(No Model.)

J. S. MUMAUGH.

CHURN.

No. 590,160. Patented Sept. 14, 1897.

Fig. 1.

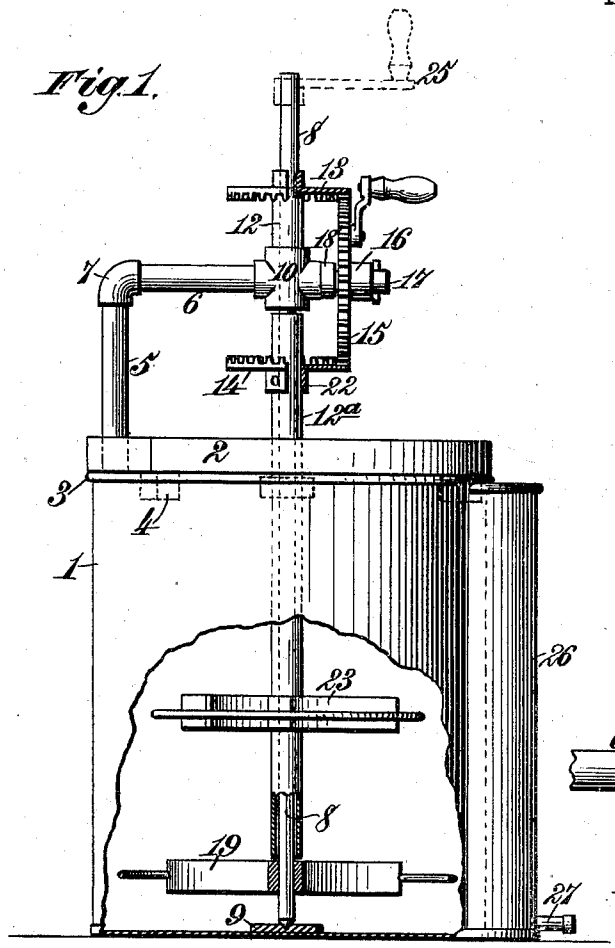


Fig. 2.

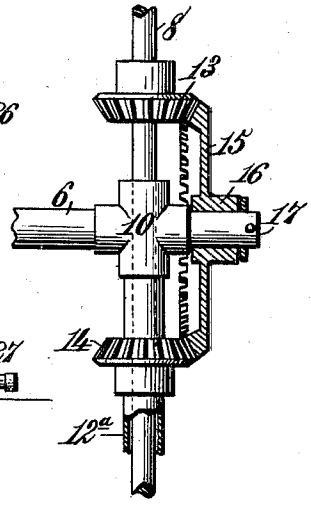
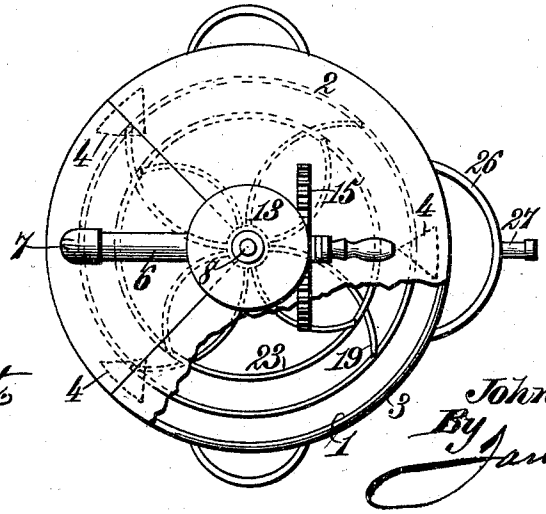


Fig. 3.



Witnesses,
Robert Ewatt,
Jno. N. Rea.

Inventor,
John S. Mumaugh,
By James L. Norris.
Atty.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN S. MUMAUGH, OF LIMA, OHIO.

CHURN.

SPECIFICATION forming part of Letters Patent No. 590,160, dated September 14, 1897.

Application filed February 1, 1897. Serial No. 621,532. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. MUMAUGH, a citizen of the United States, residing at Lima, in the county of Allen and State of Ohio, have invented new and useful Improvements in Churns, of which the following is a specification.

My invention relates to that class of churns in which rotary dashers are employed; and my purpose is to provide a novel, simple, cheap, and convenient construction for supporting the shaft that carries the rotary dasher and the gearing that drives said shaft in one direction and the sleeve carrying the second set of dasher-blades in the opposite direction.

It is my object not only to provide a support of the character briefly outlined, but to give the same such construction that it may readily be mounted on the churn-cover or removed from the latter without requiring any special tool or form of fastening device.

My invention consists, to these ends, in the new features of construction and novel combinations of parts hereinafter fully described and then particularly pointed out and defined in the claims which conclude this specification.

For the purposes of the following description reference will be had to the accompanying drawings, in which—

Figure 1 is a view in side elevation of a churn provided with my invention, part of the churn-body being broken away to show the interior arrangement. Fig. 2 is a view, partly in side elevation and partly in diametrical section, showing a modified construction of the gears. Fig. 3 is a plan view of the parts shown in Fig. 1.

