

No. 645,324.

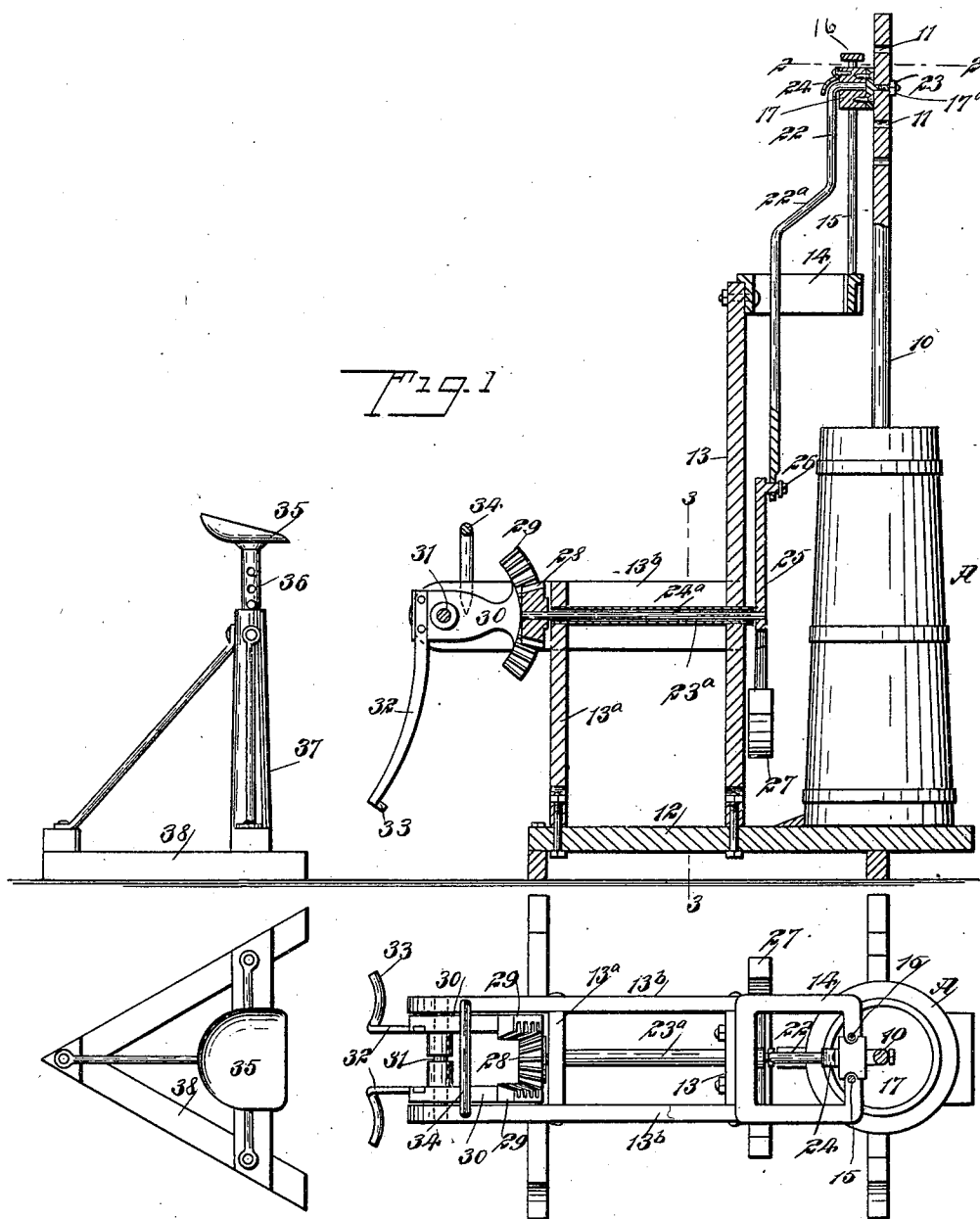
Patented Mar. 13, 1900.

Z. McCUNE.
FOOT POWER.

'Application filed Aug. 29, 1899.'

(No Model.)

