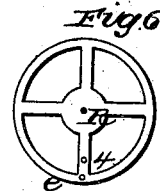
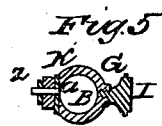
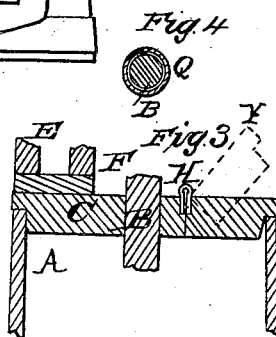
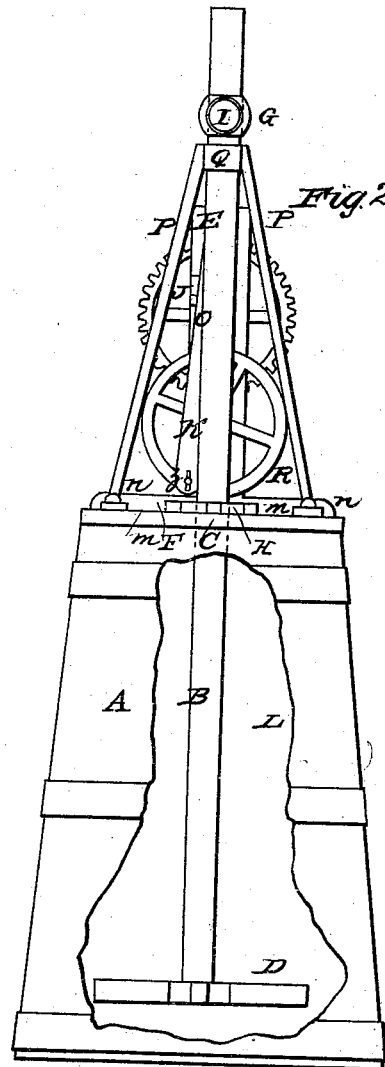
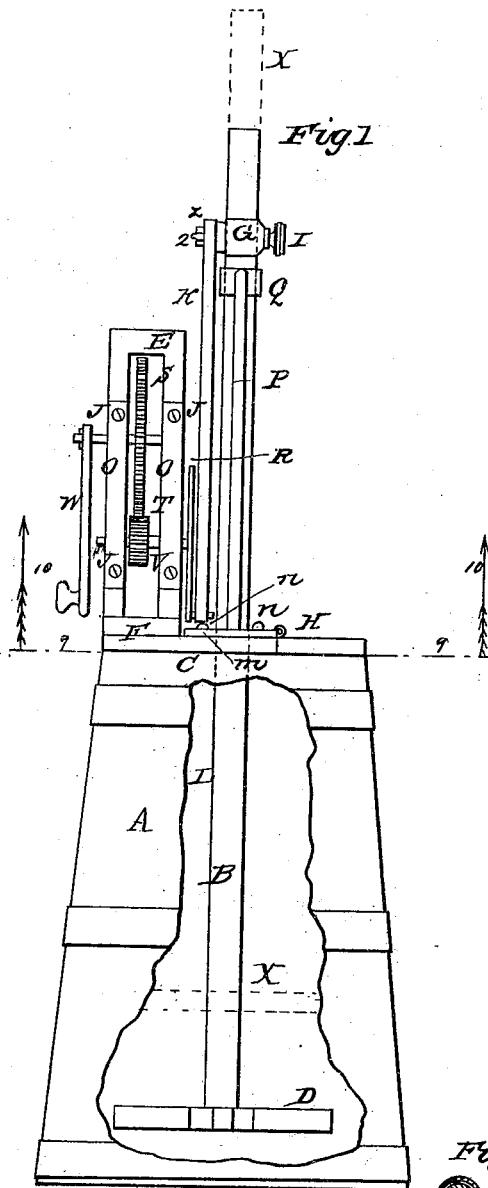


I. J. RYERSON.

Churn.

No. 52,890.

Patented Feb. 27, 1866.



Witnesses
J. S. Chapin
Albert W. H. H. H.

Inventor
I. J. Ryerson.

UNITED STATES PATENT OFFICE.

IRA J. RYERSON, OF PIERCETON, INDIANA.

IMPROVEMENT IN CHURNS.

Specification forming part of Letters Patent No. 52,890, dated February 27, 1866.

To all whom it may concern:

Be it known that I, IRA J. RYERSON, of Pierceton, in the county of Kosciusko and State of Indiana, have invented an Improved Churn; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a side elevation of my improved churn. Fig. 2 is an end elevation of the same. Fig. 3 is a central sectional elevation of the lid of the churn, and a broken section of the adjoining parts. Fig. 4 is a plan view of the guide through which the dasher-rod operates, and a horizontal section of the dasher-rod. Fig. 5 is horizontal section of the dasher-rod, holder, and regulator. Fig. 6 is an elevation of the pitman-wheel.

