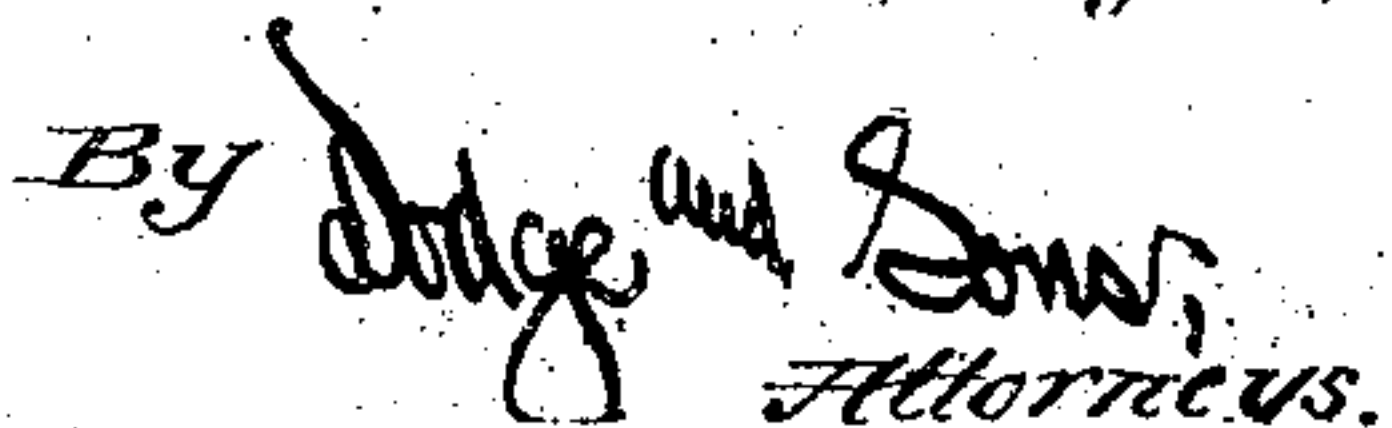


APPLICATION FILED OCT. 6, 1909.

