(No Model.)

B. WALKER, Jr.

CHURN.

No. 565,817. Patented Aug. 11, 1896.

Fig. 1

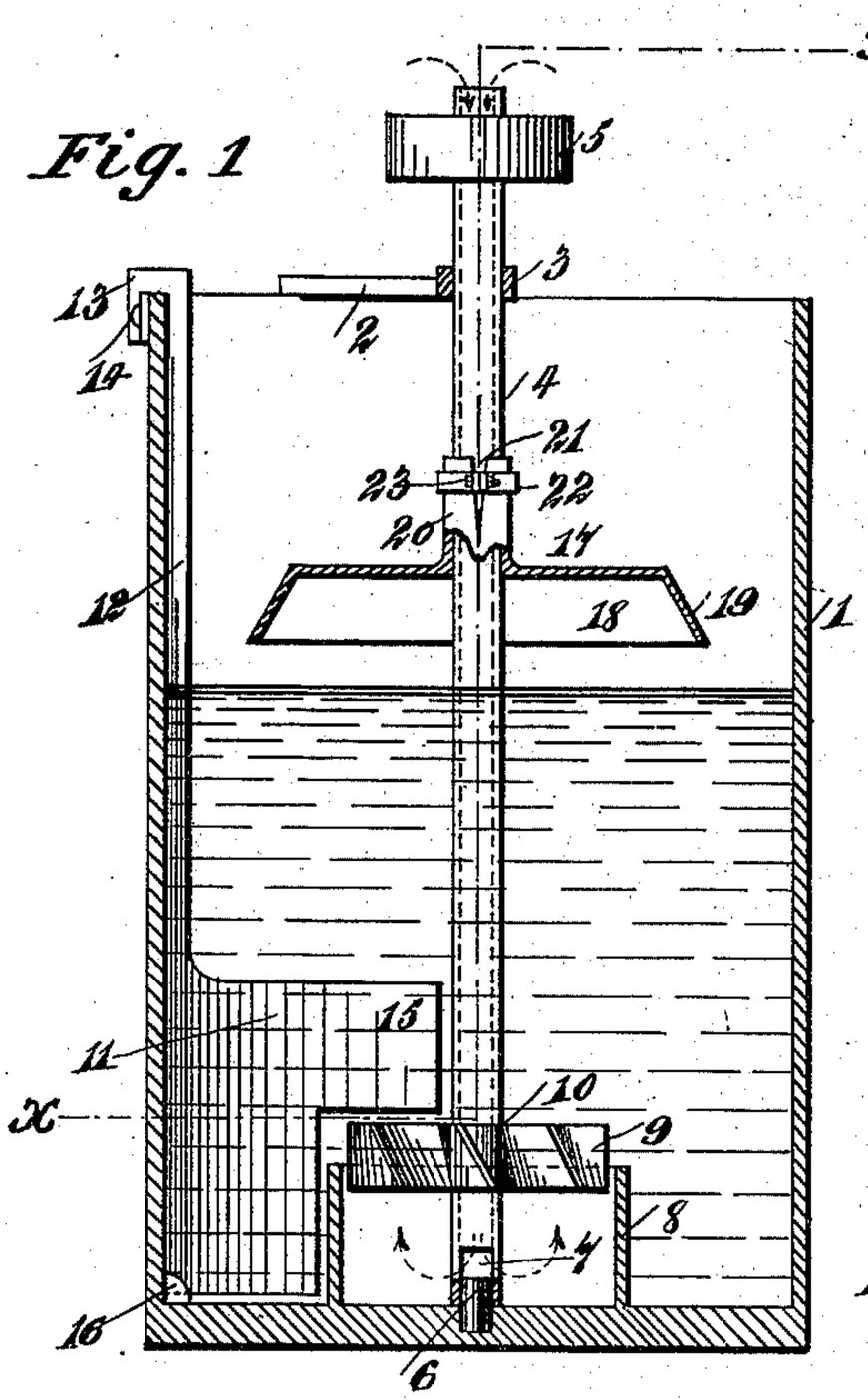


Fig. 4.

