

(No Model.)

F. CAMERON & E. POTTER.
CHURN.

No. 507,414.

Patented Oct. 24, 1893.

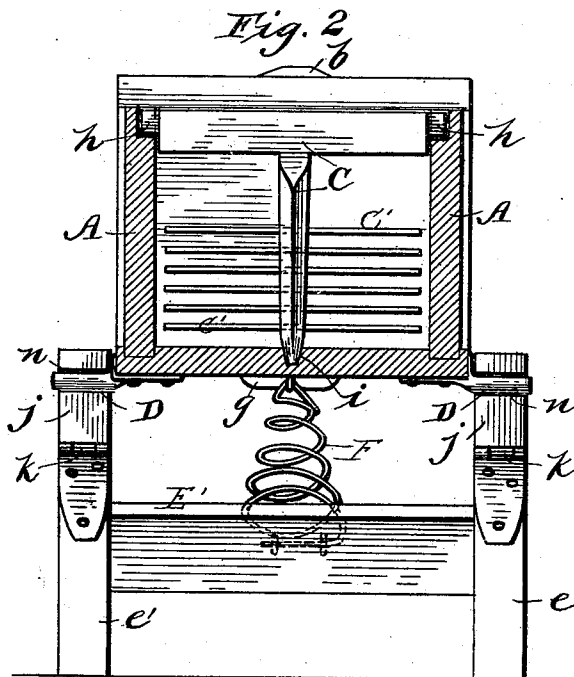
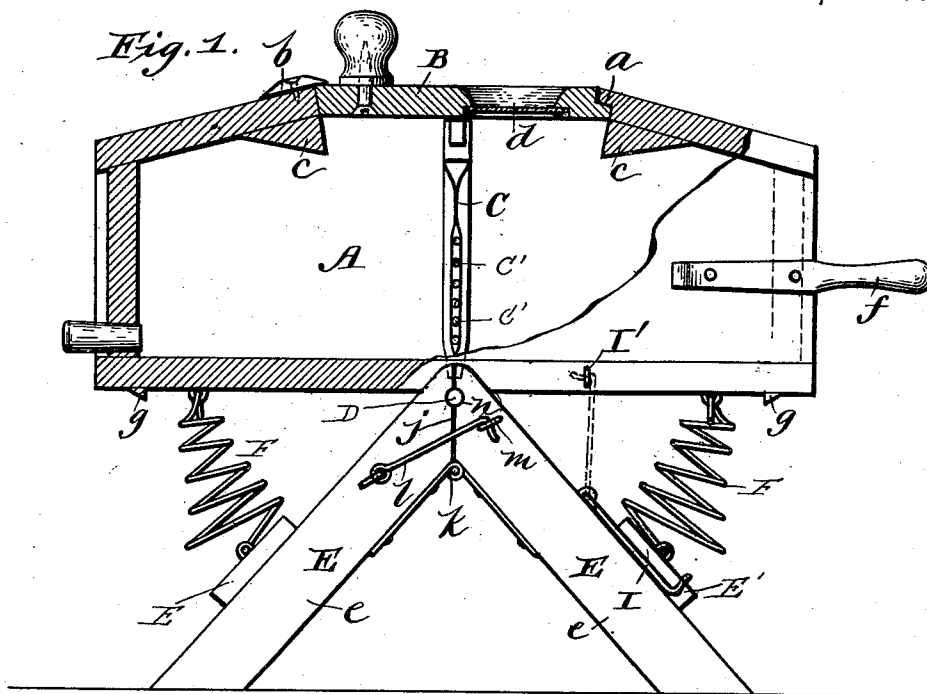
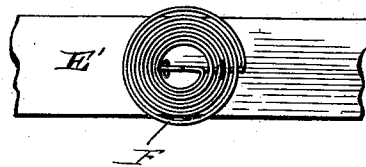


Fig. 3.



WITNESSES:

Frederick Cameron
Elmuthan Potter
by their Atty
Maras, Fenwick & Lawrence

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UNITED STATES PATENT OFFICE.

FREDERICK CAMERON AND ELNATHAN POTTER, OF QUAKER SPRINGS,
NEW YORK.

CHURN.

SPECIFICATION forming part of Letters Patent No. 507,414, dated October 24, 1893.

Application filed February 2, 1893. Serial No. 460,634. (No model.)

To all whom it may concern:

Be it known that we, FREDERICK CAMERON and ELNATHAN POTTER, citizens of the United States, residing at Quaker Springs, in the county of Saratoga and State of New York, have invented certain new and useful Improvements in Tilting Churns; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention consists, first, in a tilting churn comprising in combination an oblong box having directing projections on the inner surface of its top, and short journals at its sides for it to turn upon, and also provided with a divider formed of a lozenge shaped bar and horizontal fingers projecting from each of the sides thereof, said bar arranged centrally across the chamber of the box; triangular supporting side frame portions formed of standards united by a hinged miter joint and held upon the journals by hooks and eyes, said frame pieces being connected by inclosed flat pieces; and conical spiral springs attached respectively by their broad bases to the flat connecting pieces and by their small ends to the ends of the bottom of the churn box; and, secondly, our invention consists in certain novel constructions of the triangular frame, the central bar with fingers, and in the combination of the churn box, the triangular supporting frame and conical springs, all as hereinafter described.

