

No. 682,588.

Patented Sept. 10, 1901.

E. A. EDWARDS.

CHURN.

(Application filed Jan. 23, 1901.)

(No Model.)

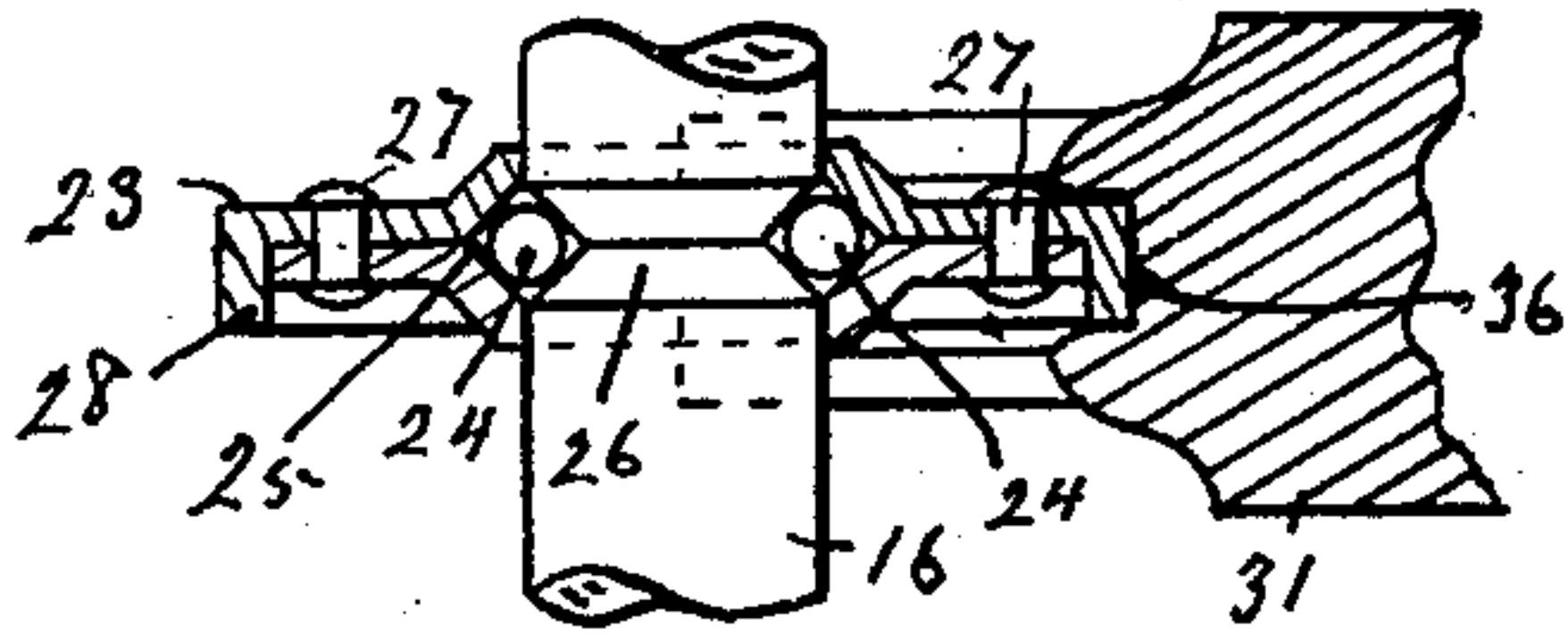


Fig. 2.

