

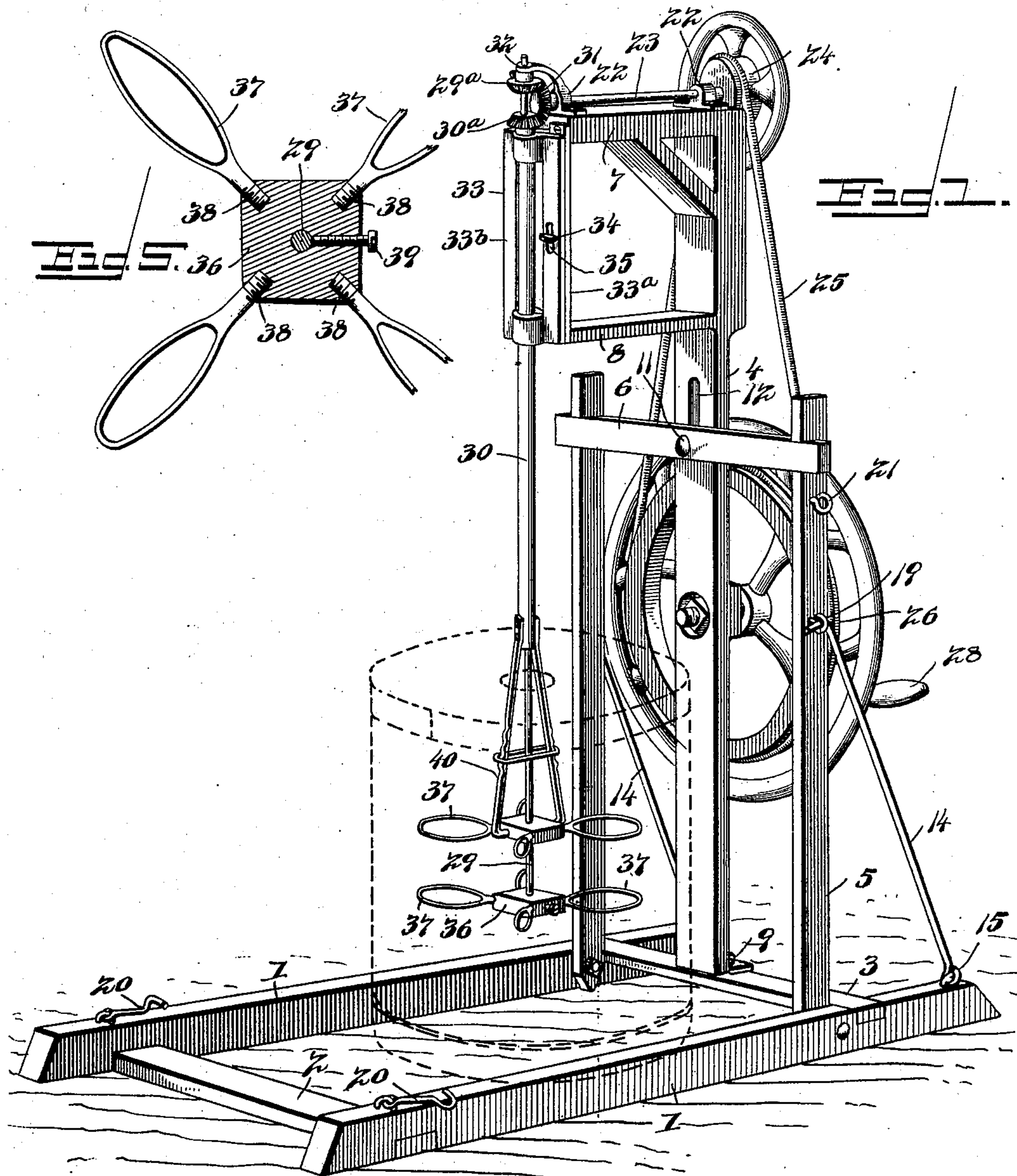
(No Model.)

2 Sheets—Sheet 1.

F. J. HOGE.  
CHURN.

No. 603,381.

Patented May 3, 1898.



Inventor

Flavious J. Hoge

Witnesses

*E. H. Hoge*  
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By *W. B. Hoge* Attorneys.

