T. LING.

Churn.

No. 3,714.

Patented Aug. 21, 1844.

FIG. 2.

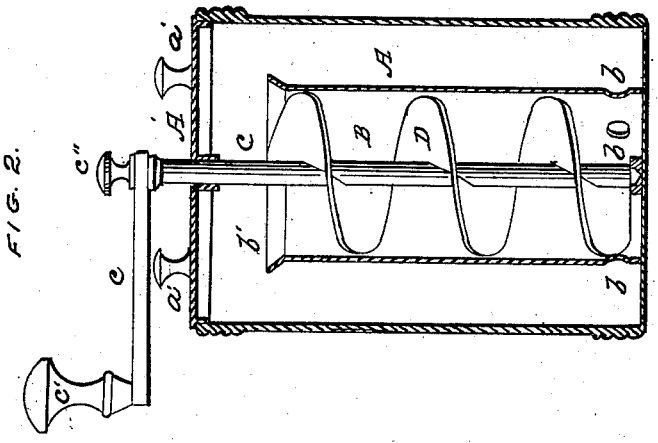


FIG. 1.

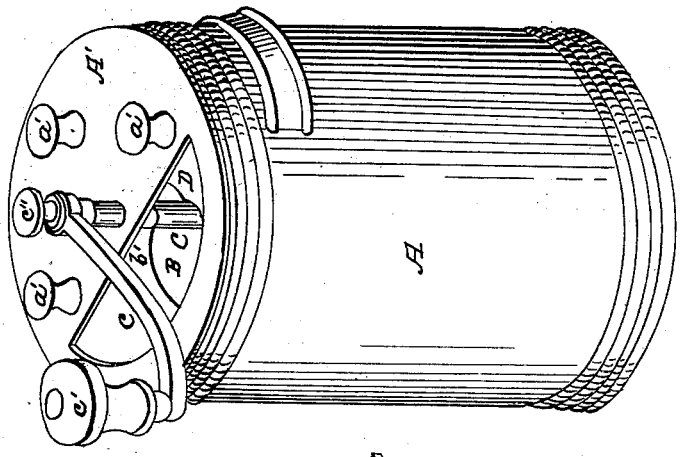
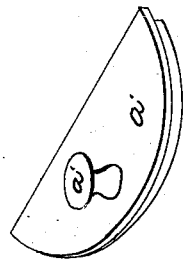


FIG. 3.



UNITED STATES PATENT OFFICE.

THOMAS LING, OF PORTLAND, MAINE.

CHURN.

Specification of Letters Patent No. 3,714, dated August 21, 1844.

To all whom it may concern:

Be it known that I, THOMAS LING, of Portland, in the county of Cumberland, in the State of Maine, have invented a new and useful Churn; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is an isometrical projection of the complete churn, Fig. 2 a central, vertical section, showing the interior arrangement, and Fig. 3 is a projection of the small lid, removed at Fig. 1.

Construction.—In the center of a vertical cylinder A, permanently closed at the bottom, is placed another vertical cylinder B, of about half the diameter of the former, and somewhat lower than it. This smaller cylinder is furnished near its bottom with a sufficient number of circular perforations *b* for the purpose hereinafter described, and on its top it has a flange *b′*, which stands at an inclination of 60 degrees with the horizon. In the center of the smaller cylinder B stands the vertical shaft C, around which winds the archimedean screw D. This screw starts very near the bottom of the cylinder and below the aforesaid perforations *b*, and reaches up to the top of the said cylinder. The diameter of the screw is such as to admit the screw to revolve with ease, but its periphery approaching as near as possible the inner surface of the cylinder B. The large cylinder is closed on the top by a lid A′, which covers the whole surface, and which has a smaller, segmental opening in it, covered by a corresponding lid *a*. The lids are furnished with knobs *a′*, by which they are to be put on or removed. The shaft C passes through the center of the larger lid, and is furnished with a crank *c* and handle *c′* at its upper extremity, which former is confined to the shaft by means of a nut or screw *c″* on its top.

Operation.—The cream having been admitted into the churn in sufficient quantity, the crank *c* is turned, which causes the shaft C to revolve, and the cream entering from the larger cylinder A, through the perforations *b* at the bottom, into the smaller cylinder B, the screw D will consequently raise the cream to the top of the smaller cylinder, and then discharge it again into the larger one, the butter accumulating on the top of the space between the two cylinders. In consequence of the withdrawing of the cream through the perforations from the larger cylinder, its raising spirally in the smaller cylinder, and its final discharge into the former again, a constant motion is kept up throughout the whole body of cream, which creates a tendency of accelerating the process of churning. Very little power is required to carry on the process, whereas the resistance to it is but little and confined to a small space.

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

The combination of the large cylinder A, the small cylinder B with its perforations *b* and flange *b′*, and an apparatus for withdrawing the cream from the large cylinder, raising it in the small cylinder, and discharging it again into the larger one, not however confining myself to the screw D for that purpose, but substituting any other contrivance, by which the same result can be obtained.

THOMAS LING.

Witnesses:

JOHN HERTZ,

FRANCIS BENNE.