S. ROBERTS.

CHURN.

APPLICATION FILED OCT. 30, 1913.

1,119,637. Patented Dec. 1, 1914.

Fig. 1

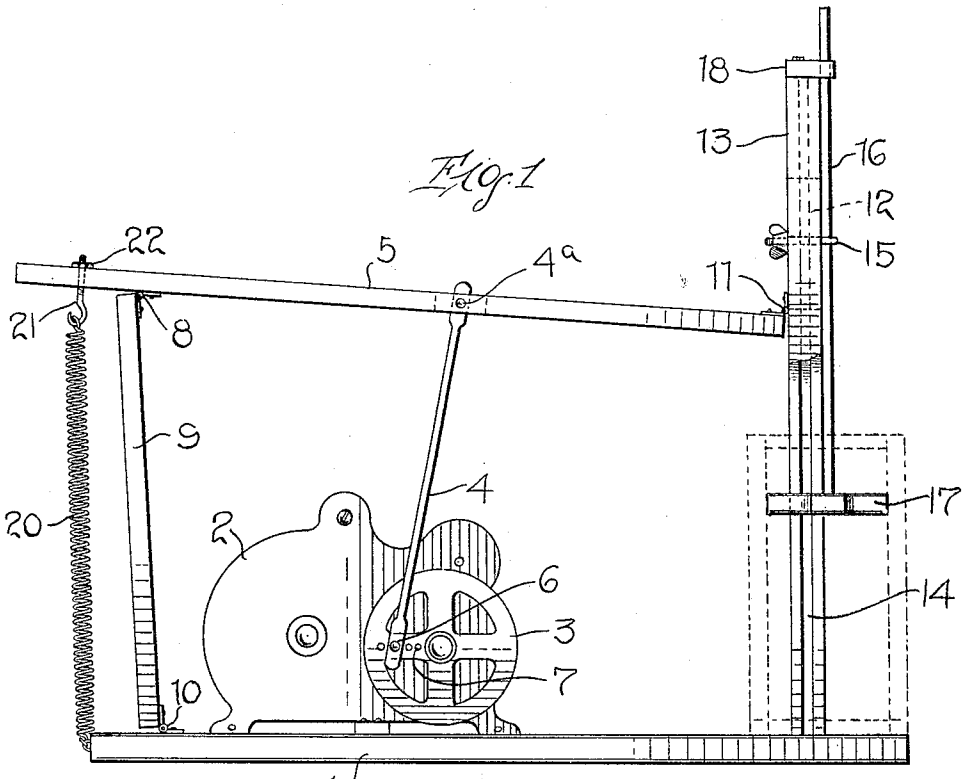
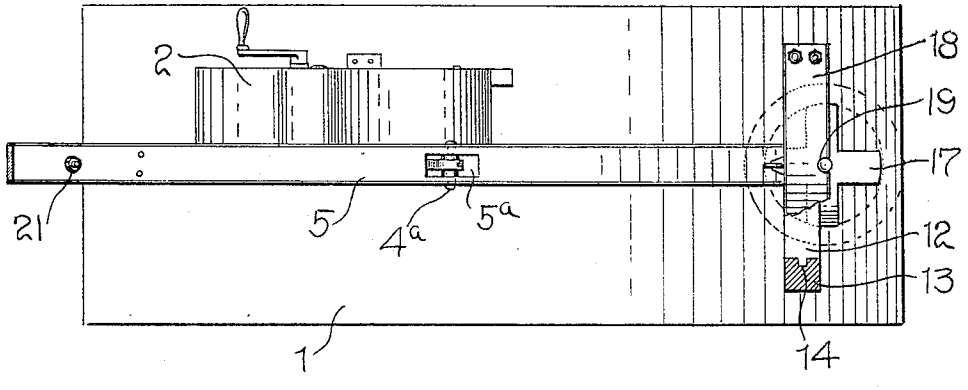


Fig. 2



Inventor

SAMUEL ROBERTS

Witnesses

Robert M. Sutphen

A. D. Hurd.

By Watson E. Coleman

Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

SAMUEL ROBERTS, OF CALHOUN, GEORGIA.

CHURN.

1,119,637. Specification of Letters Patent. Patented Dec. 1, 1914.

Application filed October 30, 1913. Serial No. 798,309.

To all whom it may concern:

Be it known that I, SAMUEL ROBERTS, a citizen of the United States, residing at Calhoun, in the county of Gordon and State of Georgia, have invented certain new and useful Improvements in Churns, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to certain new and useful improvements in churns and operating mechanism therefor, and it has for its primary object a simple, durable and efficient construction of device of this character, the parts of which may be easily and cheaply manufactured and readily assembled and not liable to get out of order.

A further object of the invention is a motor operated churn mechanism, the parts of which are so constructed and arranged that comparatively little power will be required to run the churn, the invention embodying a counterbalancing spring, the tension of which may be easily varied as the size of the churn or other requirements of the case may demand. And the invention also aims to generally improve devices of this class so as to render them more useful and commercially desirable.

