(No Model.)

J. B. BEAM.

CHURN.

No. 534,132. Patented Feb. 12, 1895.

Fig. 3.

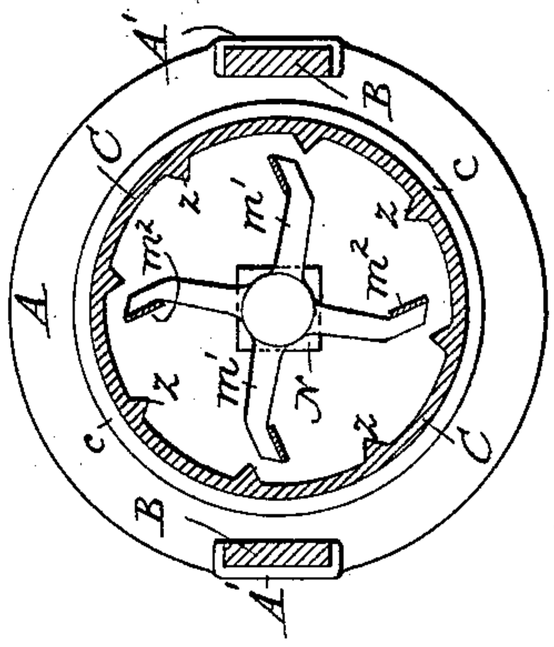


Fig. 4.

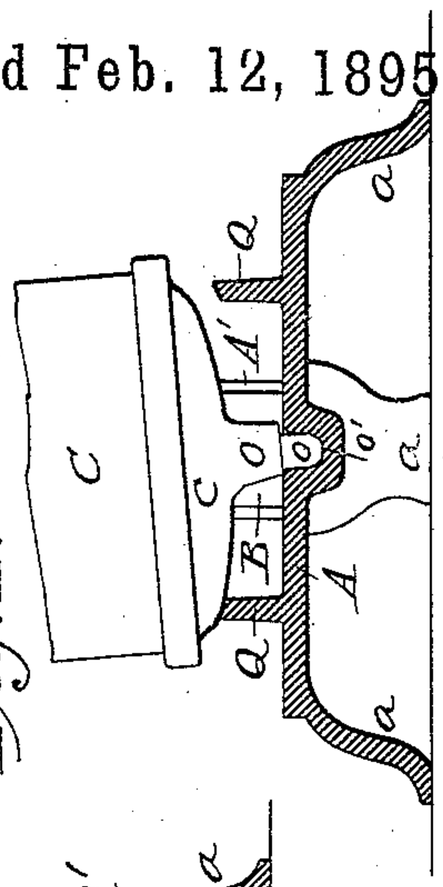


Fig. 2.

