(No Model.)

# H. W. LANPHERE.

## CHURN.

No. 495,202. Patented Apr. 11, 1893.

Fig. 3.

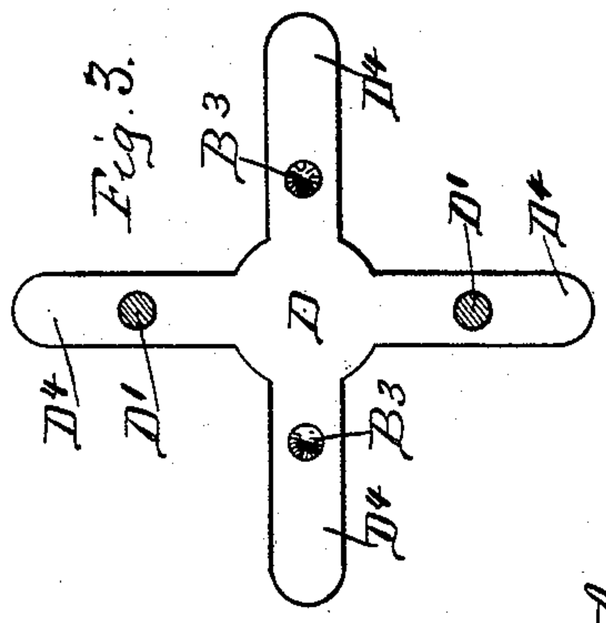



Fig. 2.