2 Sheets—Sheet 1.



WITNESSES :

J. A. Propoy
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Fig. 2

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Fig. 3

Fig. 5

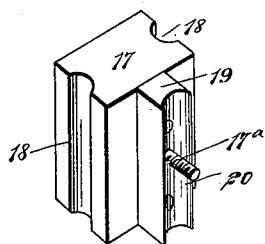
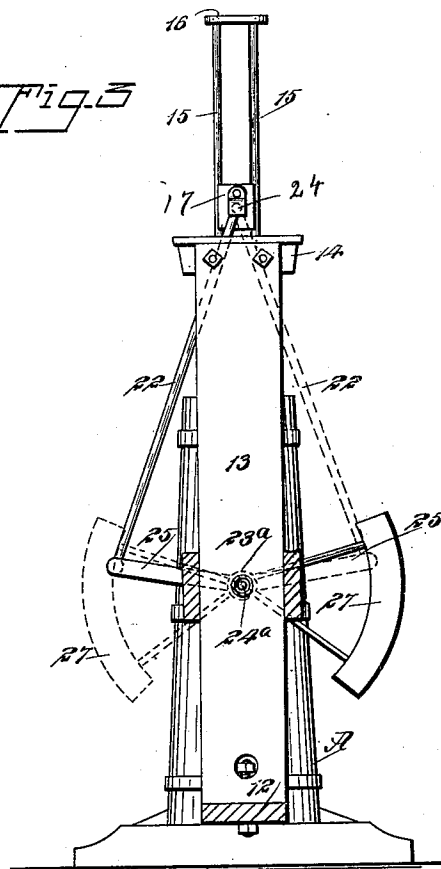
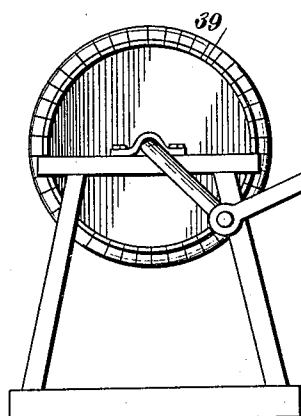
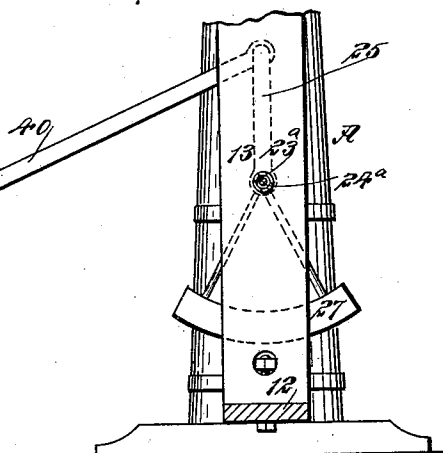


Fig. 4



WITNESSES:

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UNITED STATES PATENT OFFICE.

ZEB McCUNE, OF WEST ALEXANDER, PENNSYLVANIA.

FOOT-POWER.

SPECIFICATION forming part of Letters Patent No. 645,324, dated March 13, 1900.

Application filed August 29, 1899. Serial No. 728,902. (No model.)

To all whom it may concern:

Be it known that I, ZEB McCUNE, of West Alexander, in the county of Washington and State of Pennsylvania, have invented a new and Improved Foot-Power, of which the following is a full, clear, and exact description.

One object of my invention is to provide a foot-power especially adapted for operating a dash-churn, but which is available for other purposes, and to so construct the power device that a steady and continuous movement will be imparted to the dasher, and but little exertion is required to operate the device.

Another object of the invention is to so construct the device that the operator may remain seated with the hands free during the operation of churning.

A further object of the invention is to provide a foot-power device especially adapted for application to either a dash or a rotary churn, which will be very simple, light, readily applied, and which will not interfere to any appreciable extent with the portability of the churn.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a vertical section through the device, showing the churn in side elevation and a portion of the dasher thereof in section. Fig. 2 is a plan view of the device, a portion thereof being in horizontal section, which section is taken practically on the line 2 2 of Fig. 1. Fig. 3 is a vertical section taken substantially on the line 3 3 of Fig. 1. Fig. 4 is a section similar to that shown in Fig. 3, illustrating, however, the adaptation of the device to a rotary churn; and Fig. 5 is a detail perspective view of the block adapted for attachment to the churn-dasher and to the pitman which serves to connect the dasher with the power device.

The churn A (shown in Figs. 1, 2, and 3) is of the ordinary upright type, having a vertical dasher 10, which is provided with apertures 11 at its upper end. The churn is shown mounted on a platform 12, to which an up-

right 13 is secured, located just back of the churn. This upright 13 carries a horizontal guide-yoke 14, and two parallel guide-rods 15 extend upwardly from the forward end of the guide-yoke 14, the guide-rods 15 being connected at the top by a suitable cross-bar 16, a cap, or the equivalent of the same.

A block 17 is adapted to slide between the guide-rods 15. As shown in Fig. 5, this block is provided with longitudinal grooves 18 in its sides, which receive the guide-rods, and the said block is provided with a vertical shoe 19, located at its front central portion. This shoe has a groove or recess 20 made therein to receive the rear face of the upper or apertured portion of the dasher 10, and a screw 17^a, adapted to enter any one of the apertures 11 in the dasher 10 and to receive a nut 23.

