C. FARMER.
Churn.

No. 200,997. Patented March 5, 1878.

Fig 1.

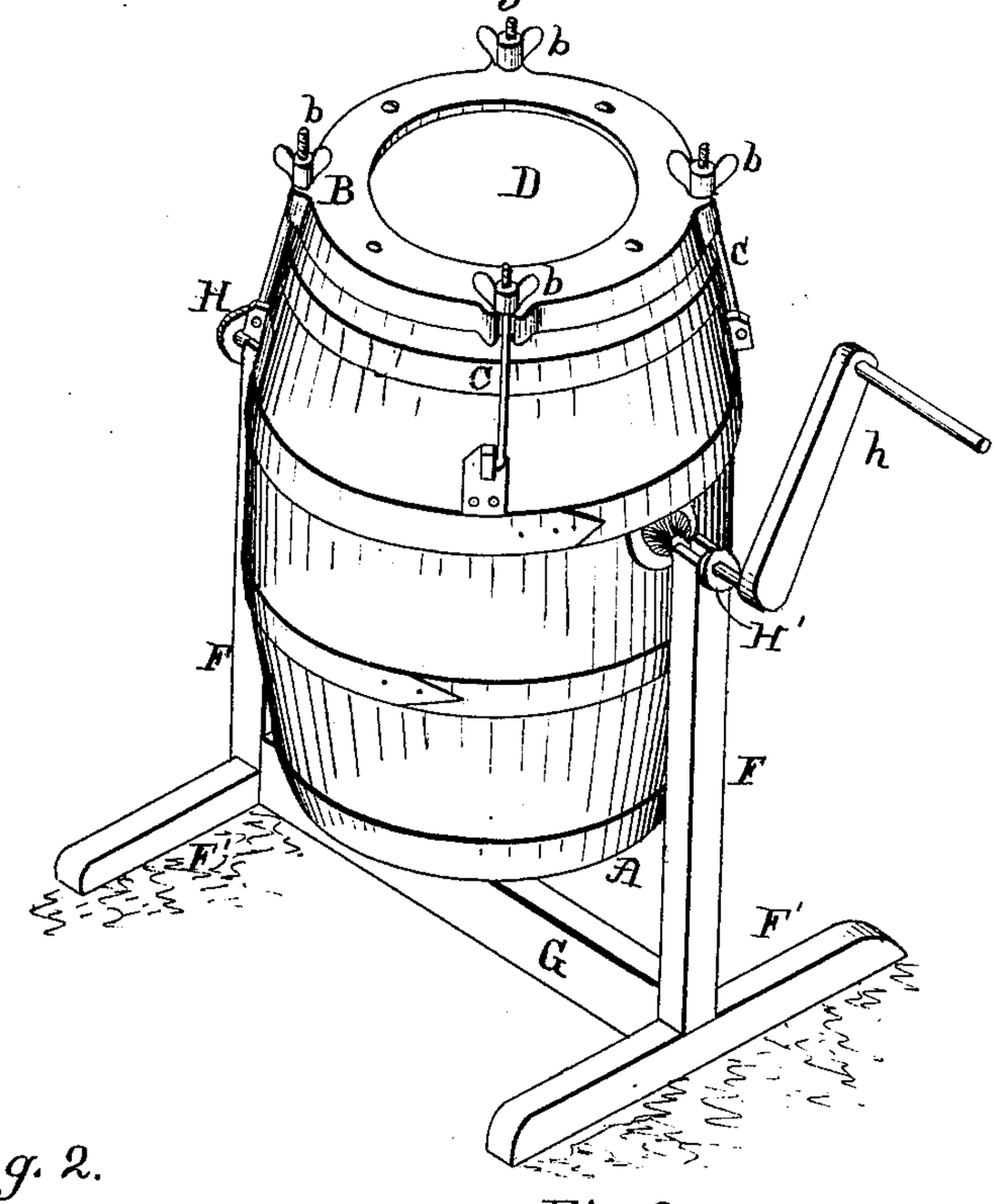


Fig. 2.

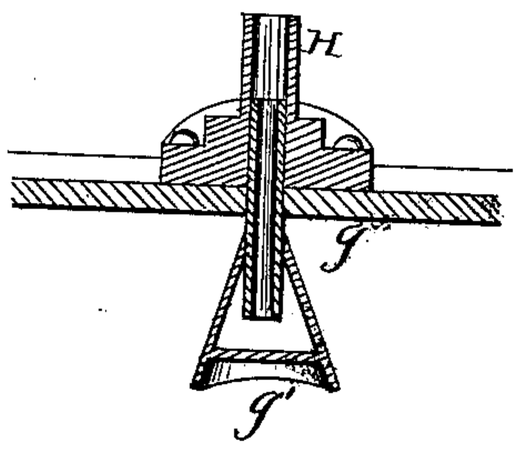


Fig. 3.

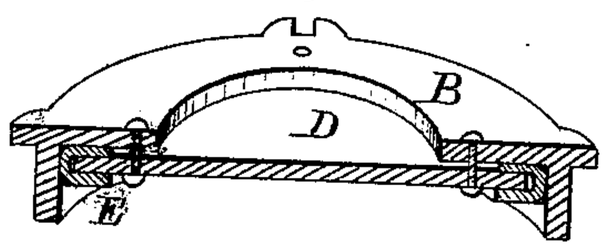
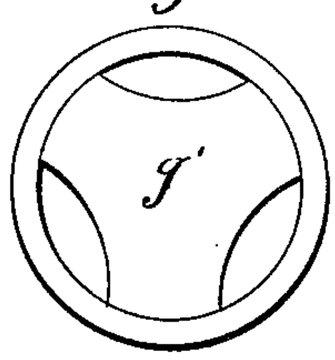


Fig. 4.



