

J. L. ARNOLD.
CHURN.

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936,400.

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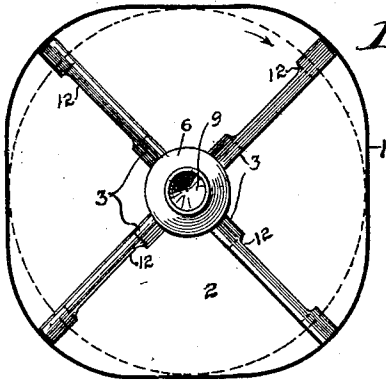


Fig. 1.

Fig. 2.

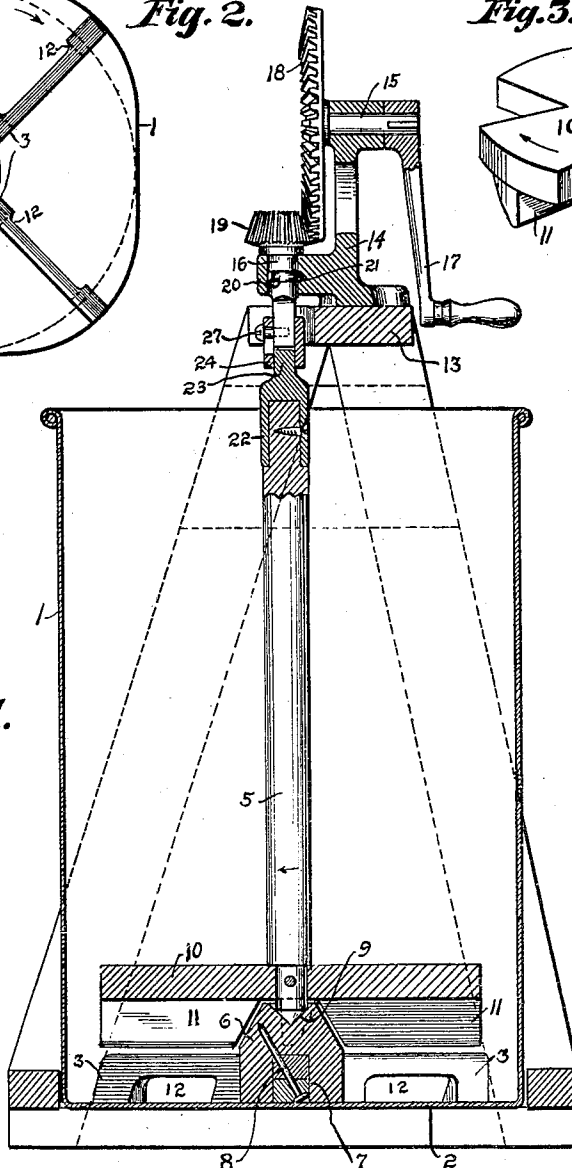


Fig. 3.

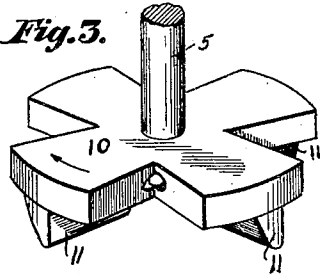
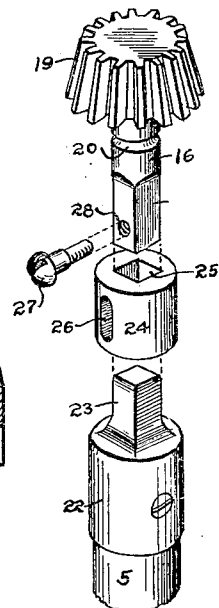


Fig. 4.



