

(No Model.)

2 Sheets—Sheet 1.

C. S. BROWN & F. B. FARGO.  
CHURN AND BUTTER WORKER.

No. 557,961.

Patented Apr. 7, 1896.

Fig. 1.

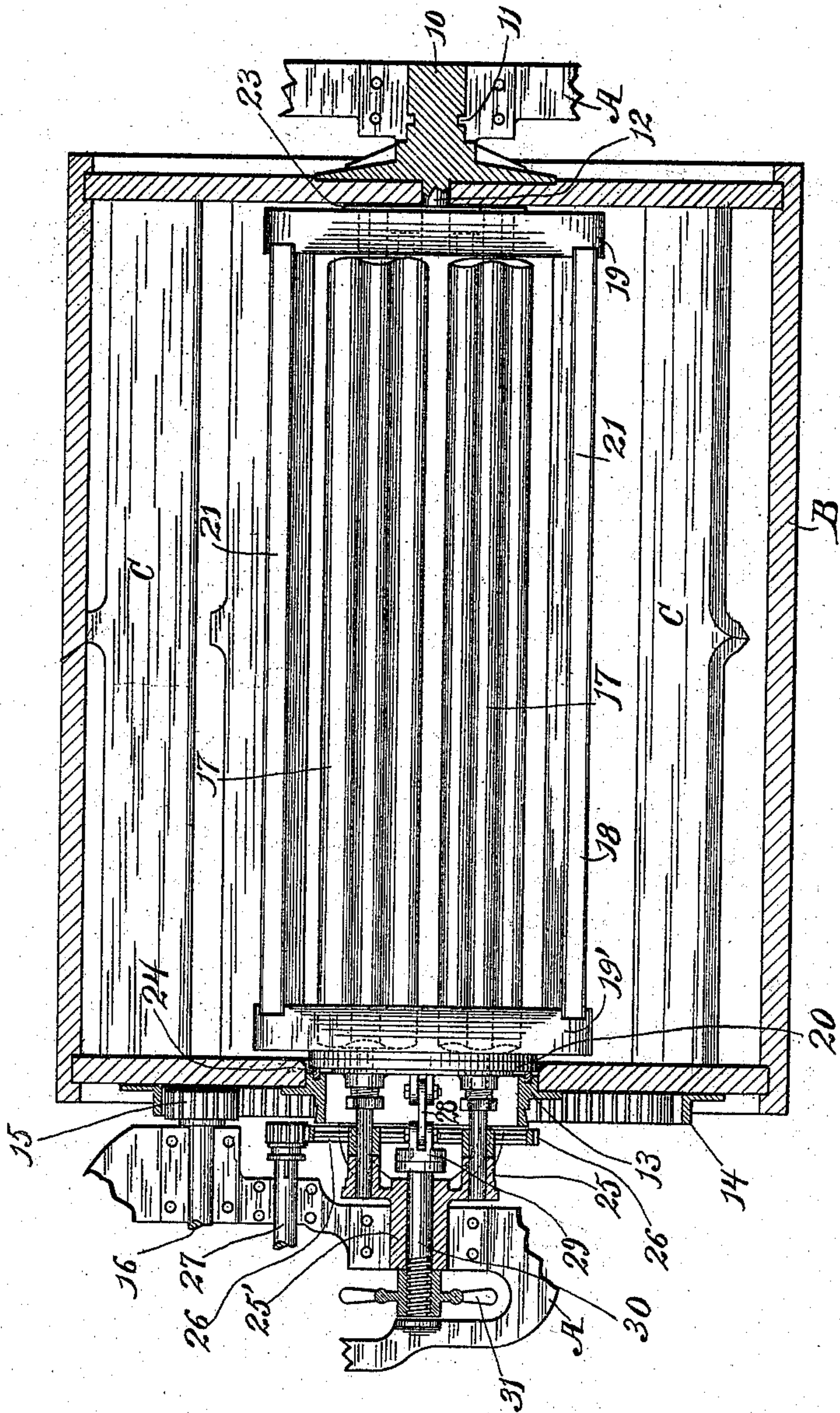
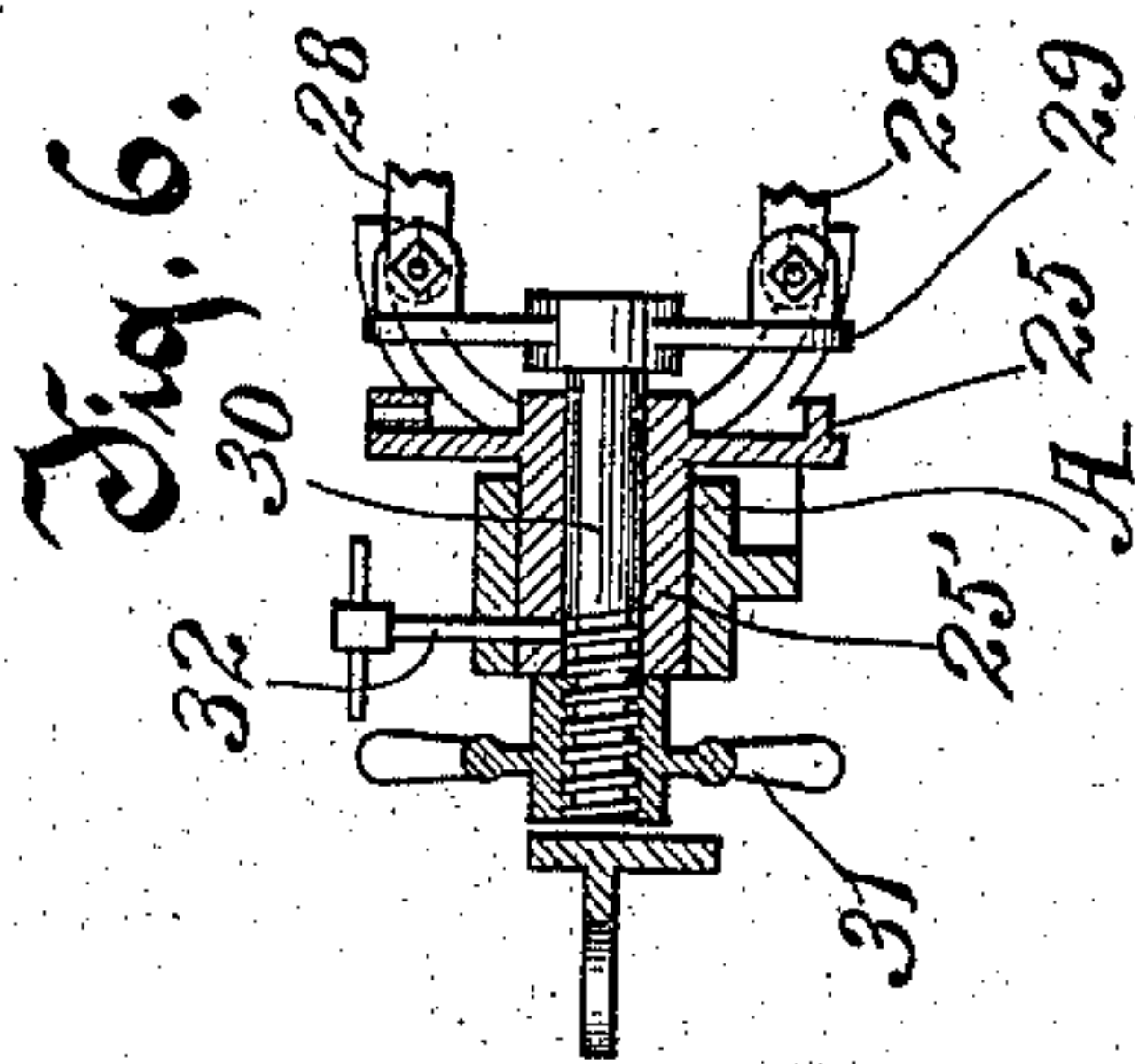


Fig. 6.