Witnesses:

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Inventor:

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UNITED STATES PATENT OFFICE.

CHESTER FARMER, OF ROCKFORD, ILLINOIS.

IMPROVEMENT IN CHURNS.

Specification forming part of Letters Patent No. **200,997**, dated March 5, 1878; application filed June 5, 1876.

To all whom it may concern:

Be it known that I, CHESTER FARMER, of Rockford, in the county of Winnebago and State of Illinois, have invented a new and useful Improvement in Churns; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Figure 1 is a perspective view of the churn mounted upon the frame. Fig. 2 is a sectional view of the journal opposite the crank, showing the manner of ventilating the cream and allowing the escape of the gaseous matter. Fig. 3 is a vertical section of the cover, showing the manner of packing the same; and Fig. 4 is the inner end view of the ventilating-funnel, showing the air-passages.

Similar letters of reference denote corresponding parts in all the figures.

The object of the invention is to provide an air-tight and easily-removed head, adapted for use with the ordinary revolving barrel-churn; also, in the manner of allowing the gases to escape, as well as to allow the air to be drawn in without the escapement of the inclosed fluid, all of which will be hereinafter described.

In the drawings, A represents the churn-body, made cylindrical in form and of barrel shape. B is a metal rim, forming a part of the cover, having lugs *b* placed vertically on the periphery for the reception of the securing-bolts C. This rim is preferably made of cast-iron, but may be made of any other suitable material. D is the head proper of the churn, which can be made of any suitable material, either of wood or metal, and is secured to the rim B by rivets, screw-bolts, or otherwise. E is the packing, made of any yielding material, placed between the head D and the end of the cylinder, and fitted tightly against the said end, thus forming an air-tight joint. F are uprights, upon which the churn is mounted by the journals H H′. F′ are ground-supports, to which the upright posts F are secured. G is a cross-bar uniting the ground-supports and uprights, and completing the supporting-frame. H H′ are bearings resting in recesses or boxes upon the upper ends of the uprights F, the one, H′, having a crank, *h*, attached, by which the churn is made to revolve.

The bearing H has a hole bored through the longitudinal center and extending the entire length of the same, (see Fig. 2,) as well as through the churn-body. Into this hole is inserted from the inner side of the cylinder a tube, *g*, provided with a funnel-shaped head, *g′*. The free end of the tube *g* runs through the churn-body and into the opening made through the bearing H. The reverse end of the tube runs into the funnel, and stops near the head having the ventilating-holes, for a purpose which will now be described.

In agitating cream preparatory to separating the oily part known as "butter" a gas is generated, and when the same is created by the agitation of the cream in an air-tight vessel the force is too great for confinement by any ordinary method.

To obviate this difficulty in this class of churns, and allow such gaseous matter to escape without the escapement of the fluid, this vent has been devised. When the churn is revolved the gas, as it forms, forces its way through the air-cavities shown in Fig. 4, and escapes through the tube *g* and out through the opening in the bearing H. In case any of the fluid should enter the air-cavities in the funnel-head, it will strike against the inclined portions and run back into the churn through the same openings by which it entered, while the gas will find its way through the tube *g*, as above described. After the gas has escaped the outside air is drawn from the outside into the churn through the same openings.

C are hinged screw-clamping bolts by which the head or cover is expeditiously and securely fastened, all leakage being prevented by the use of the packing E, all of which will be readily understood without further description.

Having now described my invention, I desire to secure by Letters Patent—

1. The combination, with a churn-barrel, of a head made in two parts, one of which is a closed head and adapted to fit against the end of the barrel, while the upper part is an open or skeleton frame or rim, and constructed to embrace the outer edge of the lower head, and also overlap the sides of the barrel, substantially as described.

2. The combination, with a churn-barrel, of a closed head adapted to fit against the end

of the barrel, and an open or skeleton frame or rim constructed to embrace the outer edge of the lower head, said frame or rim provided with lugs for the attachment of suitable tightening and fastening bolts, substantially as described.

3. The combination, with a churn-barrel, of a close or imperforate head adapted to fit against the end of the barrel, and a cast-iron skeleton frame or rim constructed to embrace the outer edge of the main head, said frame having lugs for the attachment of tightening-bolts cast solid therewith, substantially as described.

4. The combination, with a churn-barrel, of a head adapted to fit against the end of the barrel, a skeleton frame or rim constructed to receive and retain the main head in place, and suitable packing interposed between the end of the barrel and the head, substantially as described.

5. The combination, with a churn-barrel and cast-metal frame or rim and churn-head secured within said rim, of hinged tightening-bolts adapted to engage in grooved lugs formed on the periphery of said cast-metal rim, substantially as described.

6. A churn-vent having small perforations in its larger end, substantially as described.

7. In a churn operated by revolving the body with the inclosed cream, the combination of a hollow bearing-journal, the tube *g*, and perforated funnel-shaped head *g'*, arranged and operating substantially as described, and for the purpose set forth.

This specification signed and witnessed this 27th day of March, 1876.

CHESTER FARMER.

Witnesses:
G. W. FORD,
CHARLES S. FORD.