(No Model.)

J. M. HUGHES.

CHURN ATTACHMENT.

No. 520,566. Patented May 29, 1894.

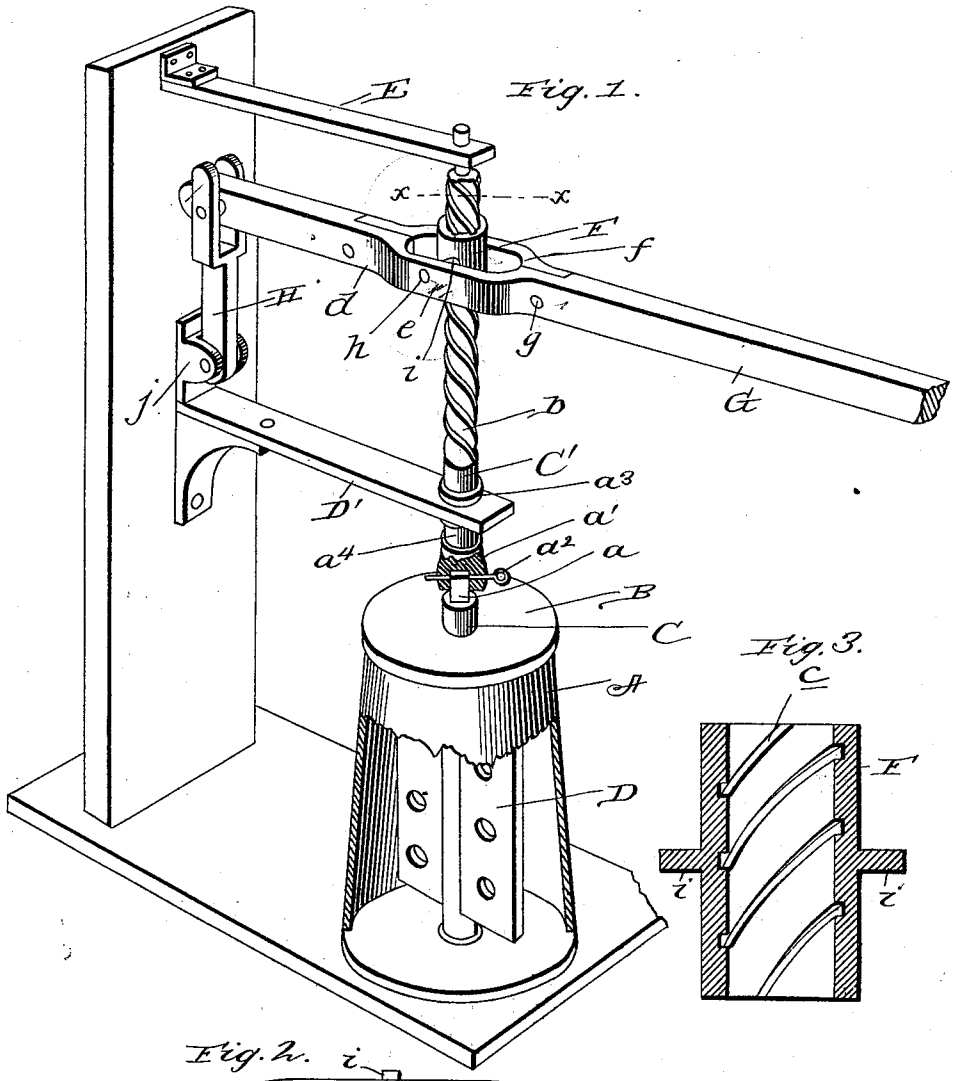

Fig. 1.

Fig. 3.

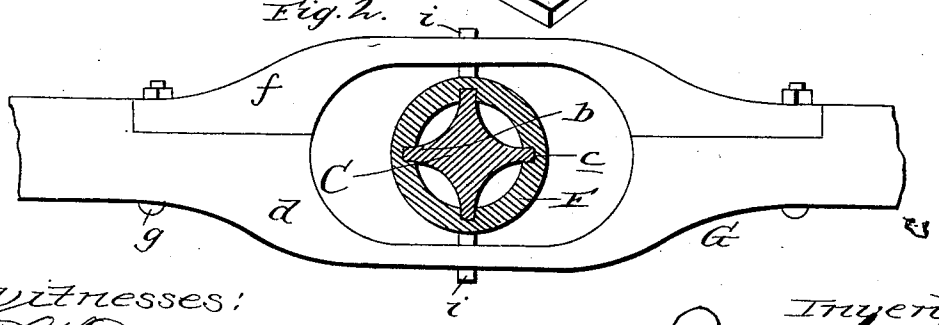

Fig. 2.

Witnesses:
C. F. Baeder
M. P. Matthews

Inventor
Jno. M. Hughes.
By James J. Sheehy
Attorney

THE NATIONAL LITHOGRAPHING COMPANY,
WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN M. HUGHES, OF KNOXVILLE, TENNESSEE.

CHURN ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 520,566, dated May 29, 1894.

