

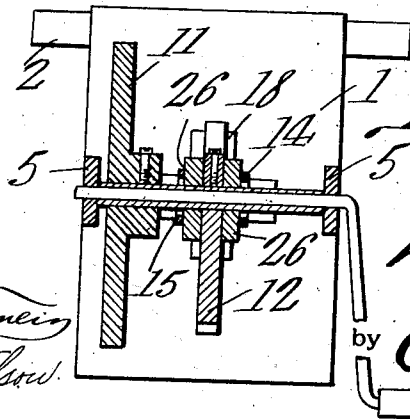
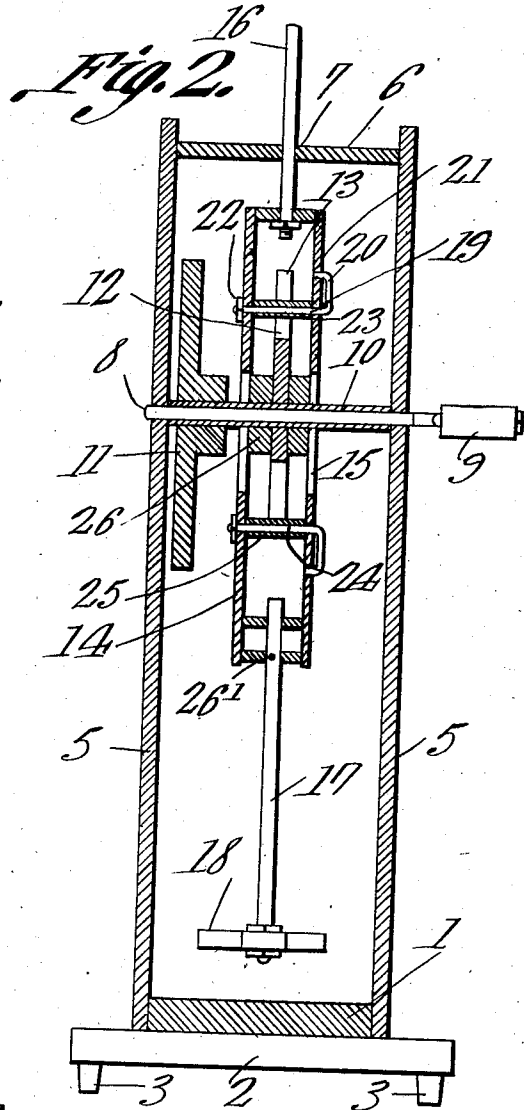
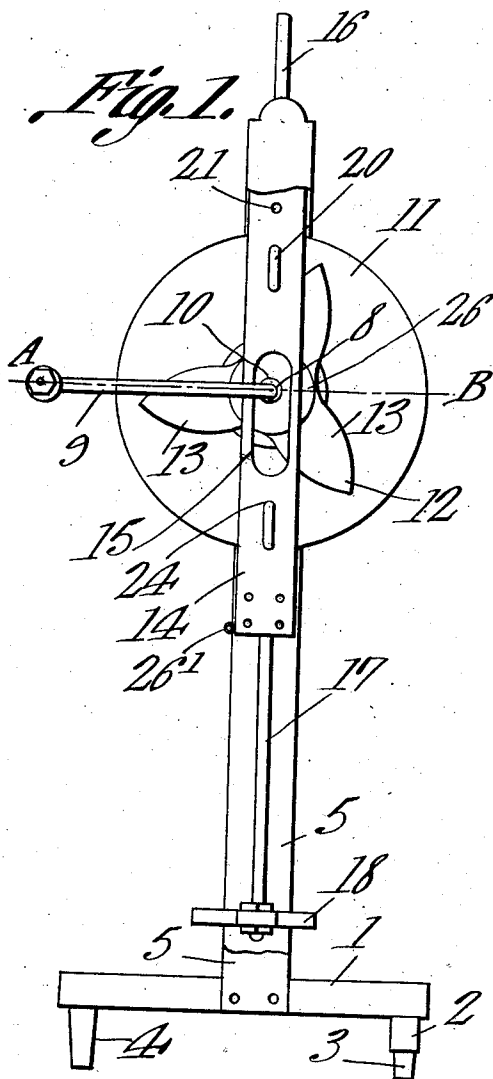
W. D. D. BOWEN.

CHURN.

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1,021,966.

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Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM D. D. BOWEN, OF FULTON, MISSISSIPPI.

CHURN.

1,021,966.

Specification of Letters Patent.

Patented Apr. 2, 1912.

Application filed April 24, 1911. Serial No. 623,002.

To all whom it may concern:

Be it known that I, WILLIAM D. D. BOWEN, a citizen of the United States, residing at Fulton, in the county of Itawamba and State of Mississippi, have invented a new and useful Churn, of which the following is a specification.