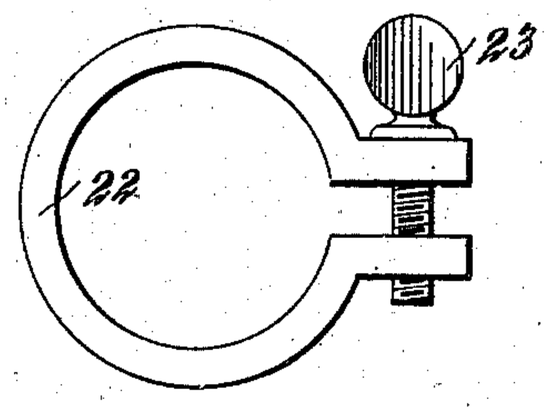


Fig. 3

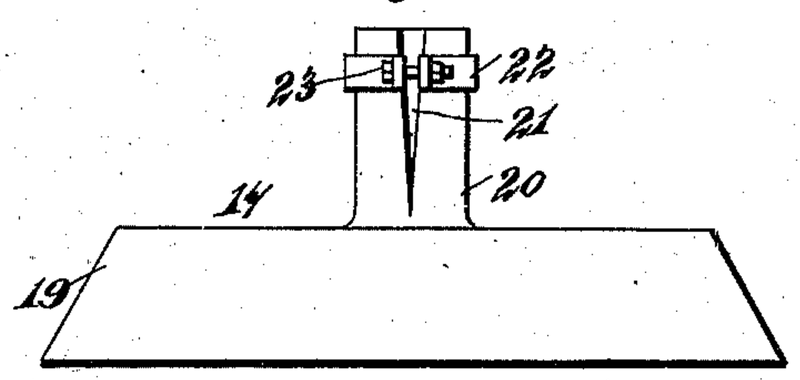
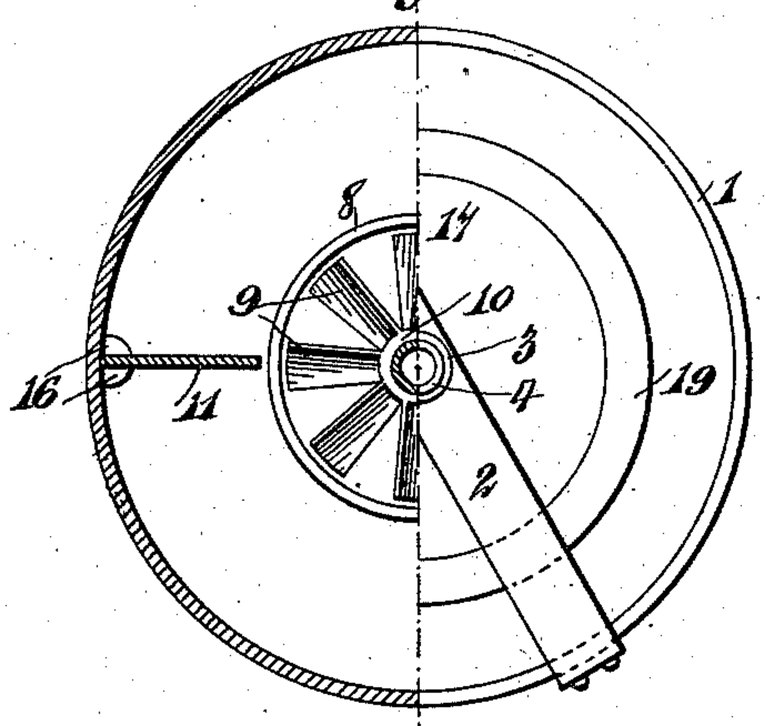


Fig. 2.



WITNESSES:

J. B. Walker

J. L. Gaylinger

INVENTOR

B. Walker Jr.

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

BEN WALKER, JR., OF AUSTIN, TEXAS.

CHURN.

SPECIFICATION forming part of Letters Patent No. 565,817, dated August 11, 1896.

Application filed November 19, 1895. Serial No. 569,428. (No model.)

To all whom it may concern:

Be it known that I, BEN WALKER, Jr., of Austin, in the county of Travis and State of Texas, have invented a new and Improved Churn, of which the following is a full, clear, and exact description.

This invention relates to certain improvements in churns, and has for its object to provide a churn of a simple and inexpensive construction adapted to be operated by hand or other power, and so constructed as to be readily separated or dismembered after the churning is finished, the various parts being so constructed and arranged as to be readily cleaned.

The invention consists in a churn comprising a body having at its base a circular chamber, at the central part of which is journaled a tubular shaft, and a fan or agitator carried on said shaft and arranged to turn at the mouth of said circular chamber, the lower end of said shaft within said chamber being formed with openings, so that as the shaft is turned a current of air will be drawn through the hollow thereof by said fan and will be discharged from the openings at the lower end of the shaft and caused to pass upward through the cream in order to thoroughly agitate the same.

The invention also contemplates certain novel features of the construction, combination, and arrangement of the various parts of the improved device, whereby certain important advantages are attained and the device is made simpler, cheaper, and otherwise better adapted and more convenient for use than various other forms of churn heretofore employed, all as will be hereinafter fully set forth.