Witnesses.

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(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

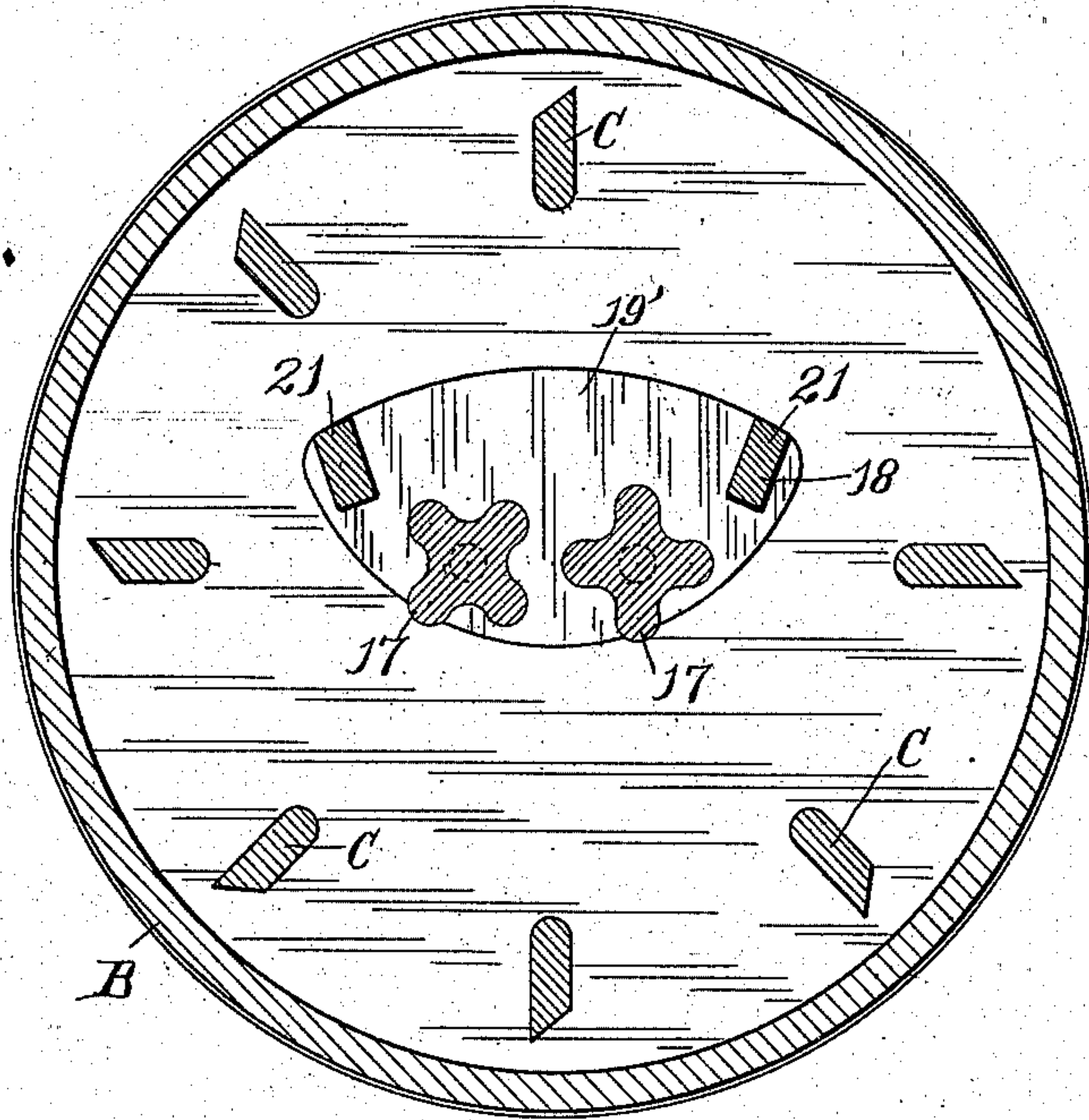


Fig. 4.

