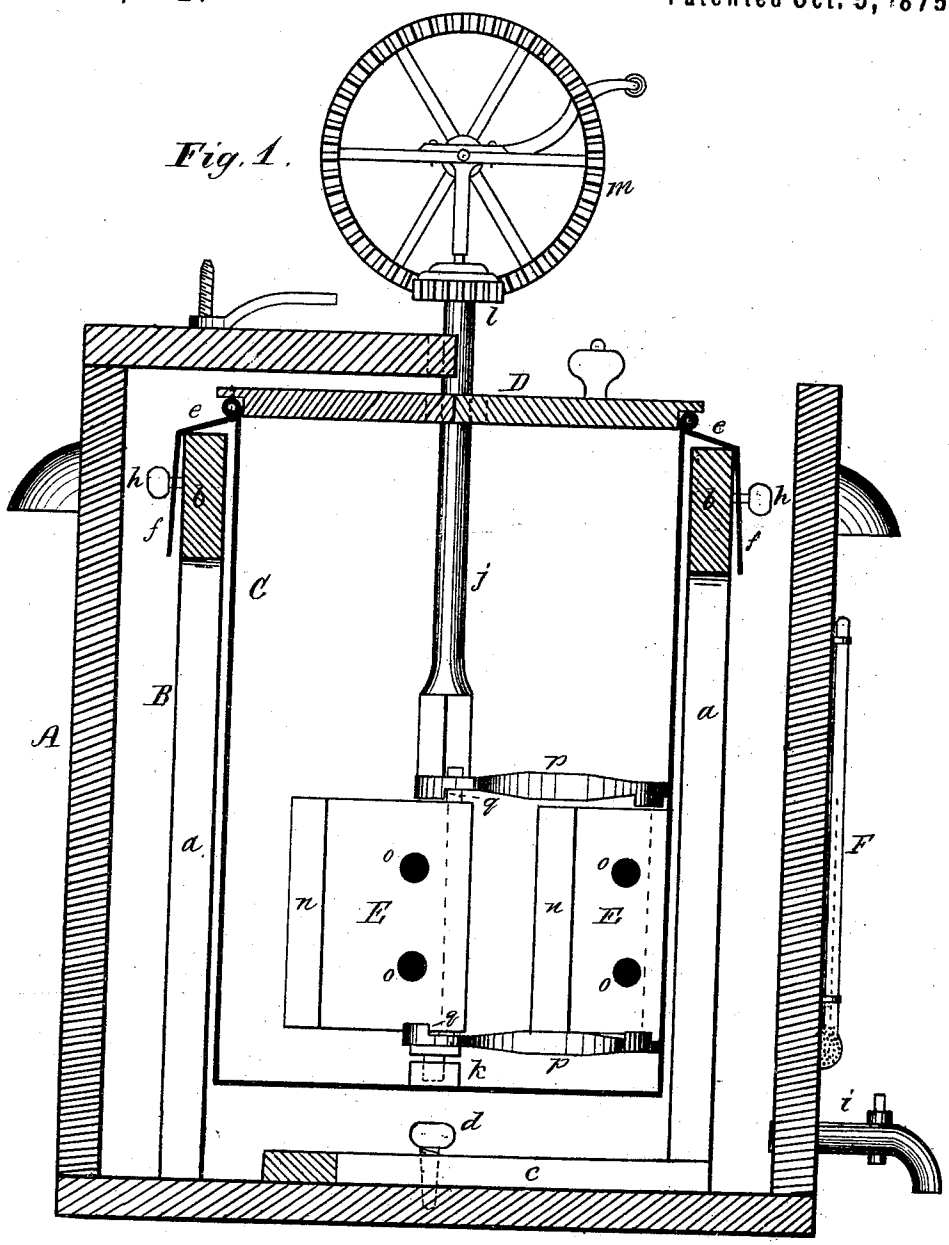
2 Sheets--Sheet 1.

A. D. GROSE.

Churn.

No. 168,392. Patented Oct. 5, 1875.

Fig. 1.



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2 Sheets--Sheet 2.

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No. 168,392. Patented Oct. 5, 1875.

Fig. 2.

