N. C. HARRIS.

Churn.

No. 206,443. Patented July 30, 1878.

Fig. 1.

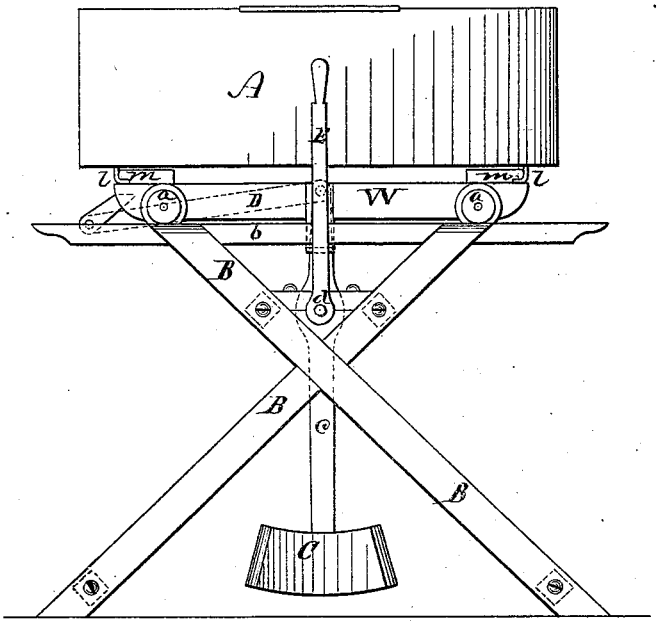


Fig. 2.

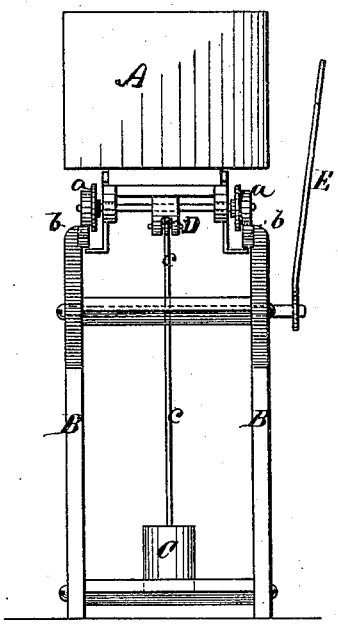
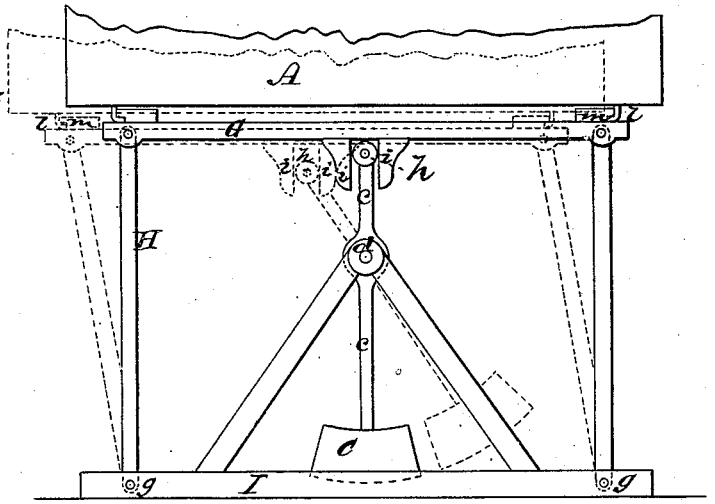


Fig. 3



Witnesses
Fred. G. Dieterich

Inventor,
Armand C. Harris,
By J. S. Brown,
his atty.

UNITED STATES PATENT OFFICE.

NORMAN C. HARRIS, OF POULTNEY, VERMONT.

IMPROVEMENT IN CHURNS.

Specification forming part of Letters Patent No. **206,443**, dated July 30, 1878; application filed April 17, 1878.

To all whom it may concern:

Be it known that I, NORMAN C. HARRIS, of Poultney, in the county of Rutland and State of Vermont, have invented an Improved Churn; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification—

Figure 1 being a side view of the improved churn; Fig. 2, an end view of the same; Fig. 3, a side view, showing a modified construction thereof, acting on the same principle.

Like letters designate corresponding parts in all of the figures.

My invention consists in the combination, with a churn-body having a reciprocating movement horizontally in a perfectly upright position, of an oscillating weight or pendulum connected with the body of the churn to control the reciprocating motions thereof, substantially as herein specified.

In the drawings, A represents a churn-body or cream-receptacle of any suitable construction, but preferably oblong in the direction of its movement. It is provided with a truck, W, having friction-wheels *a a*, which run on tracks or ways *b b* of a stand, B. In this stand is mounted an oscillating weight or pendulum, C, hung on a rod, *c*, pivoted at *d*, or otherwise equivalently arranged. The upper end of the rod *c* projects a suitable distance above the pivot *d*, and is connected by a connecting-rod, D, with the churn-body, pivoted thereto at *f*, so that the oscillating movement of the pendulum will produce a corresponding reciprocating movement of the churn-body on its ways, or vice versa. The movements of the churn-body and pendulum may be produced by a handle, E, secured to and projecting from one end of the pendulum-pivot *d*; or the motion may be applied direct to the churn-body, or otherwise.

Instead of the particular construction above described, others embodying the same principle may be employed, as the one represented in Fig. 3. Here, instead of ways and friction-rollers for the churn-body to rest and move on, it may rest on a table or support, G, which is mounted on oscillating standards H H, pivoted both to the table and to the base I of the stand. The oscillation of these standards on the lower pivots, *g g*, produces an equivalent reciprocation of the churn-body always in an upright or horizontal position, but slightly varying in height in different parts of its reciprocating movement. This produces very little friction; and instead of the connecting-rod between the pendulum-rod *c* and the churn-body, the upper end of this rod may be provided with a friction-roller, *h*, Fig. 3, to play between parallel guides *i i* on the bottom of the table or of the churn-body, as represented. Other variations of the construction will readily be suggested.

By this movement of the churn-body, and the combination therewith of the oscillating weight or pendulum, I produce a very effective motion of the churn, exactly calculated to produce the sudden dashes at the terminations of its vibrations best suited for operating the cream, and this is effected with the least practicable friction or resistance, so that churning with this apparatus is exceedingly easy; and, since the churn is constantly kept in an upright position, there is little or no tendency to slop the cream over the ends of the churn-body, which is a serious objection to the tilting movement of other oscillating churns.

The body A of the churn may be secured to the truck W by hooks *l l* on one taking into hooks *m m* on the other, or otherwise.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination, with a churn-body, A, movable in a horizontal plane, of an oscillating weight or pendulum, C, substantially as and for the purpose herein specified.

N. C. HARRIS.

Witnesses:
H. T. HULL,
W. W. HIBBARD.