H. S. BROWN.

CHURNING OR MIXING APPARATUS.

APPLICATION FILED JULY 1, 1910.

993,821.

Patented May 30, 1911.

2 SHEETS—SHEET 1.

Fig. 1,

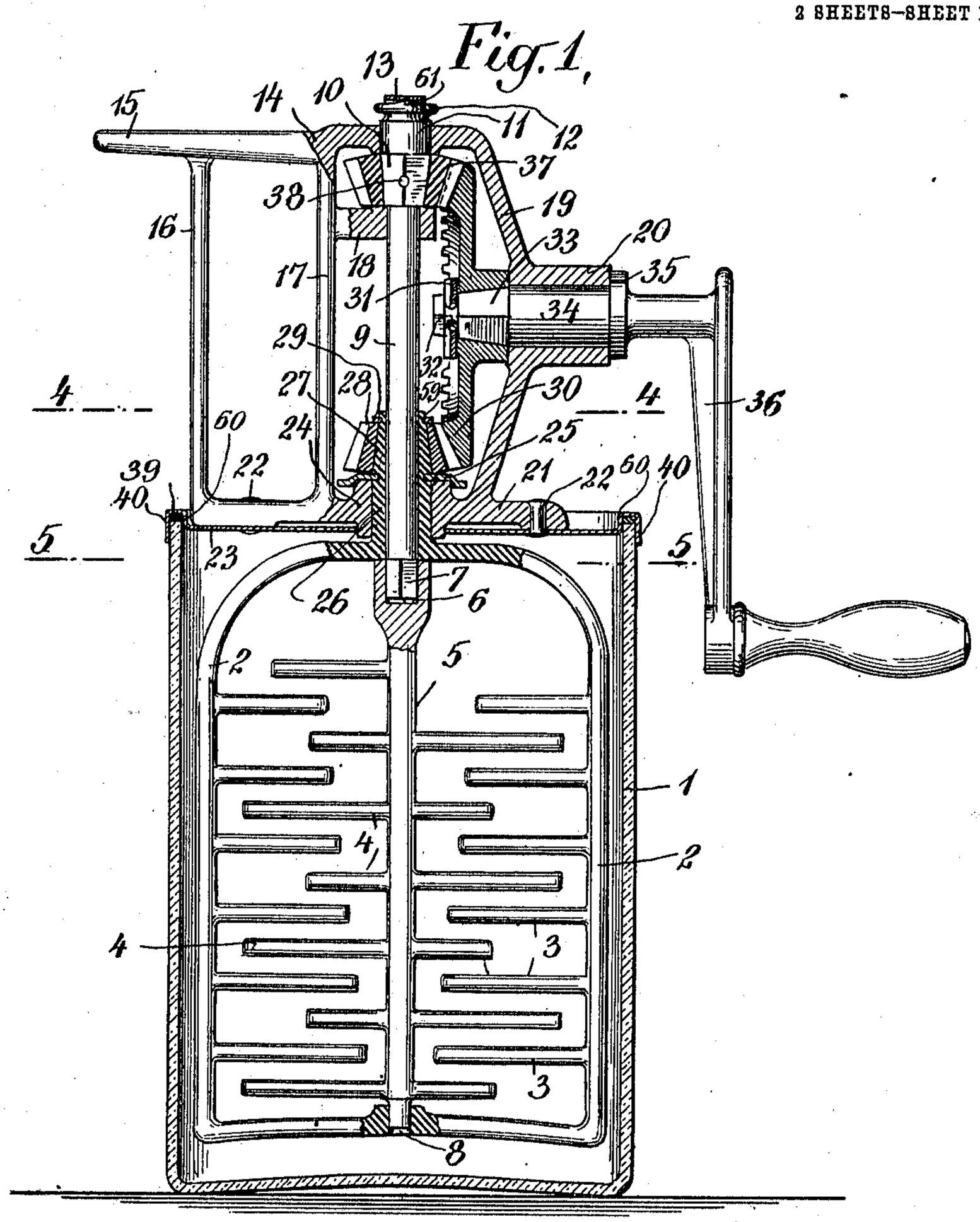
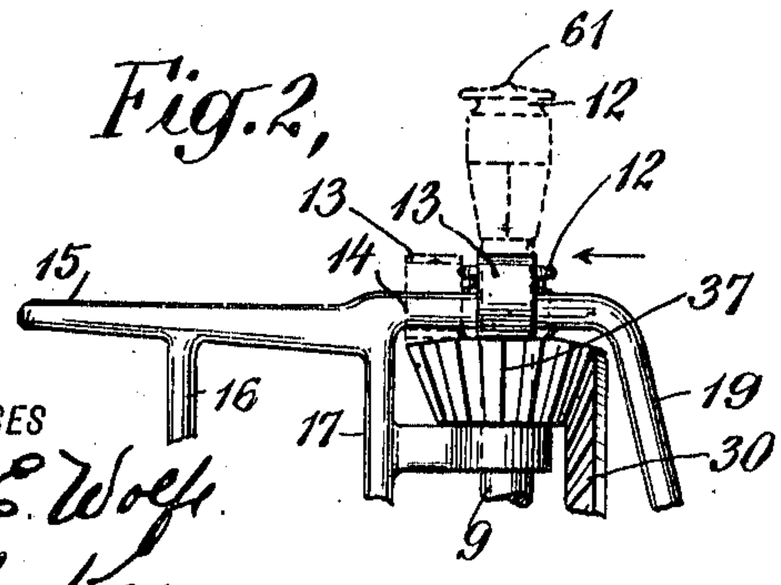


