

No. 751,520.

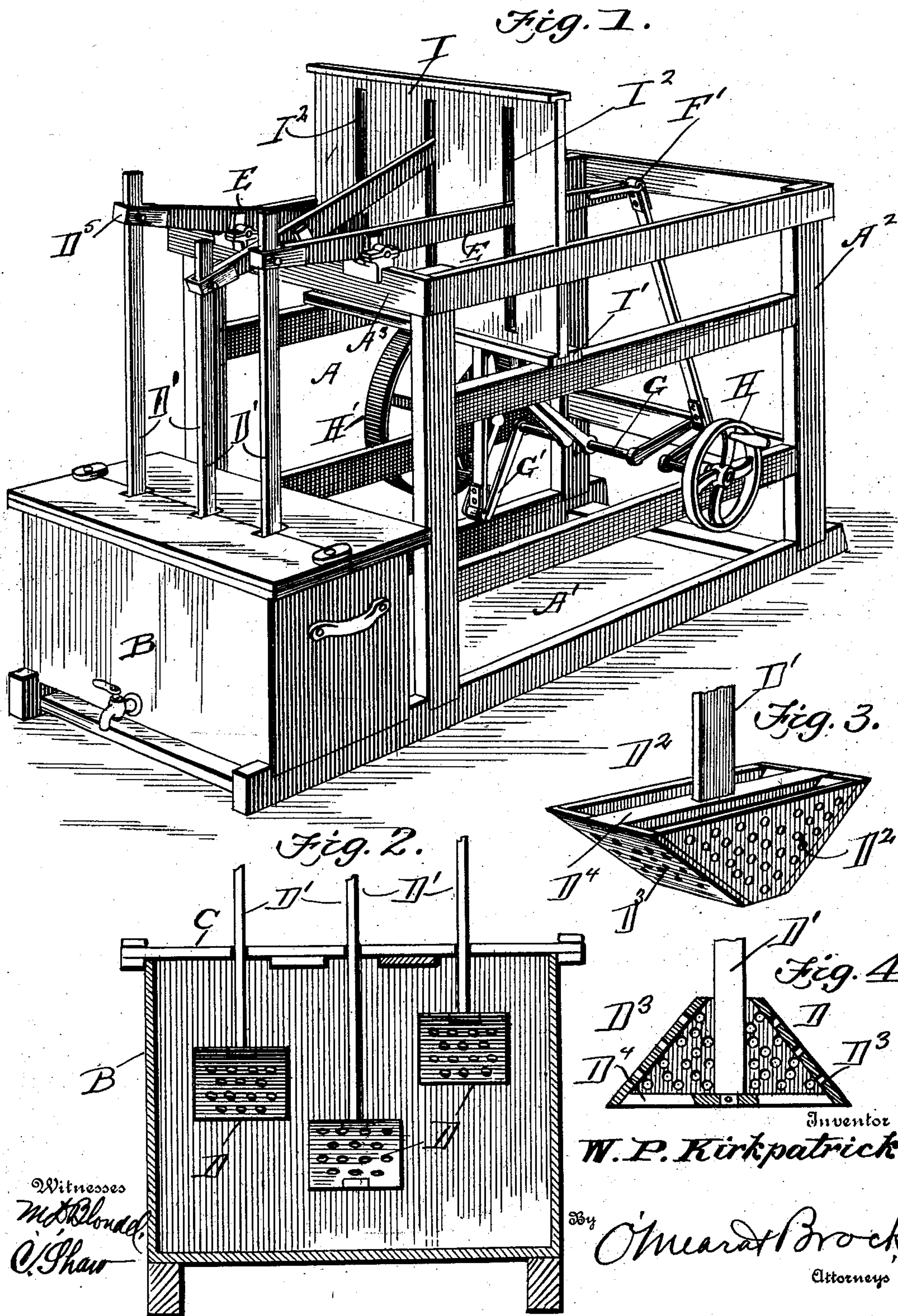
PATENTED FEB. 9, 1904.

W. P. KIRKPATRICK.
CHURN.

APPLICATION FILED NOV. 8, 1902. RENEWED JULY 31, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



UNITED STATES PATENT OFFICE.

WILLIAM P. KIRKPATRICK, OF NEWCASTLE, PENNSYLVANIA.

CHURN.

SPECIFICATION forming part of Letters Patent No. 751,520, dated February 9, 1904.