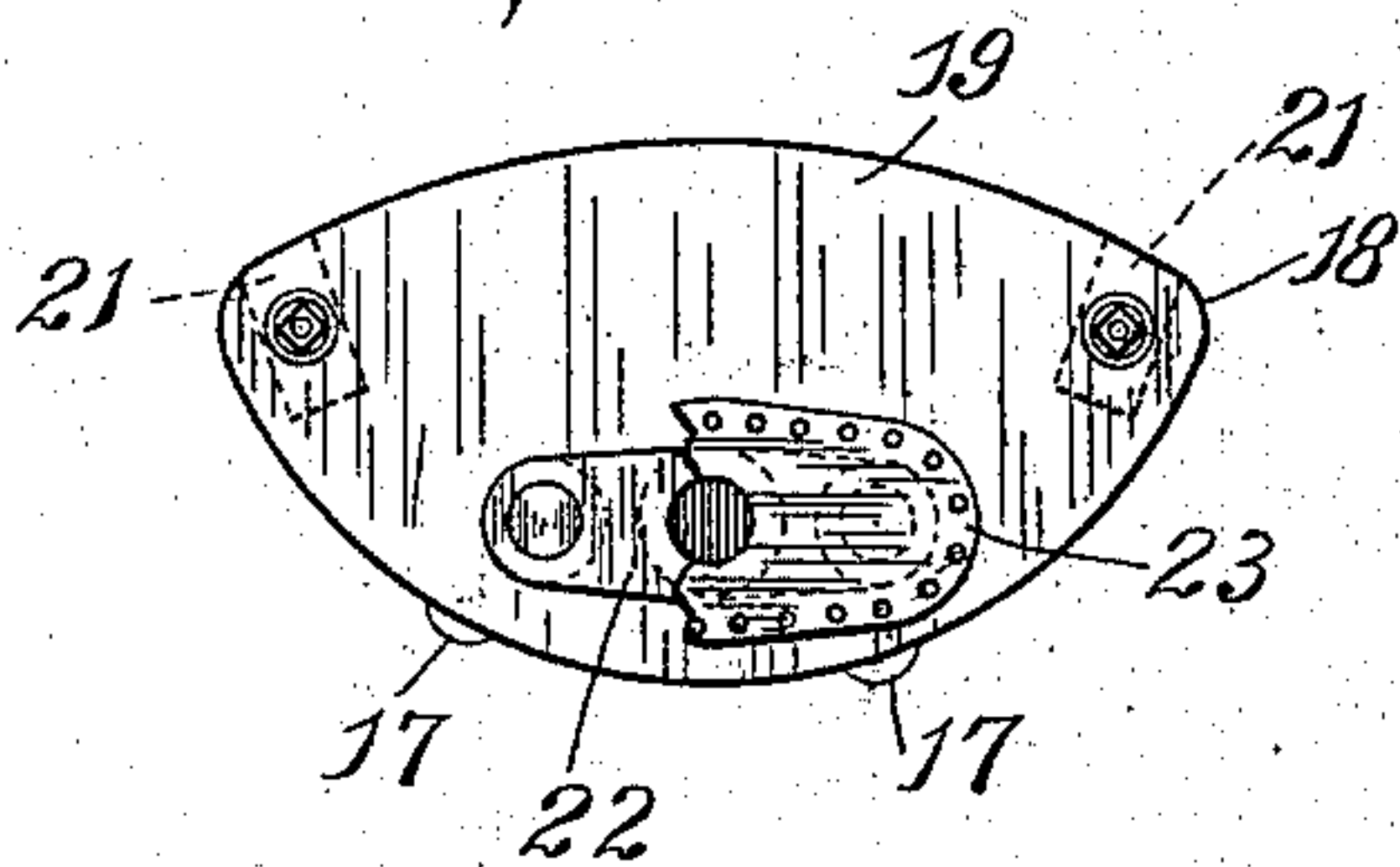


Fig. 5.