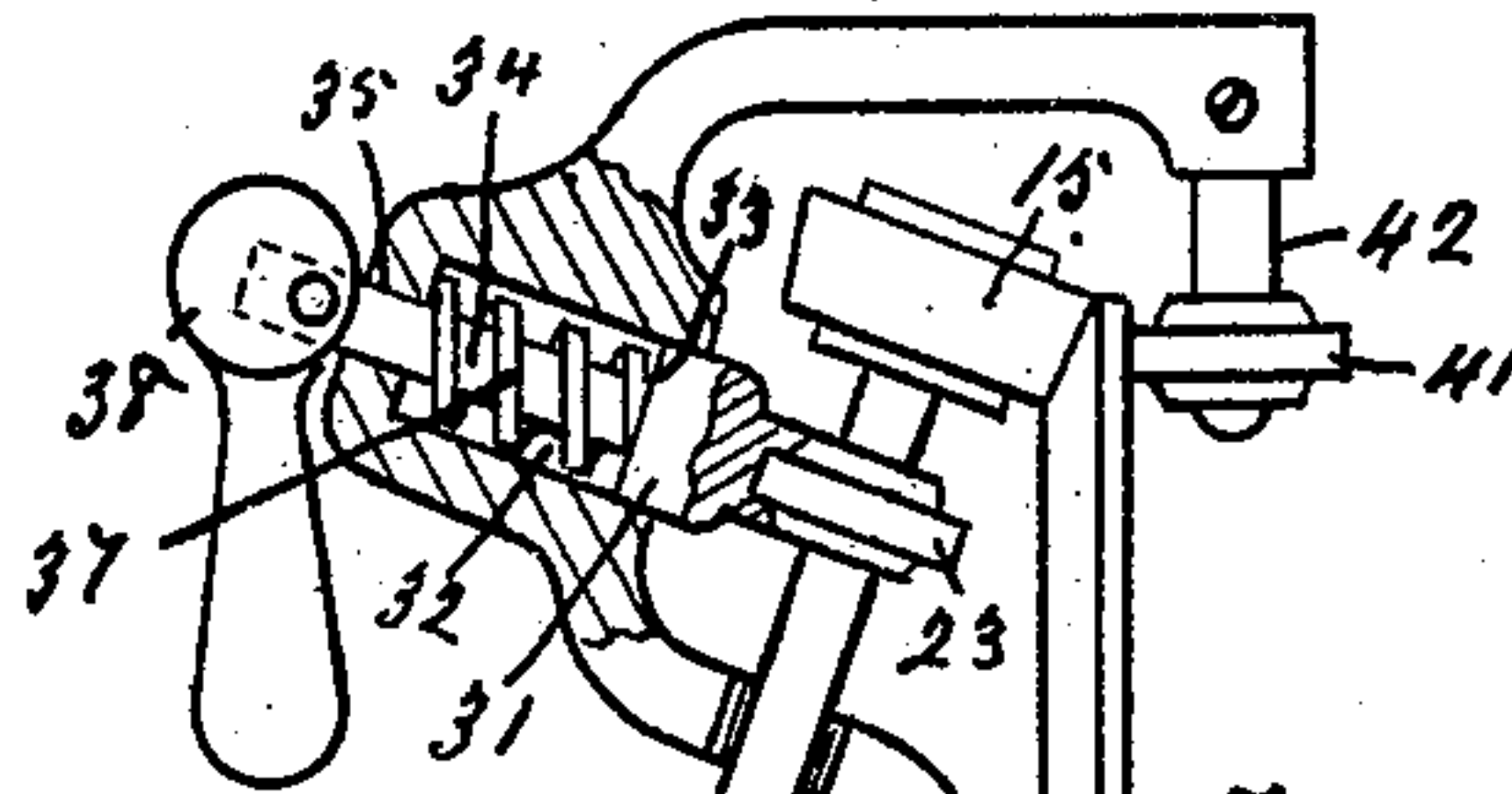


Fig. 1.

