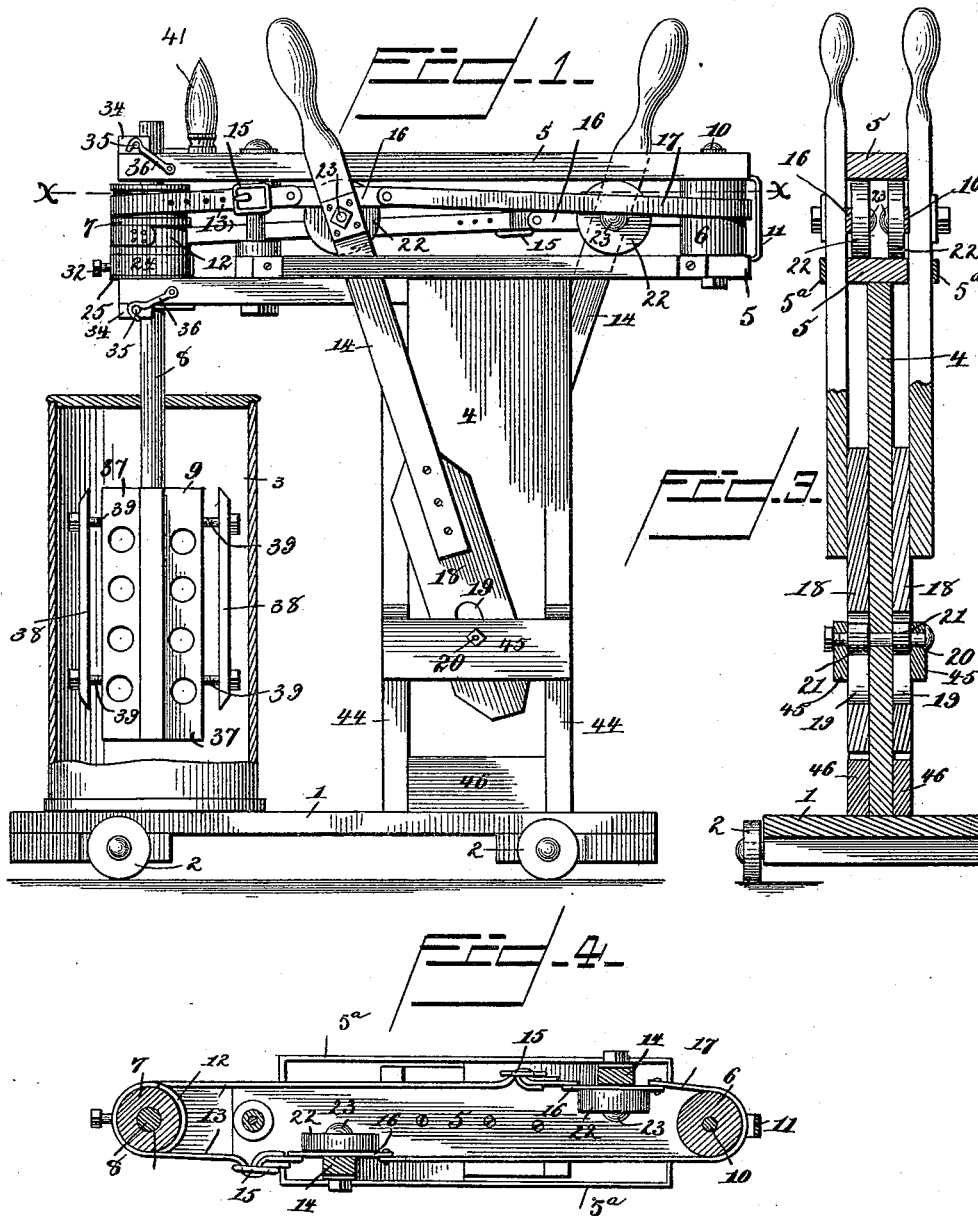
(No Model.)

2 Sheets—Sheet 1.

E. WAYLAND.  
CHURN.

No. 454,923.

Patented June 30, 1891.