*C. A. Snow & Co.*

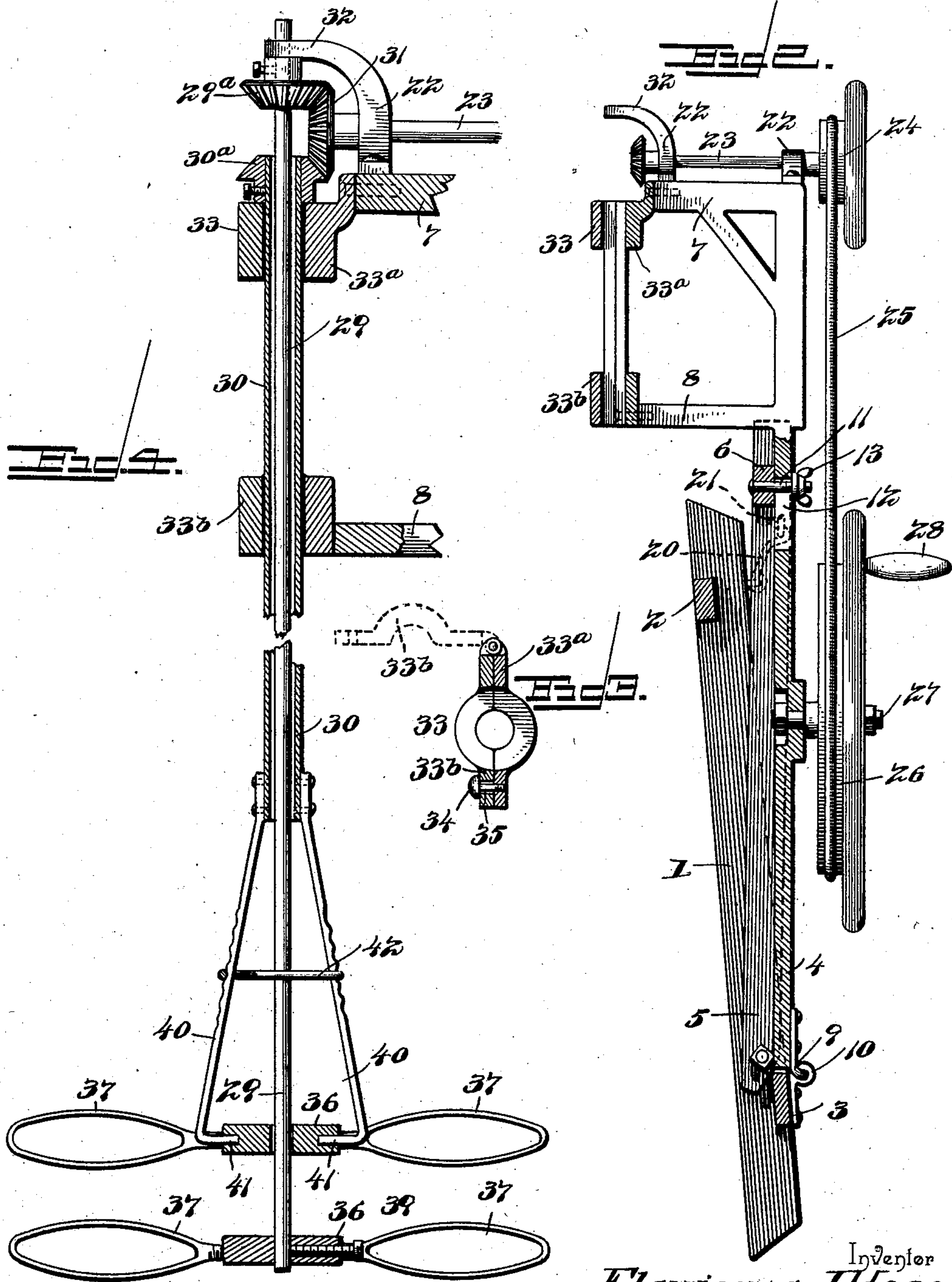
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# UNITED STATES PATENT OFFICE.

FLAVIEOUS J. HOGE, OF BIRCHWOOD, TENNESSEE.

## CHURN.

SPECIFICATION forming part of Letters Patent No. 603,381, dated May 3, 1898.

Application filed July 9, 1897. Serial No. 643,991. (No model.)

*To all whom it may concern:*

Be it known that I, FLAVIEOUS J. HOGE, a citizen of the United States, residing at Birchwood, in the county of James and State of Tennessee, have invented a new and useful Churn, of which the following is a specification.

My invention relates to churns, and has for its object to provide a simple, compact, and efficient construction and arrangement of parts wherein the supporting-frame is adapted to fold when not in use for compactness in transportation and storing, and, furthermore, to provide an efficient construction of dasher mechanism whereby the cleansing thereof is facilitated.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a perspective view of a churn-power constructed in accordance with my invention. Fig. 2 is a longitudinal sectional view of the same with the frame folded. Fig. 3 is a transverse sectional view of the bearing for the dasher staffs or spindles. Fig. 4 is a detail vertical section of the dashers and the contiguous portions of the dasher staffs or spindles. Fig. 5 is a plan view of one of the dashers, partly in section.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