Fig. 2,



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 3,

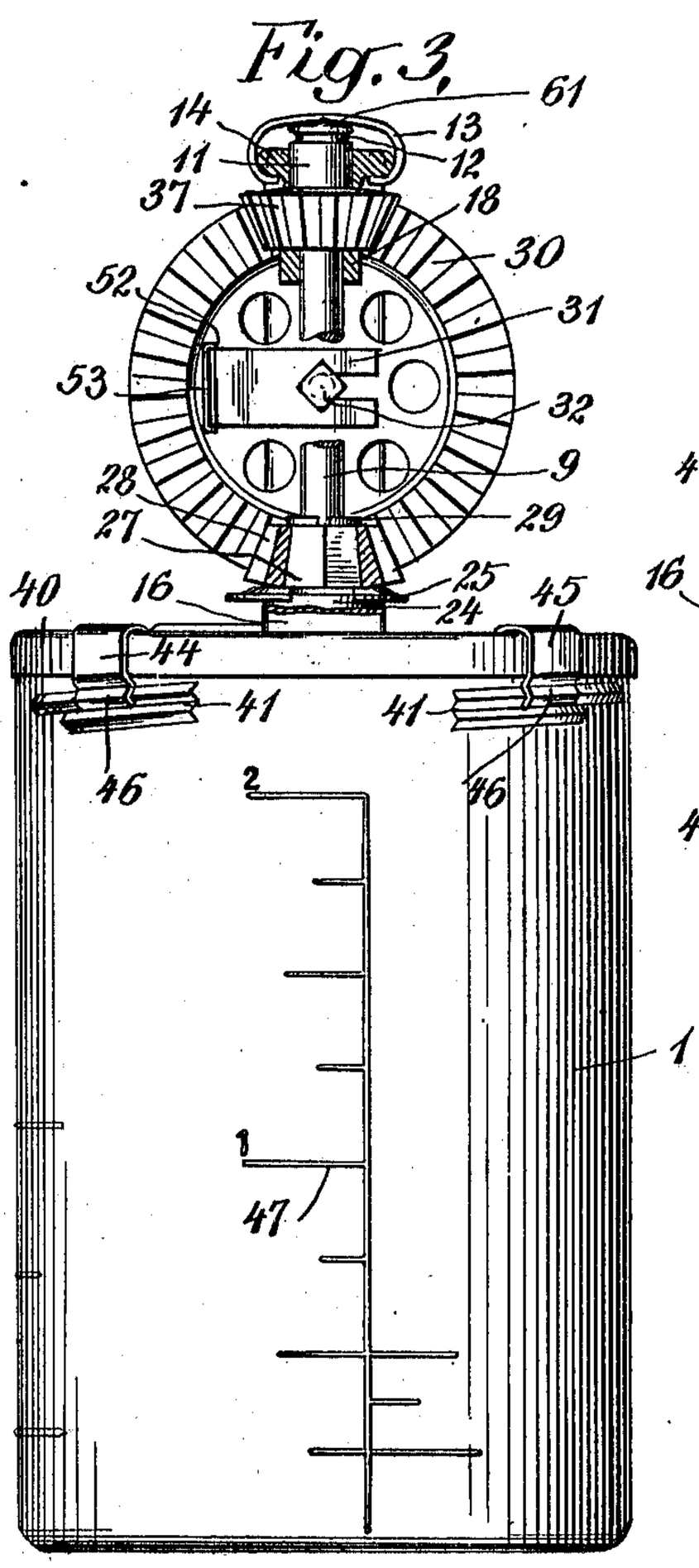


Fig. 4,

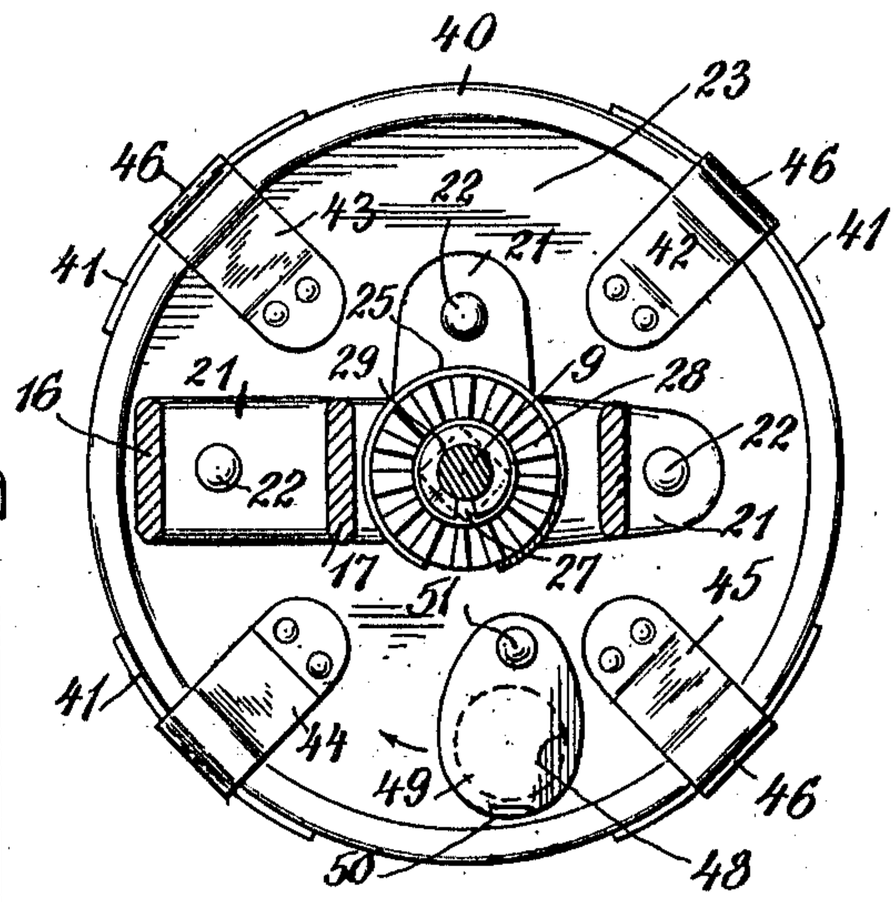


Fig. 5,

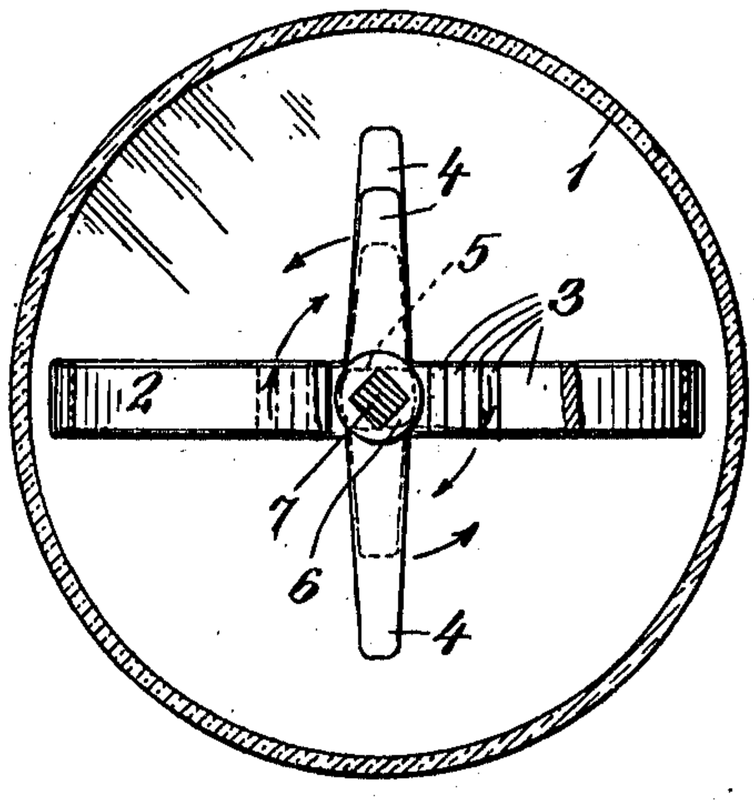
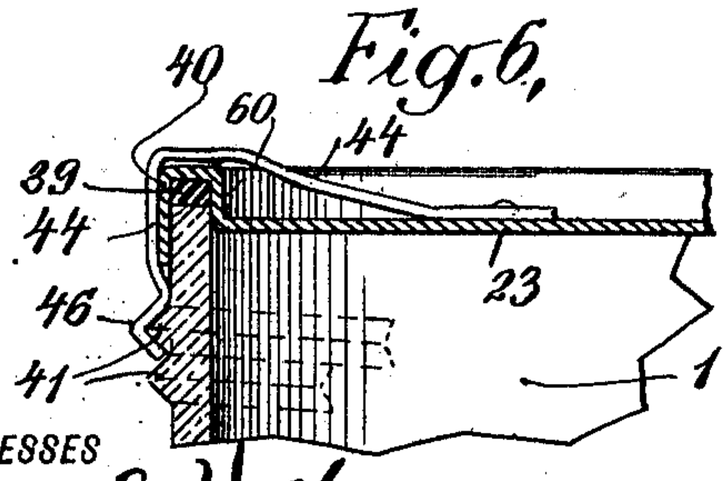


Fig. 6,



WITNESSES

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CHURNING OR MIXING APPARATUS.

993,821. Specification of Letters Patent. Patented May 30, 1911.

Application filed July 1, 1910. Serial No. 569,861.

To all whom it may concern:

Be it known that I, HAROLD S. BROWN, a citizen of the United States, and resident of Stratford, Fairfield county, Connecticut, have made a certain new and useful Invention Relating to Churning or Mixing Apparatus, of which the following is a specification, taken in connection with the accompanying drawings, which form part of the same.

This invention relates to churning or mixing apparatus and relates especially to small sized household devices of this character having a glass body.