Witnesses

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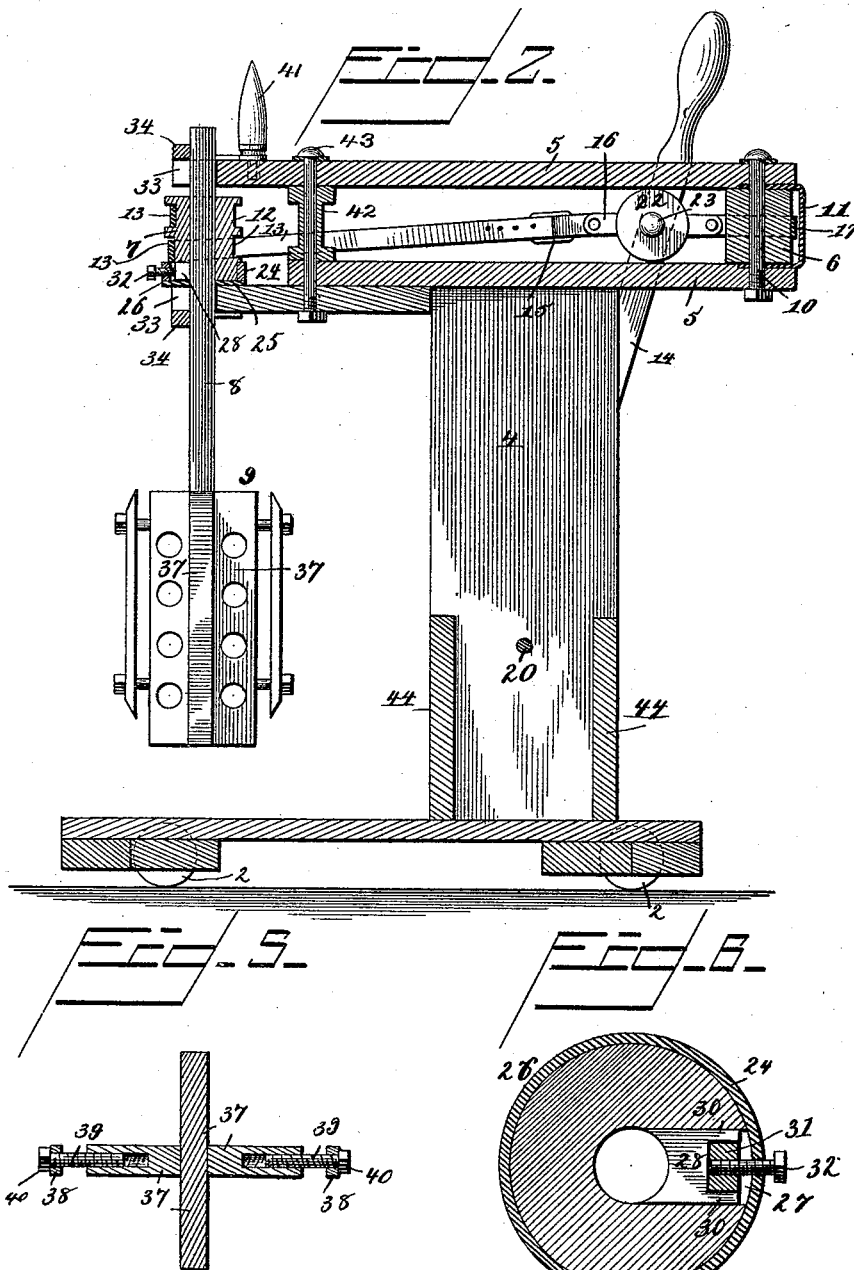
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Witnesses

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# UNITED STATES PATENT OFFICE.

ELLIS WAYLAND, OF GEST, KENTUCKY, ASSIGNOR OF ONE-HALF TO WILLIAM H. JOHNSON, OF SAME PLACE.

## CHURN.

SPECIFICATION forming part of Letters Patent No. 454,923, dated June 30, 1891.

Application filed February 13, 1891. Serial No. 381,310. (No model.)

### *To all whom it may concern:*

Be it known that I, ELLIS WAYLAND, a citizen of the United States, residing at Gest, in the county of Henry and State of Kentucky, have invented a new and useful Improvement in Churns, of which the following is a specification.

