J. N. NALL.

CHURN.

APPLICATION FILED AUG. 24, 1912.

1,045,872.

Patented Dec. 3, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

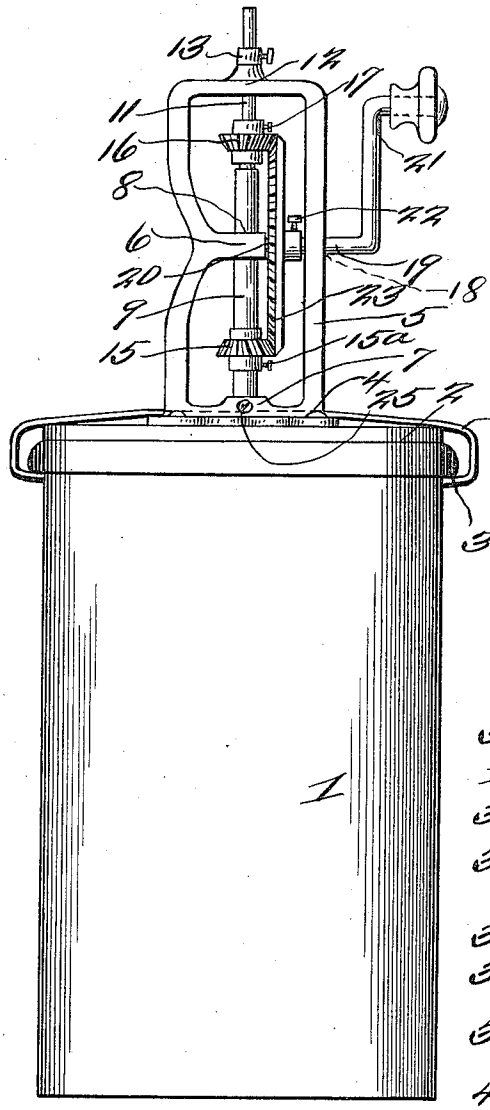
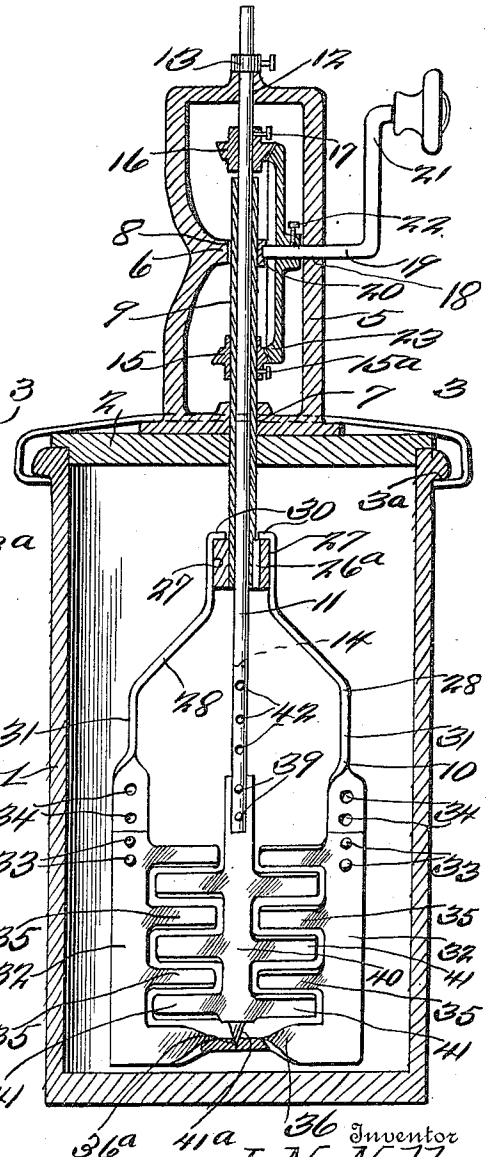