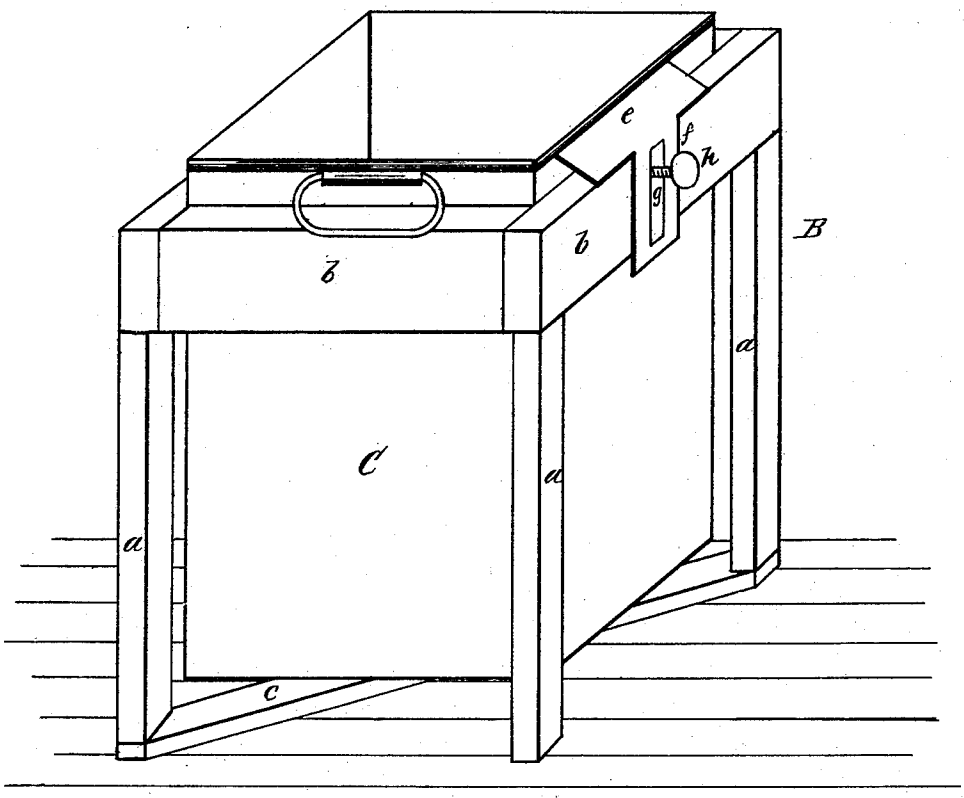


Fig. 3

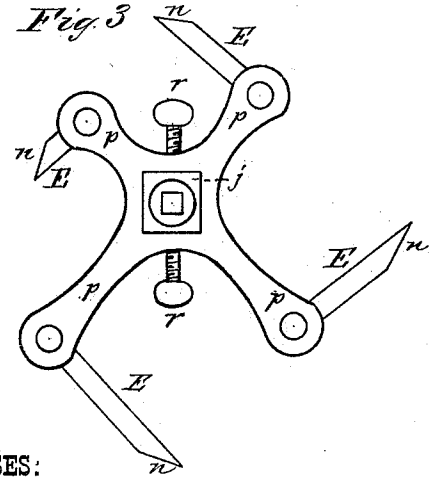
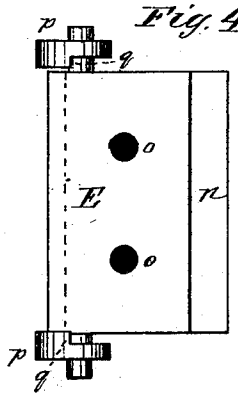


Fig. 4.



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UNITED STATES PATENT OFFICE.

ANDA D. GROSE, OF TILTON, KENTUCKY.

IMPROVEMENT IN CHURNS.

Specification forming part of Letters Patent No. **168,392**, dated October 5, 1875; application filed August 24, 1875.

To all whom it may concern:

Be it known that I, ANDA D. GROSE, of Tilton, in the county of Fleming and State of Kentucky, have invented a new and valuable Improvement in Rotary 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, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a vertical section of my improved churn. Fig. 2 is a detached perspective view of the skeleton-frame and box. Fig. 3 is a top-plan view of the dasher; Fig. 4, a side view of one of the dasher-wings and its bearings.

