D. W. DAVIS.

CHURN.

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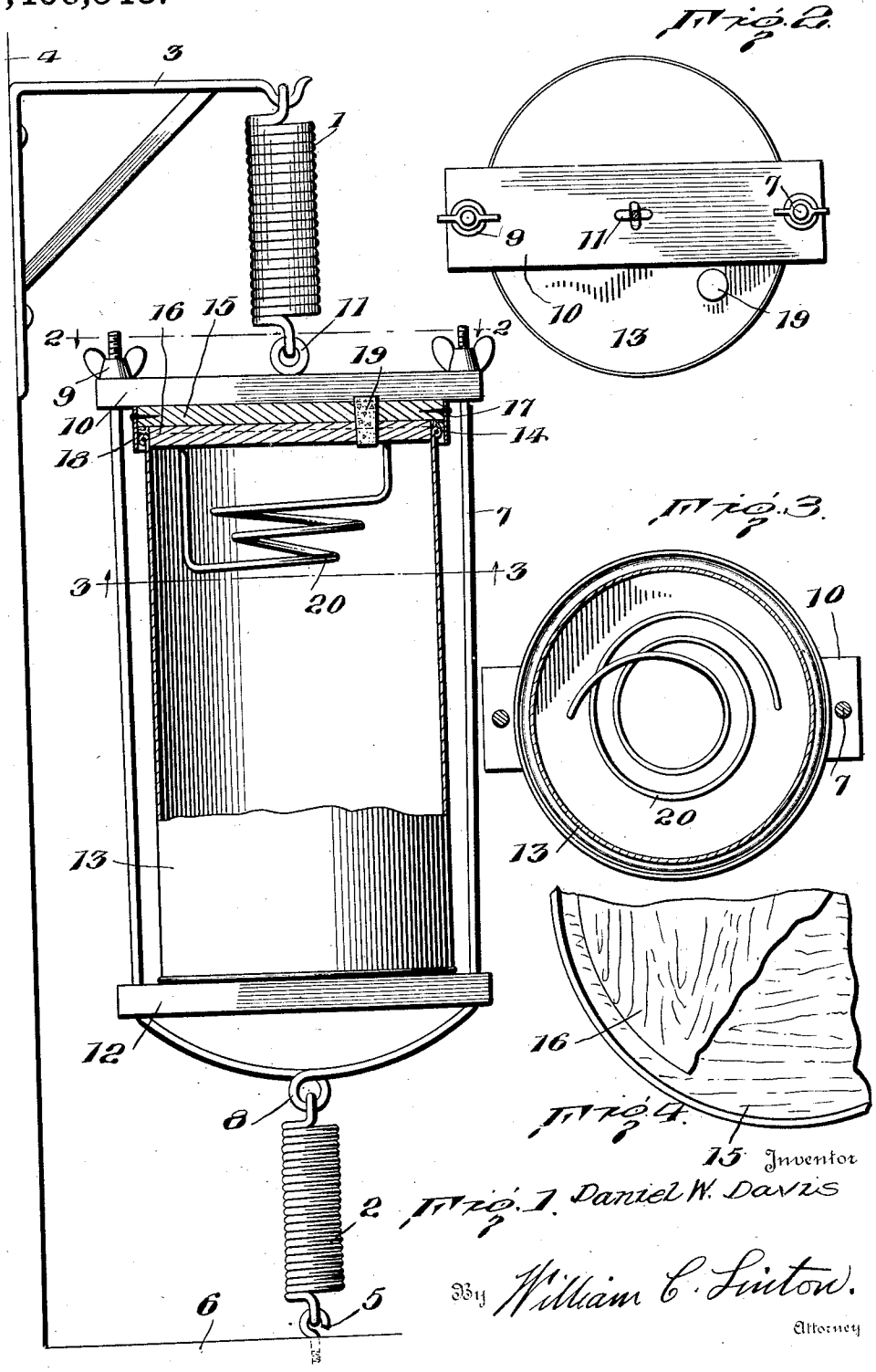
1,406,543. Patented Feb. 14, 1922.



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CHURN.

1,406,543. Specification of Letters Patent. Patented Feb. 14, 1922.

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To all whom it may concern:

Be it known that I, DANIEL W. DAVIS, a citizen of the United States of America, residing at Oskaloosa, in the county of Mahaska and State of Iowa, have invented certain new and useful Improvements in Churns; and I do hereby declare that the following is a full, clear, and concise description of the same, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in churns, having for an object to provide an improved churn and form of support and actuating device therefor, whereby the churn can be rapidly vibrated to effect agitation of the cream for producing butter, the arrangement being such as to require but minimum effort in operating the device.

It is also an object of the invention to provide means adapted for arrangement in the churn whereby the globules of butter produced during agitation or a churning operation will be thoroughly broken up, thus permitting the production of butter in but a minimum amount of time.

Yet another object of the invention resides in the provision of a novel cover or closure for the churn receptacle consisting of layers or sections of wood, whose grains are arranged in opposite fashion in order to prevent warping of the closure and therefore, permitting the same to have positive engagement at all points with the churn receptacle for tightly closing it.

Other objects will be in part obvious and in part pointed out hereinafter.

In order that the invention and its mode of operation may be readily understood by persons skilled in the art, I have in the accompanying illustrative drawings and in the detailed following description based thereon set out one possible embodiment of the same.