Application filed January 29, 1894. Serial No. 498,348. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. HUGHES, a citizen of the United States, residing at Knoxville, in the county of Knox and State of Tennessee, have invented certain new and useful Improvements in Churn Attachments; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in churns and more particularly to that class known as vibratory churns; and it has for its general object to provide a simple and durable vibratory churn and one embodying such a construction that the operator may actuate the dasher at a high rate of speed with the exercise of but little effort.

Other objects and advantages of the invention will appear from the following description and claims when taken in connection with the annexed drawings, in which—

Figure 1, is a perspective view of my improved churn with the body broken away. Fig. 2, is an enlarged detail section taken in the plane indicated by the line *x*, *x*, of Fig. 1. and Fig. 3, is a diametrical section of the burr or nut carried by the lever handle.

Referring by letter to said drawings:—A, indicates the upright body of the churn; B, the cap or cover thereof, and C, the dasher shaft which may be stepped in the bottom of the body and is provided with blades D, as illustrated. This dasher shaft C, extends above the cap or cover B, of the body, about the proportional distance illustrated, and its upper end is preferably reduced and squared, as shown at *a*, so as to take into the socket *a'*, at the lower end of the detachable shaft section C', which section preferably has its upper end reduced, as shown, and journaled in a horizontal arm E, connected to a wall or the like, whereby it will be perceived that it may be rotated in a vibratory manner at a high rate of speed without the objectionable wabbling so often experienced. The said shaft section C', is detachably connected to the dasher shaft C, by a pin a^2, which takes through the socket *a'*, and the shaft as shown, so as to enable the operator to raise the shaft section at the completion of the churning operation and thereby disconnect it from the shaft C, so as to permit of a ready removal of the said shaft from the churn body for obvious reasons.

D', indicates a horizontal arm which is designed to form an auxiliary bearing for the shaft section C'. This arm D', is fixedly connected to a wall or other support and it is provided adjacent to its outer end with a sleeve section a^3, which engages the plain portion a^4, of the shaft section C', and serves to hold the said section and the dasher shaft C, steady and firm.

As better shown in Fig. 1, the section C', is provided for the greater portion of its length with spiral threads *b;* and these threads are designed to be engaged by the interior threads *c*, of the vertical, reciprocatory burr or nut F, through the medium of which the shaft section is rotated in opposite directions as presently described.

G, indicates the operating lever of the churn. This lever comprises the body section *d*, which is curved at an intermediate point of its length as shown at *e*, and the removable section *f*, which is connected to the section *d*, by transverse bolts *g;* and these sections *d*, and *f*, are provided with journal apertures *h*, to receive the integral trunnions *i*, of the burr or nut F, whereby it will be seen that the said burr or nut is free to rock during its vertical movement so as to accommodate itself to the threads of the shaft and prevent the objectionable binding.

H, indicates a swinging arm which is pivotally mounted at its lower end in a bracket casting *j*, connected to a wall or other support, and has its upper free end forked for the pivotal connection of the lever G, as illustrated. This arm H, serves as a movable fulcrum for the lever G, and it is designed and adapted to move in concert with the said lever so as to enable the burr or nut F, carried thereby to move in a true vertical line, which is necessary to a successful operation, as is obvious.

In the practice of the invention, the body A, is charged with cream; and the parts being in the position shown in Fig. 1, the free end of the lever G, is moved up and down, when the burr or nut F, moving upon the shaft section C', will rotate said section and the shaft C, connected therewith, at a high rate of speed, first in one direction and then in the

other so as to rapidly cause the formation of the butter globules. The movement of the burr or nut F, and the consequent vibratory movement of the shaft C, may be effected with but little effort, since the peculiar manner in which the lever is fulcrumed and connected to the burr or nut absolutely prevents binding of any of the parts.

It will be perceived from the foregoing description taken in connection with the drawings that my improvements are cheap and simple and that they are efficient in operation; and it will also be perceived that by reason of the peculiar construction and manner of connecting the parts, the dasher shaft, the shaft section C′, the lever, the burr or nut, and the fulcrum arm may be employed in conjunction with any number of churn bodies in succession, which is desirable where the butter is manufactured in large quantities.

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

The herein described churn consisting essentially of the following elements in combination, viz: the upright body A, the dasher shaft C, arranged in said body and having its upper end squared, a base supporting the body, the upright support connected to and rising from said base, the horizontal arm E, connected to the upright support and arranged above the body, the arm D′, also connected to the support below the arm E, and having the vertically-disposed sleeve a^3, the rotary shaft section C′, journaled in the arm E, and having the plain portion a^4, arranged in the sleeve of the arm D′, whereby it may be moved vertically in the arm D′, and E, and also having the spiral threads *b*, and a socket *a*, at its lower end to receive the squared end of the dasher shaft, the removable pin taking through said socket and the dasher shaft, the arm H, pivotally connected at one end to the upright support, the operating lever pivotally connected to the free end of said arm H, and the burr or nut having trunnions journaled in the operating lever and also having a threaded bore receiving the shaft section C′, all as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

J. M. HUGHES.

Witnesses:
J. F. NEIGHBOR,
W. B. HENDERSON.