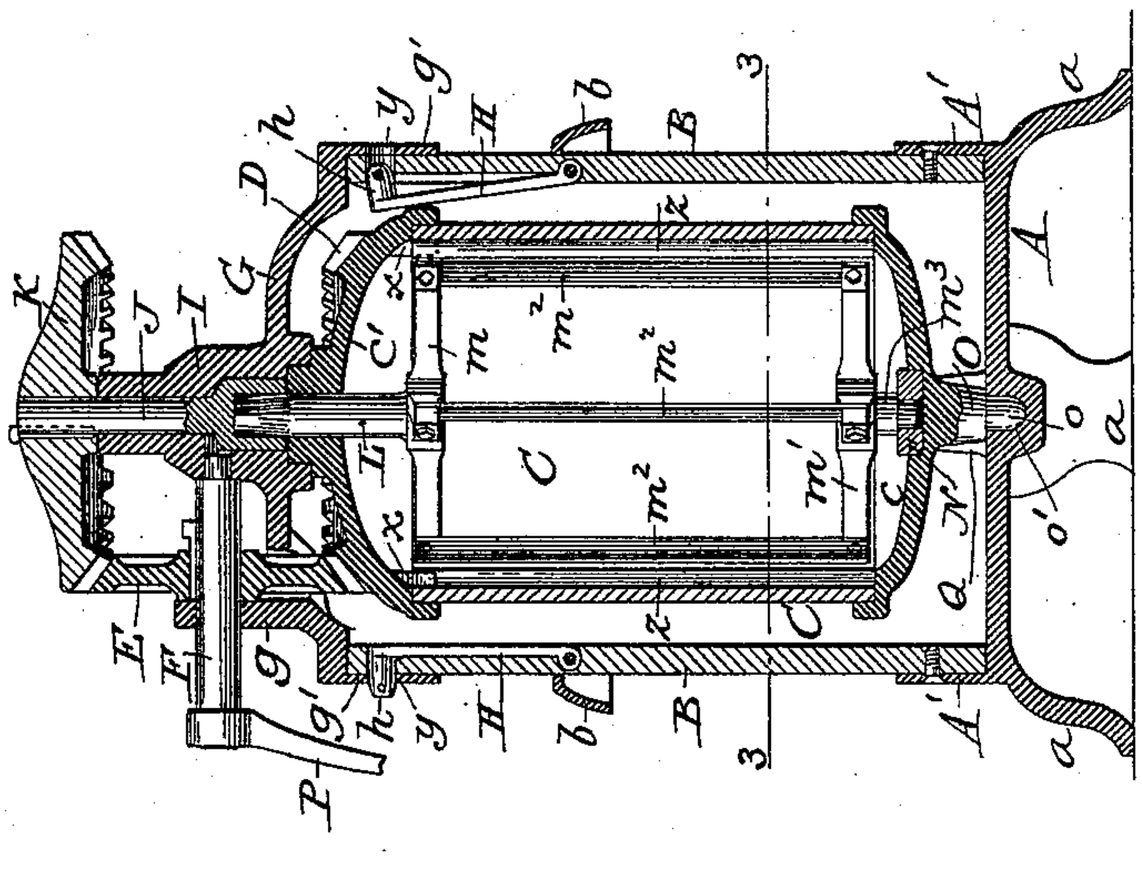
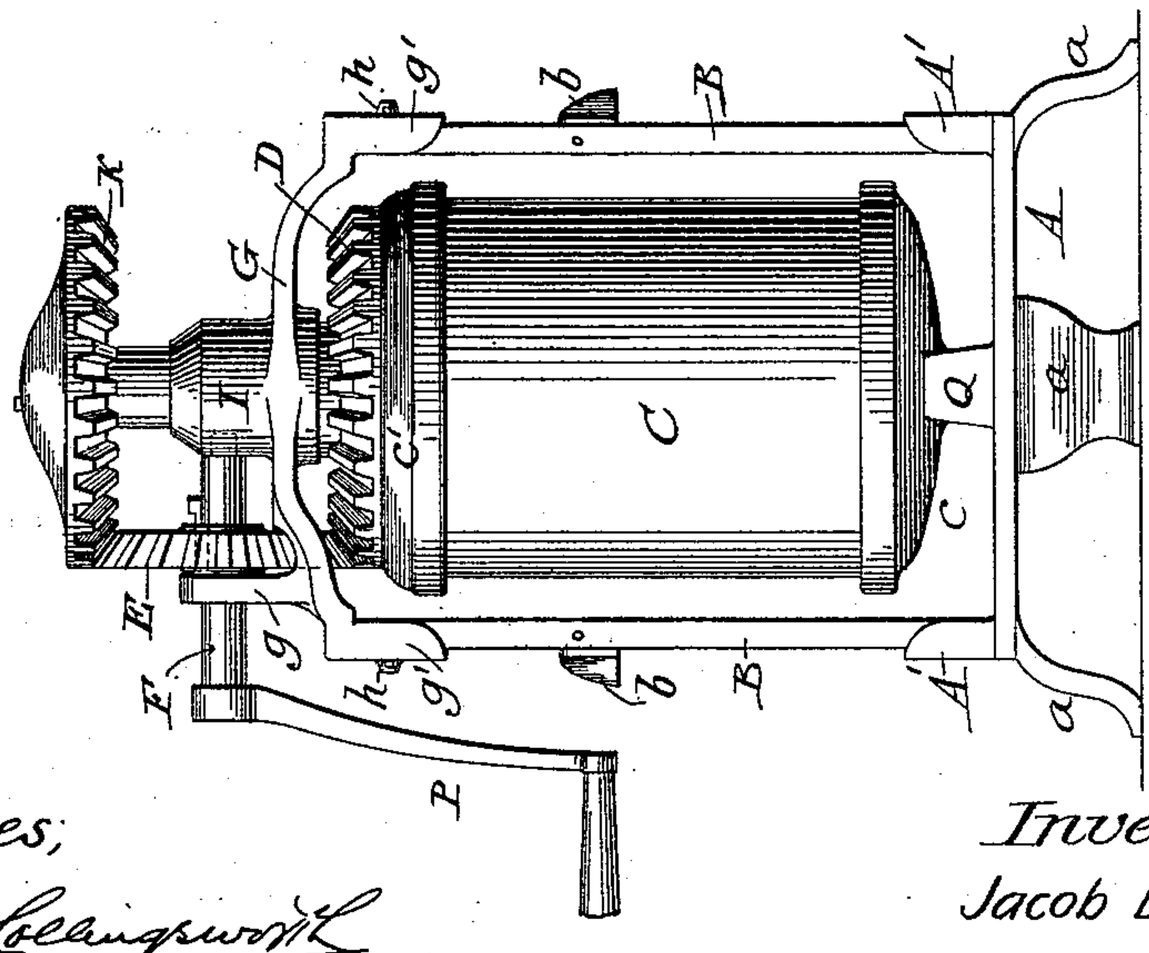