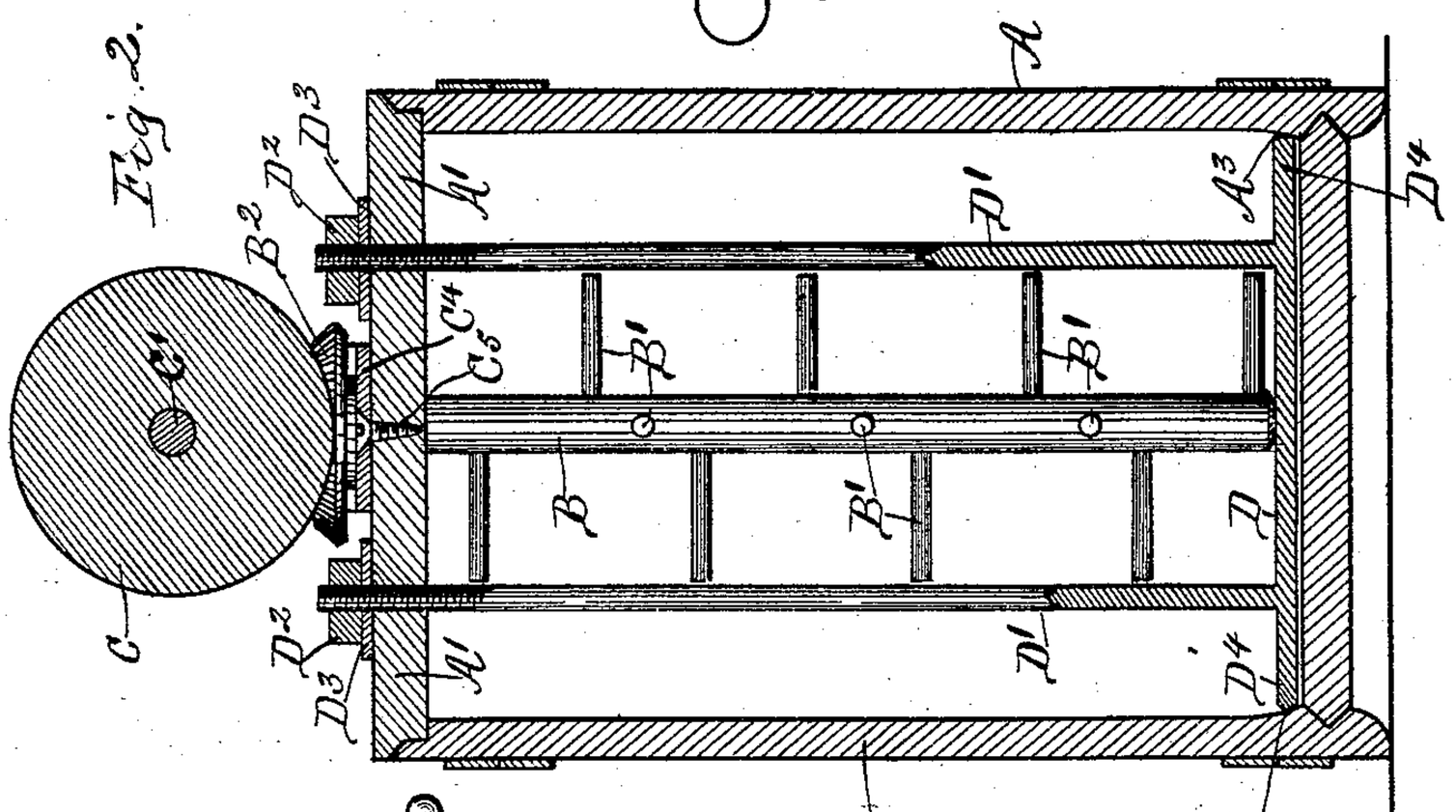
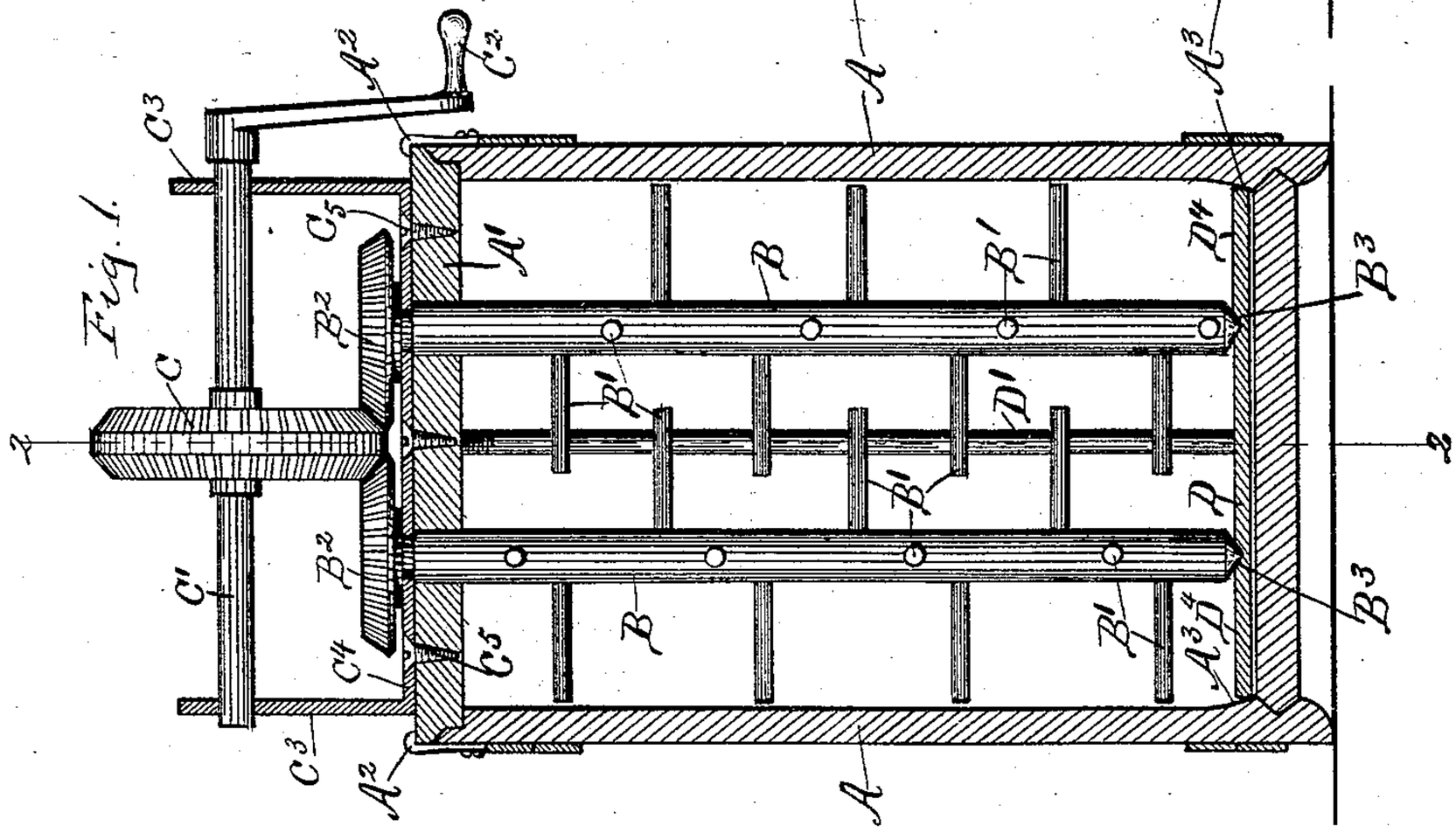



Fig. 1.