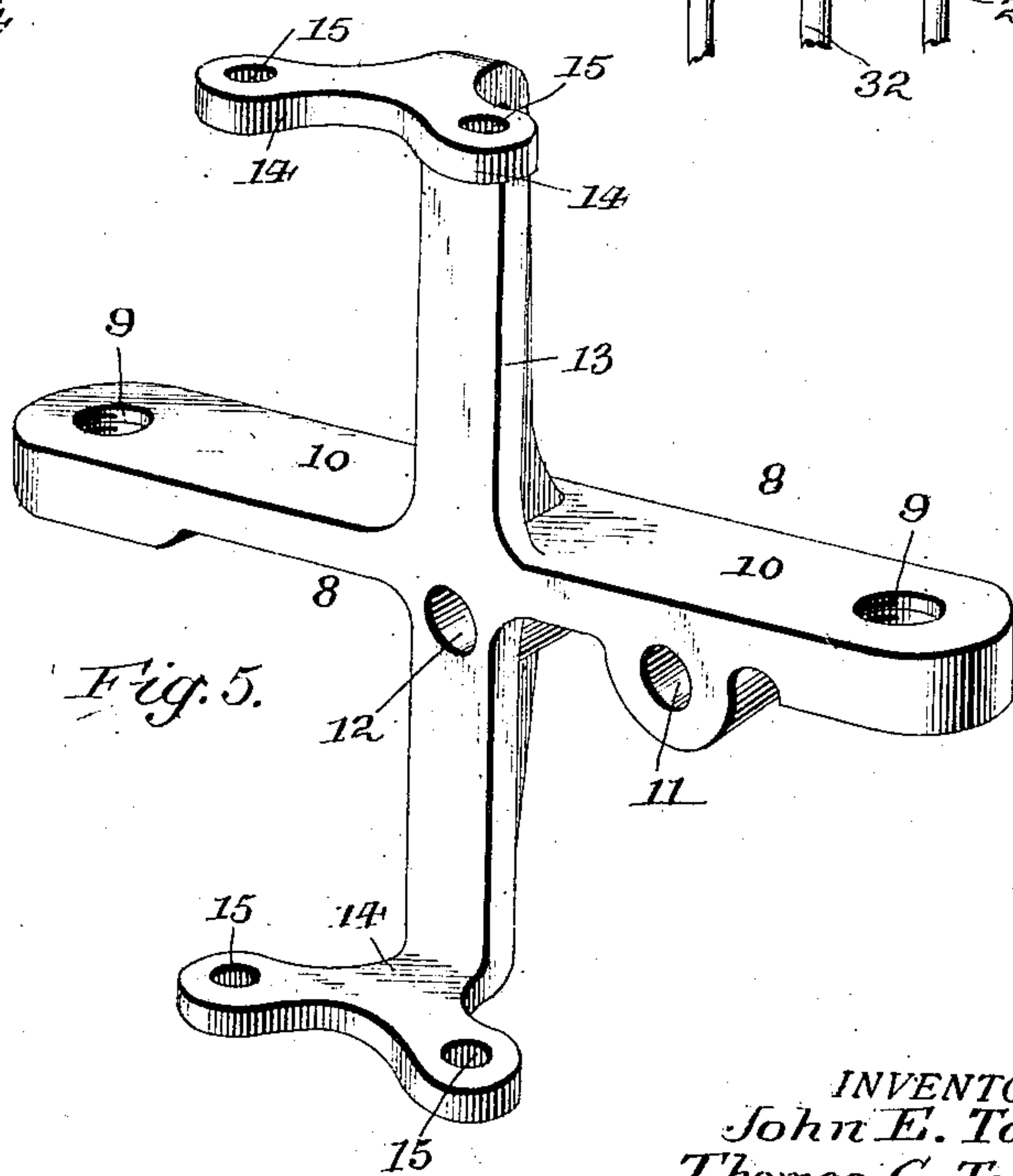
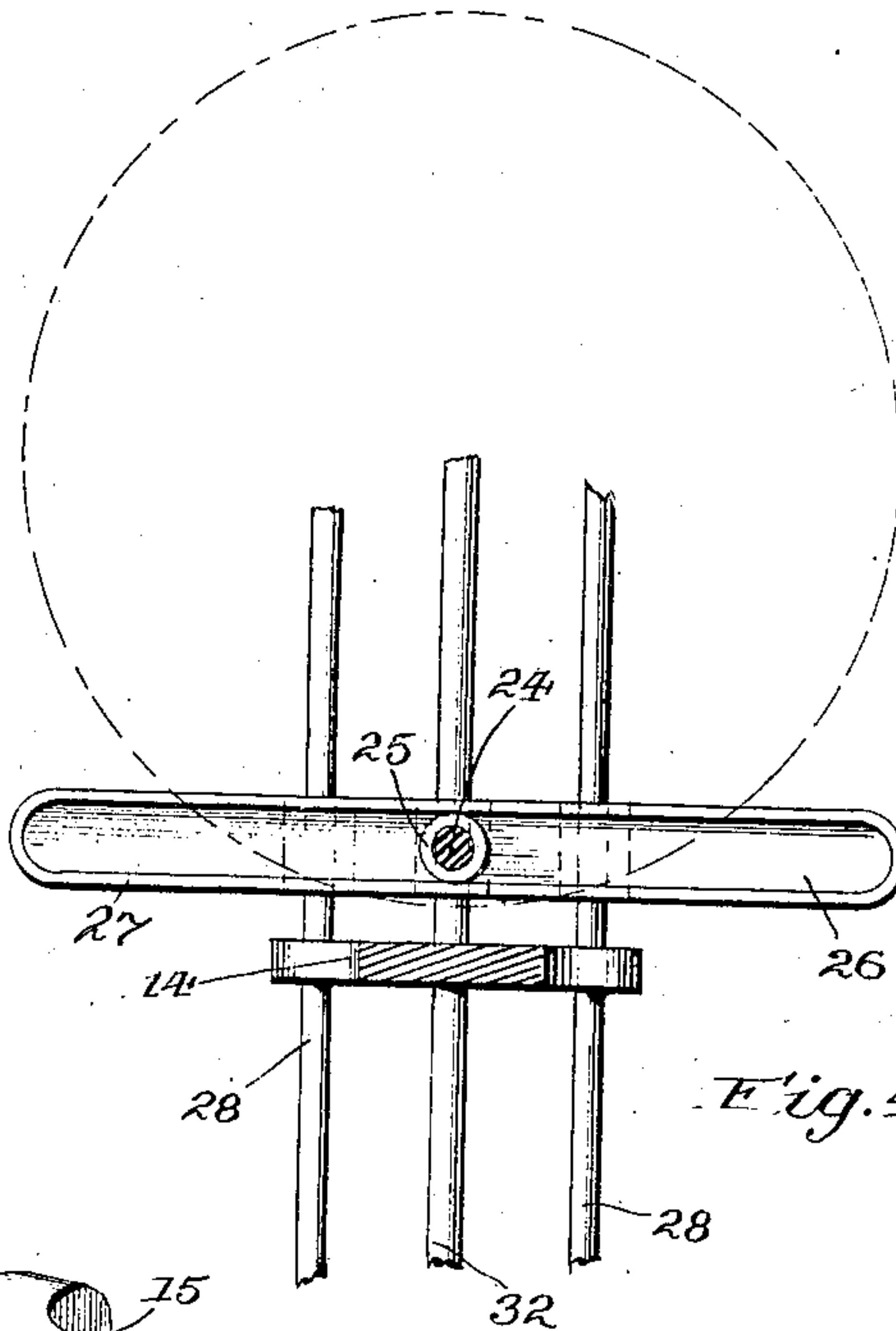