Fig. 1.



Witnesses;
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UNITED STATES PATENT OFFICE.

JACOB B. BEAM, OF BIG RUN, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO GEORGE W. MILLER, OF SAME PLACE.

CHURN.

SPECIFICATION forming part of Letters Patent No. 534,132, dated February 12, 1895.

Application filed August 8, 1894. Serial No. 519,745. (No model.)

To all whom it may concern:

Be it known that I, JACOB B. BEAM, a citizen of the United States, residing at Big Run, in the county of Jefferson and State of Pennsylvania, have invented certain new and useful Improvements in Churns, of which the following is a specification.

The object of my invention is to provide a churn that may be easily opened and closed or taken apart, and which may be easily operated to do its work expeditiously and efficiently.

I provide mechanism for rotating the churn body in one direction, and the dasher in an opposite direction, in such manner as to throw the contents of the body toward the center. The dasher co-operates with longitudinal ribs in the body of the churn to expedite the operation.

The details of construction, and the subject-matter claimed, are hereinafter designated.

In the accompanying drawings,—Figure 1 is a front elevation of a churn embodying my improvements. Fig. 2 is a vertical, central section thereof. Fig. 3 is a transverse section on the line 3—3 of Fig. 2. Fig. 4 is a detail view partly in elevation and partly in section of the lower part of the churn.

The base A, is provided with feet or standards *a*, and with a pair of socket pieces A′, which receive the uprights B. These uprights are provided with handles *b*, by means of which the churn may be readily moved from place to place.

The churn body C, is preferably cylindrical, as shown, the lower end *c* thereof being easily fitted to the central portion, and it is preferably provided with an interlocking connection, as shown at *x*, to prevent the body C, from turning on the end *c*. At its upper end, the body C is provided with an end piece or head *c′*, which is fitted to the central portion C, in a similar manner to the end piece *c*.

An annular row of teeth D, is formed on the outside of the top head *c′*, and with these teeth gear the teeth of a cog wheel or beveled pinion E, mounted on a horizontal shaft F, extending through a bracket *g* formed on the yoke G. This yoke G, extends over the top of the churn body, and has sockets *g′* adapted to fit over the upper ends of the uprights B. Both the uprights and the socket pieces are perforated at *y* to receive the heads *h* of pivoted locking catches H. The arrangement is such that when these locking catches are turned to an upright position, as shown at the left-hand side of Fig. 2, the yoke G is firmly connected to the uprights B, but when it is desired to disconnect the yoke from the uprights, the catches may be swung inwardly, as indicated at the right-hand side of Fig. 2, and the yoke may be readily withdrawn. The ends of the heads *h* may be perforated, as indicated, and a locking pin employed to hold the catches in position. The yoke is provided with a hub or bearing I, through which extends a stud-shaft J, to the upper end of which is keyed a gear wheel K, that meshes with the gear wheel E. The lower end of the shaft J, is provided with a square recess to receive the square upper end of the stud-shaft L, of the dasher. This shaft extends through a round opening in the head *c′*, and is free to turn therein. At its lower end it is secured to a spider *m*, which is connected to a similar spider *m′*, at the lower end of the churn body by bars or slats m^2. The spider *m′* is provided with a short shaft m^3, that has a bearing in a wooden block N, arranged in the end piece *c*. The arrangement is such that the dasher may freely revolve within the churn body, the churn body being arranged to revolve in its frame independently of the dasher. The end piece *c* is provided with a knob or hub O, which is formed with a stud bearing *o* arranged in a socket *o′* in the frame. The connection of the upper end piece *c′* with the yoke is such as to permit of a free movement of the end piece relatively to the yoke. Motion is imparted to the gear wheel E, by means of the crank P, and through the pinion E, motion is communicated to the gear wheel K, connected, as above described, with the dasher. The gear wheel E, also imparts motion to the churn body by engaging with the teeth D, on the top piece *c′*, the arrangement being such that the dasher and churn body revolve in opposite directions.