This invention has relation to that class of churns wherein a water-space is formed between the receptacle for holding the cream and the outer casing, for the purpose of tempering the cream.

My invention consists, in connection with an outer box or casing, of a removable skeleton-frame, within which the box for holding the cream is suspended, and in the manner of connecting said box to the frame, so as it may be adjusted therein or removed therefrom. My invention further consists in the peculiar construction of the churn-dasher, so as it will be more effective upon the cream during the process of churning, as will be more fully described hereafter.

In the drawings, A represents the outer casing or box, of any suitable dimensions, within which is secured a skeleton-frame, B, consisting of upright corner pieces or legs *a* and horizontal pieces *b*, and at its lower ends or base is a strip, *c*, running diagonally, and secured to the opposite corner-pieces *a*, by which the frame is fastened to the bottom of the casing A by the set-screw *d*. An inner box, C, for holding the cream is suspended within the frame B by the wide bands *e*, having tongues *f*, with elongated slots *g*, through which thumb-screws *h* pass. By this arrangement the box C, which may be of any suitable metal, can be suspended at the desired distance within the frame, and securely held there by screwing up the thumb-screws *h* until their heads press against the face of the tongues *f*; or, by simply turning the screws so as to allow the elongated slots to pass over the same, the box may be raised out and removed from the frame for cleaning or for emptying its contents. The skeleton-frame B is also capable of removal by withdrawing the set-screw *d*. The frame B allows the water, when placed within the casing A, to freely circulate around the sides of the box C, thereby every portion of the same being brought in contact with the water, which serves to temper or sour the cream, according to the degree of temperature of the water. If desired, a thermometer, F, may be placed upon the side of the casing A, so that its inner face will be brought in contact with the water, by which the temperature necessary for churning can be definitely determined. A faucet, *i*, communicates with the interior of the casing A, for drawing off the water after churning. The dasher is connected to a vertical shaft, *j*, its lower end resting upon a step, *k*, and its upper end passing through a sectional cover, D, and carries a horizontal cog-wheel, *l*, by which the shaft is rotated through the medium of a driving gear-wheel, *m*, the teeth of which engage with the teeth upon the wheel *l*. The churn-dasher consists of a series of wings, E, beveled upon their outer edge, as shown at *n*, and formed with openings *o*, so as to allow their easy passage through the cream. It will be seen, by reference to Fig. 3 of the drawing, that the wings are of different widths, and the arms *p*, which support them, correspond in length to the width of such wings, and are formed with stops *q*, which prevent the beveled edges of the wings from striking against or coming in contact with the interior face of the box C while in motion. The upper series of the arms are secured to the shaft *j* by set-screws *r*, by which arrangement the arms can be raised up on the shaft, and allow the ready removal of the wings E for cleaning. By having the wings E of different widths during the rotation of the dasher, each succeeding wing, being greater in width than the preceding one, breaks its current, thereby producing a thorough and complete agitation of the cream, bringing the butter in a much shorter time than when using the dashers heretofore employed. Upon reversing the motion of the dasher, the wings will

close to the center against the shaft, which serves to gather the butter. The arms *p* I propose to form from a solid plate by stamping, or they may be cast of any suitable metal.

My invention is especially applicable to dairymen and others who have large quantities of milk, and it may be manufactured at a comparatively small cost, bringing it in reach of those requiring such an article.

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

1. The combination, with the outer casing A, of the removable skeleton-frame B, for supporting the box C by means of the plates *e* and tongues *f*, with slots *g*, and the thumb-screws *h*, to admit of the ready removal of the box C, substantially as and for the purpose set forth.

2. The dasher consisting of the wings E, of unequal widths, and the arms *p* and shaft *j*, constructed to operate substantially as and for the purpose set forth.

3. The dasher consisting of the wings E, and the arms *p*, with stops *q*, the upper series of arms being adjustable upon the shaft *j*, for the removal of the wings E, substantially as and for the purpose specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

ANDA D. GROSE.

Attest:
F. P. ROBERTSON,
I. R. COCHRAN.