

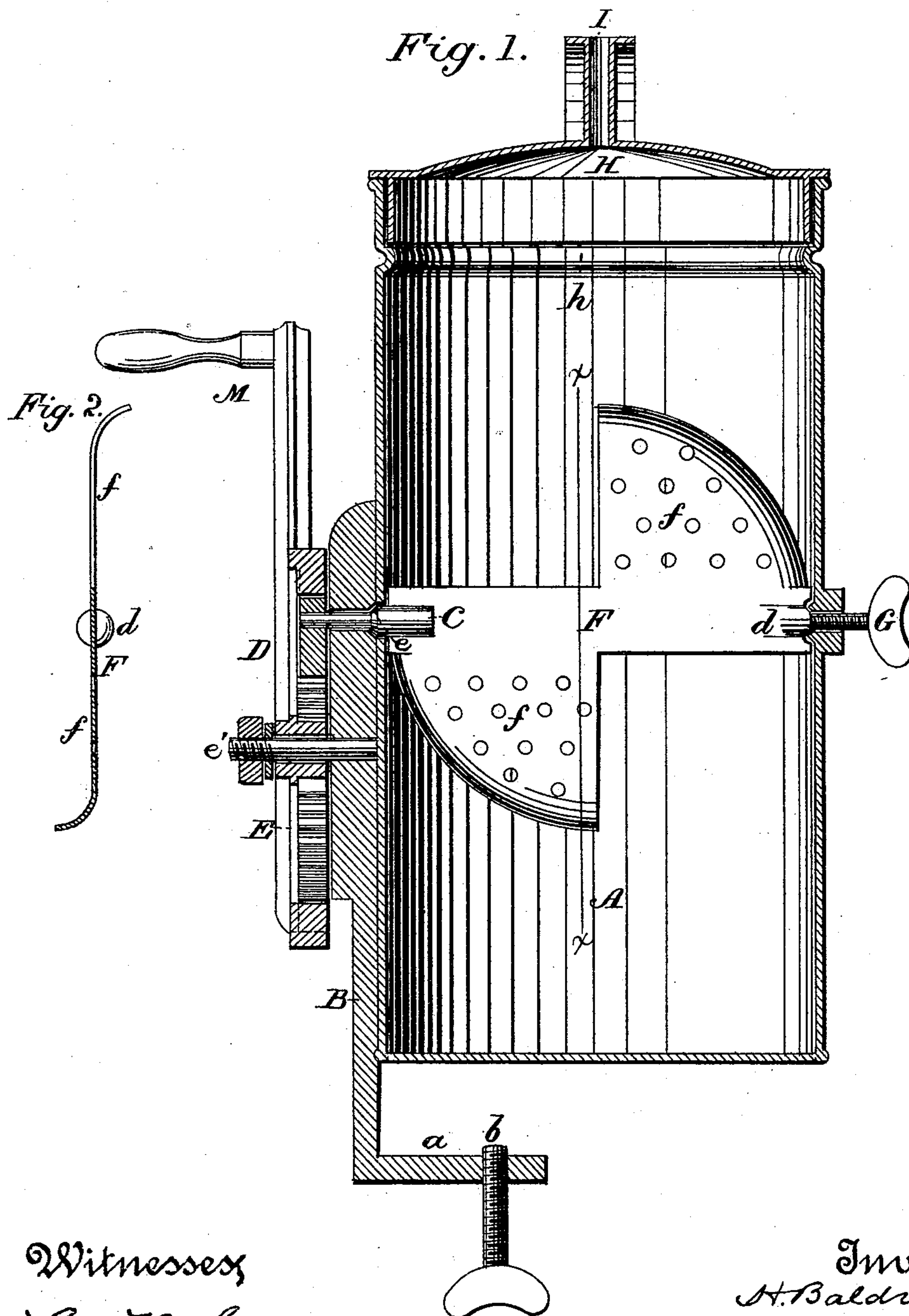
(No Model.)

H. BALDRIDGE.

CHURN.

No. 277,103.

Patented May 8, 1883.



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UNITED STATES PATENT OFFICE.

HERMAN BALDRIDGE, OF LOS ANGELES, CALIFORNIA.

CHURN.

SPECIFICATION forming part of Letters Patent No. 277,103, dated May 8, 1883.

Application filed November 22, 1882. (No model.)

To all whom it may concern:

Be it known that I, HERMAN BALDRIDGE, of the city and county of Los Angeles, State of California, have invented an Improved Churn; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to the class of churns, and to certain improvements therein.

The object of my invention is to provide a simple and effective churn.

Referring to the accompanying drawings, Figure 1 is a vertical section of my device. Fig. 2 is a section of the dasher on line *x x*, Fig. 1.

