

J. L. SPRAGUE.
Churn.

No. 216,466.

Patented June 10, 1879.

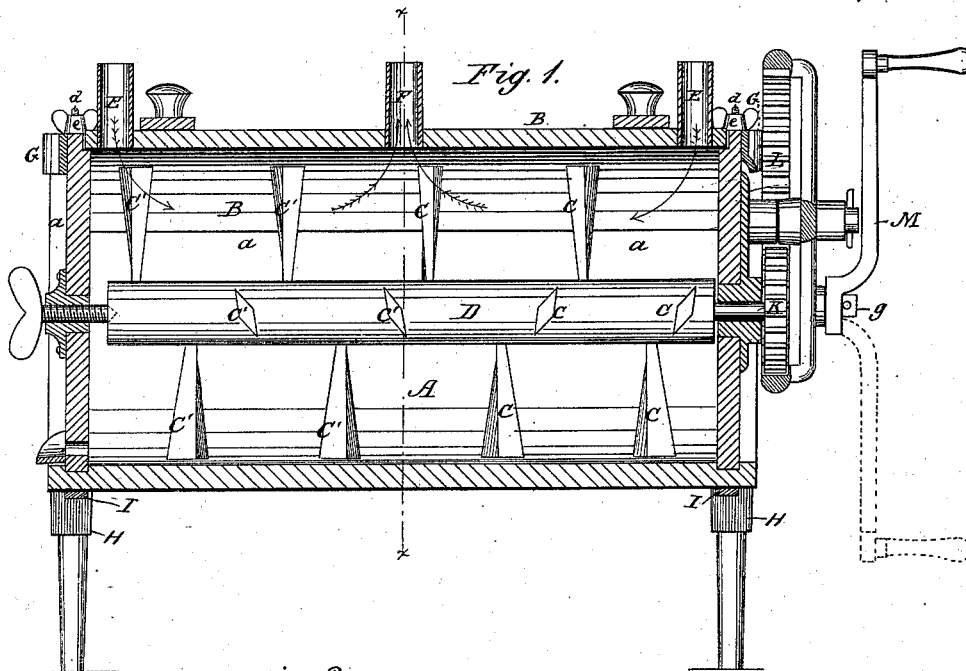


Fig. 2.

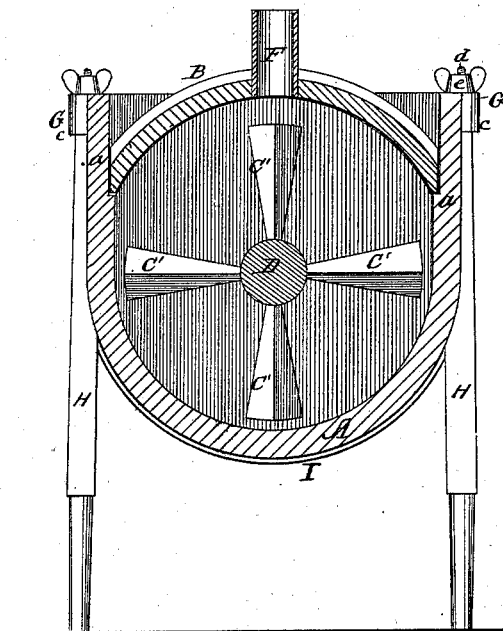


Fig. 3.

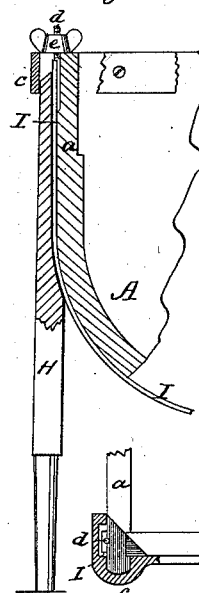


Fig. 4.

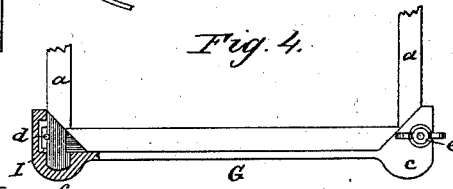
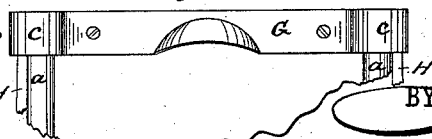


Fig. 5.



WITNESSES;

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UNITED STATES PATENT OFFICE.

JAMES L. SPRAGUE, OF MINNEAPOLIS, MINNESOTA.

IMPROVEMENT IN CHURNS.

Specification forming part of Letters Patent No. **216,466**, dated June 10, 1879; application filed March 14, 1879.

To all whom it may concern:

Be it known that I, JAMES LYNN SPRAGUE, of Minneapolis, in the county of Hennepin and State of Minnesota, have invented a new and Improved Churn; and I do hereby declare that the following is a full, clear, and exact description of the same.

The invention is chiefly an improvement upon a churn for which I have received Letters Patent No. 172,194.

The improvement relates to the convex form of the cover and the provision of air-tubes in the top of the same; also, to the combination, with the churn body and legs, of the devices which secure them together, as hereinafter described.

Figure 1 is a central longitudinal section of my improved churn. Fig. 2 is a vertical cross-section. Fig. 3 is a detail cross-section of a fragment of the churn. Fig. 4 is a detail plan and partial section of one end of the body of the churn. Fig. 5 is an end view of same.

The body *A* of the churn has an arched or convex cover, *B*, in the top or crown of which two air-inlet tubes, *E E*, and an air-exit tube, *F*, are set in line—one, *E*, at each end, and one, *F*, in the middle.

The paddles *C C'* of shaft *D* are set radially; but one-half of them, *C*, are set with their transverse planes inclined in one direction, and the other half, *C'*, in the opposite direction. Thus, as in my aforementioned invention, the paddles create opposite currents of air and cream, which flow toward each other. The course of the air is indicated by arrows, and the entrance and exit of the same are facilitated by the form of the cover *B* interiorly, since the cover concentrates the air over the middle of the body of cream, and

causes it to flow along the middle of the cover to the escape-tube *F*, so that it comes in contact with the portion of cream which is carried up on the ends of the paddles. The effect is much better than when the air takes a diagonal course across the churn, as in my former invention.

The metal bars *G* have enlarged ends *c c*, which are recessed to receive the upper ends of the churn-legs *H*.

The cylindrical portion of the churn-body is encircled by bands *I*, whose reduced cylindrical ends *d* are screw-threaded and pass through the ends *c* of bars *G*. Nuts *e* are screwed on the ends *d*, and by turning them the bands *I* are tightened. Thus the bands and bars hold the parts of the churn-body firmly together, yet adjustably so, since the nuts and screws enable the bands to be slackened or tightened, as required by the swelling or shrinking of the body.

The dasher-shaft is rotated by a crank, *M*, placed on shank *g* of a gear, *L*, which meshes with pinion *K*.

What I claim as my improvement is—

1. The combination, with the dasher having paddles *C C'*, set oppositely, as specified, of the concave cover *B* and the three air-tubes set in its crown or top, as and for the purpose described.

2. The combination of the bands *I*, having the terminal screws *d* and their nuts *e*, with the bars *G*, having recessed and perforated ends *c c*, and the churn-legs *H* and body *A*, as shown and described.

JAMES LYNN SPRAGUE.

Witnesses:

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C. G. JONES.