

CHURN.

Patented May 20, 1913.

2 SHEETS--SHEET 1.

Fig. 1. A detailed technical drawing of a mechanical device, likely a pump or valve assembly, showing a vertical shaft with various components labeled with numbers 1 through 48. The device features a large circular component at the top, a central vertical shaft, and a base with a flared section. A dashed line indicates the vertical axis of symmetry.

Fig. 6.

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Witnesses

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CHURN.

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1,062,254.

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2 SHEETS-SHEET 2.

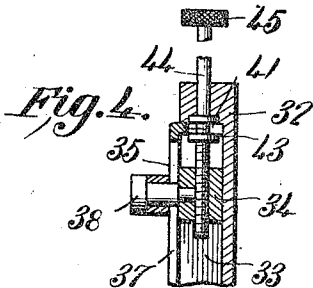
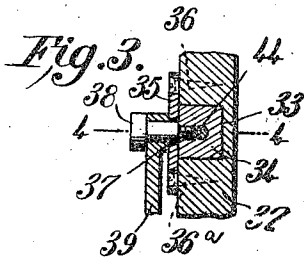
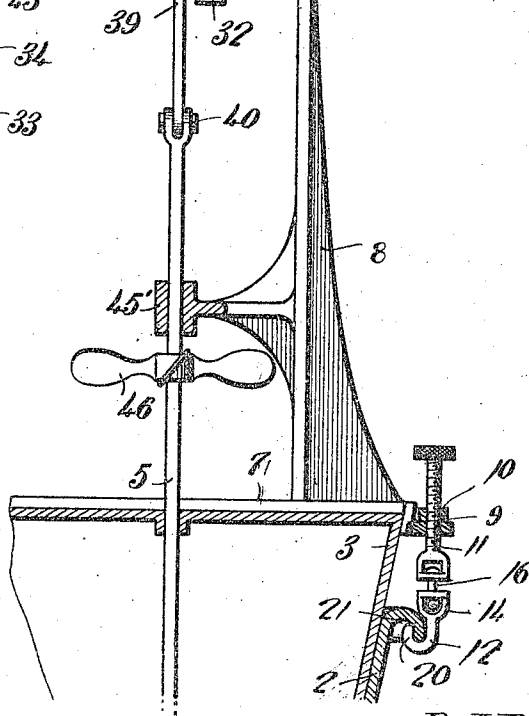
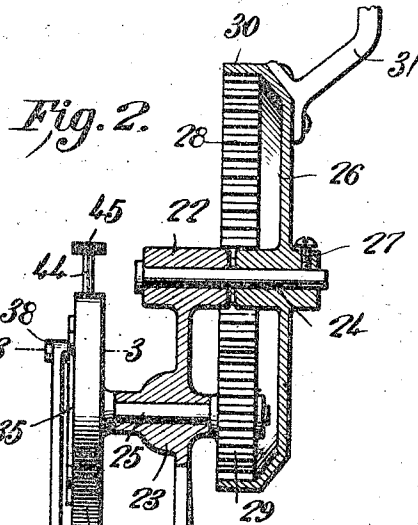
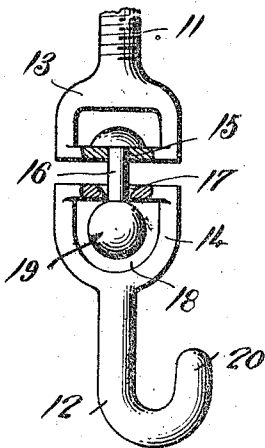


Fig. 7.



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# UNITED STATES PATENT OFFICE.

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## CHURN.

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Specification of Letters Patent.

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*To all whom it may concern:*

Be it known that I, BYNUM J. REID, a citizen of the United States, residing at Milan, in the county of Telfair and State of Georgia, have invented new and useful Improvements in Churns, of which the following is a specification.

This invention relates to churns and has for an object to provide mechanism which will include an adjustable lid that is adapted to accommodate itself to vessel necks of different internal sizes.

Another object of the invention is to provide mechanism which will include means for reciprocating the dasher and for regulating the stroke of the same so as to maximize the churning effect of the dasher and to permit the dasher to accommodate itself to churn vessels of different depths.

Another object of the invention is to provide means for agitating or disturbing the air in close proximity to the cover so as to prevent the accumulation of flies or other germ spreading insects on the cover and around the dasher therefor.

In the drawing forming a portion of this application, and in which like letters of reference indicate similar parts in the several views:—Figure 1 is a side view of the churn. Fig. 2 is a section on line 2—2 of Fig. 1 showing parts in elevation. Fig. 3 is a section on line 3—3 of Fig. 2. Fig. 4 is a section on line 4—4 of Fig. 3. Fig. 5 is a perspective view of the combined guiding member and screw support. Fig. 6 is a perspective view of the cross head adjusting screw. Fig. 7 is a side view of the cover engaging hook and the adjusting screw therefor showing parts in section.

