H. A. CLOW.

BUTTER-WORKER.

No. 189,608. Patented April 17, 1877.

Fig. 1

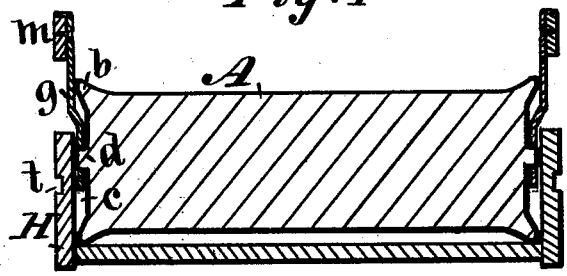
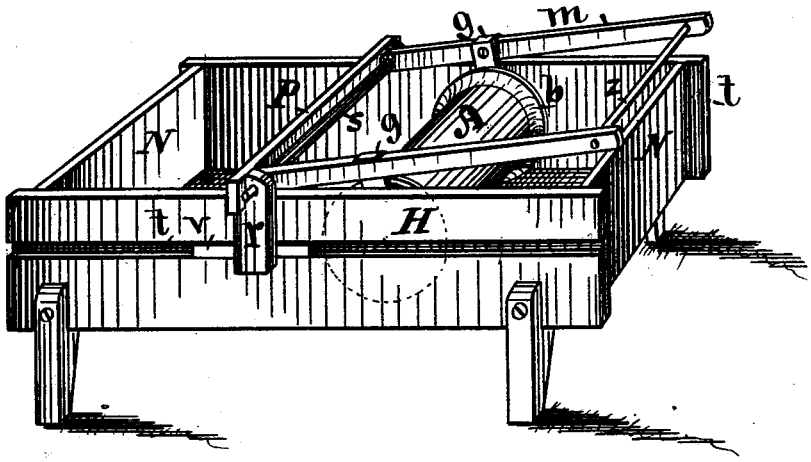


Fig. 2



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UNITED STATES PATENT OFFICE.

HENRY A. CLOW, OF DES MOINES, ASSIGNOR OF ONE-HALF HIS RIGHT TO R. A. RHOADS, OF NEWTON, IOWA.

IMPROVEMENT IN BUTTER-WORKERS.

Specification forming part of Letters Patent No. **189,608**, dated April 17, 1877; application filed October 23, 1876.

To all whom it may concern:

Be it known that I, HENRY A. CLOW, of Des Moines, in the county of Polk and State of Iowa, have invented an Improved Butter-Worker, of which the following is a specification:

The object of my invention is to simplify the construction, reduce the cost, and improve the operation of a butter-working machine. It consists in forming, mounting, and combining a roller with a detachable carriage and a tray in such a manner that the ends of the roller will fit closely to the sides of the tray, and be free to move vertically and longitudinally in the tray, at the will of the operator, to work butter on the tray-bed without distributing any to the ends of the roller or the vertical sides of the tray, all as hereinafter fully set forth.

Figure 1 of my drawing is a longitudinal central section of my roller, and illustrates my peculiar manner of fitting its ends to the sides of the tray.

A is the body of the roller, preferably made of hard wood. It is cylindrical, and may vary in size, as desired. *b b* are enlargements on the ends of the roller A. They are beveled off inward, to press the butter on the bed of the tray toward the center. They may be formed integral with the roller or attached in any suitable way. *c c* are cavities, formed in the ends of the roller to admit roller-bearers. *d d* are short journals formed integral with, or attached to, the axis of the roller A. *g g* are roller-bearers, rigidly attached to the arms *m* of a movable carriage, and bent inward to fit into the annular cavities *c* surrounding the journals *d* in the end of the roller. By means of these cavities *c* and bent bearers *d* the enlarged ends *b* of the roller are allowed to closely engage the vertical sides H of the tray at all times while the roller is operated in the tray, and to thereby steady its movements, and prevent butter from adhering to the sides of the tray, or getting against the ends of the rollers.

I am aware that rollers having enlarged and concave ends have been used for various purposes, and that disks beveled off inwardly have been used on butter-rollers to press the butter away from the sides of a tray; but my manner of fitting bent bearers *g* into the concave *c* of the roller, having enlarged ends *b* to allow free vertical, longitudinal, and revolving motion to the roller while in close contact with the sides of the tray, is novel and prevents the necessity of the journals of the rollers extending through or over the sides of the tray to reach their bearings.

Fig. 2 is a perspective view of my complete machine, and illustrates my manner of combining my adjustable roller with a detachable carriage, to operate in a portable tray to press and work butter and similar substances.

H H are the vertical sides of a portable tray, that has suitable legs to support it in an elevated position. N N are the ends of the tray, corresponding in length with the roller A. P represents the body of a movable carriage carrying the roller A. *r r* are brackets, fixed to the ends of the carriage P, in such position as to bring them on the outer sides of the vertical tray sides H. *s* represents a rod or bar, extending through the rear ends of the arms *m*, and the brackets *r*, to form a hinge-joint connection between the carriage P and the roller A, carried by the arms *m* and bent bearers *g*. *t t* are longitudinal grooves and carriage-tracks in or attached to the sides H of the tray. On their outer side *v* is a runner, rigidly fixed to the bracket *r*, to slide in the carriage-track *t*. A corresponding runner is attached to opposite side of the carriage P. *x* is a stop, fixed in the rear end of the tray to limit the rearward movement of the carriage and roller.

I am aware that movable carriages carrying adjustable rollers have been operated in trays that had their sides slotted to form carriage-tracks. I am also aware that rollers have been fitted to engage the vertical sides of a tray, and to extend their journals over the tops of the tray to reach their bearings carried by a detachable carriage that moved upon tracks formed on the outside of the tray; but my manner of mounting a roller upon the bent bearers *g*, fitted into its ends, and carried by the hinged arms *m* of a detachable carriage that has runners moving upon tracks outside of the tray, is new and greatly advantageous,

because it allows the roller constant contact with the inside surface of the vertical sides of the tray while in operation without extending its journals through or over the tray sides, and the runners prevent the roller from twisting, and its ends from binding against the tray sides as it moves back and forth in close contact with the vertical sides of the tray.

In the practical operation of my invention, the butter to be worked is placed upon the bottom of the tray, upon which the enlarged ends *b* of the roller rest and roll. The carriage carrying the roller is then put in position, with its runners *v* in the tracks *i*, and the roller A allowed to rest upon the butter. The connecting-rod *z* of the handles or arms *m* is then seized by the operator, and the carriage and roller moved back and forth. Hand-pressure may be added to the weight of the roller, to cause it to press and spread, and work the mass of butter underneath it. When the mass of butter is thus flattened and spread over the bed, the roller can be elevated, to allow the butter to be gathered in a heap, and again subjected to pressure under the roller. By repetition of this process all the milk, water, or brine will become extracted, the mass of butter thoroughly mixed and grained, and made solid and compact, as required to produce good butter.

I claim—

1. In a butter-worker, the roller A, having the short journals *d*, and annular cavities *c*, and the bent bearers *g*, arranged and combined substantially as and for the purposes shown and described.

2. The movable carriage P, having runners *v* to engage the tracks *t* on the outside of the tray, the hinged arms *m*, carrying the bent bearers *g* inside of the tray, and the roller A, having enlarged ends *b* fitted against the inside faces of the vertical tray sides H, all arranged and combined to operate substantially as and for the purposes shown and described.

HENRY ANDREW CLOW.

Witnesses:

J. S. HILL,

J. E. TETLEY.