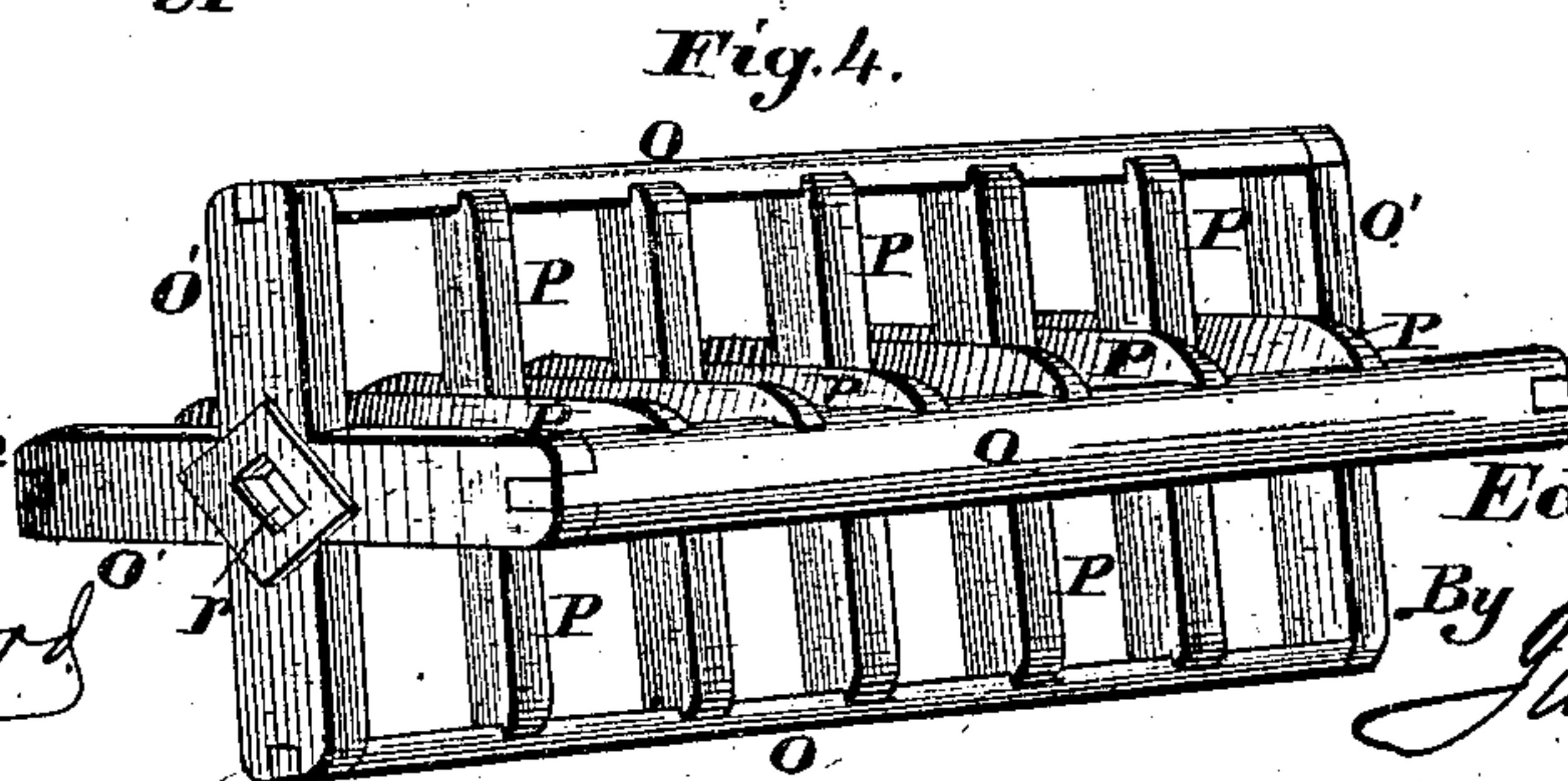