The frame of the churn-power embodying my invention consists of a base having side bars 1 and cross-bars 2 and 3, a standard 4, hingedly connected for swinging movement to the cross-bar 3 of the base, a swinging brace-frame 5, having side bars pivotally mounted in contact with the inner surfaces of the side bars of the base and connected at their upper ends by a cross-bar 6, having a sliding connection with the standard, and forwardly-extending arms 7 and 8, carried by the standard and supporting the operating mechanism. The hinge by which the standard is connected with the cross-bar of the base consists of a pintle 9, engaging an eye 10 and adapted to be disengaged therefrom by lateral movement and the sliding connection between the cross-bar of the brace-frame, and said standard preferably consists of a

guide-pin 11, carried by the cross-bar and extending through a slot 12 in the standard, said pin being engaged by a thumb-nut 13, by which the standard and brace-frame may be clamped to prevent independent movement when the parts are in operative position. I also preferably provide detachable brace-rods 14, having a swiveled connection at 15 with the side bars at the base and provided with hooked upper extremities to engage eyes 19 on the side bars of the brace-frame. It is obvious that by loosening the clamping device, consisting of the thumb-nut, which is threaded upon the guide-pin above described, and disengaging the brace-rods from the side bars of the brace-frame, the standard and brace-frame may be folded into the plane of the base, the side bars of the brace-frame lying between the side bars of the base and having their swinging movement limited by the cross-bar 3 of the base, and in this position the standard and brace-frame may be secured by means of fastening-hooks 20 on the side bars of the base, which engage eyes 21 on the brace-frame. The cross-bar of the brace-frame is located at such a distance from the pivotal points of the side bars of said frame as to fall beyond the ends of the side bars of the base when the parts are folded, as will be seen by referring to Fig. 2.

Upon the upper arms 7 of the standard are arranged aligned bearings 22, in which is mounted a driving-shaft 23, provided at one end with a fly-wheel and pulley 24, which receives motion, through a belt 25, from a driving-wheel 26, which is mounted upon a stub-shaft 27, carried by the standard, said driving-wheel being provided with a suitable handle or crank 28.

In order to employ oppositely-revoluble dashers, I provide concentric dasher staffs or spindles 29 and 30, provided at their upper ends with oppositely-disposed bevel-pinions 29<sup>a</sup> and 30<sup>a</sup> to mesh with a pinion 31 on the driving-shaft, the upper end of the inner dasher staff or spindle 29 being mounted above the plane of its pinion in a bearing formed in an extension or arm 32 of the contiguous front bearing 22. Said concentric staffs or spindles are also mounted in a bearing 33 on the face of the frame, said bearing being of sectional construction and having a



fixed member 33<sup>a</sup> and a movable member 33<sup>b</sup>, which is preferably hinged to the fixed member and is adapted to be secured in its normal position by means of a catch 34. In the construction illustrated this catch consists of a thumb-screw threaded in the fixed member and having an elongated head which is adapted to pass through a slot 35 in the movable member. The turning of the thumb-screw to arrange its head transversely with relation to the slot in the movable member locks said member in place. The exterior or tubular dasher staff or spindle is held from downward displacement by the contact of the hub of its pinion 30<sup>a</sup> with the upper end of said sectional bearing, and the inner spindle is similarly held from downward displacement by the bearing of its pinion 29<sup>a</sup> upon the pinion 31, which is carried by the driving-shaft.

The dashers which I prefer to employ in connection with the improved churn mechanism are of simple construction, each embodying simply a body portion or collar 36 and a plurality of looped blades or wings 37, provided with terminal studs 38, which are threaded into suitable sockets in the edges of the collar. The lower dasher, which is carried by the inner staff or spindle, has its collar fitted upon said spindle and secured by means of a set-screw 39, whereby it may be readily removed to facilitate cleansing, and the upper dasher, which is carried by the tubular staff or spindle, is secured thereto by means of spring-arms 40, carried by said tubular staff or spindle and provided with in-turned lower extremities, forming studs 41 to engage sockets in the opposite side edges of the collar forming the body portion of the dasher. The tendency of the spring-arms is to swing outwardly and thus disengage their terminal studs from the sockets of the dasher-collar, and in order to maintain them in operative engagement with the collar I employ a slide-ring 42. In other respects the upper dasher is identical in construction with the lower dasher.

The preferred form of dasher-blade embodies a loop consisting of a single continuous elongated ring, the elongation or major axis being radial with relation to the axis of rotation of the dasher, said ring having a single integral extension forming a one-ply stem, preferably threaded in a radial socket in the body portion or collar of the dasher, whereby in engaging or disengaging the blade the looped portion thereof serves as a handhold for turning the stem.

From the above description it will be seen that the framework, while adapted to fold to occupy the minimum space when not in use, is simple and strong, and when arranged in operative position it is adapted to be firmly secured against vibration by the holding devices provided for that purpose and including the thumb-nut, by which the brace-frame and standard are locked at the desired relative adjustment, and the brace-rods, which

extend in an inclined direction from the base in rear of the brace-frame to the side arms of the brace-frame near their upper ends.