Application filed November 8, 1902. Renewed July 31, 1903. Serial No. 167,805. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM P. KIRKPATRICK, a citizen of the United States, residing at Newcastle, in the county of Lawrence and State of Pennsylvania, have invented a new and useful Churn, of which the following is a specification.

This invention relates generally to churns, and more particularly to that class known as "reciprocating multiple-dasher" churns, the object of the invention being to provide a churn of this character in which the cream will be broken up into its component parts and the churning operation completed in the shortest possible time without the expenditure of any additional amount of power; and with this object in view the invention consists in the novel features of construction, combination, and arrangement of parts, all of which will be fully described hereinafter, and pointed out in the claims.

In the drawings forming part of this specification, Figure 1 is a perspective view of a churn constructed in accordance with my invention. Fig. 2 is a vertical sectional view taken through the body of the churn proper. Fig. 3 is a detail perspective view of one of the dashers. Fig. 4 is a detail sectional view of one of the dashers. Fig. 5 is a vertical sectional view taken through the main frame and churn-body. Fig. 6 is a detail perspective view of the crank-shaft. Figs. 7 and 8 are detail perspective views illustrating the manner of pivoting the operating-levers upon the main frame. Fig. 9 is a detail view taken on the line 9 9 of Fig. 5. Fig. 10 is a detail view illustrating the manner of connecting the pitman to the crank-shaft.

In carrying out my invention I employ a main frame A, consisting, essentially, of the parallel base-sills A', the uprights A², and the cross-beam A³, secured to the upper ends of the forward standards. The standards may also be connected by means of transverse and longitudinal timbers, as most clearly shown in Figs. 1 and 2.

The churn-body B is preferably in the form of a rectangular-shaped box and rests upon the forwardly-projecting portions of the sills A', said churn-body having the sectional cover

C. Working in the churn-body B are three dashers D, each connected to a dasher-shaft D', said dasher-shafts being pivotally connected at their upper ends to the levers E, each lever having a bifurcated casting E', which is provided with trunnions E², resting in bearings E³, forming part of the bifurcated casting E⁴, mounted upon the cross-beam A³, the said trunnions being held in place by means of plates E⁵, which constitute parts of the trunnion-bearings. The dashers D are each composed of the perforated sides D², perforated ends D³, and the cross-strip D⁴, connecting the ends and to which the dasher-shaft D' is connected. It will be noted that two of the dashers are arranged with their narrow ends at the bottom, while the central dasher is arranged with its narrow end at the top, this arrangement serving to break up the cream more rapidly than will otherwise occur. As before stated, the dasher-shafts are pivotally connected to the forward ends of the levers, and this connection is accomplished by means of a clevis-coupling D⁵, and in practice I prefer to provide a series of perforations in the dasher-shaft, so that a variety of adjustments can be had. The rear end of each lever E is pivotally connected to the upper end of the pitman F by means of a coupling F', and the lower end of each pitman is pivotally connected to a crank-shaft G by means of a coupling F². The crank-shaft comprises three crank-sections G', each being arranged one-third of a circle, or one hundred and twenty degrees, from the next adjacent one.

A crank-wheel H is arranged upon one end of the crank-shaft and a balance-wheel H' is arranged upon the opposite end of said shaft. In order to steady the movements of the levers, and consequently of the dasher-shafts, I employ a guide-board I, which rests upon a transverse beam I' and is slotted vertically, as shown at I², the levers working in said slots, and consequently being guided in true vertical lines.

In operation the cream to be churned is placed within the box, the dashers arranged therein, the churn-covers set in place, and the dasher-shafts coupled to the levers. The hand-wheel is then turned and the crank-shaft being

driven will operate the levers, reciprocating the dashers, and inasmuch as there are three dashers it is obvious that the cream will be subjected to a vigorous agitation, and, further-
5 more, by having two of the dashers provided with perforated inclined ends arranged at one angle and the central dasher provided with perforated inclined ends arranged on an opposite angle the churning operation will be mate-
10 rially expedited.

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

1. In a churn of the kind described, the combination with a main frame, churn-body and dashers and shafts, of the levers pivotally mounted upon the main frame, pitmen

connected to the said levers, and the crank-shaft to which the pitmen are connected, and a vertically-slotted guide-board arranged upon
20 the main frame and through which the levers operate, as specified.

2. In a churn of the kind described the combination with a main frame, churn-body, dashers and dasher-shafts, of the operating-
25 levers and means for operating the same, the guide-board supported by the main frame and having a plurality of vertical slots, the operating-levers working in said slots, as specified.

WILLIAM P. KIRKPATRICK.

Witnesses:

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