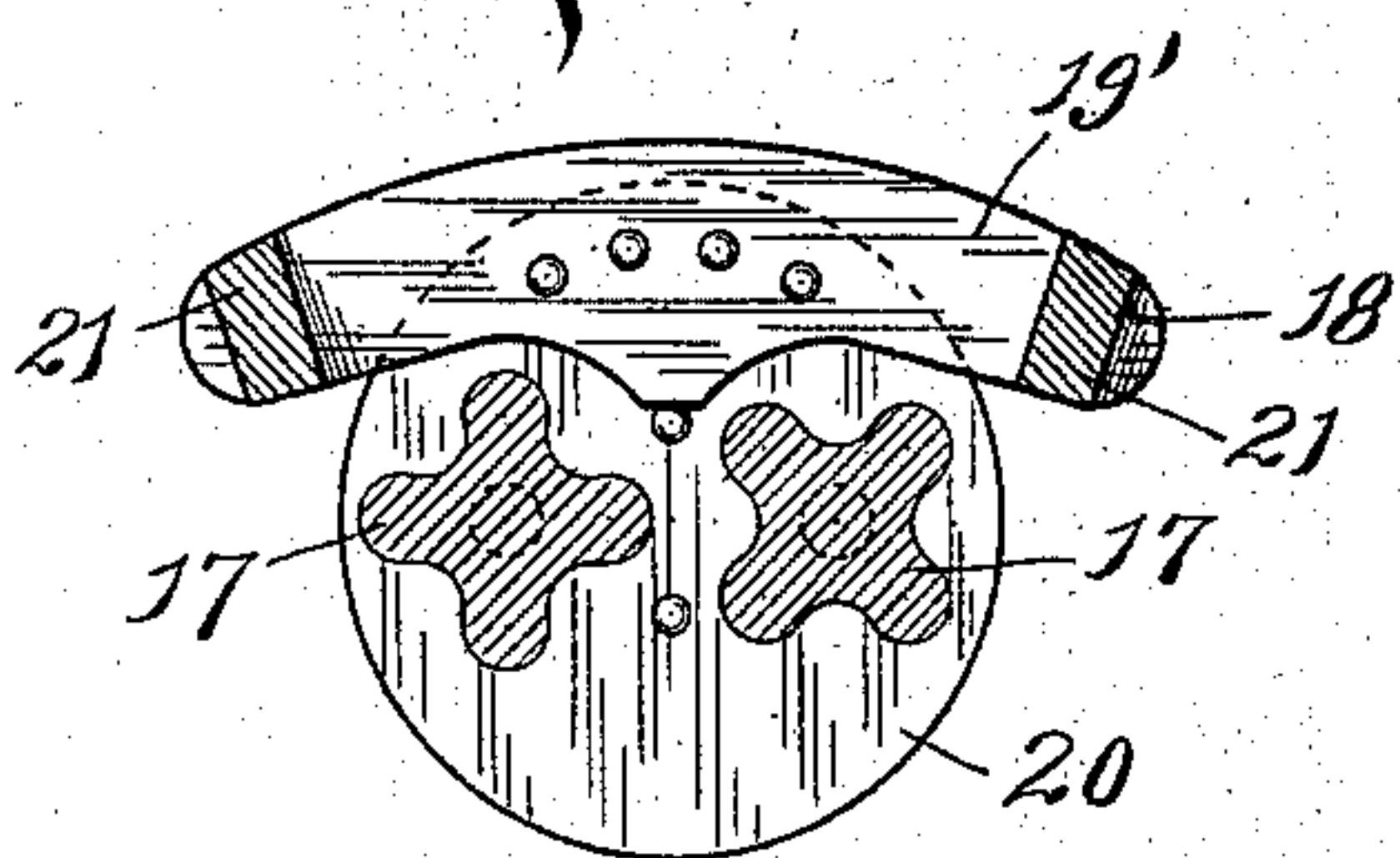
