

W. A. FLINT, J. B. McDONALD & D. H. CRABBS.

CHURN.

APPLICATION FILED SEPT. 17, 1912.

1,052,230.

Patented Feb. 4, 1913.

2 SHEETS—SHEET 1.

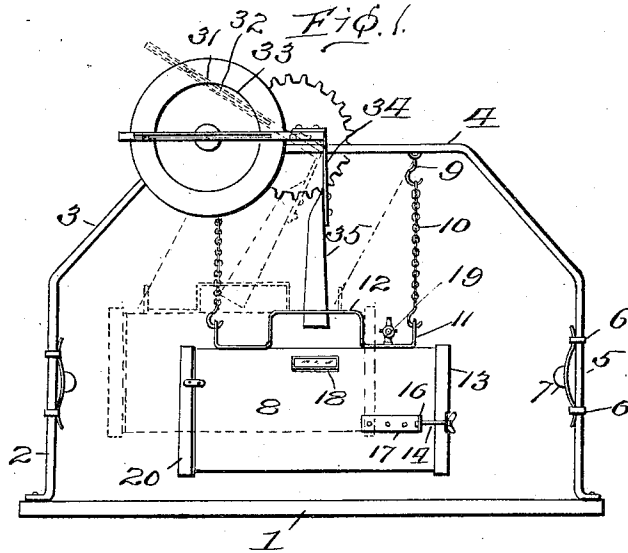


Fig. 2.

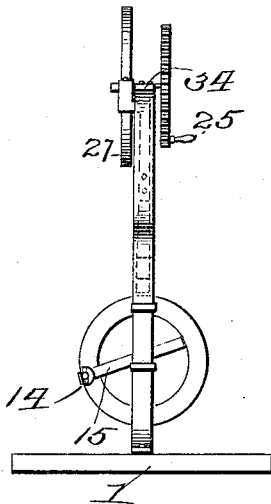
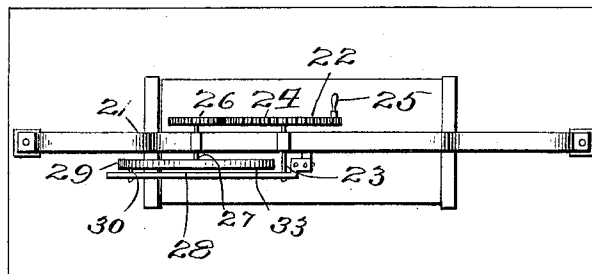


Fig. 3.



Witnesses

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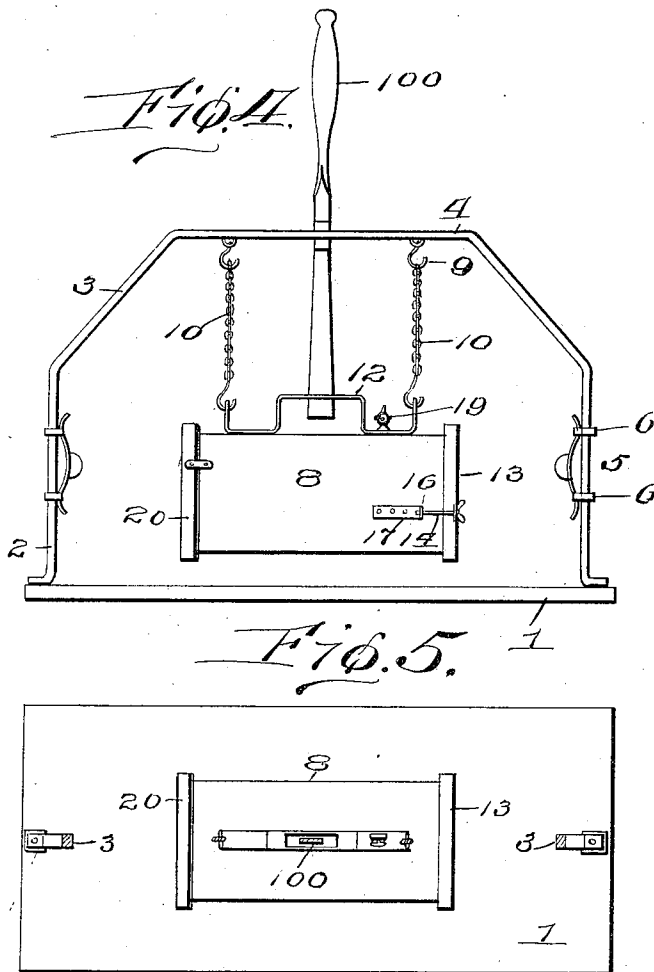
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UNITED STATES PATENT OFFICE.