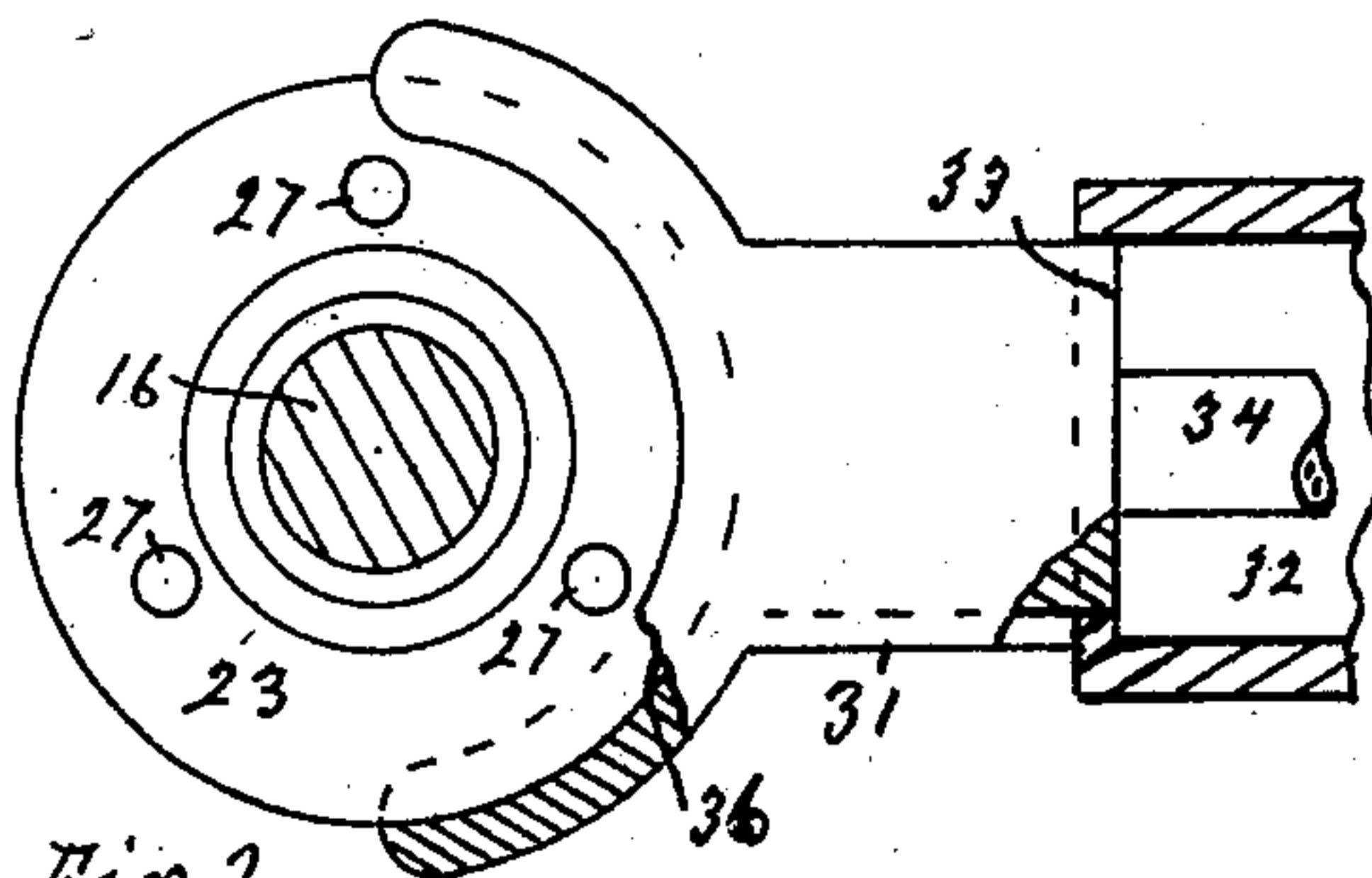