As clearly shown in Fig. 3, the inside of the churn body is provided with longitudinal ribs *z*, which co-operate with the dasher to more

efficiently agitate the contents of the vessel. On the base piece I provide projections Q, which serve as rests for the churn body when the uprights are separated from the yoke.

The drawings show all the parts in operative position, but when it is necessary to open the churn, the catches H are withdrawn and the yoke removed. This will simultaneously remove the gear wheels and crank, and when these are removed, the top *c'* may be taken off without removing the dasher, and the dasher may then be subsequently withdrawn It will be seen, therefore, that all the parts are loosely connected together. When they are in operative position, they are held tightly in place, but are free enough to operate easily, but when the catches are unlocked, the several parts may be easily detached.

Fig. 4 shows how the churn body will be supported on one of the rests or uprights Q, when the yoke is removed. It is only necessary to employ two rests Q, as, should the churn tilt in other directions, it will be supported by the uprights B, but four such uprights may be employed, if desired.

I claim as my invention—

1. A churn comprising the base, the uprights secured thereto, the yoke having sockets detachably secured to the upper ends of the uprights, the churn body arranged between the yoke and the base supported on a single central pivot in the base and having a pivotal connection with the yoke, a dasher within the churn body having a shaft extending through the yoke, a ring of teeth on the top of the churn, a gear wheel connected to the shaft of the dasher and a single gear wheel mounted in bearings in the yoke and meshing with the teeth on the churn and the gear wheel of the dasher.

2. The combination of the base, the uprights, the yokes detachably secured to the uprights, a churn body mounted on a vertical pivot and held in place by the yoke to which it is pivotally connected, a ring of gear teeth formed on the top or cover of the churn body, a dasher within the churn body, a shaft extending from the dasher through the cover, a gear wheel having a shaft detachably connected with the dasher shaft and a single gear wheel for operating the churn body and dasher to move them in opposite directions.

3. The combination of the base piece, the uprights secured thereto, the churn body mounted on a vertical pivot in the base piece, a yoke detachably secured to the upper ends of the uprights and having a central, socketed hub I, the shaft J, having an enlarged lower end seated in the socket in the hub, the gear wheel K, secured to the shaft J, an operating shaft F mounted in a bearing bracket *g* on the yoke, a gear wheel E, meshing with the wheel K, a dasher having a short shaft L, detachably connected to the shaft J, and gear teeth on the churn body connecting with the gear wheel E.

4. The combination of the churn body having the vertical ribs *z*, the detachable bottom *c*, the removable cover *c'* having the interlocking connection *x* with the body, the dasher provided with the longitudinal vertical ribs or slats m^2 co-operating with the vertical ribs *z* on the churn body, and means for turning the body and dasher in opposite directions.

5. The combination of the base piece A, the uprights B, secured in sockets A' in the base piece, the yoke G having sockets into which the upper ends of the uprights project, the swinging catches H, extending through the openings in the uprights, and the socket pieces of the yoke, the churn body resting on a single vertical pivot on the base piece, and having a pivotal connection with the yoke and dasher, and means for revolving the dasher and churn body in opposite directions.

6. The combination of the base piece A, the uprights B secured to socket pieces A' on the base piece, the yoke G, detachably secured to the uprights, the churn body C, mounted on a single vertical pivot resting in a central bearing in the base piece A, and having a pivotal connection with the yoke G, and the rests Q, on opposite sides of the base piece A to support the churn body when the yoke is removed and when the churn body is tilted, as set forth.

In testimony whereof I have hereunto subscribed my name.

JACOB B. BEAM.

Witnesses:
S. T. SMITH,
E. T. WOOSTER.