WILLIAM A. FLINT, JAMES B. McDONALD, AND DAVID H. CRABBS, OF VINCENNES,
INDIANA.

CHURN.

1,052,230.

Specification of Letters Patent.

Patented Feb. 4, 1913.

Application filed September 17, 1912. Serial No. 720,818.

To all whom it may concern:

Be it known that we, WILLIAM A. FLINT, JAMES B. McDONALD, and DAVID H. CRABBS, citizens of the United States, residing at Vincennes, in the county of Knox and State of Indiana, have invented certain new and useful Improvements in Churns, of which the following is a specification.

Our invention relates to improvements in churns, and has particular reference to a concussion vibrating churn in which the churn body oscillates between a frame of special construction.

The primary object of the invention is to provide a churn of this character having simple and efficient means for imparting an oscillatory movement thereto.

Another object of the invention is to provide an improved locking mechanism for the churn head.

A further object of the invention is to provide an improved construction of supporting frame from which the churn is suspended and between the vertical sides of which the churn vibrates.

Another object of the invention is to provide an improved construction of bumper or buffer against which the churn contacts at the end of each vibration.

A further object of the invention is to improve and simplify the construction of churns of this character; to cheapen their cost; and to increase their usefulness and desirability.

To attain the desired objects, the invention broadly stated, consists of a supporting structure, a churn suspended therefrom and vibrating between the sides thereof, and means for imparting a vibratory movement thereto, the invention further consisting in certain novel features of construction and combinations of parts, substantially as shown, described, and claimed hereinafter, reference now being had to the accompanying drawing, in which:—

Figure 1 is a side elevation of a churn and churn supporting frame constructed in accordance with and embodying the principles of our invention, the position the churn assumes when vibrated or oscillated being indicated in dotted lines. Fig. 2 is an end view thereof, and Fig. 3 is a plan view. Fig. 4 is a side elevation of a modified construction of churn wherein an operating handle is connected to the churn,

and Fig. 5 is a plan view thereof, part of the bail shaped frame being broken away.

In the drawings:—The numeral 1 designates the base of the churn supporting structure, from which rise the vertical parallel side members 2, formed with the inclined portions 3, terminating in a horizontal bar 4, the whole frame being bail shaped in configuration and preferably channeled, and the side members 2 each having a leaf spring 5 secured thereto at diametrically opposite points by the clamps 6, which springs carry bumpers or buffers 7 of highly resilient material.

The numeral 8 designates the churn, of any desired size, shape, and material, suspended from the horizontal bar 4 of the frame by means of the hooks 9 and chains 10, connected with the vertical flanges or extensions 11 of the bail shaped member 12, said churn being confined between the vertical sides of the bail shaped frame and contacting with the spring actuated buffers carried thereby.

The lid 13 of the churn is provided with a flange fitting over one end of the churn and is held in place preferably by the short wing bolts 14, which pass through openings in the metal plate 5 fastened to the churn head and let into the same so as to form a level surface at the point of contact with the buffer 7. The heads of the bolts fit into slots formed in the flanges or lugs 16 of the plates 17 secured to the body of the churn, whereby said bolts may be readily disengaged when desired. The churn is further provided with a glass covered sight opening 18 to enable the operator to observe the action of the contents of the churn, and a valve 19 of any desired construction is employed for permitting the escape of gases, while a head or back piece 20 may be fastened to the end of the churn to prevent the churn body from coming into direct contact with the spring actuated buffers. The means for imparting a vibratory or oscillating movement to said churn are extremely simple and efficient and comprise a bearing plate 21 fitted and secured in the channel of the channeled bar 4 of the frame, and formed with a journal 22 in which is mounted the shaft 23 of the gear wheel 24, having an operating handle 25 and meshing with the pinion 26, whose shaft 27 is journaled in the journal 28 of said

bearing plate 21 and carries upon its other end a wheel 29 formed with a stud 30 engaging a slide plate 31 adapted to work in an elongated slot 32 formed in the outer end of a reciprocating lever 33, the inner end of which is connected to a bracket 34, the lower end of which is connected to a vertically disposed oscillating member 35, which has connection with the bail shaped member 12 of the churn. From this construction, it will be seen that rotation of gear wheel 24 will cause pinion 26 to rotate, thus rotating wheel 29, which through its novel connection with the lever 33 will cause said lever to reciprocate and through its connection 34 and 35 with the bail shaped member 12 of the churn, will oscillate said churn between the vertical parallel sides 2 of the supporting structure, as best shown in Fig. 1, the springs in the buffers serving to preserve the life of the rubber.