In the illustrative embodiment of this invention shown in the drawings, Figure 1 is a vertical central section, Fig. 2 is a detail view showing some of the parts in disengaged position, Fig. 3 is a side elevation, parts being removed, Fig. 4 is a top sectional view along the line 4—4 of Fig. 1, Fig. 5 is a similar view through the body along the line 5—5 of Fig. 1, and Fig. 6 is a detail showing the cover attaching grips.

In the illustrative embodiment of this invention shown in the drawings, the body 1 may with advantage be formed of substantially transparent glass and be provided with various indications such as 47 for measuring the various ingredients used. The operating parts are preferably mounted on the cover 23 which may be of sheet metal and formed with an outer depending flange 40 overlapping the body and closing the same in connection with a suitable washer 39 if desired, which may be more securely held in position by forming the cover with a coöperating internal flange 60 within the body 1. The frame 21 carrying the operating parts of the apparatus may be conveniently secured to the cover by suitable rivets 22 and the cover may be secured to the body by any desired means, such as an interrupted screw connection. The interrupted threads 41 may be formed on the body and it is desirable in the case of such glass or other frangible bodies or containers to have a yieldable connection which minimizes strain and breakage. For this purpose a series of suitable spring grips 42, 43, 44, 45, may be riveted or otherwise attached to the cover 23 so as to be normally clear of the same at its outer edge as indicated in Fig. 6. These grips are formed with suitable thread engaging outer ends 46 so as to coöperate with the screw threads 41 on the body and yieldingly hold the cover down in engagement therewith. In this way the cover may be held on as securely as desired by turning it to the desired extent after the grips engage the screw threads and with such individually yielding grips, slight inequalities in the threads and coöperating parts do not cause such undesirable strains in the container.

The frame 21, which may be of galvanized iron or other material, may be provided with the hand grip 16 and the coöperating guard 15 which may be engaged by the user to firmly hold the apparatus in position while it is being operated. Other frame members 17, 18, 19, rigidly support various bearings such as the journal 20 in which is mounted the drive shaft 34 having the shoulder 35 and operating handle 36 integral therewith, if desired. This drive shaft may have the polygonal shank 33 integral therewith so that the beveled driving gear 30 formed with a coöperating polygonal hole may be readily secured to the drive shaft and firmly held in position by the gear clip 31 coöperating with a suitable recess 32 in the shaft and held in the retaining position indicated in Figs. 1 and 3 by the projection 52 on the gear with which the end 53 of this clip engages. This drive gear 30 may operate the dasher 2 provided with suitable internally projecting dasher blades such as 3 and having the dasher shaft 26 engaging a suitable bearing 24 in the frame. The shank 27 which may be integral with this dasher shaft may fit a coöperating polygonal hole in the dasher gear 28 which may be retained in position on the shank by a suitable spring retaining ring 29 fitting within the shoulder 59 on the shank. If desired, also, a suitable dasher clip such as 25 may be forced into the lateral recesses in the dasher shaft just above the bearing 24 so as to hold the shaft and dasher firmly in operative position and yet allow the ready dismounting of these parts when desired.

If desired, a suitable internal dasher or paddle 5 may be used and provided with paddle blades 4 which may be of varying length and arranged between the dasher

blades 3 so as to give an increased churning or mixing action. The paddle may be rotated in the opposite direction from the dasher by suitable gearing operated from the drive shaft. As indicated, the paddle cooperates with a suitable bearing 8 in the lower part of the dasher and is provided at its upper end with the socket 6 with which the polygonal end 7 of the paddle shaft 9 cooperates. This paddle shaft firmly holds the paddle in operative position as long as its end engages the socket in the paddle but as soon as the shaft is withdrawn, the paddle may be removed for cleaning or otherwise. The head 11 may be formed at the upper end of this paddle shaft and may coöperate with a suitable bearing in the frame and have, if desired, a bearing pivot 61 in its upper end which may coöperate with the paddle retainer 13 which as indicated in Fig. 3 is sprung around the frame member 14 so as to slide longitudinally thereof. When in the position indicated in Figs. 1 and 3, this retainer holds the paddle shaft down in operative position while when the retainer is slipped to one side as indicated in dotted lines in Fig. 2, the projecting flange 12 of the head, may be engaged by the operator to pull up the paddle shaft as indicated in dotted lines. This paddle shaft may if desired, be formed with the polygonal shank 10 coöperating with a similar hole in the paddle gear 37 meshing with the drive gear 30. In some cases, also, it is desirable to more permanently secure this gear 37 to its shaft and for this purpose the pin 38 may be passed through these two parts to firmly connect them.

