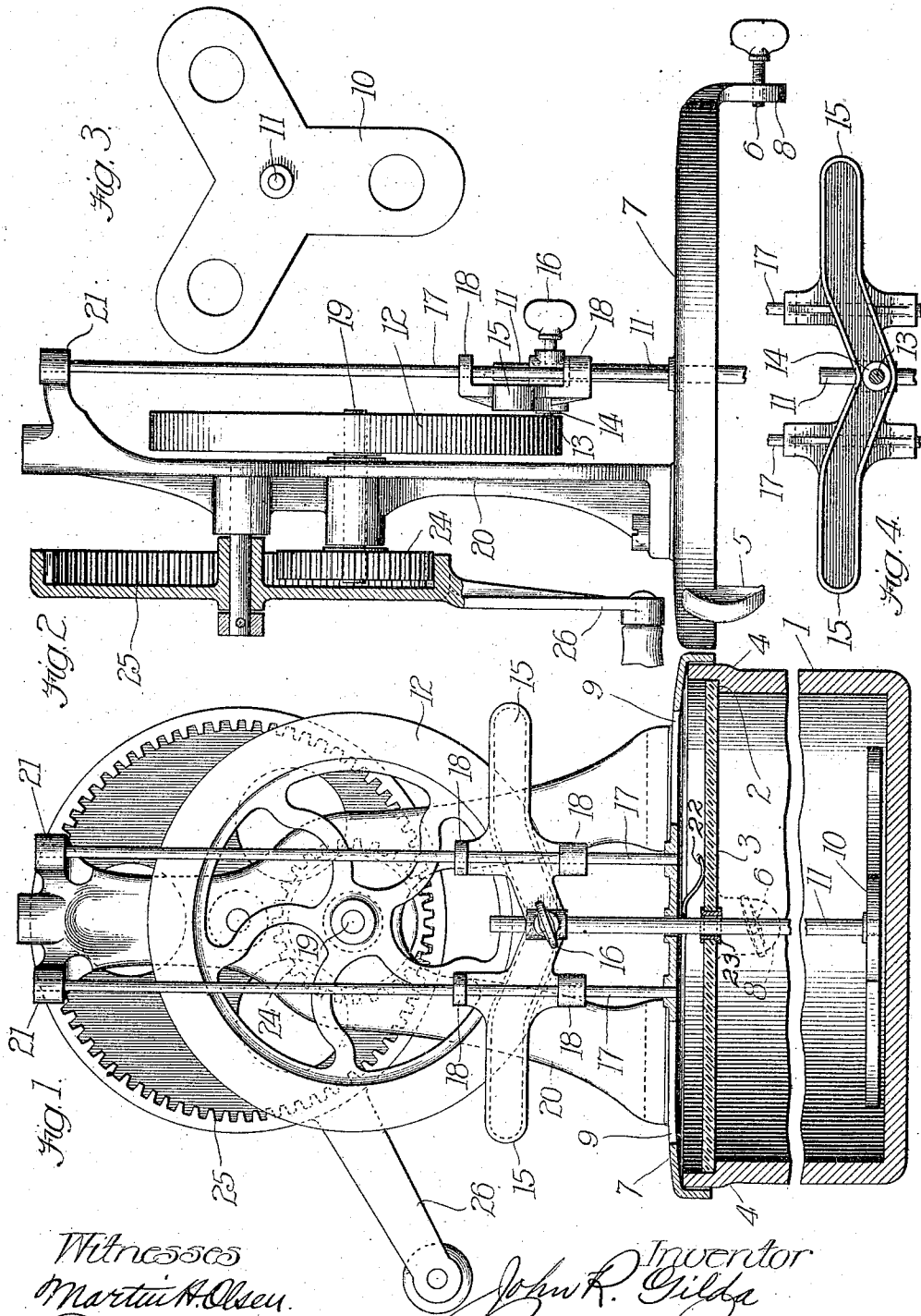


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CHURN.

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UNITED STATES PATENT OFFICE.

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CHURN.

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To all whom it may concern:

Be it known that I, JOHN R. GILDA, a citizen of the United States of America, and a resident of the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Churns, of which the following is a specification.

The main objects of this invention are to provide an improved construction for hand operated churns; to provide improved mechanism for operating a vertically reciprocatory dasher in churns of this type; to provide an improved lid construction for such churns whereby all of the operating mechanism will be carried by the lid, and may be readily connected or disconnected from the receptacle, and whereby the progress of the churning operation may be watched without necessitating the removal of the lid. These objects are accomplished by the device shown in the accompanying drawings, in which:—

Figure 1 is a front elevation of a churn constructed according to this invention, the receptacle being in section and partly broken away. Fig. 2 is a side elevation of the lid and the mechanism carried thereby, the outer gear being in section and the dasher being omitted. Fig. 3 is a plan view of the dasher. Fig. 4 is a rear elevation of the slotted cross head which forms part of the pitman mechanism.