The churn vessel 1 is provided with a neck 2 in which is mounted a lid 3 of substantially inverted frusto-cone form having a central vertical passage formed therein through which extends the upper end of a reciprocating dasher shaft 5, the latter having secured thereto at its lower end a dasher or agitator 6 of any approved well known construction.

The lid 3 has secured thereto a base plate 7 from which a bracket 8 rises. Portions 9 of the plate 7 are extended laterally beyond the large end of the lid 3, and as shown said portions are provided with vertical threaded passages 10 to accommodate correspondingly threaded adjusting screws 11. Clamping hooks 12 are disposed below the screws 11

and connected therewith through the swiveled portions 13 and 14 on said hooks and screws respectively. As shown in Fig. 7 the portion 13 is apertured at 15 to receive the upper end of a connecting pin 16. This pin is also extended through a flared passage 17 in the portion 14 and terminally formed within the recess 18 of said portion 14 with a spherical head 19. From this construction it is seen that each hook while being connected for rotation on the screw is also adjustable with relation to the adjacent side of the lid 3 whereby the tongue 20 of the hook can be operatively inserted in the concavity 21 of the neck 2. Such construction is necessary in view of the purpose of the described formation of the lid. The lid is of a downwardly decreasing diameter so that its circumferential surface can be brought into effective contact with the internal walls of the neck of the churn vessel.

The bracket 8 is provided with superimposed bearings 22 and 23, the former having revolubly mounted therein a driving shaft 24 while the latter supports a driven shaft 25. A gear wheel 26 is secured as at 27 to the driving shaft and as shown said wheel is provided with a circular series of internal teeth 28 which intermesh with the teeth of a gear wheel 29 on the driven shaft so that the latter will be revolved on rotation of the driving shaft. The wheel 29 is relatively small as compared with the size of the driving wheel 26 so as to maximize the speed of motion of the driven shaft and to minimize the power necessary to a proper operation of the mechanism. The driving wheel 26 is provided with a pulley like internal surface 30 to accommodate a suitable driving belt whereby the machine may be driven through the influence of a suitable motor, not shown. Preferably a crank handle 31 is secured to the driving wheel 26 so that the same may be driven manually.

With a view to regulating the stroke of the dasher shaft and for reciprocating the same I provide the driven shaft 25 with a relatively large crank wheel 32 which has formed therein a guide recess 33 for an adjustable member 34, said recess being extended across the center of the crank wheel whereby the member 34 can be adjusted with relation to the center of the wheel and thereby regulate the stroke of the dasher shaft. A guide plate 35 is secured by re-

movable fastenings 36<sup>a</sup> to one side of the crank wheel and disposed with relation to the recess 33 so as to form retaining means to hold the member 34 against accidental displacement. The plate 35 has a longitudinal slot 37 therein through which a wrist pin 38 extends. This pin has pivotal connection with the upper end of a crank rod 39, the lower end being operatively connected at 40 with the dasher shaft 5. The plate 35 has an extension 41 therein which extends into the recess 33 of the crank wheel, being bifurcated at 42 and operatively associated with a portion 43 of a regulating screw 44 so that the latter is swiveled to the plate 36. The upper end of the screw extends through the crank wheel and is disposed beyond the peripheral surface thereof and provided with a manipulating head 45. The screw is extended operatively into a correspondingly threaded passage in the member 34 so that the position of the latter in the recess 33 may be changed according to the stroke of the agitator shaft desired. One or more bearings such as shown at 45' is provided to guide the dasher shaft in its movement. The dasher shaft is provided with a fan 46 which is disposed in such proximity to the lid 3 of the churn to agitate the air when the shaft is reciprocated.

As a consequence of this construction it is evident that flies or other germ carrying insects will be held against accumulating on the lid of the churn during the churning operation.

I claim:—

1. A churn comprising a receptacle, a lid removably fitted thereto, a crank wheel sup-

ported by the lid, means for revolving the wheel, the said wheel having a radial slot therein, a screw support located at one side of the wheel and closing against one side of the slot and provided at one end with a bifurcated portion extending into the slot, a crank rod, a dasher rod reciprocating in the lid and connected with said crank rod, a member adjustably mounted in the slot of the wheel and provided with a pin extending through the slot of the screw support and operatively connected with the crank rod, and a screw swiveled in the bifurcated portion of the support and threadedly adjustable in said sliding member and operable to adjust said member with relation to the center of said crank wheel.

2. A churn comprising a receptacle, a lid fitting within the neck of the receptacle, vertically adjustable screws carried by the lid, the said receptacle having an external annular concavity, hooks located beneath the screws and adapted to be extended into the concavity of the receptacle, whereby to hold the lid close against the receptacle when the screws are adjusted to one position, and pins connecting the screws with the hooks and provided with spherical lower portions associated with the hooks whereby to permit the latter to be adjusted angularly of the screws and laterally of the concavity of the receptacle.

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

BYNUM J. REID.

Witnesses:

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