The invention relates to improvement in churns.

10 The object of the present invention is to simplify and improve the construction of churns and enable the same to be operated by the expenditure of a small amount of labor.

15 A further object of the invention is to enable the dasher to be adjusted vertically according to the amount of lacteal fluid to be churned and enable the dasher to be adjusted in size to suit different-sized churn-bodies.

20 The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

25 In the drawings, Figure 1 is a side elevation of the churn constructed in accordance with this invention, the body being shown in section. Fig. 2 is a vertical longitudinal sectional view. Fig. 3 is a vertical transverse sectional view. Fig. 4 is a horizontal sectional view on line *xx* of Fig. 1. Fig. 5 is a detail sectional view of the dasher. Fig. 6 is a detail sectional view of the removable roller.

35 Referring to the accompanying drawings, 1 designates a platform mounted on wheels 2, and adapted to be moved from place to place without necessitating carrying, and designed to support a churn-body 3, which is arranged at one end of the platform and is removable therefrom. Rising from the opposite end of the platform is a vertical standard 4, having mounted on its upper end parallel bars 5, which are arranged horizontally and project from opposite sides of the standard 4 and has 45 journaled between them at one end a roller 6, and at the opposite end a removable roller 7, adapted to receive a dasher-shaft 8, and enable the same to be adjusted vertically to ar-

range a dasher 9 near the top or bottom of the churn-body 3, according to the amount of lacteal fluid to be churned. The roller 6 is journaled on a suitable bolt 10 and the frame-bars 5 are supported at that end by a metal yoke 11, which is approximately U-shaped and has its parallel arms secured to the inner opposite faces of the frame-bar 5. The roller 7 is provided with grooves 12 to receive the strap 13, which extends from a pair of operating-levers 14, and passes around the removable pulley 7 and the grooves and flanges formed by the groove prevent the strap slipping down and becoming worn. The strap 13 is provided at its ends with perforations and is adapted to be secured to the operating-levers by buckles 15, which are attached to metal plates 16 projecting from opposite sides of the levers and affording means for securing the ends of a strap 17 extending from the opposite sides of the levers and passing around the pulley 6, and the said metal plate 16 prevents the straps becoming worn at their points of attachment to the operating-levers.

The operating-levers are provided at their lower ends with enlarged portions or extensions 18, which are slotted longitudinally to provide openings 19, through which passes a bolt 20, which secures the operating-lever to the vertical standard, and the said bolt is provided with anti-friction rollers 21, which facilitate the operation of the churn. The upper ends of the operating-levers are formed in the handles, and secured to the inner faces of the levers a short distance from their upper ends are anti-friction wheels 22, which are arranged to run upon the upper face of the lower frame-bar 5 and enable the churn to be operated with great ease. The anti-friction wheels 22 are mounted on bolts 23, and the operating-levers are guided in their movements and prevented moving laterally and straining the straps 13 and 17 by metal guide-bars 24, arranged on the edges of the lower frame-bar 5, and provided at their ends with angular bends which are perforated and are secured to the frame-bar 5 by screws. During the operation of the churn the levers have a slight longitudinal movement, which is permitted by the

openings in the extensions 19, and the anti-friction rollers and wheels greatly facilitate the operation of the churn.

The lower end of the pulley 7 is provided 5 with a metal cap 26, consisting of a band 24 and a disk 25, having a central opening through which passes the dasher-shaft 8, and arranged within the cap 26, and working in a recess 27 of the pulley, is a clamping-lock 28, 10 having one end concaved and conforming to the shaft and adapted to engage the same, and the other end provided with parallel flanges 30, between which is arranged a nut 31, which receives a set-screw 32, having its 15 head arranged outside the cap and adapted to be turned to force the clamping-blocks 29 into engagement with the shaft 8 and maintain the dasher at any desired elevation.

The dasher-shaft is arranged in recesses 33 20 in the end of the frame-bar 5, and it is retained in the recesses by blocks 34, pivoted to the upper and lower faces of the frame-bar and provided with curved recesses to receive the shaft and complete the bearings for the 25 same, and provided at their free ends with projections 35, arranged to be engaged by hooks 36, pivoted to the frame-bar and adapted to secure the block 34 to close the recesses 33 and form bearings for the shaft.