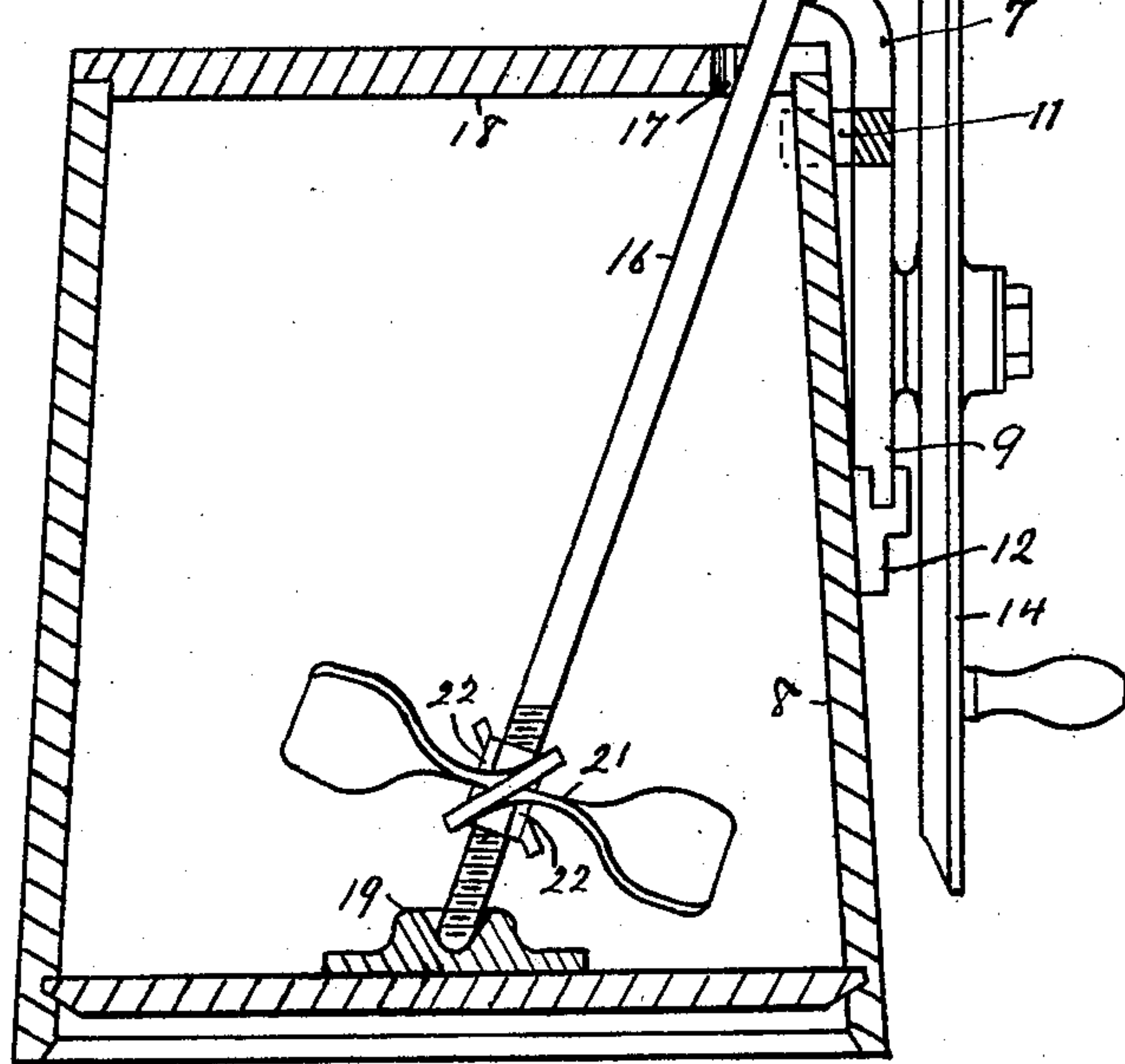