Witnesses:
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# UNITED STATES PATENT OFFICE.

HENRY W. LANPHERE, OF INDIAN LAKE, NEW YORK.

## CHURN.

SPECIFICATION forming part of Letters Patent No. 495,202, dated April 11, 1893.

Application filed August 15, 1892. Serial No. 443,107. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY W. LANPHERE, a citizen of the United States, residing at Indian Lake, county of Hamilton, and State of New York, have invented certain new and useful Improvements in Churns, of which the following is a specification.

My invention relates to such improvements and consists of the novel construction and combination of parts hereinafter described and subsequently claimed.

Reference may be had to the accompanying drawings, and the letters of reference marked thereon, which form a part of this specification.

Similar letters refer to similar parts in the several figures.

Figure 1 of the drawings is a vertical central section of my improved churn. Fig. 2 is a similar view taken on the broken line 2—2 in Fig. 1. Fig. 3 is a top plan view of the skeleton step-plate the upwardly projecting arms being shown in cross-section.

A— is the churn-barrel and A′— the churn-cover adapted to fit and close the open end of the barrel.

The dasher-shafts, B—, B—, are each rotary in bearings in the churn-cover and each shaft is provided with a plurality of dasher-arms or beaters, B′—, preferably arranged upon their respective shafts spirally and in such manner that the arms of one shaft alternate with those of the other shaft. Each dasher-shaft projects through the cover and is provided on its projecting end with a beveled gear, $B^2$— adapted to mesh with, and be driven by, the beveled gear, C—, common to both, fixed upon the drive-shaft, C′. The drive-shaft is provided with a crank-handle, $C^2$—, and is rotarily supported in bearings in the brackets, $C^3$— projecting from the supporting plate, $C^4$— secured to the cover, as by screws, $C^5$. The plate, $C^4$— also forms bearings for the dasher-shafts and their gears $B^2$— and prevents the rotary parts from wearing away the churn-cover.

The lower ends of the dasher-shafts are supported in bearings $B^3$— in the step-plate, D—, which is secured to the churn-cover by means of the upwardly projecting arms, D′. Such arms are preferably integral with the step-plate and project through the cover, the projecting ends being screw-threaded and provided with nuts, $D^2$—, whereby such arms are secured to the churn-cover. Washers, $D^3$—, may be interposed between the nuts, $D^2$—, and the churn-cover. The step-plate is thus adjustably connected with the churn-cover and any lost motion due to wear of the parts one upon another may be compensated by means of the nuts, $D^2$. The cover may be secured in place by means of the spring-clamps or hooks, $A^2$.

By my improved construction, the entire beating mechanism is supported by the churn-cover and may be withdrawn from the churn by lifting the cover, thereby affording easy access to the dashers for the purpose of cleansing the same. To cleanse the dashers, they may be supported in a barrel or tub containing water and given a few rotations by means of the crank-handle, thereby quickly and thoroughly rinsing the submerged parts.

By having the beating mechanism and its bearings wholly supported by the cover, I avoid the necessity of attaching brackets or bearing-plates of any kind to the interior of the churn-barrel; and when the cover and its connections are removed, the interior of the churn is left entirely free from projections of any sort adapted to secrete particles of butter or cream which would taint the churn. The step-plate is preferably made in the skeleton form shown in Fig. 3, with the laterally projecting arms, $D^4$—, adapted to approximately fit the interior of the churn-barrel. Such arms bear against the inner wall of the barrel and prevent lateral vibration of the step-plate and dasher-shafts.

When desired the lower portion of the inner wall of the churn-barrel may be beveled or contracted, as shown at $A^3$— to enable the skeleton-plate to fit the bottom of the barrel while it is adapted to be easily inserted in and removed from the upper portion of the barrel.

What I claim as new, and desire to secure by Letters Patent, is—

In a churn, the combination with the churn-cover; of a pair of dasher-shafts and a drive-

shaft severally supported by the cover; gear connections between the drive-shaft and dasher-shafts; a step-plate having a bearing-support for each dasher-shaft; and a plurality of arms projecting upwardly from the step-plate and each adjustably secured to the churn-cover, substantially as described.

In testimony whereof I have hereunto set my hand this 25th day of July, 1892.

HENRY W. LANPHERE.

Witnesses:
WILLIAM ALDONS,
H. L. FISH.