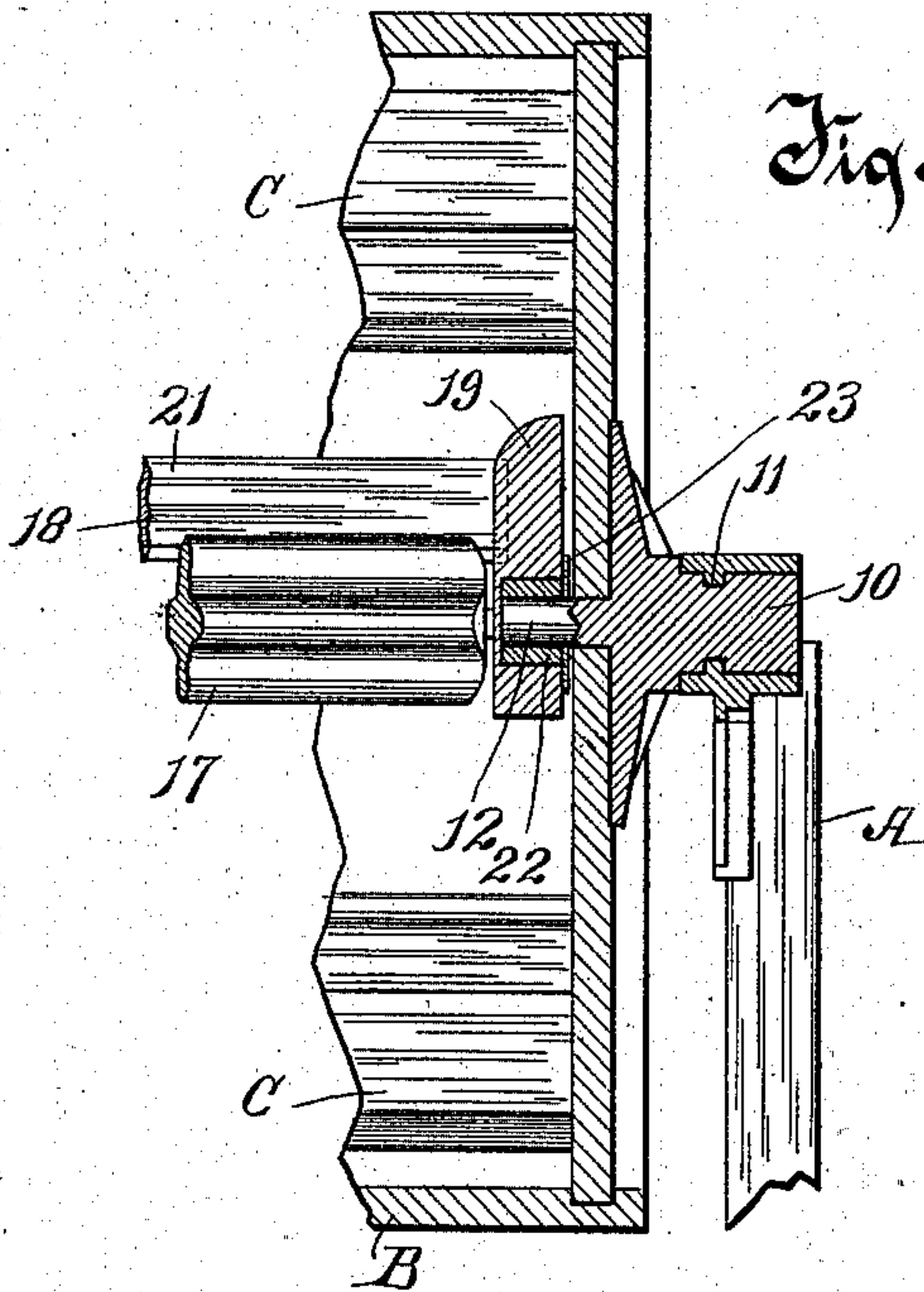