Fig. 2.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

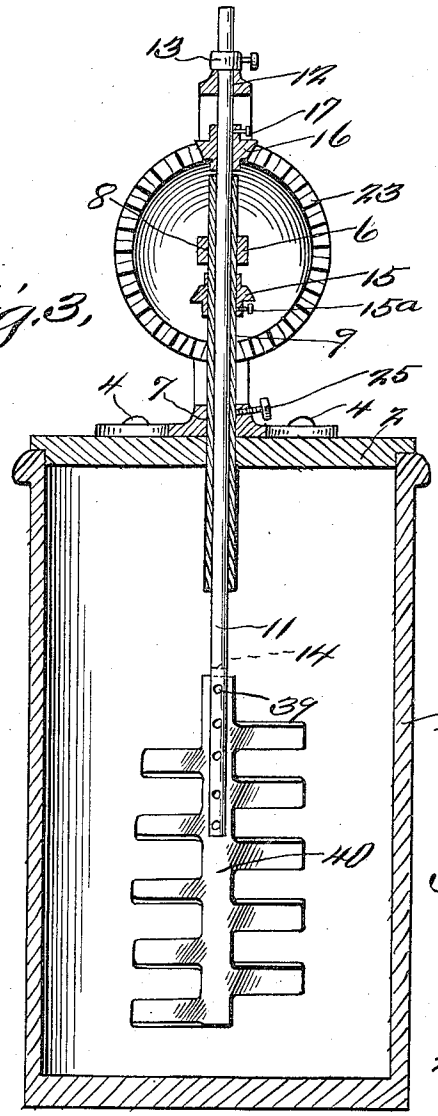


Fig. 4.

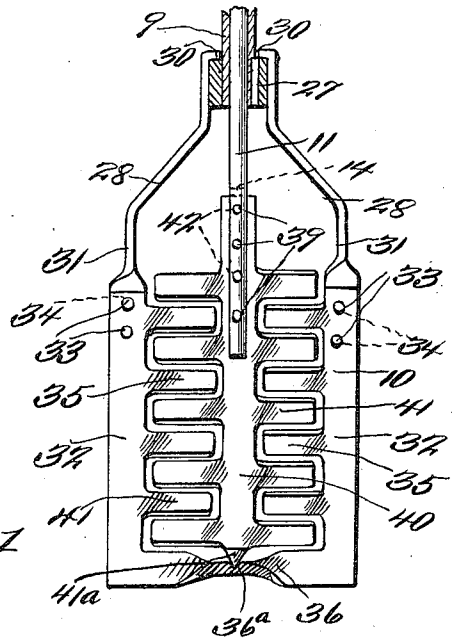


Fig. 5.

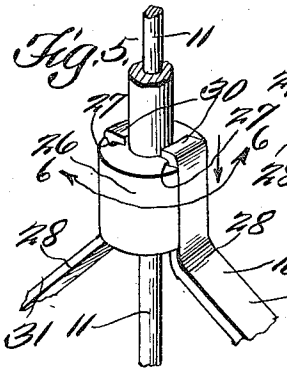
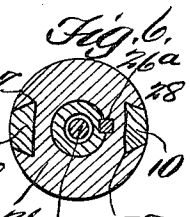


Fig. 6.



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UNITED STATES PATENT OFFICE.

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CHURN.

1,045,872. Specification of Letters Patent. Patented Dec. 3, 1912.

Application filed August 24, 1912. Serial No. 716,821.

To all whom it may concern:

Be it known that I, JAMES N. NALL, a citizen of the United States, residing at Barham, in the parish of Vernon and State of Louisiana, have invented a new and useful Churn; and I do hereby 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.

This invention relates to a new and useful churn, of the manually operated type.

As one of the objects of the invention, it is the aim, to improve the general construction of such churn, and especially those set forth, illustrated and claimed in the Patents Nos. 960,680, and 971,466.

A further object of the invention is to provide a churn dasher, comprising a revoluble sleeve having a collar at its lower end, which is provided with oppositely arranged recesses, in which the side bars of one of the dasher members are secured. Each of the side bars is constructed in two parts secured together substantially midway of the height of the dasher, the lower part having inwardly directed churning arms, with which the outwardly directed churning arm of the central dasher intermeshes. The lower part is provided with a transverse bar, which not only receives a bearing pin to insure a firm bearing for the dasher, but also constitutes a churning member similar to the said arms.

The drawing discloses certain features, but in practical fields these features may necessitate alterations, to which the patentee is entitled, provided the alterations fall within the scope of what is claimed.

The invention comprises further features and combination of parts, as hereinafter set forth, shown in the drawings and claimed.

In the drawings:—Figure 1 is a view in side elevation of a churn constructed in accordance with the invention. Fig. 2 is a vertical sectional view, showing the churn dasher constructed of two churning elements. Fig. 3 is a sectional view showing a single churning element. Figs. 4, 5 and 6 are detail views of the churn dasher shown in Fig. 2.