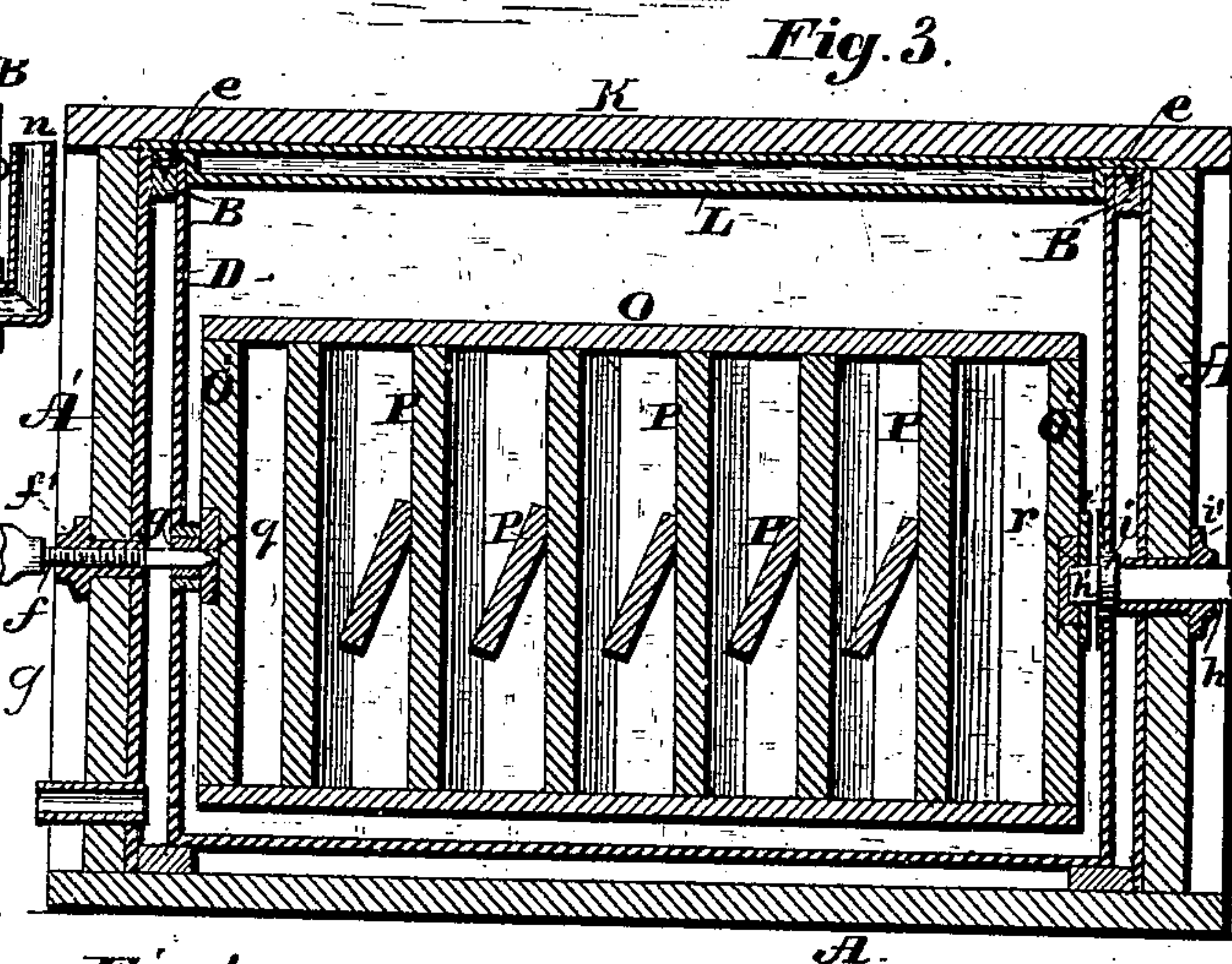
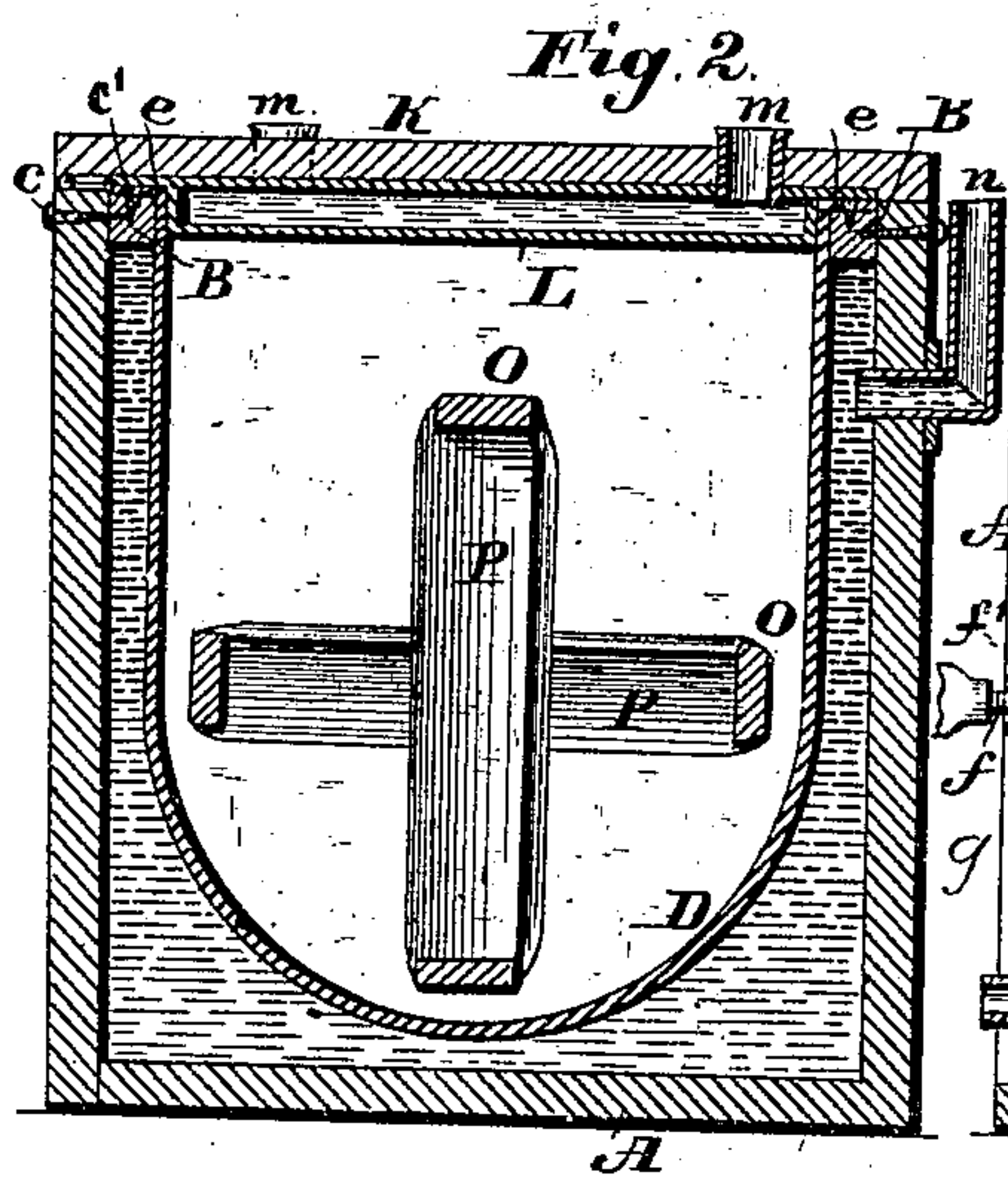