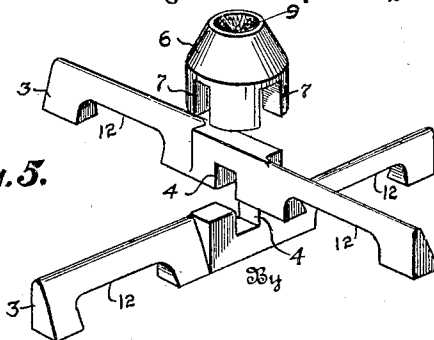
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Fig. 5.



Witnesses

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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, JOHN L. ARNOLD, a citizen of the United States, and resident of Canton, in the county of Stark and State of Ohio, have invented a new and useful Improvement in Churns, of which the following is a specification.

My invention has for its objects the improvement in churns having a rotary dasher and non-rotatable dash bars and also the easy removal from the body of the churn the dasher shaft and rotary dasher as well as the fixed dash bar.

The mechanism shown in the drawing fully illustrates my invention with the above objects in view.

In the accompanying drawing: Figure 1 is a vertical section of the churn body showing portions of the churn body holding frame and the gear, also showing the arrangement of the dasher gear. Fig. 2 is a horizontal section of the churn body showing the rotary dasher and its parts removed and illustrating the position of the non-rotatable dash bars. Fig. 3 is a perspective view of the rotary dasher showing a portion of the dasher shaft. Fig. 4 is a view showing the top of the dasher shaft and the parts to connect the said dasher shaft with the gear shaft. Fig. 5 is a view showing the non-rotatable dasher bars detached from each other and their connecting head detached from the dasher bars.

Similar numerals of reference indicate corresponding parts in all the figures of the drawing.

In the accompanying drawing, 1 represents the churn body or what might be termed the can which may be formed of any suitable material and of any size desired. For the purpose hereinafter described the churn body 1 is formed practically rectangular in cross section, having the flat vertical sides joined by curved portions or in other words what might be termed rounded corners. Upon the bottom 2 of the body 1 are normally located the non-rotatable dash bars 3 which dash bars are connected together at right angles to each other or substantially so by suitable notches or recesses 4. For the purpose of assisting in holding the dash bars 3 in proper relationship with reference to each other and at the same time providing a bearing support for the dasher shaft 5 the coupling head 6 is provided which coupling head is provided with the right angled

grooves 7, into which grooves the dash bars 3 are seated and securely connected to the bearing head or block 6 by means of a suitable nail 8 or its equivalent.

The bottom or lower end of the dasher shaft 5 is formed conical and said conical lower end normally located in the conical socket 9 formed in the head or block 6. To the bottom or lower end of the dasher shaft 5 is attached the rotatable dasher 10, which dasher is substantially of the form shown in Fig. 3 and as shown the dasher bars are provided with the downward extending ribs or agitating blades 11, which blades are beveled upon their front or forward faces and are so beveled for the purpose of giving to the cream a slight down thrust, which down thrust causes the cream to strike with greater force the dash bars 3. For the purpose of allowing a portion of the cream to pass under the dash bars their bottom or under edges are provided with the openings or recesses 12.

It will be understood that by forming the can body as shown in cross section Fig. 2 and extending the dash bars so that their outer ends come in close proximity to the curved portions of the churn body or can 1, they will be held against rotary movement, thereby, providing what might be termed breaks, as against the free circular movement of the cream. Another object in providing the churn body with rounded corners, is to prevent the cream from taking a circular path without interruption or in other words without obstruction.

It will be understood that as the cream is given a rotary or circular movement the outer body of the cream will strike alternately against the straight faced portions and the curved portions of the churn body or can 1, thereby, breaking its true circular movement. It is well understood that in churns of this class it is of the utmost importance that all of the parts of the churn are kept perfectly clean so that perfect sanitary conditions can be maintained with ease and in order to provide for this it is necessary that provision be made for easily removing from the churn body or can all of the working parts and also the stationary parts so that they can be properly cleaned. In order to provide for thus removing the various parts I provide the means herein- after described.