The novel features of the invention will be carefully defined in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a section taken vertically through the axis of a churn constructed in accordance with my invention. Fig. 2 is a plan view of the churn, one-half thereof being shown in section in the plane indicated by the line *x x* in Fig. 1. Fig. 3 is a detached detail view, drawn to an enlarged scale, of the disk employed on the churn-shaft for preventing the foaming of the contents of the churn-body; and Fig. 4 is an enlarged detail view showing the clamp employed for holding said disk adjustably in place on the shaft.

In the views, 1 represents the churn-body, which may be of any preferred construction, being, as herein shown, of cylindrical form and having an open top, across which extends a brace 2, provided with a central bearing 3, wherein is rotatably mounted the hollow shaft 4, which extends vertically in the axis of the churn-body and is provided at its upper end with a pulley 5 or equivalent device, whereby it may be rotated. The opposite ends of the shaft 4 are open and the lower end thereof is adapted to receive and turn on a pin 6, secured at the base of the churn-body, and said lower end of the shaft 4 is provided with one or more openings 7 for the escape of the air drawn through said shaft from the upper end thereof, as will be hereinafter set forth.

At the lower part of the churn-body a raised wall 8 is formed concentric with the shaft 4, and forming within it an air-chamber, at the upper part of which turns a fan or agitator comprising inclined blades 9, secured on a boss or hub 10, mounted on the shaft 4, said fan or agitator being of a diameter adapted to fit snugly in the mouth of the chamber, and being arranged to project slightly above the same, so as to act upon the cream contained in the churn-body.

11 represents a plate or sheet of suitable material held vertically in the churn-body and serving to prevent the rotation of the contents thereof under the influence of the rotating agitator-blades 9, said plate being provided with a stem 12, which extends up and is provided with a hooked upper end 13, engaging the upper edge of the churn-body and provided with a screw 14, whereby it may be clamped fast thereto. Said plate is provided at its lower part with an overhanging portion 15, which extends out over the agitator and serves to prevent the removal of the same when the said plate is clamped fast by means of its screw 14. The lower end of the plate 11 is held against movement by lugs

16, formed on the bottom of the churn-body at the wall thereof, between which lugs said plate is engaged, as clearly indicated in Fig. 2.

17 represents the disk or plate for preventing the foaming of the contents of the churn-body, said plate being provided with an inclined or beveled edge 19 and being somewhat dished or concaved on its under side, as indicated at 18 in Fig. 1, and being provided with a neck 20, fitting the shaft 4, and split, as indicated at 21, so as to be adapted to be clamped fast on said shaft 4 by means of a clamping-band 22, encircling the neck and provided with an adjusting-screw 23, the construction of which will be clearly understood from Figs. 1 and 4 of the drawings.

In the operation of the device, the shaft 4 being set in rapid rotative movement, the blades 9 of the agitator or fan will act to create an upward current in the cream near the bottom of the churn-body, so as to create a partial vacuum in the chamber formed by the raised wall 8 at the base of the churn-body, whereby air will be drawn through the openings 7 in the lower end of the shaft 4 and caused to pass up through the cream contained in the churn, so as to fairly agitate the same and form the butter. The plate 11 at the same time serves to prevent the contents of the churn-body from turning, and the disk 17 also serves to prevent the contents from foaming and overflowing at the top of the churn-body, for which purpose it may be adjusted up and down on the shaft 4.

From the above description of my invention it will be seen that the device is of an exceedingly simple and inexpensive nature, and that the various parts thereof when separated may be readily cleansed, since there are no crevices or corners in which the soured milk may collect. It will also be obvious from the above description of my improvement that the device is susceptible of considerable modification without material departure from the principles and spirit of my invention, and for this reason I do not wish to be understood as limiting myself to the exact form of the device herein shown.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of the churn-body, the air-chamber having a mouth with a continuous circular wall, said mouth leading to the churn-body, a rotary agitator located in the mouth of the air-chamber so as to close the same, and an air-inlet leading to said chamber, substantially as described.

2. The combination of the churn-body, the rotary agitator having a hollow shaft and a continuous raised wall formed in the churn-body and surrounding the agitator-shaft, the said wall fitting snugly around the agitator so that the latter will form a cover for said chamber, and the shaft having an opening adapted to discharge air into the said chamber, substantially as described.

3. The combination of the churn-body, the rotary agitator, and an air-chamber having its walls fitted snugly around the agitator so that the latter closes and controls the communication between the churn-body and the air-chamber whereby the liquid cannot rush under the agitator while the same is in operation, the agitator projecting partly beyond the mouth of said chamber, and an air-inlet leading to said chamber, substantially as described.

BEN WALKER, JR.

Witnesses:
BEN WALKER,
LESSLIE L. JACKSON.