In these drawings:

Figure 1 is a side elevation of the improved churn and support therefor, a portion of the churn being broken away and shown in section;

Figure 2 is a horizontal section taken on the line 2—2 of Figure 1 looking in the direction in which the arrows point;

Figure 3 is a horizontal section taken on the line 3—3 of Figure 1 looking in the direction in which the arrows point; and,

Figure 4 is a fragmentary detail, with portions broken away, showing the construction of the churn receptacle closure.

Having more particular reference to the drawings, in connection with which like characters of reference will designate corresponding parts throughout, the improved churn and support may be stated to comprehend a pair of vertically aligned coiled springs 1 and 2, the spring 1 being of heavier gauge material than the spring 2 and by consequence, exerting a stronger pull. The spring 1 has its upper or outer end looped and loosely engaged with the hooked end of a bracket arm 3 secured to a fixed object, fragmentally shown and indicated at 4, while the outer end of the lower spring is similarly looped and engaged with the hooked end of a screw 5 also engaged in a fixed object fragmentally shown and indicated at 6.

As means for supporting the churn receptacle, hereinafter more fully described, there is provided a substantially U-shaped bracket 7 consisting of a single rod bent upon itself into U-shaped formation and having a loop or eye 8 formed in the base thereof and adapted to be engaged with the adjacent end of the lower spring 2 as clearly shown in the Figure 1. The extremities of this U-shaped bracket 7 are screw threaded and adapted to receive wing nuts 9 thereover, whereby to adjustably secure a transversely disposed clamping bar 10 in position with respect to the hereinbefore mentioned churn receptacle. An eyelet screw 11 is engaged with the intermediate portion of the upper side of this bar 10 and has connection with the adjacent end of the upper spring 1. Thus, it will be understood that through the medium of the bracket 7, the springs 1 and 2, which are of different tensions, will be interconnected. A supporting plate 12 having oppositely disposed openings therein is engaged with the opposite sides of the U-shaped brackets 7 and arranged adjacent the arcuous base portion thereof in order that effectual supporting means will be provided for the said receptacle.

From the foregoing, it will be understood that suitable means are provided for receiving and supporting the churn receptacle 13 consisting of a substantially cylindrical container having a beaded open portion or mouth 14 and adapted to receive thereover a cover or closure which in turn is secured in position over the mouth of the

receptacle 13 through the medium of a clamping or cross bar 10. This closure or cover consists of a pair of wooden discs 15 and 16, the disc 15 being of a greater diameter than the disc 16, whereby when the metal rim or band 17 is arranged about its peripheral end, a pocket will be provided between the lower or free portion of said band 17 and the adjacent peripheral surface of the lower disc 16; said pocket serving to receive therein the beaded portion 14 of the receptacle mouth and preferably, having a suitable form of packing material 18 arranged therein whereby to insure fluid tight connection as between the cover and the receptacle. The grains of the several wooden discs 15 and 16 are arranged in opposite fashion and because of this, it will be understood that warping of the cover during use will be prevented, hence, insuring proper engagement of the same, at all times, over the mouth of the churn receptacle 13. To permit the escape of gases created in the churn receptacle 13 during a churning operation, a tapered opening may be and preferably is formed in the cover and is adapted to be closed by a suitable form of stoppel 19.

With a view towards providing means for expediting the production of butter with my improved churn, an agitating member 20 is arranged upon the under side of the churn receptacle cover, consisting of a single length of wire having its opposite ends embedded in adjacent portions of the wooden disc 16 while the intermediate portion thereof is coiled upon itself in helical fashion and exposed to the interior of said receptacle, whereby, during a churning operation, the highly agitated cream contained by the receptacle will be directed into engagement with the various portions of the coil in order that the globules of butter will be rapidly broken up, thus resulting in the rapid production of butter with use of the churn.

The operation of the improved churn and support may be reviewed as follows:

Cream is placed in the churn receptacle 13 whereupon the same is placed upon the support 12 within the U-shaped bracket 7. At this time, the circular closure is engaged over the beaded mouth 14 of the receptacle 13 and is clamped securely in position thereover by engaging the clamping or cross bar 10 over the same, the opposite ends of said cross bar engaging over the extremities of the U-shaped bracket 7 so that with tightening of the wing nuts 9 upon the screw threaded extremities of said bracket, said bar 10 will have positive engagement with the churn receptacle closure. At this time, the churn receptacle is forced abruptly downwardly, thus distending the coils of the spring 1 which upon rebound will distend the coils of the spring 2, thereby imparting a rapid vibratory motion to the churn which in turn will agitate the cream within the receptacle 13 to such a degree as to produce butter with continuation of the same.

Manifestly, the construction shown is capable of considerable modification and such modification as is within the scope of my claims, I consider within the spirit of my invention.

I claim:

1. A device of the character described comprising a receptacle, a closure for said receptacle, agitating means suspended from said closure, said agitating means consisting of a single length of wire having its opposite ends embedded in said closure, the intermediate portion of said wire being coiled upon itself in helical form whereby the larger convolutions are arranged at the top thereof and exposed to the interior of the receptacle substantially as and in the manner specified.

2. A closure for a receptacle susceptible of agitation, agitating means on said closure, said agitating means consisting of a single length of wire having its opposite ends embedded in said closure, said wire being helically formed and exposed to the interior of said receptacle.

In witness whereof I have hereunto set my hand.

DANIEL W. DAVIS.