

L. S. COLBURN.

Churn.

No. 39,035.

Patented June 30, 1863.

Fig. 2,

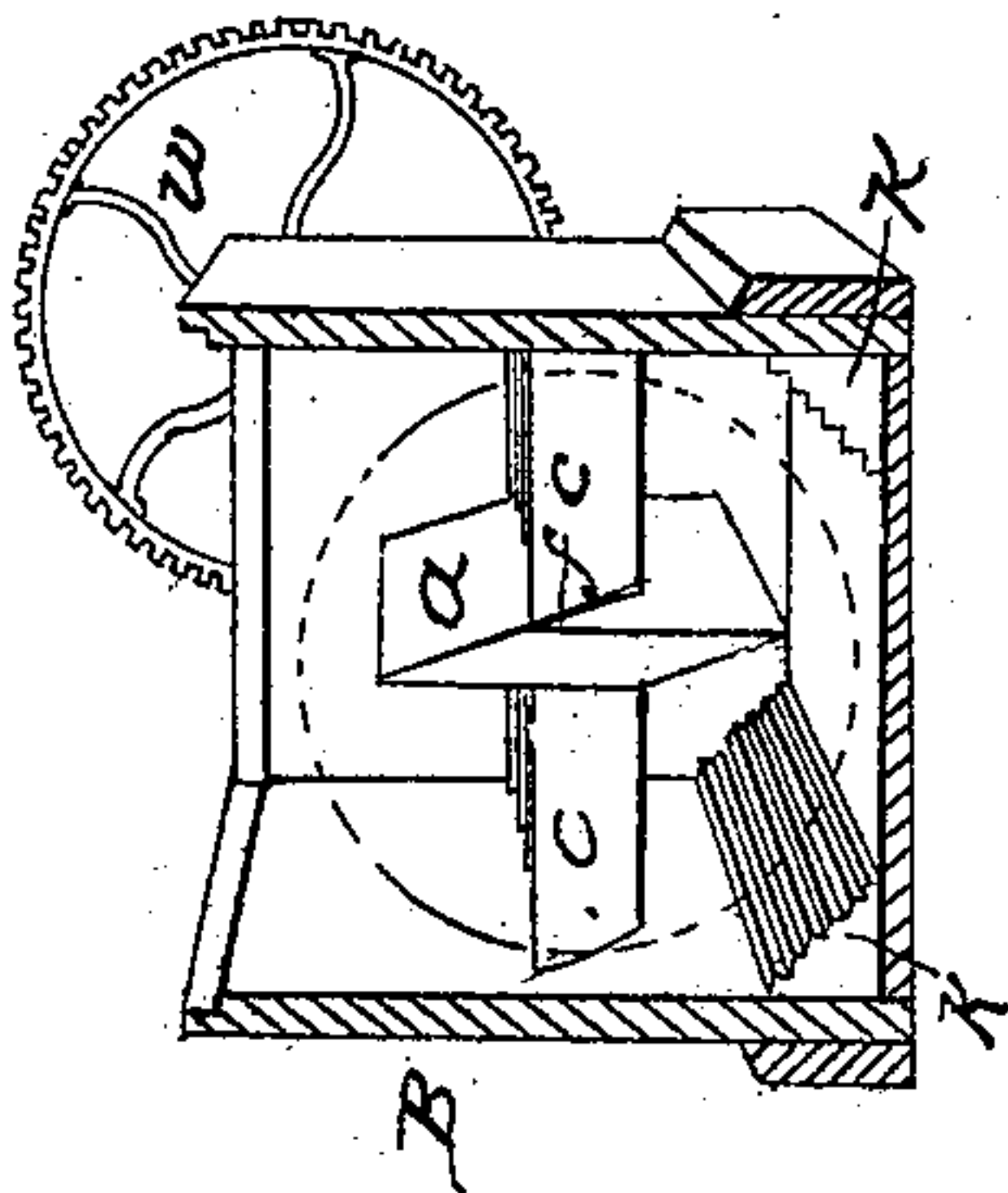


Fig. 4,

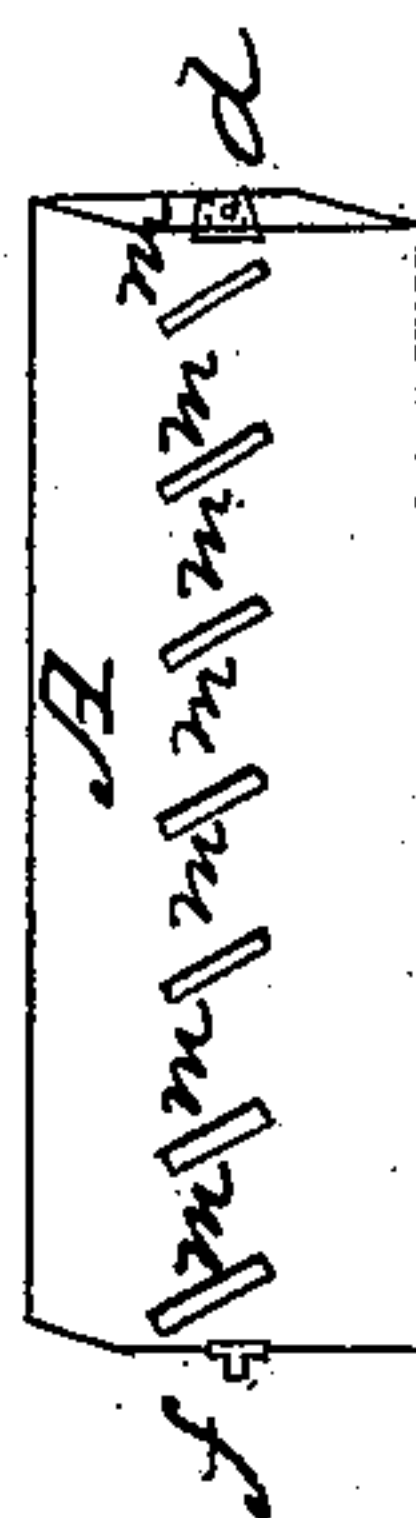


Fig. 1,