30 The dasher 9 is arranged at the lower end of the dasher-shaft 8, and is composed of vertical blades 37, arranged at an angle and provided with openings. The blades 37 are preferably four in number, and two opposite ones 35 are provided with adjustable cutters or bars 38, arranged parallel with the blades and connected with them by pins 39, secured in recesses of the blades and engaged by set-screws 40, which retain the dasher bars or cutters 38 40 at their proper adjustment, and the said dasher bars or cutters 38 are designed to be adjusted to the different-sized churn-body employed. The larger the body the greater the distance the dasher bars or cutters will be 45 arranged from the blades.

Preparatory to churning, the dasher and dasher-shaft, together with the pulley 7, are removed from the frame-bars by releasing the blocks 34 and unfastening one end of the 50 strap 13. The dasher is then adjusted in the churn-body, it being arranged nearer the top or the bottom, according to the amount of milk to be churned, and after such adjustment the churn-body is placed on the platform and the shaft is secured in its bearings, 55 and the churn is ready for operation. After the operation has been completed and the dasher and dasher-shaft removed from the frame-bars, the pulley 7 is removed from the dasher-shaft and is placed upon a pin 41 to prevent the pulley becoming injured by falling to the floor or the like. The lower frame-bar is constructed of two sections, which lap 60 and are suitably secured together, and the frame-bars are supported near the end provided with bearings by a post 42, through

which passes a bolt 43, which secures the top frame-bar and the sections of the bottom frame-bar together. The lower ends or the extensions of the operating-levers are arranged in frames composed of end pieces 44, 70 and horizontal pieces 45 and 46, and are braced by the said frame.

It will be seen that the churn is simple and comparatively inexpensive in construction, 75 and may be operated by the expenditure of but a small amount of force, and that the dasher may be adjusted vertically, according to the amount of milk to be churned, and that the size of the dasher may be varied to 80 suit the churn-body employed.

What I claim is—

1. In a churn, the combination of the platform, the standard rising from the platform, 85 the parallel frame-bars mounted on the upper end of the standard and forming tracks, the operating-levers provided at their lower ends with extensions having longitudinal openings, the anti-friction rollers arranged in the 90 openings, the anti-friction wheels arranged on the inner faces of the operating-levers and engaging the tracks, the dasher-shaft, and means for operating the dasher-shaft, substantially as described.

2. In a churn, the combination of the platform, the standard rising from the platform, 95 the frame-bars arranged at the upper end of the standard and forming parallel tracks, the guide-bars secured to the lower frame-bar and arranged at opposite edges thereof, the 100 operating-levers having their lower ends provided with extensions and pivotally connected to the standard, said levers being arranged within the guide-bars, the anti-friction wheels arranged on the inner face of the 105 levers and engaging the tracks, the dasher-shaft, and means for connecting the operating-levers to the dasher-shaft, substantially as described.

3. In a churn, the combination of the platform, the standard rising from the platform, 110 the frame-bars secured to the upper end of the standard, the pulleys arranged at the ends of the frame-bars, the dasher-shaft connected to one of the pulleys, the operating-levers having their lower ends pivotally 115 connected to the standard and provided at their upper ends with metal plates projecting on opposite sides of the levers, and the straps passing around the pulleys and secured to 120 the plates, substantially as described.

4. In a churn, the combination of the pulley having a central opening and a recess in its lower end, the metal cap covering the 125 lower end of the pulley, the clamping-block arranged within the cap and the recess of the pulley, the nut, and a set-screw received by the nut and engaging the clamping-block, substantially as described.

5. In a churn, the combination of the pulley 7, having the central opening and provided 130 with a recess in its lower end, the metal

cap covering the lower end of the pulley  
and consisting of the band, and the disk pro-  
vided with a central opening, the clamping-  
block having one end concaved and adapted  
5 to conform to the shaft and provided at its  
opposite end with flanges, the nut, and the  
set-screw engaging the clamping-block, sub-  
stantially as described.

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

ELLIS WAYLAND.

Witnesses:

WILLIAM H. JOHNSON,  
WILLIAM A. CARTER.