This invention relates to churns and more particularly to dasher operating mechanism. One of the objects of the invention is to provide improved mechanism whereby several strokes of the dasher will be produced during each rotation of the power shaft, these movements of the dasher being produced without the necessity of employing gears or other elements tending to complicate the structure to an undesirable extent.

A further object is to provide means whereby the strokes of the dasher can be varied at will.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings:—Figure 1 is a side elevation of a dasher and its operating mechanism; Fig. 2 is a vertical transverse section through the dasher operating mechanism. Fig. 3 is a section on line A—B Fig. 1.

Referring to the figures by characters of reference 1 designates a base mounted on a cross strip 2, there being legs 3 extending downwardly from the ends of this cross strip and another leg 4 extending downwardly from the base so as to hold the base firmly upon a floor or other structure. Standards 5 extend upwardly from the sides of the platform 1 and may be suitably connected at their upper ends as indicated at 6, this connecting strip being formed with a central opening 7 for the purpose herein-after set forth. A shaft 8 is journaled within the standards 5 and has a crank 9 or the like upon one end thereof whereby the same can be readily rotated. A sleeve 10 is preferably secured on the shaft and bears at its ends against the standards 5, and secured to this sleeve is a fly wheel 11. A star wheel

12 is also secured to the sleeve, preferably adjacent the center thereof, this star wheel being made up of three substantially ovate wings 13 having acute tips. The actuating wheel 12 extends into an elongated frame 14 having longitudinal slots 15 in the sides thereof and through which the sleeve 10 and shaft 8 extend, there being a rod 16 projecting upwardly from the upper end of the frame and slidable within the opening 7 while a dasher rod 17 is connected to and extends downwardly from the lower end of the frame, there being a dasher head 18 secured to the lower end of the rod 17.

A bearing pin 19 is extended transversely through the upper portion of the frame and is preferably formed with an angular head 20 adapted to be seated within one of the series of openings 21, the said head being held within the opening and the pin being secured within the frame by means of a nut 22 or the like engaging one end of the pin. Said pin is located in the path of the wings of the star wheel and has a roller 23 mounted for rotation thereon. It is to be understood that the pin may be inserted into any one of the openings 21 for the purpose herein-after set forth. Another pin 24 similar to the pin 19 extends transversely of the frame and below the wheel 12, this pin also carrying an anti-friction roller 25 located in the path of the wings of the star wheel when the frame is elevated. Spacing rings 26 may be arranged on the sleeve 10 between the star wheel and the sides of the frame so as to hold said frame in proper relation relative to the wheel at all times during the operation of the mechanism.

It will be apparent that when the shaft 8 is rotated by means of the crank 9, the star wheel will also rotate and the wings of the star wheel will successively move against the roller 23 and push it upwardly, thus causing the frame 14 to move upwardly, it being guided during such movement by the walls of the slots 15 and by the rods 16. During this upward movement of the frame the lower roller 25 is brought between the lowermost wings of the star wheel and, as the upper roller 23 passes over the tip of the wing actuating it, the lower roller 25 is brought to a position at the base of the wing 13 advancing thereagainst so that the wings on the wheel thus operated to engage the two rollers 23 and 25 successively so as to reciprocate the frame as the wheel ro-

tates. By providing three blades upon the wheel, said frame is given six strokes during each rotation of the shaft, three of these strokes being upward and the other three downward. When the parts are mounted as shown, it will be apparent that the frame will drop downwardly by gravity and the wings will not therefore be necessary for the purpose of producing a downward movement of the frame. When however there is any material in the path of the dasher which would tend to retard the downward movement thereof, the lower wings will move against the roller 25 in proper succession and force the frame and the dasher downwardly against the resisting material. It will be apparent that, by shifting the pin 19 farther away from the shaft and seating it in any of the other openings 21 provided therefor, the stroke of the dasher and frame will be reduced because the frame will be held against further downward movement by the dasher 18 and the roller 23 will thus be held normally farther removed from the center of the wheel than when the parts are arranged as shown in the drawings. The rod 17 of the dasher may be adjusted longitudinally within the lower end portion of the frame

and after such adjustment may be held against movement relative to said frame by means of a set screw 26' or the like.

What is claimed is:—

Churn operating mechanism including a supporting structure, an operating shaft journaled therein, a frame having oppositely disposed longitudinally extending slots through which the shaft extends, said shaft constituting a guide for the frame, a star wheel secured to the shaft between the sides of the frame and revoluble with the shaft, a dasher connected to and adjustable longitudinally relative to the frame, a guide element extending from the frame and slidably engaging the supporting structure, guide pins extending transversely of the frame above and below and in the path of the star wheel, said wheel and pins cooperating to reciprocate the frame upon the shaft, and means for rotating the shaft and star wheel.

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

WILLIAM D. D. BOWEN.

Witnesses:

GEORGE Y. BOWEN,
JAMES M. WALKER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."