# F. P. Deuel.

## Churn.

No. 88,016. Patented Mar. 23, 1869.

Fig. 1.

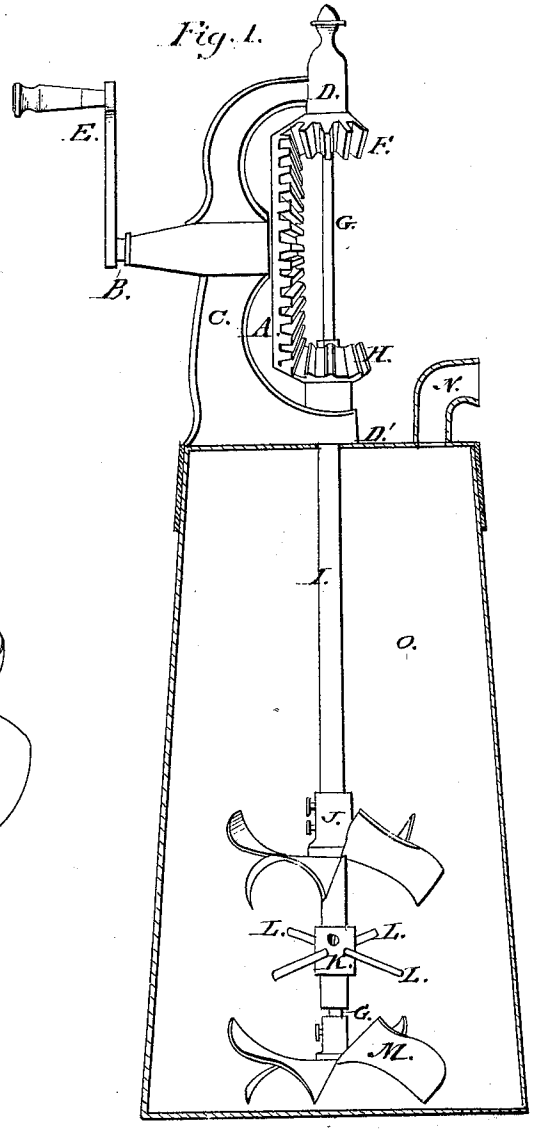



Fig. 3.

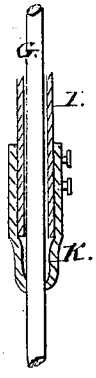
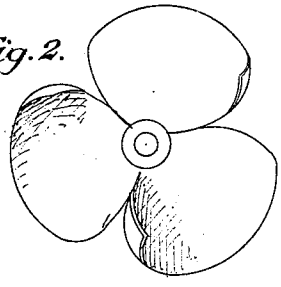



Fig. 2.



Witnesses:
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# United States Patent Office.

FREDERICK P. DEUEL, OF TECUMSEH, MICHIGAN.

*Letters Patent No.* 88,016, *dated March* 23, 1869.

## IMPROVEMENT IN APPARATUS FOR BUTTER-MAKING.

**The Schedule referred to in these Letters Patent and making part of the same.**

*To whom it may concern:*

Be it known that I, FREDERICK P. DEUEL, of Tecumseh, in the county of Lenawee, and State of Michigan, have invented a new and useful Improvement in Apparatus for Butter-Making; and I do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, and being a part of this specification.

Figure 1 is a plan view of my apparatus, in vertical section.

Figure 2 is a top-plan representation of the shape of the screw-wheel.

Figure 3 is a vertical section of the hub which carries the arms and its connections.

Like letters indicate like parts in each figure.

The nature of this invention relates to an improvement in the construction of what are usually denominated rotary atmospheric churns, and consists in the peculiar and novel arrangement of the various parts.

A, in the drawings, is a bevel-geared wheel, rigidly secured to the end of crank-shaft B, which is properly journalled into bearings in the frame C, secured to the churn-cover D', and receives motion from the crank E.

F is a bevel-pinion, rigidly secured to the shaft G, the upper end of which runs in the bearing D.

H is another bevel-pinion, secured to the upper end of the hollow shaft I, which is sleeved on the shaft G.

J is a three or four-blade propeller-screw, secured to the hollow shaft I, and may be adjusted higher or lower upon the shaft, by means of set-screws.

K is a cylinder, also sleeved upon the shaft G, over the lower end of the hollow shaft I, in such a manner as to allow packing to be placed between the bottom of the cylinder and hollow shaft I, around the shaft G, by means of which fluids are prevented from entering said hollow shaft.

From this cylinder project, at right angles, the arms L, which rotate with said hollow shaft I, and in the same direction as the screw J, and are designed to more effectually "break up" the cream.

M is another similar propeller-screw, secured to the lower end of the shaft G, so that it rotates with said shaft, and in an opposite direction to that of the screw J.

N is a tube connecting the inner with the outer atmosphere, and

O is a churn, with the side broken out, to show the mechanism, above described, at work in the interior of the churn.

The operation of this device is so apparent, that a description of its operation is considered unnecessary.

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

The arrangement and combination of the bevel-geared wheel A, pinions F H, crank E, and frame C, with the shaft G, hollow shaft I, cylinder K, propeller-screws J M, arms L, air-tube N, and churn O, when constructed and operating substantially as herein described, set forth, and shown.

FRED. P. DEUEL.

Witnesses:

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