Fig. 3.

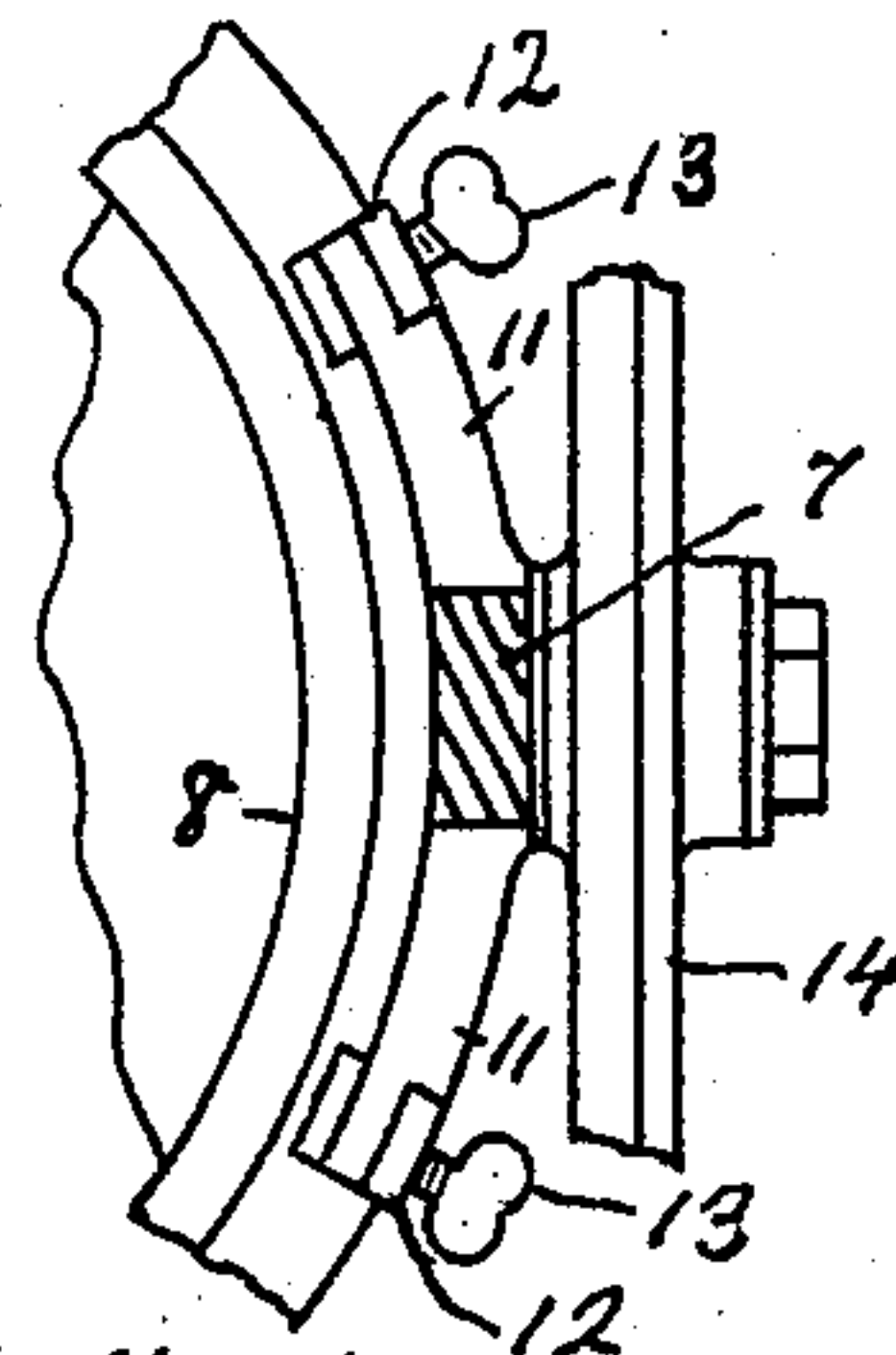


Fig. 4.

WITNESSES:

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CHURN.

SPECIFICATION forming part of Letters Patent No. 682,588, dated September 10, 1901.

Application filed January 23, 1901. Serial No. 44,452. (No model.)

To all whom it may concern:

Be it known that I, EDGAR A. EDWARDS, a citizen of the United States, and a resident of Cincinnati, Ohio, have invented certain new and useful Improvements in Churns, of which the following is a specification.

My invention relates to churns; and the objects of my improvement are to removably secure the actuating mechanism on the tub, to inseparably attach the bearing on the dasher-shaft, to provide spring-actuated mechanism to move and maintain the pinion in frictional engagement with the hand-wheel, and to provide a guide-roller for the periphery of the hand-wheel at the point of contact therewith of the pinion. These objects are attained in the following described manner, as illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation with parts in section of a churn embodying my improvement; Fig. 2, a sectional view of the ball-bearing attached to the dasher-shaft; Fig. 3, a plan of the parts shown in Fig. 2 with the plunger splined in the chamber of the bracket, and Fig. 4 a plan showing the bracket attached to a portion of the tub.