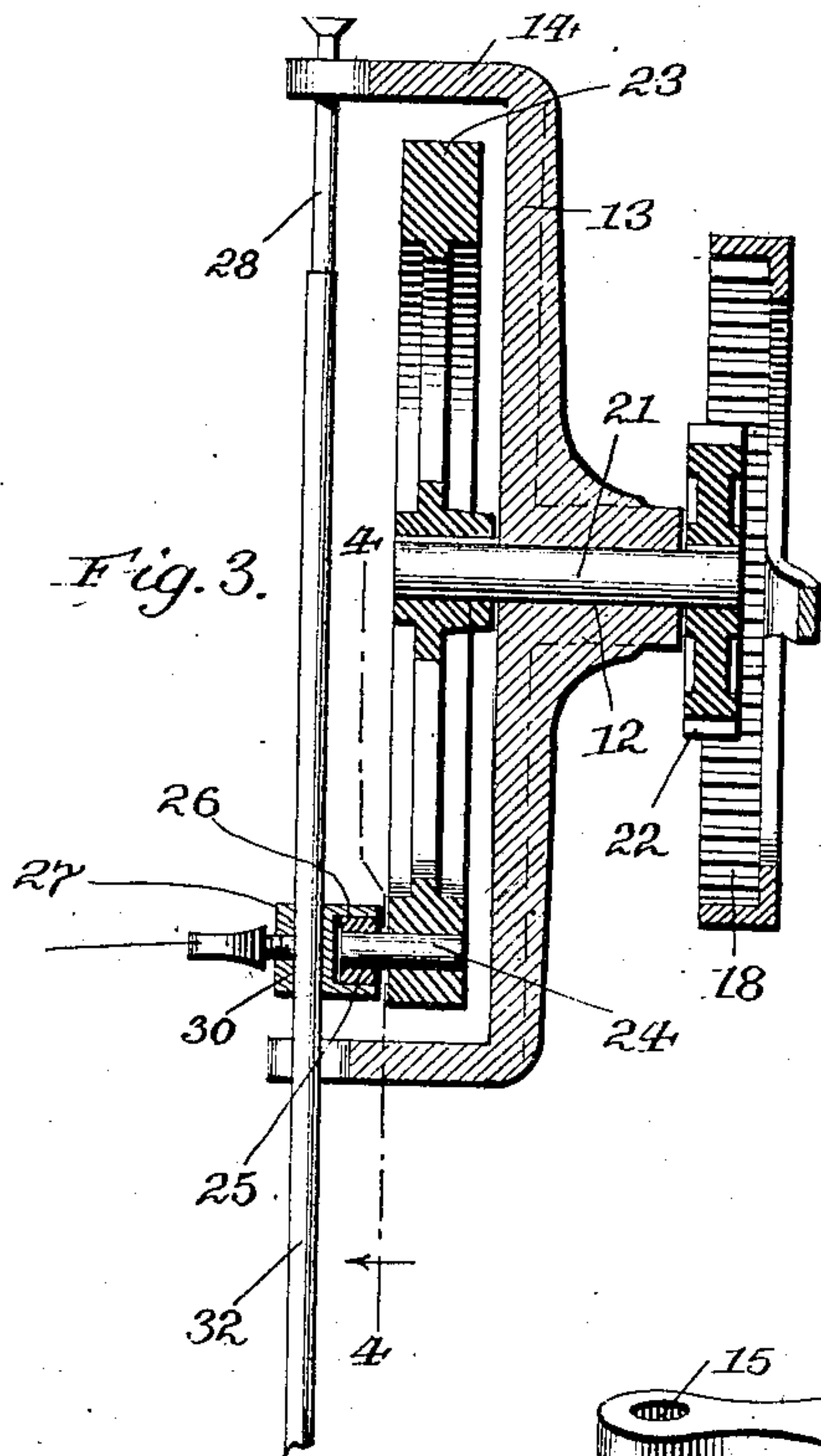
Patented Jan. 4, 1910.
2 SHEETS—SHEET 1.