Let A represent a cylindrical vessel of suitable proportions, on the outside of which is secured a vertical strip, B, extending below the base of the vessel, and having its end turned at right angles, forming a clamp, *a*, in which a set-screw, *b*, is fitted to secure the vessel to the edge of the table in a position in which it may be operated with the most convenience. The inner surface of the strip B, which I shall now call the "gear-frame," is suitably concaved to fit the convexity of the vessel as snugly as possible, and is also grooved out where it passes the base of the vessel, to allow the flange or seam of the latter to fit therein. Through the upper portion of the gear-frame B extends a shaft, C, carrying on its outer end a pinion, D, with which the main driving-gear E upon a shaft, *e'*, in the gear-frame engages. M is the crank of the gear E. The inner end of the shaft C extends within the vessel A, and is slotted to receive one end or side of the dasher F. The other side of the dasher is provided with a socket or bearing, *d*, formed by a small piece of iron, which said socket receives a thumb-screw, G, through the side of the vessel, thus forming a bearing for that side. The dasher, by being thus mounted, revolves in a vertical plane on a horizontal axis, about midway between the top and bottom of the vessel. The dasher F is peculiarly constructed. It consists of two quadrants diagonally opposite, forming paddles *f f*. The faces of these are slightly dished or concaved—one in one direction, the other in an opposite direction—and both are perforated, as shown, to increase the friction on the cream, Fig. 2. Their edges are close to the wall of the vessel when lying in a

horizontal plane, so that they may churn as close as possible to the sides. The revolution of this dasher on a horizontal axis beats vertically against the main body of cream, and dashes portions of it against the curved sides of the vessel. One paddle dashes it to one side and the other to the other side, and as it is thrown back from the curved sides of the vessel each catches that which was thrown by the other and dashes it back again. The cream is thus in a measure churned against itself, which is an advantage in preserving the texture of the butter and preventing it from becoming oily, which has a tendency to destroy its keeping qualities. The revolution of the dasher in a vertical plane on an axis transversely placed in the churn has a good effect in keeping the main body of the cream above and below at work, and when the paddles lie in a horizontal plane they draw under some air, which has the effect of assisting the formation of the butter quickly.

To prevent any leakage of cream where the shaft C enters, I make a beveled shoulder, *e*, upon said shaft, which, fitting in a correspondingly-beveled socket made in the inner surface of the gear-frame B, forms a bearing and a tight joint. This is set up by the thumb-screw G on the other side, and the joint may be thus perfectly adjusted. To prevent leakage at the top, I have a bead, *h*, made upon the inner surface of the vessel A, near its top. The cover H fits down inside of the vessel, and its lower edge rests upon the bead *h*, whereby the cream cannot be dashed up to leak at all.

To furnish air to the interior of the churn, I have a tube, I, passing down through the cover a short distance and extending up above to the handles, through which it opens. It thus forms for the handle a support.

When it is desirable to remove the dasher, I loosen the thumb-screw G and remove the other side of the dasher from the slotted shaft C, and it may then be taken out without difficulty.

In the operation of this churn, the peculiar form and position of the dasher revolving on a horizontal axis in a vertical vessel, when taken in connection with the curved sides of the vessel, a particularly advantageous effect is pro-

duced, in that the cream is not dashed against the maximum resisting surface, as would be the case if the vessel had flat sides, but is rather swept around the curved surface, following the direction imparted by the wall of the vessel, and is thus not beaten so severely as to injure the texture or grain of the butter, and at the same time the operation of the driving-crank is rendered easier.

10 Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a churn, the vertical cylindrical vessel A, in combination with the dasher F, set transversely in said vessel, said dasher being constructed with two diagonally-opposite quadrants or paddles, *ff*, in a plane with the axle, and the edges of which are turned in opposite directions, and a means for revolving said dasher, substantially as herein described.

2. In a churn, the vessel A and dasher F, having paddles *ff*, and arranged transversely

in said vessel, in combination with the gear-frame B, the slotted driving-shaft C, securing one side of the dasher, and having a beveled shoulder, *e*, fitting a beveled socket on the inner surface of said frame B, and the set-screw G, impinging against a socket in the other side of the dasher, whereby said dasher is mounted and adjusted substantially as and for the purpose herein described.

3. In a churn, the vessel A and dasher F, mounted transversely in said vessel, in combination with the gear-frame B, secured upon the outside of the vessel, and forming, with the bottom of said vessel, a clamp, *a*, below, the slotted shaft C, pinion D, and main gear E, all arranged and operating substantially as herein described.

In witness whereof I hereunto set my hand.

HERMAN BALDRIDGE.

Witnesses:

CHAS. CHARNOCK,
GEO. S. HUPP.