The objects of our improvements are to provide for a more perfect agitation and separation of the cream from the milk,—render the movement of the tilting churn box easier; increase the extent of the up and down tilt of the box without injuriously crowding the springs which are employed to throw the ends of the churn upward; to simplify the general construction of the churn and afford convenience for packing the churn for transportation, and facilitate the adjustment of the churn for use.

In the accompanying drawings, Figure 1 is a vertical longitudinal section of our improved churn. Fig. 2 is a vertical cross section of the same, and Fig. 3 is a plan view of one of the conical springs and flat pieces on which they are placed, as the same appears before

being set on the inclined sides of the jointed frame piece.

A in the drawings represents an oblong box having its side and end pieces beveled off so as to leave a high intermediate horizontal portion at the place where a movable lid B is applied. The lid is fastened by means of a rabbet shoulder *a* formed on it and on the box, and by a turn button *b*. On the under side of the top of the box right and left inclined projections *c* are formed for directing the milk or cream properly toward the central part of the bottom of the box and preventing it from passing upward against the lid and leaking out at the joints thereof. In the lid a glazed peep hole *d* is provided through which the operation may be inspected. On one end of the box, near the bottom, handles *f* are applied for the purpose of tilting it, and in the opposite end a plugged discharge passage is provided. On the bottom of the box, at each end, handling lugs *g* are formed so that the box may be more conveniently lifted off its supporting frame. C is a vertical T bar fitted by lugs *h* in slots formed in the inner surfaces of the side walls of the box, and steadied by its lower end being entered into a socket *i* in the center of the bottom board of the box. This bar is formed with a front and rear knife edge, or is substantially of lozenge shape in horizontal cross section. Through this bar fingers or wires *C'* are passed, said wires being spaced some distance apart. This bar and its fingers form a breaker or divider which effectually cuts up or separates the milk and cream as the churn is tilted and the cream is thereby caused to move back and forth violently from end to end of the box. At the sides of the bottom portion of the box, centrally of its length, short journals D are applied so as to project out some distance therefrom.

E E are triangular side frame pieces of support upon which the churn box rests. Each of these side frame pieces is formed of separated, inclined standards *e e'* which are connected so as to form a miter joint *j* by means of a hinge *k*, and the standards are held in a proper position by a hook *l* in one and an eye *m* in the other. In each of the frame pieces a journal bearing *n* is formed by cutting a semi-circular recess in each standard,

and in the bearings thus formed metal linings may be inserted, and into said linings the journals D are fitted and allowed to turn. The connecting pieces E' between the frame
5 pieces E are broad flat boards, and they are set on the inclined front and rear edges of the standards of the frame pieces. Between the
10 bottom of the churn and these broad boards spiral conical springs F are applied, being attached to the bottom of the churn box and to
the broad boards, resting with their broad bases upon the boards and their small ends
15 next to the churn bottom. By this arrangement of the spiral conical springs the advantage of having their smaller spiral winds fold within the larger spiral winds is gained,
and thus the churn box can be tilted up and down a longer distance or to a much greater
20 extent than when other forms of springs which have their winds arranged to fold upon one another are employed. Furthermore, when
the churn is packed for shipment, these springs can be folded as illustrated in Fig. 3,
25 and thus occupy much less room and will not be so liable to injury as when made in other forms. When the churn is not being used it may be held horizontal by means of a hinged
rod I attached to one of the side frame pieces, and hooked into a staple I' attached to the
30 churn box.

It will be seen that the tapered lozenge form of the divider bar tends to cut up the milk or cream, and that the rods, free at their
35 outer ends, serve for whipping or beating it up; that the side frame pieces with hinged miter joints allow of the frame pieces being opened at the journal boxes either for insertion of the journals or withdrawal thereof from the journal bearings, and furthermore

the side frame pieces can be folded for packing into a smaller compass.

What we claim as our invention is—

1. A tilting churn comprising a rectangular box having cream directing projections on its top on the inside, a stationary transverse
45 dasher or cream divider and agitator formed of a transverse bar having confining lugs on its ends and a vertical central bar having transverse fingers or wires arranged horizontally therein; short journals on the sides of
50 the box, a handle; triangular frame pieces connected by broad boards fastened to the outer inclined edges of the standards of said frame pieces, and formed with hinged miter joints held closed by hooks and eyes; and conical
55 spiral springs attached by their smaller ends to the ends of the bottom of the churn box and by their broad bases to the said connecting boards, substantially as described.

2. The combination of the tilting churn
60 box having journals, the triangular supporting frame pieces formed of miter jointed standards hinged together and held closed by hooks, and connected by broad boards arranged on the outer inclined edges of the
65 standards of the triangular frame pieces, and the conical spiral springs attached by their smaller ends to the bottom of the churn box and by their broad bases to the said connecting boards, substantially as described.

In testimony whereof we hereunto affix our signatures in presence of two witnesses.

FREDERICK CAMERON.
ELNATHAN POTTER.

Witnesses:

C. E. BRISBIN,
J. B. DEYOR.