In the construction shown in the drawings, the receptacle 1 is open at the top and is of suitable shape to permit it to be made of earthenware. The vertical walls of the receptacle 1 are off-set outwardly adjacent to the rim thereof, to provide an inner annular ledge 2 for receiving the circular glass plate 3, which forms a closure for the receptacle. The outer surface of the walls is also provided with an annular shoulder 4 for engaging the securing lugs 5 and clamp screw 6 of a flanged metal cover 7, which fits over the rim of the receptacle to protect the glass cover 3 and at the same time serve as a support for the operating mechanism. The outer cover 7 is provided with three depending lugs 5 and 8, there being two hook shaped lugs 5, one being directly behind and hidden by the other, in Fig. 2. These hook shaped lugs and the screw 6 engage the shoulder 4 in such manner as to rigidly secure the cover 7 in place. Sight openings

9 in the cover 7 enable the operator to watch the progress of the churning operation.

A dasher 10 of suitable form is carried by an upright rod 11, which extends through central apertures in the covers 3 and 7. The upper end of the dasher rod 11 is connected with crank operated pitman mechanism, whereby it is reciprocated vertically.

The operating mechanism comprises a rotary member 12 in the form of a wheel having a heavy rim so that it acts as a fly wheel and having on one face adjacent to its rim, a projecting pin 13, carrying a roller 14. A slotted bar or cross head 15 is fastened to the upper end of the rod 11 by means of a set screw 16, and is slidably mounted upon a pair of vertically disposed stationary guide rods 17, the cross head being provided with four bearing lugs 18, which slidably fit the rods 17. The slot in the cross head 15 is engaged with the roller 14 in such manner that the rotation of the member 12 causes the dasher 10 to reciprocate vertically. Instead of having the usual straight slot in the cross head 15, which, as is well known, would produce a harmonic motion, the slot is a cam groove of special form, being off-set downwardly at its middle part, so that when the pin traverses the arc which forms the lower part of its path, the dasher will be caused to make an additional up and down stroke of short amplitude, and its movement will thus consist of alternately long and short strokes, a motion which is found to produce highly efficient results. It will be observed from Fig. 1 that the pin occupies the outer horizontal portions of the slot in the crosshead 15 during those portions of its cycle of movement during which the vertical component of its direction of motion is greater than the horizontal component, and traverses the off-set portion of the slot in the cross head when its direction of motion is mainly horizontal. In this manner, the dasher is caused to move up and down rapidly at all times except at the instant when it changes its direction of movement, and there are no intervals, such as occur when the slot in the cross head is a straight horizontal slot, during which the vertical movement of the dasher is so slow that it is practically stationary.

The member 12 is journaled on an axis which intersects the axis of the dasher rod 11, and which is at right angles to the plane

of movement of the cross head 15. The wheel 12 is carried by a shaft 19, which is journaled in an upright frame 20, rigidly mounted on the top of the outer metal cover 7. The upper part of the frame 20 is provided with overhanging arms 21, to which the rods 17 are secured. A spring 22 is secured to the under face of the cover 7 in position to bear on the glass plate 3 and prevent it from being lifted when the liquid contents of the receptacle are dashed against it. A metal eyelet 23 is secured in the aperture in the glass plate 3 to receive the dasher rod 11 so as to prevent it chipping the plate. A pinion 24 is fixed on the shaft 19, and meshes with an internal gear 25, to which the crank 26 is secured. The gear 25 serves as a guard which prevents the possibility of the operator's clothing or hands becoming entangled in the gearing.

The operation of the device shown will be readily understood from the foregoing description.

Although but one specific embodiment of this invention is herein shown and described, it will be understood that numerous details of the construction shown may be altered or omitted without departing from the spirit of this invention, as defined by the following claims.

I claim:—

1. A churn, comprising a receptacle having an inner opening at the top and having an inner annular ledge at the top, a glass plate supported on said ledge, a cover fitting over said receptacle and having therein sight openings whereby the contents of said receptacle may be viewed through said glass plate, a dasher in said receptacle, and mechanism mounted above said cover and comprising a part extending through said cover and plate for operating said dasher.

2. A churn, comprising a receptacle having an inner opening at the top and having

an inner annular ledge at the top, a glass plate supported on said ledge, a cover fitting over said receptacle and having therein sight openings whereby the contents of said receptacle may be viewed through said glass plate, a dasher in said receptacle, mechanism mounted above said cover and comprising a part extending through said cover and plate for operating said dasher, and means on said cover adapted to bear on said plate for securing the same against rising from said ledge while said cover is in position.

3. A churn, comprising a receptacle having an inner opening at the top and having an inner annular ledge at the top, a glass plate supported on said ledge, a cover fitting over said receptacle and having therein sight openings whereby the contents of said receptacle may be viewed through said glass plate, a dasher in said receptacle, mechanism mounted above said cover and comprising a part extending through said cover and plate for operating said dasher, and a spring on said cover adapted to bear against said plate for securing the same against rising from said ledge while said cover is in position.

4. A churn, comprising a receptacle having an inner opening at the top and having an inner annular ledge at the top, a glass plate supported on said ledge, a cover fitting over said receptacle, a dasher in said receptacle, a rod extending vertically from said dasher through apertures in said cover and plate, an eyelet secured in the aperture in said plate for receiving said rod, and mechanism mounted above said cover for reciprocating said rod vertically.

Signed at St. Louis this 17th day of Jan'y, 1911.

JOHN R. GILDA.

Witnesses:

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