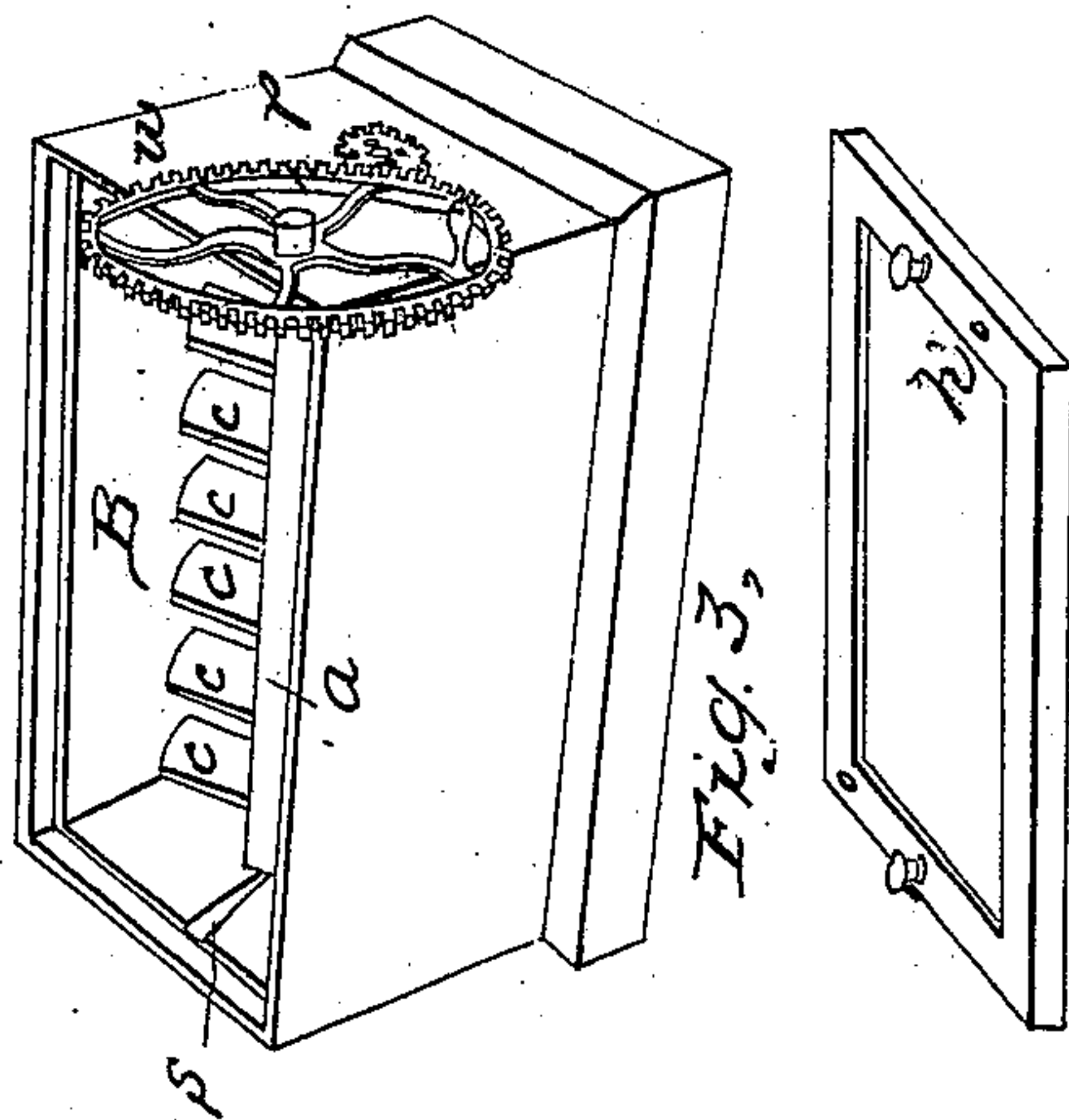
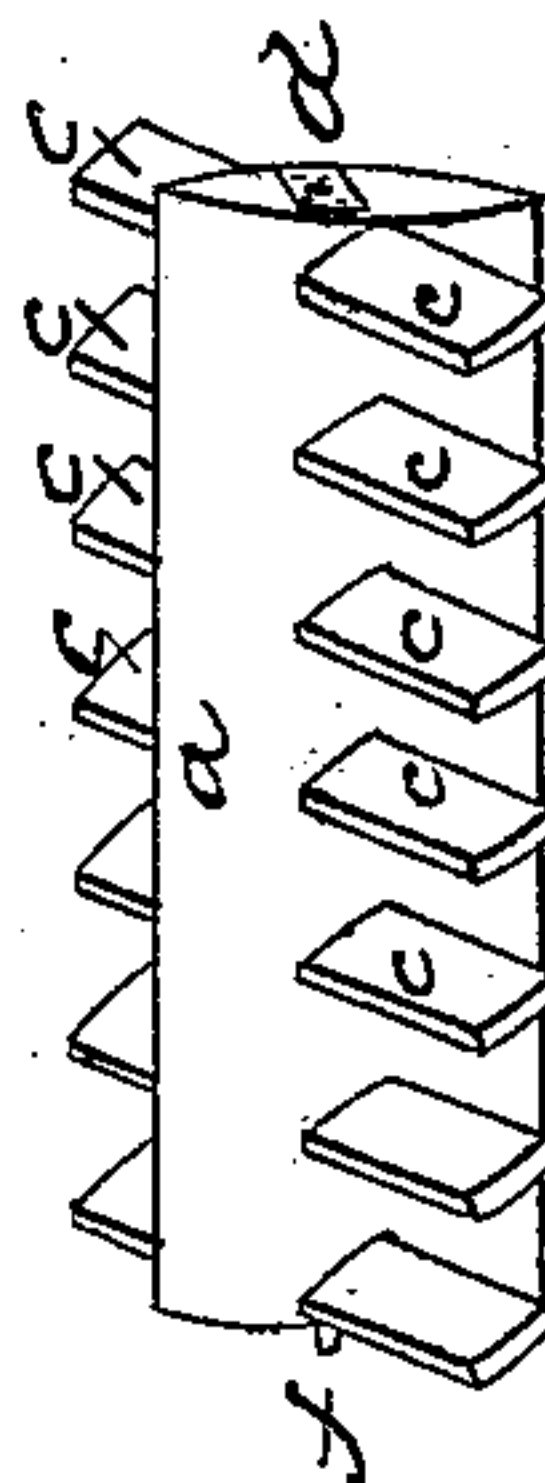