Upon the top of the frame 13 is located

and securely fixed the bearing bracket 14 in which bracket the crank shaft 15 and the short dasher shaft 16 are journaled. The crank shaft 15 is, of course, provided with an ordinary crank 17 and the driving gear wheel 18, which gear wheel meshes with the pinion 19, which pinion is securely connected to the short dasher shaft 16 in any convenient and well known manner. The short dasher shaft 16 is provided with the annular groove 20 and the bracket 14 provided with a cross aperture, through which cross aperture a pin 21 is located, and so located that the cross pin will be seated in the annular groove 20 as best illustrated in Fig. 1 so that the short shaft 16 will be held in proper relationship with reference to the bracket 14, under all circumstances and especially be prevented from an upward movement, when the dasher shaft 5 is uncoupled as hereinafter described. The dasher shaft 5 is provided at its top or upper end with the metallic thimble or ferrule 22, which ferrule is provided with the angled extension 23. Upon the angled extension 23 is normally located the coupler 24, which coupler is provided with the angular aperture 25, which angular aperture is for the purpose of receiving the angled extension 23 and the lower angled end of the short dasher shaft 16, as best illustrated in Fig. 1. The coupler 24 is provided with the elongated slot 26, through which slot the set screw 27 is passed and connected to the short dasher shaft 16 by means of a screw threaded aperture 28. When it is desired to remove the dasher shaft 5 together with the dasher proper the coupler 24 is moved upward until the same is released from the angled extension 23 at which time the dasher shaft 5 can be brought from under the short shaft 16 and removed from the churn body or can 1.

It will be understood that by providing the set screw 27 and forming the elongated slot 26 and passing the set screw through the elongated slot the coupler 24 need not be removed from the short dasher shaft 16, but sufficient vertical movement is provided to bring the coupler into such a position that the dasher shaft can be uncoupled with ease and rapidity.

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

1. In a churn, a churn body or can provided with rounded corners, dash bars adapted to be located in the bottom of the can and held against rotation, a dasher shaft bearing secured to the dash bars, a dasher shaft provided with a dasher, said dasher shaft pro-

vided with an angled extension at its top or upper end, a frame and a bracket secured to said frame, said bracket having journaled in said frame a short dasher shaft, said short dasher shaft provided with an angled lower end, a coupler provided with an angled aperture and an elongated slot and a set screw secured to the short dasher shaft and located through the elongated shaft formed in the coupler and means for imparting rotary movement to the dasher shaft and dasher, substantially as and for the purpose specified.

2. In a churn, a churn body or can, dash bars adapted to be held against rotation and located upon the bottom of the churn body or can, said dash bars provided with openings in their bottom or underside, a dasher shaft provided with a dasher, said dasher provided with downward extensions, said downward extensions beveled upon their forward edges, a bearing secured to the dash bars and adapted to support the dasher shaft, a short dasher shaft and means for coupling the short dasher shaft and the shaft provided with the dasher together and means for imparting rotary motion to the dasher shafts, substantially as and for the purpose specified.

3. In a churn, a churn body or can, removable dash bars located in the bottom of the churn body, a bearing block adapted to connect the dash bars together and provided with a socket at its upper end, a dash bar journaled in the bearing block, said dash bar provided with a dasher, a short dasher shaft provided with a coupling adapted to slide upon the short dasher shaft and the shaft provided with the dasher adapted to be rotatably coupled with the short dasher and means for imparting rotary motion to the dasher shaft, substantially as and for the purpose specified.

4. In a churn, a churn body or can, means located in the bottom of the can adapted to break the circular motion of the cream, a dasher shaft, said dasher shaft provided with a dasher, said dasher provided with beveled ribs upon its bottom or underside and means for imparting rotary motion to the dasher shaft, substantially as and for the purpose specified.

In testimony that I claim the above, I have hereunto subscribed my name in the presence of two witnesses.

JOHN L. ARNOLD.

Witnesses:

SYLVIA BORON,
F. W. BOND.