In the further construction of the frame of the device an upright 13^a is located on the base 12 at the rear of the main upright 13, and side bars 13^b extend from one upright to the other and rearwardly beyond the rear upright 13^a, as shown in Figs. 1 and 2.

A pitman 22 is loosely connected with the block 17, and the upper end of the pitman is provided with a horizontal member, which extends into the block 17 and is mounted to turn therein. The upper rear portion of the pitman 22 is prevented from bending or working upward by a guard 24, attached to the rear of the block 17 and extending over the rear upper portion of the pitman, as shown in Figs. 1 and 2. The pitman is provided with an upper straight section and a lower and longer straight section, and these two straight sections are connected by an inclined intermediate section 22^a, so that the lower portion of the pitman may pass downward through the guide-yoke 14 at the rear of the churn A.

A sleeve 23^a is secured at its ends in the uprights 13 and 13^a, and a shaft 24^a is loosely passed through the sleeve 23^a. This shaft 24^a constitutes a portion of the power mechanism and is provided at its forward end with a crank 25, connected with the lower end of the pitman 22 by a wrist-pin 26 or its equivalent. The crank 25 is counterbalanced and normally held in vertical position through the medium of a pendulum-weight 27, attached to that portion of the crank that connects with the shaft 24^a, while at the opposite or rear end of the

shaft 24^a a beveled pinion 28 is firmly fastened. This pinion is rotated through the medium of two segmental or mutilated gears 29, engaging with opposite sides of the pinion, as shown in Fig. 2, and each gear is provided with a rearwardly-extending shank-hub 30, which hubs are loosely mounted on a shaft 31, journaled in the extensions of the side pieces 13^b of the frame, and the shank-hubs 30 extend rearwardly beyond the said shaft.

A lever 32 is secured to the rear end of the shank-hub of each gear 29, and these levers are usually curved downwardly and rearwardly and terminate at their lower ends in foot-rests 33, which rests extend outwardly from the levers or in opposite directions, as is shown in Fig. 2. The upward movement of the segmental gears 29 is limited by an arched stop 34, which extends from one side piece 13^b of the frame to the other just forward of the shaft 31.

In operating the device means are provided for seating the operator, and these means usually consist of a seat 35, having an attached standard 36, adjustably mounted in a socket 37, formed on a base 38. Thus it will be understood that the operator when seated, the seat being properly adjusted, may place the feet on the foot-rests 33, and by alternately reciprocating the levers will impart a churning motion to the dasher 10 of the churn.

In Fig. 4 I have illustrated an adaptation of the device to a rotary churn 39, in which a straight pitman 40 is substituted for the pitman 22, one end of the pitman being pivotally attached to the crank 25 of the device and the other end pivotally attached to the crank-handle of the churn.

The stroke of the dasher 10 is greater than the movement of the crank 25, and as the lower end of the pitman travels in a quarter of a circle each way from the highest point the dasher is caused to increase its speed as it descends, thus creating a great disturbance in the milk and causing the butter to come quicker than it would if the dasher traveled at the same degree of speed through the whole length of its stroke. The levers 32 being attached to the segments at the rear of the shafts upon which they are mounted

causes the foot ends of the levers to have a downward and forward movement, which is an easy movement and may be rendered very powerful. It will be seen that the crank which operates the pitman makes half a revolution at each full stroke of a foot-lever and that during such stroke the churn-dasher makes two strokes, one up and one down. The weight 27 on the crank 25, when the latter is in motion, serves as a balance to drive the dasher up and down and renders the power device steady and light-running.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a mechanical motor, the combination with a frame, of a rock-shaft mounted therein, means for transmitting from the shaft the movement thereof, a bevel-pinion fastened to the rock-shaft, two beveled segmental racks mounted in the frame in planes at right angles to the plane of the pinion and meshing therewith at opposite sides thereof, and a treadle attached to each rack, the treadles being projected downward from the racks into proximity to the plane of the base of the frame, permitting the treadles to be rocked in opposite directions to drive the rock-shaft.

2. In a mechanical motor, the combination with a frame, of a rock-shaft mounted thereon, a crank attached to one end of the rock-shaft, a pitman attached to the crank, a cross-head connected with the pitman, means on the frame for guiding the cross-head, the cross-head serving to transmit movement from the motor, a beveled pinion fastened to the rock-shaft, two beveled segmental racks mounted in the frame in planes at right angles to the plane of the pinion and meshing therewith at opposite sides thereof, and a treadle attached to each rack, the treadles being projected downward from the racks into proximity to the plane at the base of the frame, permitting the treadles to be rocked in opposite directions to drive the rock-shaft.

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Witnesses:

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