Fig. 5,



WITNESSES:
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UNITED STATES PATENT OFFICE.

LYMAN S. COLBURN, OF OBERLIN, OHIO.

IMPROVEMENT IN CHURNS.

Specification forming part of Letters Patent No. 39,035, dated June 30, 1863.

To all whom it may concern.

Be it known that I, LYMAN S. COLBURN, of Oberlin, in the county of Lorain and State of Ohio, have invented a new and useful Improvement in Churns; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, in which—

Figure 1 is a perspective view of my churn, the cover being removed to show part of the interior. Fig. 2 is a transverse section of the churn-box, showing the shaft and dashers or beaters in place. Fig. 3 represents the cover detached from the box. Fig. 4 is the shaft in the process of construction, showing the oblique mortises for inserting the beaters. Fig. 5 is the shaft, with the radial beaters inserted into the mortises.

My invention consists in the combination of a churn-box with a broad horizontal shaft and with a series of broad beaters set obliquely upon a horizontal shaft, and also in peculiar counter-beaters in the lower part of the box.

The object of my invention is to improve the efficiency of box-churns by giving the cream both a rotary and a longitudinal motion when the churn is in operation, and at the same time securing the effect of counter-beaters placed in the lower part of the box.

In the construction of my churn the box may be externally of the ordinary form, as shown at B in the accompanying drawings, Figs. 1 and 2. The shaft of the churn runs lengthwise of the box in a horizontal position, as seen at Fig. 2, and carries a series of beaters, *c*, Fig. 5. This shaft is made very broad—say about five inches—and about one and one-fourth inches in thickness. A series of mortises are made through the shaft, as seen at *m*, Fig. 4. Into these mortises are permanently inserted a series of beaters, *c*, above mentioned. The alternate sides of the shaft are beveled from the mortises to the edges of the shaft, as seen at *a*, Fig. 2. When the churn is in operation, these beveled surfaces strike the cream and thereby force the latter

from the shaft and bring it more fully under the action of the rotary beaters *c*. The same action facilitates the gathering of the butter. The fan-like sides of the shaft force a copious supply of air into the cream, giving the latter the form of spray when the churn is in full operation. The dashers or beaters *c*, Fig. 5, are flat and of a length corresponding to the size of the churn-box—say about ten inches. They are closely fitted into the mortises *m*, being set at right angles to the shaft, so that their faces are parallel throughout the whole series and on both sides of the shaft. The shaft and beaters being united as one piece are removable from the box for washing. The shaft is held in place by means of a metallic socket, *d*, Fig. 4, which is slipped upon the inner end of the shaft of the pinion *p*, while the bearing *f* is held at the bottom of a groove in the opposite end of the box by means of a wedge or slide *s*, Fig. 1, dovetailed into the end board of the box.

The churn is operated by means of the crank-wheel *w*, which engages with the pinion-wheel *p*, Fig. 1. Air is admitted into the churn through shielded perforations *h* in the cover. In the lower part of the box are placed counter beaters *k*, Fig. 2, in the form of stairs in order to react upon the cream as it is forced from the shaft against the box. I usually employ about six of these on each side of the box, so as to form a sort of trough or bed for the beaters to work in; but the number may be varied without changing the principle. These counter-beaters *k* increase the efficiency of the churn.

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

The above-described dasher having the flat oblique beaters and the broad horizontal shaft, constructed and operated substantially in the manner and for the purposes set forth.

L. S. COLBURN.

In presence of—

W. P. HARRIS,
A. H. CLARK.