The reference-numeral 1 in said drawings indicates the churn-body, which is usually of cylindrical form and of any material and size desired. The open upper end of said churn-body is closed, when the churn is in use, by a cover 2, which I apply in any known or preferred form. Preferably this cover 2 rests upon the top flange 3 of the body of the churn and is provided with a suitable number of blocks 4, which depend therefrom and extend into the body of the churn when the cover is in place and prevent any shifting of the latter. The cover 2 of the churn is formed in two parts, as shown in the drawings, one of which is readily removable therefrom for inspection or cleaning of the churn, and the other of which carries the bracket next hereinafter described.

I provide a bracket 5, which may be made of two pieces 5 and 6, of gas or other pipe, rigidly united at a right angle one to another by an ordinary pipe-coupling 7 or in any preferred manner that will give a rigid connection at the required angle. The end of one of said parts, as 5, is secured to one of the parts of the cover in any preferred manner, as seen in Fig. 1, so that its axis is substantially parallel with the axis of the shaft of the churn. The part 6 is arranged in the radial line of the churn-top and extends nearly to the line of a central shaft 8, which is stepped at its conical lower end in a seat formed in a plate 9, attached to the churn-bottom.

The end of the part 6 of the bracket closely approaches but does not touch the shaft 8, and upon the end of said part 6 is rigidly attached a four-way pipe-coupling 10. Through the latter, at a right angle to the part 6, passes the central shaft 8 of the churn, inclosed by a short sleeve 12 above the four-way coupling 10 and a long sleeve 12^a below. These sleeves at their ends abut against the ends of the vertical portion of the coupling. Upon the upper end of the sleeve 12 rests a gear 13, rigid on the shaft 8, and upon the sleeve 12^a is mounted a gear 14 of equal size, both meshing with an intermediate driving-gear 15, carried by a short sleeve 16, which is supported upon an axis 17, projecting laterally from the coupling 10. The intermediate gear 15 rests against the end of a short section 18, extending the necessary distance from the coupling 10.

The gears 13 and 14 may be bevel-gears, as seen in Fig. 2, but an intermediate spur-gear 15, as seen in Fig. 1, can be used, if preferred, the two gears 13 and 14 being in such case crown-gears.

The shaft 8, which extends the whole length of the churn, carries near the bottom of the churn a dasher, consisting of cross-arms 19, which may be two, three, or four in number, as desired. Upon said dasher rests the lower end of the sleeve 12^a, which extends through the churn-cover and enters the hub 22 of the

gear 14. This sleeve is loose on the shaft and carries the second dasher 23, turning between the cover 2 and dasher 19 and in the opposite direction to the latter. The sleeve 12^a rests at its lower end upon the dasher 19. The shaft 8 extends beyond the sleeve 12 and receives the gear 13, the hub of which is rigid on a projecting portion carrying a crank 25. If preferred, however, the crank may be attached to the intermediate gear 15, if preferred, as shown in Fig. 1.

The numeral 26 indicates a hot-water jacket which is secured to the body of the churn in a suitable manner or may be formed therewith. At its lower end this hot-water jacket is provided with an outlet 27, through which the water may be withdrawn. Hot or cold water, as the circumstances may require, may be introduced into this hot-water jacket for lowering or increasing the temperature of the contents of the churn.

The dashers of the churn are bent, preferably into curves, substantially as shown in dotted lines in Fig. 3. The frame of the churn is preferably made of malleable iron in one or more pieces, with a foot to fasten on the lid. These features, however, I do not consider as forming any part of my present invention.

What I claim is—

1. In a churn, the combination with a support mounted on the churn-cover, of a four-way pipe-coupling fixed on said support, a central shaft journaled in said coupling and carrying a dasher at its lower end, a short sleeve loosely arranged on said shaft above the coupling, a long sleeve arranged on the shaft below the coupling and resting at its lower end on the hub of the said dasher, a gear resting on said short sleeve and rigid on the shaft, a gear mounted on the long sleeve, a bearing projecting laterally from the four-way coupling, an intermediate gear journaled on said bearing and meshing with said gears, and a dasher fixed on the long sleeve, substantially as described.

2. In a churn, the combination with two tubular arms, and a right-angled pipe-coupling uniting said arms, one of the arms being rigidly mounted on the churn, of a four-way pipe-coupling mounted on the other arm, a churn-shaft journaled in said four-way coupling, a short sleeve loosely arranged on the shaft above the four-way coupling, a long sleeve arranged on the shaft below the coupling, a gear resting on said short sleeve and rigid on the shaft, a gear mounted on the long sleeve, a bearing projecting laterally from the four-way coupling, an intermediate gear journaled on said bearing and meshing with said gears, and dashers fixed on said shaft and long sleeve, substantially as described.

3. In a churn, the combination with a support mounted on the churn-cover, of a four-way pipe-coupling fixed on said support, a dasher-shaft journaled in said coupling and having a gear mounted thereon, a bearing projecting laterally from the four-way coupling, and a gear journaled on said bearing and meshing with the gear on the dasher-shaft, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN S. MUMAUGH.

Witnesses:
GEORGE H. HUTCHINSON,
WILLIAM T. GRAVES.