J. E. & T. G. TAYLOR.
CHURN.
APPLICATION FILED OCT. 6, 1909.

945,639.

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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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CHURN.

945,639.

Specification of Letters Patent.

Patented Jan. 4, 1910.

Application filed October 6, 1909. Serial No. 521,322.

To all whom it may concern:

Be it known that we, JOHN E. TAYLOR and THOMAS G. TAYLOR, citizens of the United States, residing at St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Churns, of which the following is a specification.

This invention relates to churns and particularly to improvements in the gear-driven vertical dasher type whereby simplicity, strength and cheapness of construction, as well as smooth easy action are secured.

The invention is particularly directed toward the simplification of the parts and the reduction of their number and to the securing of a sanitary easily cleaned dasher.

The device will be described with reference to the accompanying drawings, wherein:—

Figure 1 is a perspective view of the assembled mechanism, the cream holding receptacle being omitted; Fig. 2 is a side elevation, partly sectional of the apparatus shown in Fig. 1, the cream holding receptacle being shown in section; Fig. 3 is a vertical section on the center line of the fly wheel; Fig. 4 is a section on the line 4—4 of Fig. 3; and Fig. 5 is a perspective view of the head casting of the frame and the guide rod brackets.

Like numerals refer to like parts throughout the drawings.

The device is supported on a base board 1 carrying lugs or brackets 2 to position the tub or bucket 3 (Fig. 2). Rising from this base board are two standards or supports 4 preferably of cast pipe threaded into flanges 5 attached to the base board by screws 6. The standards 4 are braced to the base board by the diagonals 7. The upper ends of the standards 4 are threaded at 9 into a casting 8 which serves as the frame head, gear support and cross head guides. It comprises a horizontal member 10, having two openings 11 and 12, and a vertical member 13 having forward projections 14 at its ends. Each projection 14 is provided with two bearings 15 equally spaced, the bearings in one projection being alined with those in the other. A handle 16 is fastened to casting 8 at a convenient point to enable the operator to steady the device.

A spindle 17 is forced into the hole 11

and upon this spindle turns a large internally toothed gear 18 having a crank 19 and handle 20. The hole 12 serves as a bearing for shaft 21 fast to which are a small gear 22 and a fly wheel 23. The gear 22 meshes with internal gear 18, so that fly wheel 23 is driven at increased speed from gear 18. The gear ratio is preferably about three to one.