From the foregoing description, it is evident that this apparatus may after shipment be readily assembled by an unskilled person and may be readily taken apart at any time as for cleaning. Under operating conditions, when the cream or other material has been placed in the body or container the cover and connected operating parts may be readily secured thereto by the interrupted screw connections described and then the operator by turning the handle may effect an energetic churning or mixing action by the oppositely revolving dasher and paddle having intermeshing blades. The operation may be readily observed through the glass container and if desired, material may be added from time to time during the operation through the opening 48 in the cover which is normally closed by the cap 49 shown in Fig. 4 as secured by the pivot 51 about which it may be swung by the upstanding handle or lug 50. It is of course highly advantageous to have the body or container of such apparatus formed of glass because of the facility with which it can be kept clean, aside from the other desirable features mentioned and it is also highly desirable to have the dasher and paddle entirely supported from the cover so that they operate without the necessity of any bearing formed in the body or container itself.

Having described this invention in connection with an illustrative embodiment thereof, to the details of which disclosure the invention is not of course to be limited, what is claimed as new and what is desired to be secured by Letters Patent is set forth in the appended claims.

1. In churning or mixing apparatus, a body, a cover coöperating with said body, a frame secured to said cover and having bearings, a drive shaft and connected handle mounted in said frame and provided with a non-circular shank, a drive gear coöperating with said shank and a gear clip engaging said gear and shank to removably hold them in coöperation, a dasher mounted in said body and having a connected dasher shaft projecting through said cover, a dasher clip coöperating with said dasher shaft to removably hold the same in coöperation with said cover and frame, a non-circular shank on said dasher shaft, a dasher gear on said shank and coöperating with said drive gear and a ring to removably hold said dasher gear on said shank, a paddle having a socket and coöperating with said dasher, a paddle shaft mounted in said frame and coöperating with said socket to normally rotate said paddle, a shank, head and pivot on said paddle shaft adjacent its upper end, a paddle gear engaging said shank on said paddle shaft and coöperating with said drive gear and a spring paddle retainer coöperating with said pivot to removably hold said paddle shaft and gear in position.

2. In churning or mixing apparatus, a body, a cover coöperating with said body, a frame secured to said cover, a drive shaft and connected handle mounted in said frame, a drive gear removably connected with said drive shaft, a dasher mounted in said frame to operate in said body, a connected dasher shaft projecting through said cover, a dasher clip coöperating with said dasher shaft to removably hold the same in coöperation with said cover and frame, a non-circular shank on said dasher shaft, a dasher gear on said shank and coöperating with said drive gear, a paddle coöperating with a bearing in said dasher and having a socket, a paddle shaft mounted in said frame and coöperating with said socket to removably hold said paddle in position with respect to said dasher and rotate the same, a non-circular shank on said paddle shaft adjacent its upper end and a paddle gear engaging said shank on said paddle shaft and coöperating with said drive gear.

3. In churning or mixing apparatus, a body of frangible material provided with threads adjacent its open end, a cover co-

operating with said body, a plurality of angularly separated yielding grips on said cover to coöperate with said threads on said body, a frame secured to said cover, a drive shaft and connected drive gear and handle mounted in said frame, an agitator mounted in said body and having a connected shaft projecting through said cover and engaging said frame and having an agitator gear cooperating with said drive gear.

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Witnesses:
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