It will be seen, furthermore, that when the churning operation is completed the dashers may be removed from the churn-receptacle, which is indicated in dotted lines in Fig. 1, without displacing the frame by opening the sectional bearing in which the dasher-spindles are mounted and disengaging the pinions of the dasher-spindles from that on the driving-shaft.

It will be seen, furthermore, that the construction of the dashers is such as to enable them to be readily cleansed, and thereby kept in a perfectly clean and hygienic condition. It will be seen that the dasher-heads may be detached from their staffs or spindles, whereby they may be placed in a vessel and subjected to a boiling operation. The use of the spring-arms for connecting the upper dasher with its staff or spindle obviates the objectionable features of a tubular staff, the tubular portion of said staff being arranged wholly outside of the churn-receptacle.

It is obvious, furthermore, that the churn mechanism constructed as above described may be used in connection with any churn-receptacle, for the reason that its operation is wholly independent of such receptacle, the dashers having no bearing upon any part thereof.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having described my invention, what I claim is—

1. A churn-power having a frame consisting of a base including parallel side bars, a standard hingedly connected to the base at a point between the side bars of the base and adapted to fold therebetween, a brace-frame pivotally mounted upon the side bars of the base to fold therebetween, and having a sliding connection with the standard, said brace-frame being mounted eccentrically with relation to the hinge of the standard, and means for clamping the standard and brace-frame together, to secure them in their desired relative positions, substantially as specified.

2. A churn-power having a frame consisting of a base including parallel side bars, a standard having a detachable hinged connection with the base, between said side bars, and adapted to fold in the plane thereof, a brace-frame having side bars pivotally connected to the side bars of the base to fold therebetween, and having a cross-bar provided with a guide-pin operating in a slot of the standard, and a clamping device consisting of a thumb-nut engaging said guide-pin to clamp the brace-frame and standard in the desired relative positions, substantially as specified.

3. A churn-power having a frame consist-



ing of a base including parallel side bars, a standard hingedly connected with the base between said side bars, and adapted to fold in a plane therewith, a brace-frame having side bars pivotally mounted on the inner sides of the side bars of the base, and connected by a cross-bar having a sliding connection with the standard, and brace-rods for securing the brace-frame in its upright position, substantially as specified.

4. A churn-power having a supporting-frame, including a folding standard and means for securing the same in its upright position, operating mechanism including a driving-shaft, a driving-wheel, and a belt connection between the driving shaft and wheel, a sectional bearing on the frame having a movable member, and means for securing the same in its operative position, and dashers having concentric spindles mounted in said sectional bearing and provided with gears meshing with a gear on the driving-shaft, whereby the dashers and spindles may be dismantled for removal from the churn-receptacle preparatory to folding the frame, substantially as specified.

5. A churn mechanism having concentric dasher staffs or spindles and means for rotating the same, dashers, of which one is secured to the inner dasher staff or spindle, said dashers having body portions or collars and wings or blades, arms carried by the tubular dasher staff or spindle, and provided with inturned lower extremities to engage sockets in opposite sides of the body portion or collar of its dasher, and a slide-ring fitted upon said arms for normally maintaining their inturned extremities in engagement with a dasher, substantially as specified.

6. A churn mechanism having concentric dasher staffs or spindles and connected dashers, and means for communicating rotary motion to the dasher staffs or spindles, one of the dashers having a collar removably fitted upon the inner dasher staff or spindle, and

provided with locking devices to secure it thereon, and the other dasher being secured to the tubular dasher staff or spindle by means of arms, carried by the latter and provided with inturned lower extremities forming studs to engage sockets in the body portion of said dasher, and a ring fitted to slide upon said arms to normally maintain the inturned extremities or studs in engagement with said sockets, substantially as specified.

7. The combination with a dasher-spindle, and a dasher having its body portion provided with opposite sockets, spring-arms carried by the dasher-staff and having inturned extremities forming studs to engage said sockets in the body portion of the dasher, said spring-arms having an outward tendency adapted to remove their studs from the sockets of the dasher, and a sliding ring mounted upon the arms and adapted, when moved in one direction, to contract the arms to cause engagement of their studs with said sockets, substantially as specified.

8. A churn mechanism having concentric dasher staffs or spindles, and means for rotating the same, dashers, of which one is secured to the inner dasher staff or spindle and the other of which is loosely mounted upon said spindle, said dashers having body portions or collars and attached wings or blades, radially-swinging arms carried by the tubular dasher staff or spindle and terminally having a pin-and-socket connection with the collar of the loosely-mounted dasher, and means for maintaining the arms with their extremities in interlocking engagement with said loosely-mounted dasher, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

FLAVIEOUS J. HOGE.

Witnesses:

W. N. HOLMAN,  
T. R. ZIEGLER.