G. J. CLINE & J. GALLAGHER.

CHURNS.

No. 194,650. Patented Aug. 28, 1877.

Fig 1

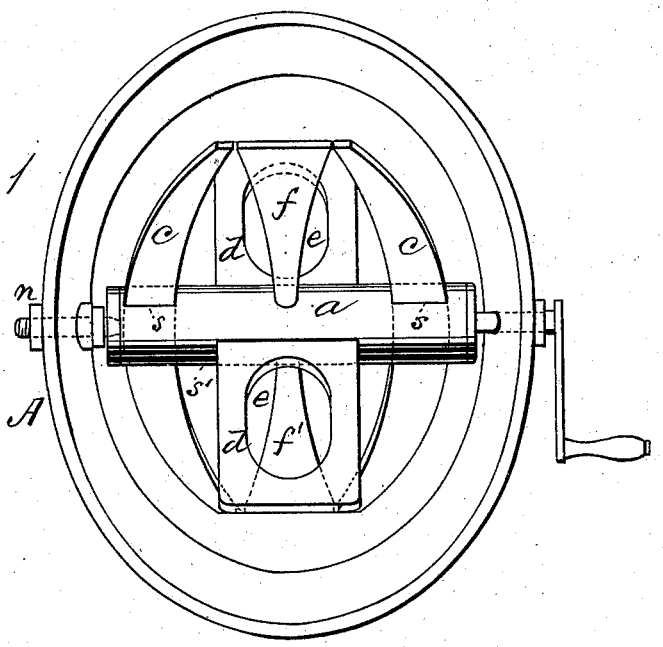
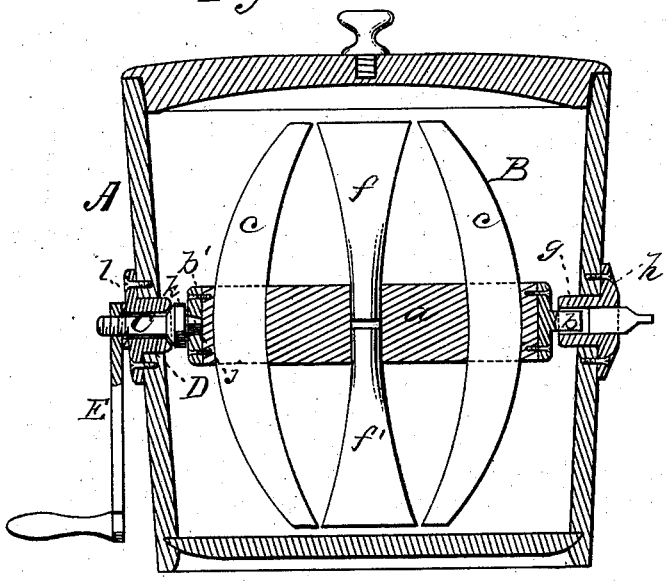


Fig 2



WITNESSES

Villette Anderson.

F. J. Masi

INVENTORS

George J. Cline,

Joseph Gallagher,

by E. W. Anderson,

ATTORNEY.

UNITED STATES PATENT OFFICE.

GEORGE J. CLINE AND JOSEPH GALLAGHER, OF GOSHEN, INDIANA.

IMPROVEMENT IN CHURNS.

Specification forming part of Letters Patent No. **194,650**, dated August 28, 1877; application filed July 21, 1877.

To all whom it may concern:

Be it known that we, GEORGE J. CLINE and JOSEPH GALLAGHER, of Goshen, in the county of Elkhart and State of Indiana, have invented a new and valuable Improvement in Churns; and we 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 part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a plan view of our improved churn, and Fig. 2 is a longitudinal vertical section.

This invention has relation to improvements in that description of churns having rotary dashers.

The nature of the invention will be fully set forth in the following description, and in the claims appended thereto.

In the annexed drawings, the letter A is preferably an oval wooden tub. Rotating in bearings therein is a dasher, B, of the following construction: It consists of a cylindrical wooden hub, *a*, having upon one end a rabbeted spur, *b*, and upon the other a metallic plate, b^1, having a central polygonal opening formed therein. The length of this hub is somewhat less than the width of the tub A. *c c* represent two crescent-shaped blades, that are extended through slots *s* in the same plane with each other, and at each end of the said hub, so that they project equally at each side thereof. These blades have their concave edges facing each other, and are secured to the hub by means of wedges or other suitable devices. Intermediate the slots *s* is a second slot, *s'*, at right angles to their plane, through which is passed a second blade, *d*, having in each of its projecting ends an oblong orifice, *e*. This blade is, therefore, at right angles to the plane of blades *c c*, and is between the same. *f f'* represent two additional blades, that are passed into the hub after the manner of a spoke, and are secured thereto in any suitable manner. These blades are at right angles to blade *d*, and in the same plane with blades *c c*, and their general shape is triangular. The opening between the blades *f f'* and *c c* is also triangular in its general shape.

During the rotation of this dasher the cream passing through the space between the blades *c c* and *f f'* is effectually beaten and divided by the blade *d*, and that passing through the orifices *e* of the latter by the blades *f f'* aforesaid. The butter-cells are thus rapidly broken by the reiterated strokes to which they are subjected.

The spur *b* passes into a tubular sleeve, *g*, projecting through an orifice in the side of the tub from a metallic plate, *h*. This plate is rigidly secured to the side of the tub by means of screws or other suitable fastenings. In practice a suitable packing may be interposed between said spur and the tubular bearing aforesaid.

The opposite end of the hub *a* is provided, as aforesaid, with a centrally-perforated metallic plate, *b'*, into which is fitted a correspondingly-shaped head, *j*, on a metallic spindle, C. This spindle is extended through a tubular bearing, D, having a countersunk inner end, into which a correspondingly-conical face of a collar, *k*, on said spindle is adapted to be received, and its projecting screw-threaded end serves as a means for attaching thereto a crank-arm, E. By applying this crank-arm the collar is forcibly pressed against its seat in said sleeve, and an air-tight joint of these parts is secured.

The bearing-sleeve D is provided with an outside flange, *l*, that accurately conforms to the curvature of the tub and is secured thereto by means of suitable screws. The seat of the conical collar *k* being ground true therewith, by giving a slight turn to the crank-arm E any lost motion may be quickly taken up, and all leakage be effectually prevented.

In practice, instead of the spur *b* and the tubular sleeve or bearing *g*, a device in all essential particulars similar to that just described may be substituted therefor, with this exception, that, in lieu of the crank-handle E, a nut, *n*, will be substituted therefor. By this means all leakage of the joints or bearings of the rotary dasher is effectually prevented.

In practice, the screw-thread whereby the crank E is secured to the spindle will be opposite to the motion of the crank, so that unless the said crank be reversed, which is not at all probable, there is no danger of detaching the said crank from the spindle.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. The churn-dash consisting of the cylindrical hub *a*, the crescent-shaped blades *c c*, the angular blades *f f'*, intermediate to and in the same plane with said blades, and the blade *d*, having orifices *e*, and extending through the hub *a* at right angles to the blades *c f f'*, substantially as specified.

2. The combination of the hub *a*, having plate *b'*, with a central polygonal opening, and the spindle C, having the polygonal head *j*, adapted to be received in said opening, and collar *k*, having a conical face, with the bearing D, having a countersunk head and an outside flange, *l*, substantially as specified.

In testimony that we claim the above we have hereunto subscribed our names in the presence of two witnesses.

GEORGE J. CLINE.
JOSEPH GALLAGHER.

In presence of—
JOHN H. BAKER,
HENRY V. CURTIS.