

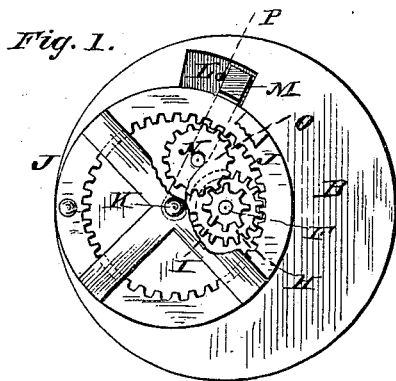
(No Model.)

DE ELBERT A. REYNOLDS.

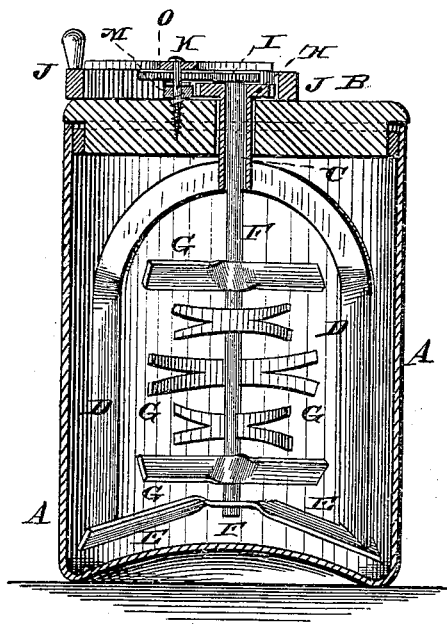
CHURN.

No. 262,118.

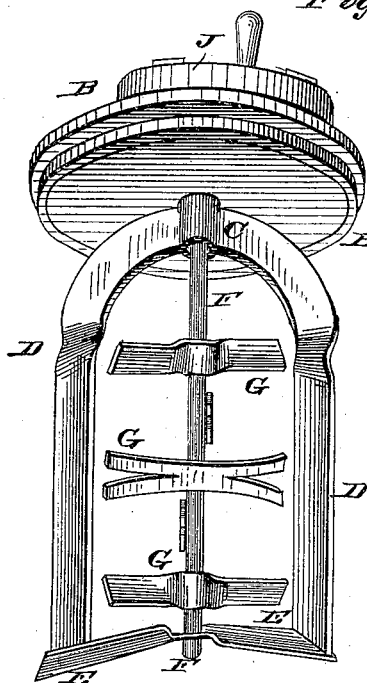
Patented Aug. 1, 1882.



*Fig. 2.*



*Fig. 3.*



WITNESSES

*Wm. L. Dietrich,*  
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INVENTOR

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# UNITED STATES PATENT OFFICE.

DE ELBERT A. REYNOLDS, OF LYONS, MICHIGAN, ASSIGNOR TO SERUAH E. REYNOLDS, OF SAME PLACE.

## CHURN.

SPECIFICATION forming part of Letters Patent No. 262,118, dated August 1, 1882.

Application filed December 15, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, DE ELBERT A. REYNOLDS, of Lyons, in the county of Ionia and State of Michigan, have invented certain new and useful Improvements in Churns; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

Figure 1 is a top plan. Fig. 2 is a vertical sectional view; and Fig. 3 is a perspective view of the lid, dasher, and operating mechanism detached.

Corresponding parts in the several figures are denoted by like letters of reference.

This invention relates to vertical rotary churns; and it consists in certain improvements in the construction of the same, and the mechanism for operating the same, as will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, A represents the churn-body, which is preferably cylindrical in shape, and which may be made of wood, earthenware, or any other suitable material. It is provided with a closely-fitting cover, B, having a central vertical bearing for a tubular shaft, C, carrying the vertical wings D D, which form a part of the dasher. Said wings, which are beveled or inclined in cross-section, as will be clearly seen in Fig. 3, are placed a distance apart nearly equal to the inside diameter of the churn-body or vessel A, so as to work closely adjoining the inside of the latter. The lower ends of the wings D are connected by a brace, E, having a central bearing for the lower end of a vertical stem or shaft, F, the upper end of which passes through and is journaled in the tubular shaft C. Stem or shaft F carries the transverse horizontal beaters or agitators G, the central ones of which are forked, as shown, so as to beat and break the cream, while the upper and lower ones are flat and beveled or inclined toward each other, so as to have a tendency, when the shaft revolves, to force the cream from the top and bottom of the churn

toward the center, where it is well exposed to the operation of the forked beaters or agitators.

The shaft C carries at its upper end, above the lid B, a pinion or gear-wheel, H.

I is a smaller pinion fixed upon the stem or shaft F above gear-wheel H. The latter engages and is operated by the internal gear of a wheel, J, journaled upon a pin or stud, K, eccentrically upon the lid or cover B. The latter has a shallow recess, L, to accommodate a lever, M, pivoted upon the stud K, and having a pin, N, upon which a small gear-wheel, O, about the size of H, is mounted loosely. The wheel O engages the gear of wheel J, and it will be observed that by means of lever M it may be thrown into operation with pinion I, thus revolving the latter and shaft F in a direction opposite to the gear H and shaft C. To retain the lever M in the position to which it is adjusted, a small pin or peg, P, fitting in a hole in the lid or cover, may be employed.

The operation of my improved churn will be readily understood. After placing the cream in the vessel A and adjusting the cover, the lever M is adjusted so as to throw the gear-wheel O into operation with the pinion I. The gear-wheel J, which is provided with a suitable crank or handle, is then operated, thus revolving the shafts C and F in opposite directions. The tendency of wings D will be to throw the cream from the sides toward the center of the churn, while the upper and lower agitators G throw it from the top and bottom toward the center, where it is well broken by the central agitators G, the tendency of which is to throw it back toward the sides. When the globules of butter have formed the gear O is thrown out of operation with pinion I, thus causing the operation of shaft F to cease and enabling the wings D to gather the butter.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The herein-described mechanism for operating churns, consisting of the tubular shaft C, having gear-wheel H, shaft F, journaled in said tubular shaft, and having pinion I, wheel J, having internal gear, and the lever M, piv-

oted upon the axis of wheel J, and having loose gear-wheel O, all arranged and operating substantially as and for the purpose set forth.

- 5 2. The combination of the cover B, having recess L and gear-wheel J, lever M, arranged in said recess, pivoted upon the axis of said gear-wheel, and having loose pinion O, shafts C F, and pinions H I, all constructed, arranged,

and operating substantially as herein described, 10 for the purpose shown and specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

DE ELBERT A. REYNOLDS.

Witnesses:

ARTHUR DEXTER,  
ALVAH VINCENT.