Fig. 3.



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# UNITED STATES PATENT OFFICE.

CHARLES S. BROWN AND FRANK B. FARGO, OF LAKE MILLS, WISCONSIN.

## CHURN AND BUTTER-WORKER.

SPECIFICATION forming part of Letters Patent No. 557,961, dated April 7, 1896.

Application filed May 20, 1895. Serial No. 549,856. (No model.)

*To all whom it may concern:*

Be it known that we, CHARLES S. BROWN and FRANK B. FARGO, of Lake Mills, in the county of Jefferson and State of Wisconsin, have invented a new and useful Improvement in Churns and Butter-Workers, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

Our invention relates to improvements in those machines or implements that are adapted to be used both as a churn and as a butter-worker, the machine being so constructed that by means of the shifting and rearrangement of the parts in a manner therein provided for the machine can be used first as a churn, and then, on making the change in the relation of the parts, as a butter-worker.

The primary object of the present invention is to provide means for mounting, and the mounting of the butter-working rollers in the drum in such manner as to obviate undesirable twisting, torsion, or binding of the parts either when in use as a churn or as a butter-worker. Incidental improvements in connection therewith also form a part of the invention.

The invention consists of the various devices and mechanical parts and their arrangements and combinations, as herein described and claimed, or their equivalents.

In the drawings, Figure 1 is a horizontal section of the drum of the churn, with a plan view of interior and operative mechanism and fragments of the frame. Fig. 2 is a transverse vertical section of the machine, looking toward its rear end. Fig. 3 is a vertical section of a fragment of the drum and its gudgeon at the rear end. Fig. 4 is a detail of the outer end of the frame or device in which the butter-working rollers are mounted at the rear end. Fig. 5 is a transverse vertical section of the butter-working rollers and an elevation of the interior face of the frame in which the rollers are mounted at the front end. Fig. 6 is a detail, partly in vertical section, of the devices at the front end of the machine in and by which the butter-working rollers are supported and their movements controlled. The view is at a right angle to the view of the same parts shown in Fig. 1 on the same sheet adjacent thereto.

Only such fragments of the frame A are shown as are necessary to indicate the relation of the operative parts of the machine thereto.

B is the case or drum of the churn, which is provided interiorly with longitudinally-disposed slash-boards or buckets C, arranged at distances apart around the periphery. At the rear end the drum is provided with a gudgeon 10, journaled in the frame and provided with an annular recess, in which a rib 11, integral with the boxing, enters and prevents the endwise movement of the gudgeon and the drum. This gudgeon 10 is provided with an arbor 12, integral and concentric therewith, projecting inwardly in the axis of the drum through its rear head, which arbor is adapted to support revolvably thereon in the drum the rear end of the frame in which the butter-working rollers are mounted, as will be hereinafter more particularly described. At the front end of the drum the head is provided with a central aperture, in and about which a hollow gudgeon 13, of considerable diameter, is fixed in the head. This gudgeon projects forwardly a little distance from the head and rests upon suitable wheels (not shown) mounted on the frame, whereby the drum at its front end is supported rotatably.

An annular toothed rack 14 is secured rigidly to the front head of the drum, and a pinion 15 meshes therewith, and, the pinion 15 being rigid on the driving-shaft 16, the drum is rotated thereby.