With these and other objects in view, as will more fully appear as the description proceeds, the invention consists in certain constructions, arrangements and combinations of the parts that I shall hereinafter fully describe and claim.

For a full understanding of the invention, reference is to be had to the following description and accompanying drawing, in which—

Figure 1 is a side elevation of a churn operating mechanism embodying the improvements of my invention, parts being broken away, and Fig. 2 is a top plan view thereof, partly in section.

Corresponding and like parts are referred to in the following description and designated in the accompanying drawing by like reference characters.

Referring to the drawing, the numeral 1 designates the base of my improved churn operating mechanism, said base being of any desired construction or shape. It may be either the floor of a room, or a separate portable base, whereby the entire mechanism may be removed from place to place, as required. Mounted upon the base 1 is a motor 2 which may be of any desired character, either a spring motor, electric motor, or any other desired type or construction of power producing mechanism, said motor being preferably provided with a balance wheel 3, to which a substantially vertically disposed connecting rod 4 is secured. The rod 4 is connected at its upper end to a substantially horizontal beam 5, preferably by having said end inserted in a slot 5^a formed in said beam and pivotally connected thereto by a transversely extending pivot bolt 4^a. The lower end of the connecting rod 4 is mounted upon a wrist pin 6 which may be inserted in any desired one of a radially disposed series of apertures 7 formed in the balance wheel 3, whereby the stroke may be lengthened or shortened, as desired, in an evident manner.

The rear end of the beam 5 is hingedly connected intermediate of its ends, as at 8, to a rocking post or standard 9 which in turn is hingedly connected at its lower end, as at 10, to the base 1, and the forward end of the beam 5 is hingedly connected, as at 11, to a slide 12 in the form of a block which is mounted to move vertically in and between standards 13 mounted upon the base and rising therefrom. Preferably, there is a groove and slot connection 14 between the slide 12 and the standards 13, as clearly illustrated in the drawing.

The slide 12 carries a hook bolt 15 or similar fastening device by which there is secured thereto, the vertically disposed rod 16 of a dasher 17, the dasher being secured to the lower end of the rod 16 and being cruciform in the present instance, although it is to be understood that the invention is not limited to any particular shape or construction of dasher. The upper ends of the standards 13 are connected together by a cross bar 18 bolted or otherwise secured thereto, and one edge of this cross bar is preferably formed with a notch or recess 19 to accommodate the dasher rod 16 in its up and down movements.

In order to counterbalance the weight of the dasher and its rod, together with the slide 12 and the longer arm of the beam 5, I employ a contractile coiled spring 20, the lower end of which is secured in any desired way to the base 1 or is otherwise fixed in a stationary manner, and the upper end of said spring is secured to a hook tension bolt 21 which is mounted in the rearwardly extending arm of the beam 5, being held in place

by a nut 22. By this means, as is evident, the tension of the spring 20 may be varied, as required. By using the counterbalancing spring 20, it is obvious that the weight of the parts above enumerated will be partly taken off of the motor, and consequently, there will be less power required in the operating mechanism than if the spring were not provided.

From the foregoing description in connection with the accompanying drawing, the operation of my improved churn operating mechanism will be apparent. In the practical operation of the device, it is obvious that the power will be transmitted from the motor 2 to the beam 5 to move the same up and down and to transmit this movement to the slide 12 which is mounted between the standards 13 and which carries the dasher rod 16 and its dasher 17, the dasher being mounted within a churn body of any desired type or design, no special churn body being shown in the present instance, because it forms no part of my present invention, my device or mechanism being applicable to churn bodies of various kinds. This up and down movement of the hinged beam 5 will be facilitated and accompanied by a rocking movement of the standard 9 which is hinged at its lower end, as at 10, to the base 1, and thus it will be apparent that the churning operation may be easily performed, the spring 20 serving to counterbalance the parts. By shifting the wrist pin 6 from one of the openings 7 to another, it is clear that the stroke may be varied at will.

While the accompanying drawing illustrates what I believe to be the preferred embodiment of my invention, it is to be understood that the invention is not limited thereto, but that various changes may be made in the construction, arrangement and proportions of the parts without departing from the scope of the invention, as defined in the appended claim.

What I claim, is:

A churn comprising a base, a motor mounted thereon including a vertically disposed fly wheel, a series of radially disposed openings in the said fly wheel, vertical standards arranged in spaced parallel relation adjacent one end of the said base, a slide mounted for vertical movement in and between said standards, a hook bolt carried on said slide, a dasher rod carried by said hook bolt and a dasher upon the lower end thereof, a horizontal beam having one end hingedly connected to said slide, a rocking post hingedly connected at one end adjacent the opposite end of the base, the other end hingedly connected adjacent the opposite end of the said horizontal beam, a connecting rod having one end pivotally connected to the horizontal beam intermediate its ends and the other end adjustably connected to the fly wheel whereby the stroke of the dasher is regulated and a contractile spring one end connected to the base and the other end connected to the rear end of the horizontal beam.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

SAMUEL ROBERTS.

Witnesses:

D. W. GALL,

FREDERICK S. STITT.

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