The fly wheel 23 carries a pin 24 projecting from its face and provided with a roller 25 running free in slot 26 formed in cross head yoke 27. This yoke carries two parallel guide rods 28 forced into holes 29 formed in the body of the yoke. These rods slide freely in the bearings 15 and constrain the yoke to rectilinear motion as the fly wheel revolves. Because of the roller 25 and the distance between bearings 15 measured on each guide rod, a very free smooth motion is secured. The use of two guide rods prevents wobbling of the cross head yoke and interference between it and the combined fly and crank wheel. Between the two guide rods is an opening 30 having a set screw 31, by which a rod 32 of spring steel is adjustably held in a vertical position, so as to reciprocate longitudinally with the cross head yoke. This rod 32 is the dasher rod. The dasher is formed of two cross pieces 33, having suitable openings 34 and is retained upon the rod by nuts 35.

By the construction just described we secure a churn that is at once light, strong, and sanitary. The double guide rod construction gives a simple, light mechanism that guides the cross head in a straight line and permits the attachment of the dasher rod immediately to the cross head yoke in direct alinement both perpendicularly and horizontally with the guide rods and propelling roller, thereby preventing all tendency to yank or cramp or wobble at each stroke as is the case where the dash rod is attached to an arm or any projection out of line with the roller on fly wheel. This is a very important part of the construction of our churn. The use of a spring steel dasher rod gives the necessary strength, combined with lightness and permits the dasher to spring sidewise and accommodate itself to the butter as it forms. It will be noted that the dasher is light and strong, easily and conveniently attached and detached, and

may be readily cleaned after detaching it from the cross head. The handle to steady the device is also an attractive feature.

We are aware of the patent to Hunt No. 5 391,149, dated October 16, 1888 and make no claim to the devices shown and described therein.

Having thus described our invention, what we claim is:—

- 10 1. In combination with a cream-holding receptacle, a base board adapted to support and position said receptacle; tubular frame standards mounted on the base board; a frame head connecting the tubular stand-
15 ards; a hand grip carried by the frame head; bearings on the frame head; a train of gears mounted in said bearings; a crank for driving said gears; a fly-wheel driven by said gears; a crank-pin on said fly-wheel;
20 bearings for vertical rods formed integrally with the frame head; a plurality of rods sliding in said bearings; a cross head mounted on said rods, and having a transverse slot engaged by the pin on the fly-wheel; and a
25 dasher, adjustably secured to the cross-head.
2. In combination with a cream-holding receptacle, a base board adapted to support and position said receptacle; tubular frame standards mounted on the base board; a
30 frame head connecting the tubular standards; a hand grip carried by the frame head; bearings on the frame head; a train of gears mounted in said bearings; a crank for driving said gears; a fly-wheel driven by
35 said gears; a crank-pin on said fly-wheel; bearings for vertical rods formed integrally with the frame head; a plurality of rods sliding in said bearings; a cross head mounted on said rods, and having a transverse
40 slot engaged by the pin on the fly-wheel; a

spring steel dasher rod; adjustable connections between said rod and the cross head; and dasher paddles carried by said rod.

3. In a churn the combination of a base; a frame mounted thereon; a casting secured 45 upon the upper end of the frame, said casting being provided with two outwardly extending arms, each arm being provided with two vertically disposed openings, said openings alining with each other in pairs; a 50 cross head; a pair of guide rods secured to said head, and extending to each side thereof and passing through the openings; a dasher rod secured to the cross head; and means for raising and lowering said cross 55 head.

4. In a churn the combination of a base; a frame mounted thereon; a casting secured upon the upper end of the frame, said casting being provided with two outwardly ex- 60 tending arms, each arm being provided with two vertically disposed openings, said openings alining with each other in pairs; a cross head; a pair of guide rods secured to said head, and extending to each side there- 65 of and passing through the openings; a dasher rod secured to the cross head; a shaft mounted in a bearing formed in the casting; a fly-wheel secured thereto; a pin and slot connection between said wheel and cross 70 head; and means for rotating the shaft.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JOHN E. TAYLOR.
THOMAS G. TAYLOR.

Witnesses:

JOHN M. HANNIBAL,
OTTO WIECHENS.