In the drum there is a plurality (preferably two) of longitudinal butter-working rollers 17 near each other and parallel with the axis of the drum, which rollers are mounted in a rigid frame 18, the frame being so mounted in the drum as to be capable of being clamped thereto and revoluble therewith, or to be released therefrom and to be revoluble independently thereof, or to remain stationary therein while the drum revolves about it. This rigid frame 18 consists, essentially, of the rear end plate 19, the front end plate 19', secured rigidly to the releasable partial head 20, and the longitudinal parallel bars 21, secured at their ends, respectively, to the head 19 and to the head 19'. These bars 21 are so located with reference to the rollers 17 that when the machine is used for a but-



ter-worker they are a little above and at the respective sides of the rollers 17, in the positions indicated in Figs. 1, 2, 3, 4, and 5 of the drawings. This frame is preferably of wood, which is more cleanly and better adapted to obviate any discoloration of the milk or butter consequent upon the wear of the parts than metal would be. At the rear end, however, a metal journal-box 22 is let into the outer or rear surface of the plate 19, which journal-box 22 receives therein the arbor 12 and the journals of the rollers 17 at their rear extremities. A cover and bearing-plate 23, of galvanized iron or other non-corrosive material, is secured to the head 19 over the box 22, thereby protecting the metal box from contact with the contents of the churn.

At the front extremity the plate 19' is secured to the inner wood surface of the partial head 20, and the outer metal surface of this partial head bears releasably against the cork gasket 24, fixed in the inner annular extremity of the hollow gudgeon 13, and the journals of the rollers project through this releasable head revolubly in suitable stuffing-boxes therefor. The journals of the rollers 17 are journaled in a spider 25, which spider is provided with legs bearing releasably against the outer extremity of the hollow gudgeon 13, the spider being also provided with a hub 25', that is journaled in the frame. The journals of these rollers are also severally provided with toothed pinions 26, which mesh with each other, and with a pinion splined on the counter-shaft 27, which counter-shaft is driven from the shaft 16 by means not shown herein, as the construction forms no part of our present invention.

The releasable head 20 is connected by the links 28 to the yoke 29, which yoke is provided with a stem 30, projecting outwardly in the prolongation of the axis of the drum movably through the hub 25', and an interiorly-screw-threaded hand-wheel 31 turns by its thread as a nut on a screw-threaded portion of the stem 30 against the outer end of the hub 25', being thereby adapted to draw the partial head 20 firmly against the inner end of the hollow gudgeon 13 against the resistance and bearing of the spider 25 against the outer end of the hollow gudgeon. A pin 32 insertible through an aperture therefor in the frame into the hub 25' is adapted to secure the spider, the rollers 17 journaled therein, and the frame 18 in stationary position in the churn

when the machine is to be used as a butter-worker, and the construction of the frame 18 and of related parts of the machine is such that when the pin 32 is thus inserted through the frame into the hub 25' the frame 18 is held stationary and no torsion or twisting or binding of parts occurs, even when the drum is rotated about it as required when used for a butter-worker. When the machine is to be used as a churn, this pin 32 is withdrawn and the frame 18 and the rollers therein are permitted to revolve about the axis of the drum.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The combination with the revoluble drum of a churn and butter-worker, said drum having one tight and one centrally open head, of a rigid roller-carrying frame approximately as long as the interior of the drum, mounted revolubly in and concentrically with the axis of the drum, substantially as described.

2. The combination with the revoluble drum of a churn and butter-worker, said drum having one tight and one centrally open head, of a rigid roller-carrying frame, comprising a plate or head at the rear end, a plate or head at the front end and parallel rigidly-attached connecting-bars, an arbor fixed in the head of the drum on which the roller-carrying frame is axled at one extremity, and means at the other end of the drum for correspondingly supporting the roller-carrying frame, substantially as described.

3. The combination with the revoluble drum of a churn and butter-worker, of a rigid roller-carrying frame in the drum, an arbor fixed in the head of the drum on which the frame is axled at that end, butter-working rollers in the frame, a releasable partial head secured to and making a part of the frame at the other end of the drum, a spider in which the journals of the rollers extending through the releasable head are journaled, and a pin insertible through the framing of the machine and in the spider whereby the roller-carrying frame is held against revolution, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

CHARLES S. BROWN.  
FRANK B. FARGO.

Witnesses:

A. W. GREENWOOD,  
GEORGE E. GREENWOOD.