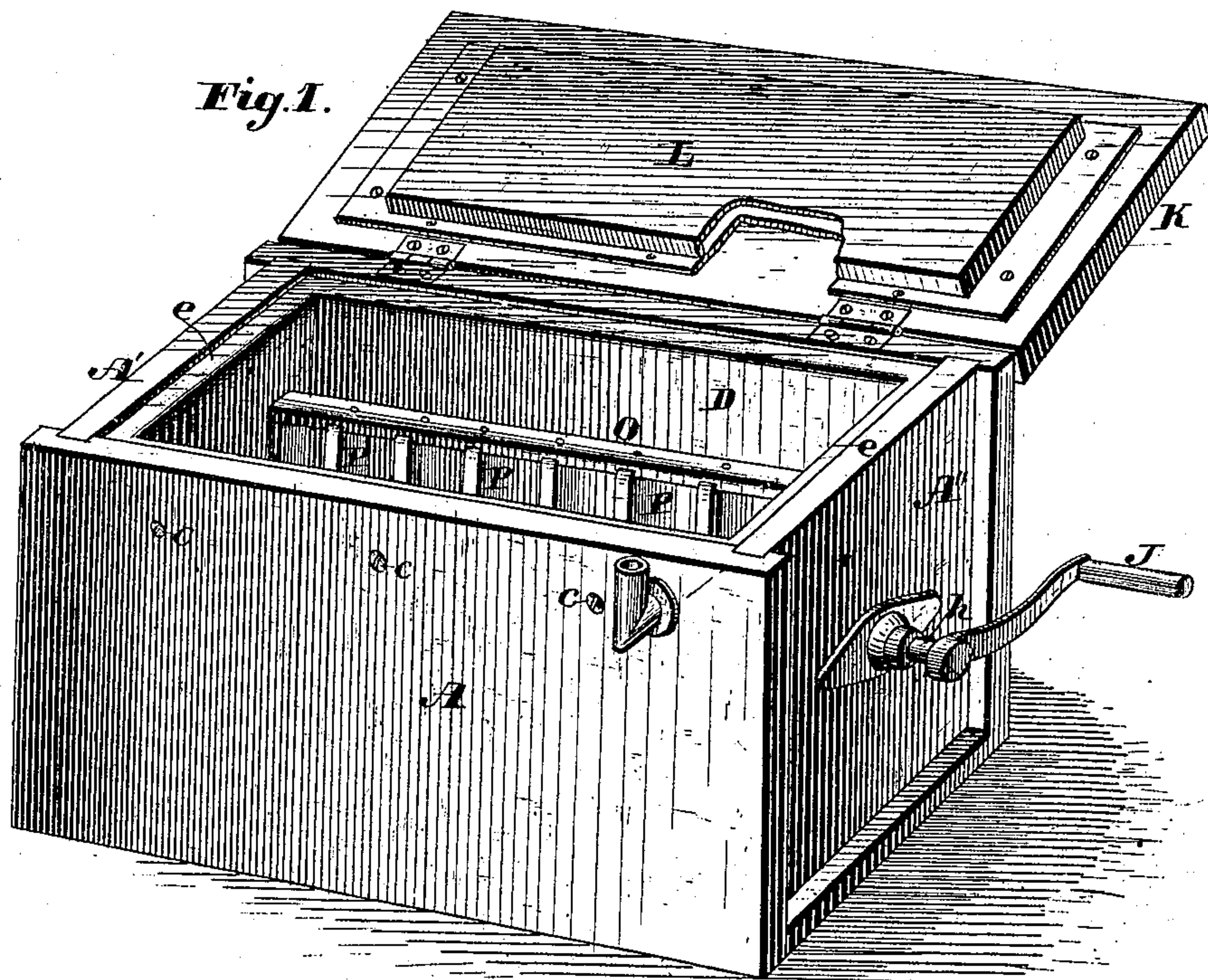