Referring more particularly to the drawings 1 designates the churn receptacle, which may be of any desired shape or construction, and is provided with a cover 2, which is secured to the receptacle by the catches 3. Secured to the cover by the screws 4 is an upright frame or casting 5 having an inturn central arm 6. Mounted in a bearing 7 in the lower portion of the frame or casting and in a bearing 8 of the inwardly turned arm is an elongated sleeve 9, which constitutes a shaft for the churning element 10. Telescoping through the sleeve is a shaft 11, which is bifurcated at its lower end, while its upper portion is mounted in a bearing 12 of the frame, there being a collar 13 secured to said shaft 11, to prevent downward displacement of the shaft, by the collar contacting with the frame. The bifurcation at the lower end of the shaft 11 is designated by the character 14. Secured to the sleeve 9, by a set screw 15^a is a beveled pinion 15. A beveled pinion 16 is secured to the shaft 11 by means of the set screws 17. Mounted in a bearing 18 of the frame is a crank shaft 19, which is also mounted in a bearing 20 of the inwardly turned arm. This crank shaft is supplied with a crank handle 21. Mounted by a set screw 22 on the crank shaft is a beveled spur gear 23, which meshes with the beveled pinions 15 and 16, whereby as the crank shaft is rotated, the sleeve 9 and the shaft 11 may be operated in opposite directions. If desired the beveled pinion 15 may be raised out of mesh with the teeth of the beveled spur gear, by loosening the set screw, so that the sleeve may be held stationary by the set screw 25, which is threaded into the base of the frame.

Keyed or otherwise secured to the lower end of the sleeve is a collar 26 having oppositely arranged dove-tailed recesses 27, in which the upper end portions of the side bars 28 of the churning element 10 are arranged. The extremities of the upper end portions of the side bars are bent over, as shown at 30, to hold the end portions of the side bars in place. Each side bar 28 is constructed in two parts 31 and 32 riveted together at 33, or bolted if desired. The rivets or bolts may be adjusted in the apertures 34 if desired, whereby the part 32 may be raised. Each part 32 is provided with inwardly extending churning arms 35. The parts 32 are connected at their lower ends by the integral bar 36 having a bearing 36^a to receive the lug or pin 41^a, thereby constituting a thrust bearing between the churning elements, so as to steady the churning elements with relation to one another, during their revoluble movements. This bar 36 not only receives the lug or pin, in order to con-

stitute a steady bearing, but also acts in a manner similar to the churning arms 35.

Secured at 39 in the bifurcation 14 of the shaft 11 is the central churning element 40 having the outwardly extending churning arms 41, which intermesh with the arms 35. The bifurcation 14 is long enough to receive a higher central churning element, in which case the securing means may be arranged in the apertures 42.

In Fig. 3 a single churning element is disclosed, in which case the side bars 28 and the parts 32 are removed, and the sleeve 9 is held stationary, in the manner hereinbefore stated.

From the foregoing it will be noted that there has been devised an efficient and novel churn, and one which has been found desirable and practical.

The invention having been set forth, what is claimed as new and useful is:—

1. In combination with a driving mechanism, a pair of telescopically arranged shafts adapted to be rotated in opposite directions, one of the shafts having a collar provided with dove-tailed recesses, a churning element having side bars the upper end portions of which are dove-tailed in said recesses, means for holding the side bars in dove-tailed connections with the collar, and a second churning element carried by the other shaft.

2. In combination with a driving mechanism, a pair of telescopically arranged shafts adapted to be rotated in opposite directions, one of the shafts having a collar provided with dove-tailed recesses, a churning element having side bars the upper end portions of which are dove-tailed in said recesses, the end portions of the side bars being bent to overlap the collar, to hold the side bars in dove-tailed connections with the collar.

3. In combination with a driving mechanism comprising a crank shaft having a gear, a pair of telescopically arranged shafts adapted to be rotated in opposite directions, each having gear connections with the gear on the crank shaft, one of the telescopically arranged shafts having a collar provided with dove-tailed recesses, a churning element having side bars the upper end portions of which are dove-tailed in said recesses, means for holding the side bars in dove-tailed connections with the collar, and a second churning element carried by the other telescopically arranged shaft.

4. In combination with a driving mechanism comprising a crank shaft having a gear, a pair of telescopically arranged shafts adapted to be rotated in opposite directions, each having gear connections with the gear on the crank shaft, one of the telescopically arranged shafts having a collar provided with dove-tailed recesses, a churning element having side bars the upper end portions of which are dove-tailed in said recesses, the end portions of the side bars being bent to overlap the collar, to hold the side bars in dove-tailed connections with the collar.

5. In combination with a driving mechanism comprising a crank shaft having a gear, a pair of telescopically arranged shafts adapted to be rotated in opposite directions, each having gear connections with the gear on the crank shaft, one of the telescopically arranged shafts having a collar provided with dove-tailed recesses, a churning element having side bars the upper end portions of which are dove-tailed in said recesses, the end portions of the side bars being bent to overlap the collar, to hold the side bars in dove-tailed connections with the collar, a second churning element carried by the other telescopically arranged shaft, one of said churning elements having a thrust bearing in the other churning element, so as to steady the churning elements relative to one another during their revoluble movements.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES NATHAN NALL.

Witnesses:
Y. C. PALMER,
W. K. OWERS.