In the modification shown in Figs. 4 and 5, the supporting frame and churn are similar to that shown in Figs. 1, 2 and 3, but instead of the cogs and lever therein illustrated, we employ an operating handle 100 connected directly to the bail shaped member 12 of the churn. This construction provides simple and easily constructed means for oscillating the churn.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of our improved churn will be readily seen and understood, and it will be apparent to all that the means herein described will prove simple, inexpensive, and highly efficient and reliable for accomplishing the objects heretofore stated.

It will of course be understood that we do not limit ourselves to the detailed construction herein shown and described, but reserve the right to make such changes and modifications as come within the spirit and scope of the invention, as defined in the appended claims.

We claim:—

1. In a churn, a supporting frame, a churn supported thereby, and means including a vertically disposed oscillatory member, a horizontally disposed reciprocatory member having connection therewith, and means for reciprocating said reciprocatory member for oscillating said churn between the sides of said frame and buffers carried by the frame and adapted to be engaged by each end of the churn, the buffers consisting each of spring plates adjustably secured to the frame and carrying each a yielding buffer.

2. In a churn, a supporting frame, a churn supported thereby, means for oscillating said churn, said means including an oscillatory member, a reciprocatory member having connection therewith, and means

including a wheel having a stud engaging a slide plate working in a slot in said reciprocatory member and a gear and pinion mechanism for rotating said wheel for reciprocating said reciprocatory member.

3. In a churn, the combination with a bail shaped churn supporting frame, of a churn swingingly suspended therefrom, means for oscillating said churn, and bumpers for said churn comprising flat springs secured to the sides of the frame at their extremities and projecting inwardly at their centers and carrying resilient members at said inwardly projecting portions, said flat springs being adjustable vertically with reference to the frame and churn.

4. In a churn, the combination with a frame, a churn having a bail shaped member formed with vertical extensions, flexible connections between the suspension bar of the frame and said extensions, and means including a vertically disposed oscillatory member connected to said bail shaped member and having a connection with a horizontally disposed reciprocatory member, a wheel having a stud connected to a slide plate working in a slot in said reciprocatory member, and a gear and pinion for rotating said wheel for oscillating the churn.

5. In a churn, a frame, spring actuated buffers secured thereto, a churn oscillating between said buffers, a bail shaped member formed on said churn and having vertical extensions, chains connecting said extensions with the suspension bar of the frame, a vertically disposed oscillatory bar connected to the bail portion of said bail shaped member, a bracket secured to said oscillatory member, a horizontally disposed lever secured to said bracket and having an elongated slot in its outer end, a slide plate working in said slot, a stud engaging said slide plate, a wheel upon which said stud is carried, a pinion for rotating said wheel and mounted on the same shaft with the wheel, and a gear engaging said pinion and having an operating handle for rotating said pinion to reciprocate said lever to oscillate the oscillatory member and thus the churn.

6. In a churn, an oscillating churn body, an oscillating member connected thereto, a bearing plate, a shaft carrying an operating gear journaled therein, a counter shaft carrying a pinion at one end in mesh with said operating gear, a wheel carrying a stud and mounted on the other end of said counter shaft, and means operated from said stud of said wheel to oscillate said oscillating member and buffers adapted to be engaged by the churn body.

7. In a churn, an oscillating churn body, an oscillating member connected thereto, a bearing plate, a shaft carrying an operating gear journaled therein, a counter shaft car-

rying a pinion at one end in mesh with said
operating gear, a wheel carrying a stud and
mounted on the other end of said counter
shaft, a slide plate engaged by said stud and
5 a horizontally disposed reciprocating lever
connected to said oscillating member and
having a slot in which said slide plate
works.

10 8. In a churn, an oscillating churn body,
an oscillating member connected thereto, a
reciprocating member connected to the oscil-
lating member, a manually operable shaft
carrying a gear, a counter shaft carrying a
pinion at one end meshing with said gear,

a wheel on the opposite end of said counter 15
shaft, a stud on said wheel, and a slide
plate engaged by said stud and operating
the reciprocating lever to oscillate the
churn.

In testimony whereof we affix our signa- 20
tures in presence of two witnesses.

WILLIAM A. FLINT.
JAMES B. McDONALD.
DAVID H. CRABBS.

Witnesses:

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BEULAH HEBERT.

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