E. A. THRUSH  
CHURN.

No. 245,582.

Patented Aug. 9, 1881.



Attest:  
J. Henry Kaiser  
J. A. Rutherford

Inventor:  
Edward A. Thrush  
By James L. Norris  
Atty.



# UNITED STATES PATENT OFFICE.

EDWARD A. THRUSH, OF READING, PENNSYLVANIA, ASSIGNOR OF TWO-THIRDS TO JOHN S. HILL AND PETER S. HILL, BOTH OF SAME PLACE.

## CHURN.

SPECIFICATION forming part of Letters Patent No. 245,582, dated August 9, 1881.

Application filed January 24, 1880.

*To all whom it may concern:*

Be it known that I, EDWARD A. THRUSH, a citizen of the United States, residing at Reading, in the county of Berks and State of Pennsylvania, have invented new and useful Improvements in Churns, of which the following is a specification.

The present invention relates to that class of churns in which provision is made for tempering the cream, or maintaining the same at a proper temperature, by the introduction of hot or cold water into a chamber partially surrounding the cream or working chamber of the churn.

The invention consists in a certain combination and arrangement of parts, fully hereinafter described, and pointed out in the claim.

In the drawings, Figure 1 is a perspective view of a churn constructed according to my invention, the lid being in a raised position. Fig. 2 is a transverse vertical section. Fig. 3 is a longitudinal section thereof. Fig. 4 is a detached perspective view of the dasher.

The letter A designates a rectangular wooden box, which constitutes the outer casing of the churn. Nearly flush with the upper edges of its walls, and on the inside thereof, the box is provided with cleats or rails B, secured to said walls by means of screws c inserted through the walls from the outside and not passing entirely through the cleats B.