In the drawings, 7 represents a bracket removably mounted on the side of cylindrical tub 8 by means of the engagement of toe 9 and arms 11, formed on the bracket, with the respective sockets 12, secured on the side of the tub, and where the bracket is secured in position by clamping-screws 13. Hand or drive wheel 14 is mounted on the bracket, and pinion 15, secured on the end of dasher-shaft 16, is arranged to frictionally engage therewith. Said dasher-shaft is extended through gap 17, formed in the edge of lid 18, and terminates in step-bearing 19, which is secured on the center of the tub-bottom. Dasher 21 consists of a series of flights or propeller-blades, and it is adjustably clamped on the dasher-shaft more or less distant from its end by means of nuts 22. Collar 23 is inseparably mounted on shaft 16, just below pinion 15 thereon, by means of bearing-balls 24, being inclosed within V-shaped grooves 25 and 26, which are formed to register with each other in the collar and shaft, respectively. Said collar is preferably constructed of two pieces of sheet metal stamped into the

proper form and secured together and on the dasher-shaft by means of rivets 27. One of said pieces is preferably formed with annular flange 28 to increase the thickness of its edge. Plunger 31 is splined in chamber 32, formed in the bracket. A portion of its length is reduced in size to form annular seat 33, and its smaller portion 34 is extended through opening 35 in the chamber and terminates on the outside of the bracket. A semicircular concave seat 36 is formed in the opposite end of the plunger to detachably engage the periphery of the bearing-collar 23. Coil-spring 37 encircles the portion 34 of the plunger within the chamber and exerts sufficient pressure on annular seat 33 to move the plunger toward the hand-wheel into engagement with collar 23 and maintain pinion 15 in frictional engagement with the periphery of the hand-wheel, whereby the dasher may be rotated in either direction to effect a thorough and speedy separation of the butter from the cream within the tub. Cam-lever 38, mounted on the end 34 of the plunger, which extends without the chamber, abuts against the outside of the bracket and serves to move the plunger out of engagement with the bearing-collar for the removal of the dasher from the tub. Guide-roller or idler 41 is an exact duplicate of bearing-collar 23 and is inseparably mounted in the same manner on stud 42, which adjustably depends from the bracket, and on the opposite side of the periphery of the hand-wheel from the point of contact therewith of the friction-pinion 15. Said guide-roller serves to maintain the periphery of the hand-wheel in the proper position and prevent it from yielding under the pressure of the pinion thereon.

In operation the dasher-shaft is placed within the tub, with its lower end in the step-bearing. The cam-lever serves to release the plunger, which is actuated by the coil-spring to engage the bearing-collar within the groove in the end of the plunger and to maintain the pinion in frictional engagement with the periphery of the hand-wheel at a point directly opposite the guide-roller. When it is desired to remove the dasher from the tub, the plunger is easily moved out of engagement with the bearing-collar by means of the cam-lever.

Having fully described my improvement,

what I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. In a churn, the combination with a drive-wheel, a dasher-shaft, and a pinion secured thereon, of a bearing mounted on the shaft near the pinion, and a spring-actuated plunger arranged to detachably engage with the bearing and maintain the pinion in engagement
10 with the drive-wheel.

2. In a churn, the combination with a bracket removably secured to the side of a tub, a drive-wheel mounted thereon to turn in a vertical plane, a dasher-shaft journaled
15 at one end in the center of the tub-bottom,

and a pinion secured on its other end, of a bearing attached to the shaft near the pinion, a spring-actuated plunger mounted to slide in a chamber formed in the bracket and arranged to detachably engage the bearing and
20 maintain the pinion in engagement with the drive-wheel, and means to disengage the plunger from the bearing and release the pinion from the drive-wheel, for the removal of the shaft from the tub.

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Witnesses:

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CHRIST SEIFREAT.