The object of my invention is to attach to the lid of the common dasher-churn such mechanical appliances as will easily operate the dasher, and by means of which the length of the dasher may be adjusted so as to suit the depth of any ordinary churn-barrel and the quantity of cream used in the same, and to arrange the gearing of the churn so that the dasher may be made to move up and down in the usual manner by turning the crank attached to the gearing, and so to arrange the various devices attached to the lid that the same, including the lid, may be taken off from the barrel of the churn after the churning process, leaving the dasher in the barrel, with which to gather the butter.

A further object of my invention is to place the guide which regulates the dasher above the lid of the churn instead of in the churn-barrel. It is well known that it requires two bearings or guides in order to keep the dasher-rod in a vertical position when operated by the common pitman, and that it is a common practice to use the lid of the churn as one guide, and to put the other guide inside of the churn-barrel, and also that the friction which results from the operation of the dasher on the inside guide is sufficient to generate an oily substance in the cream which is very injurious to the butter. This difficulty I obviate by placing a guide above the lid of the churn instead of in the churn-barrel, and also leave the inside of the churn-barrel free from any obstructions that

would interfere with taking out the butter and cleaning the churn. It will be seen that this gearing may be readily attached to any upright dasher-churn barrel, whether of wood or stone.

To enable others skilled in the art to make and use my invention, I will describe the method of constructing and operating the same.

A represents the common wooden churn-barrel, to which my invention is attached.

L shows a portion of the churn-barrel broken out to give a view of the dasher. C represents the lid of the churn, to which my device is attached.

6, Fig. 3, shows the manner of rabbeting the lid so as to allow a large portion of the same to project down into the churn, for the purpose of securing it to the churn-barrel without any additional fastening.

7 represents the beveling of the rabbet of that portion of the lid which is hung by means of the hinge H so as to open, as shown by the dotted lines Y.

F shows the part attached to the lid C, for the purpose of giving a suitable foundation for supporting the frame E. This frame E is used to support the shaft U of the drive-wheel S, and the shaft V of the pinion T.

R shows the pitman-wheel attached to the shaft V outside the frame E, and in a convenient position to operate the pitman K by means of the wrist 8.

m represents a metallic plate attached to the lid of the churn C by means of the screws n, for the purpose of giving a sufficient support to the inclined standards P. These standards P pass through the plates m by means of a tenon and rivet in the usual manner.

Q represents the upper guide, which is secured to the inclined standards P by brazing, soldering, or other permanent means. This guide Q is circular, and the dasher-rod B passes up and down through it when the churn is operated.

G represents the dasher holder and regulator, to which the upper end of the pitman K is attached by means of the wrist 2 and nut z. This regulator G has a circular opening, through which the dasher-rod is made to pass when regulating the dasher D with reference to the depth of the churn-barrel A and the quantity of cream used in the same, as shown at Fig. 5.

The dotted lines X' show the point to which

the top of the dasher-rod B may extend above the regulator G, and the dotted lines X the point in the churn-barrel to which the dasher D may extend when the dasher-rod B is made to pass through the guide Q in regulating the length of the rod B, by means of the regulator G, to suit a churn-barrel of less depth than that shown at A, Fig. 1.

I shows the thumb-screw, inserted in the regulator G, by means of which the dasher-rod B is held firmly at the required point.

Fig. 6 shows the pitman-wheel, in which are made the holes 8 and 4, in either of which the wrist 8 may be inserted.

The object of the additional hole 4 is to give a shorter stroke to the pitman K when the dasher-rod is regulated by means of G to a churn-barrel of less depth than that shown at A, Fig. 1.

It will be seen from the above description that the length of the dasher-rod B and the stroke given by the pitman-wheel R will allow my device to be attached to any ordinary churn-barrel, as set forth.

Operation: In order to use my device as above described it is necessary to raise a part

of the lid, as shown by the dotted lines Y, Fig. 3. Then fill the churn-barrel not to exceed three-fourths full with cream. Then turn the crank W in either direction until the churning process is complete. The operation of the gearing attached to the frame E, being in common use, needs no explanation. The thumb-screw I must then be loosened in order that the regulator G may be moved up and taken off the dasher-rod B, and the lid C, including the gearing, may be lifted up from the line 9 in the direction of the darts 10, so as to leave the dasher and rod in the churn-barrel, for the purpose of gathering the butter.

Having thus described my device, what I claim, and desire to secure by Letters Patent of the United States, is—

The arrangement and combination of the standards P, guide Q, with the dasher-rod B and regulator G, substantially as described and set forth.

IRA. J. RYERSON.

Witnesses:

GEO. L. CHAPIN,

ALBERT HAYWARD.