Within the box A is arranged a sheet-metal box, D, which forms the cream-receiver or dasher-chamber, and this box is of such a size that a continuous or intercommunicating space is formed between the outer surfaces of its walls and the inner sides of the box A. The sheet-metal box D is provided at its top, on all its sides and ends, with an outwardly-projecting flange, e, which rests upon the cleats B, and is secured thereto by the wood screws c' passed through said flange and entering the cleats B. The cream-chamber can readily be removed by detaching the cleats from the box upon removal of the screws c. If desired, however, the cream-chamber can be detached without the cleats by removing the screws c'.

About the center of one of the end walls, A', of the box or outer wooden casing a screw, f,

having an unthreaded inner portion with conical point is passed through a nut, f', fitted in said wall. The inner conical end of this screw passes through a packing-sleeve, g, which is inserted into a short tubular projection, g', of the cream-receiver D. The conical end projecting through the packing in the manner stated enters a plate, q, on one of the arms, O', of the dasher-frame, and constitutes one of the central bearings of said dasher. The object of the packing and short tube g' is to prevent leakage. At the opposite end, A'', of the box a short shaft, h, having a square inner tip, h', projects through the outer and sheet-metal boxes and a tube, i', passed through the wall A''. This shaft h is provided with a circular collar, i, which is fitted into an opening made in the end wall of the cream-receiver. The portion of the collar projecting inside said receiver is encircled by a packing-disk, which, in connection with said collar, insures a liquid-tight joint.

The tubular bearing i', projecting through the outer casing, may be packed in any suitable manner, and its inner end bears against the collar i of the shaft h. In this manner the leakage of water or other liquid contained in the space surrounding the cream-chamber is effectually prevented. A crank, J, on the outer end of the shaft h serves to operate the dasher mounted on the center screw and said shaft.

The lid or cover of the churn is designated by the letter K. It is hinged to the box or casing in the ordinary manner. To the under surface of this lid is applied a projecting shallow box, L, which is preferably made of sheet metal, and is of such a size as to fit closely within the top portion of the sheet-metal cream-chamber D. From this box L a tube, m, extends through the lid, for the purpose of enabling said box to be filled with a heating or cooling liquid, as required. A tube, n, also leads through the wall of the outer casing, A, to the space between the walls of the same and the inner cream-chamber, and serves to introduce a heating or cooling liquid into said space. When the lid is closed, as shown in Figs. 2 and



3, it will be seen that the cream-receiver or working-chamber of the churn is practically entirely surrounded by a jacket, which can be readily filled with a heating or cooling liquid, preferably water, and by means of which the temperature of the cream may be regulated as desired.

The construction above described will serve to place the cream in the most favorable condition for churning, because the contents of the cream-chamber can be maintained at a uniform temperature by entirely surrounding said chamber with a heating or cooling medium. In order to extract the greatest yield of butter I employ a rotary dasher, which consists of two frames, O, preferably made rectangular in form. The end bars, O', of these frames cross each other, and are secured to each other at their centers. Each of these frames is provided with a series of slats or beaters, P, set obliquely between their side bars, the slats or beaters of one frame passing between the slats or beaters of the other.

It will be perceived that the cream-receiver can readily be removed from the outer casing for the purpose of cleaning the same or gaining access to the liquid-space formed between said receiver and the outer casing. The central bearings of the dasher are also so fitted into the outer casing and cream-receiver that they can be easily applied to and disengaged from the dasher. The means for packing the shaft or bearing openings so as to prevent leak-

age and insure a firm connection of said bearings with the dasher are also very simple in construction and effective in operation, as will be readily apparent.

I do not wish to claim, broadly, a churn having a cream-receiver or dasher-chamber surrounded on its sides and bottom with a water-chamber; neither do I wish to claim the combination, with a jacketed churn-body, of a hollow cover or lid adapted to receive a heating or cooling liquid.

What I claim is—

A churn consisting of the box A, an inner chamber, D, having a curved bottom with its sheet-metal walls flanged at their upper edges and supported by cleats B, said outer box and inner chamber having a water-space between them, the lid K, carrying the sheet-metal box L on its under side, the inlet-tube *m*, opening into said box, the pipe *n*, passing through the outer box into the space between the box and its inner chamber, the end bearing, *g*, and conical center screw, *f*, for supporting the dasher and to enable it to be removed and replaced at will, all substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

E. A. THRUSH.

Witnesses:

JAMES L. NORRIS,

JAMES A. RUTHERFORD.