

L. M. ATHA.
JARRING MACHINE.

APPLICATION FILED AUG. 27, 1909.

967,484.

Patented Aug. 16, 1910.

Fig. 1

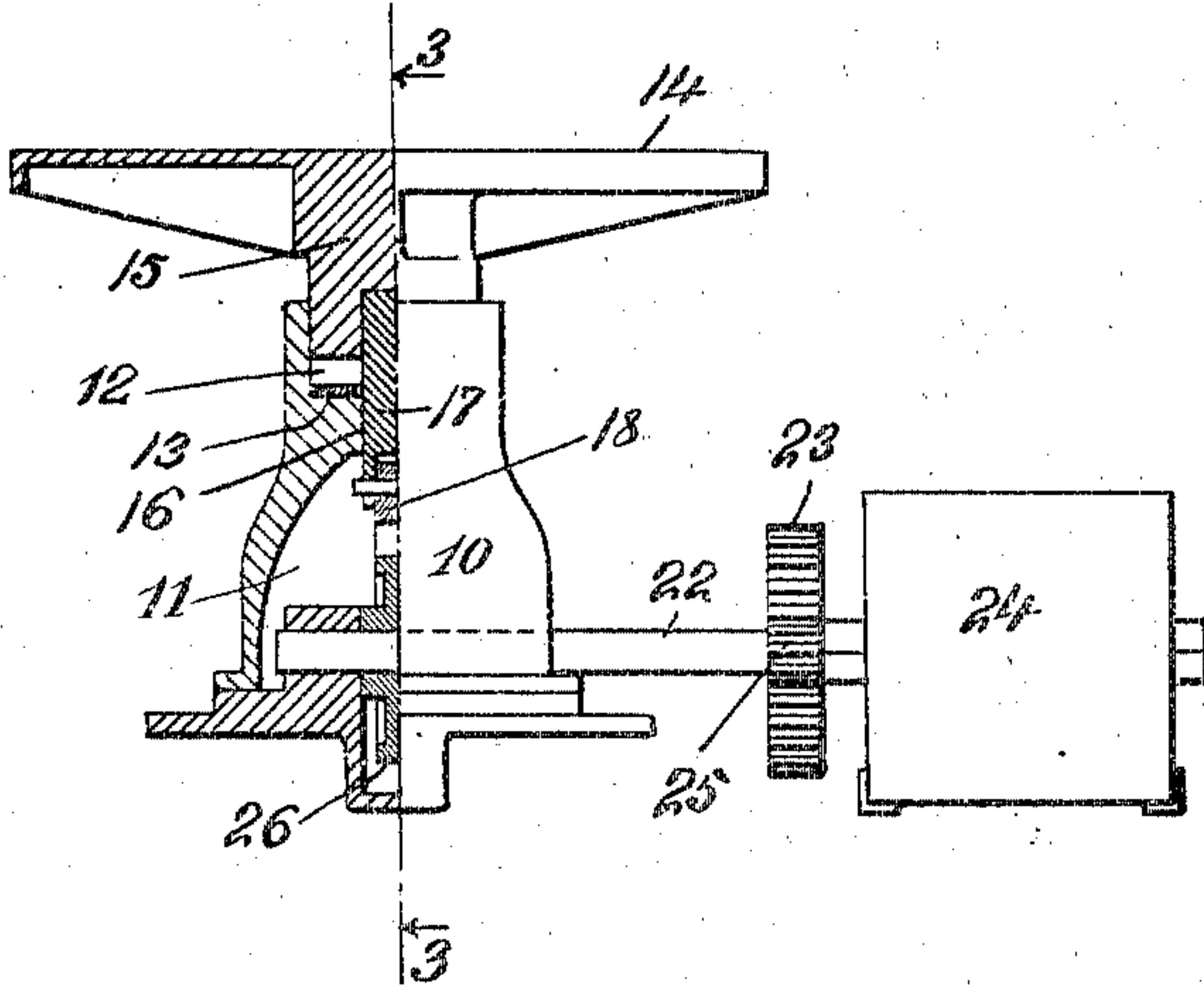


Fig. 3

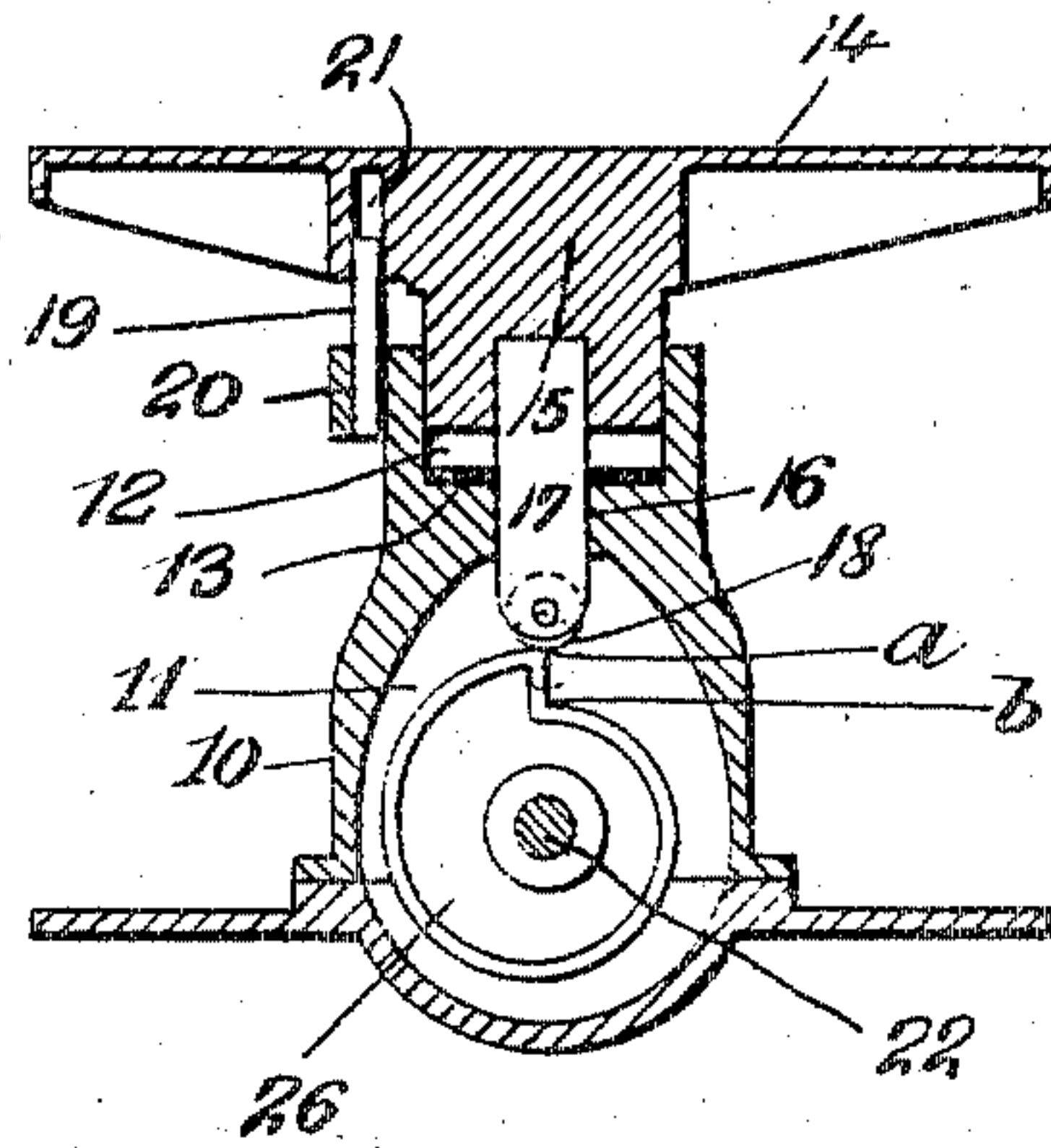


Fig. 2

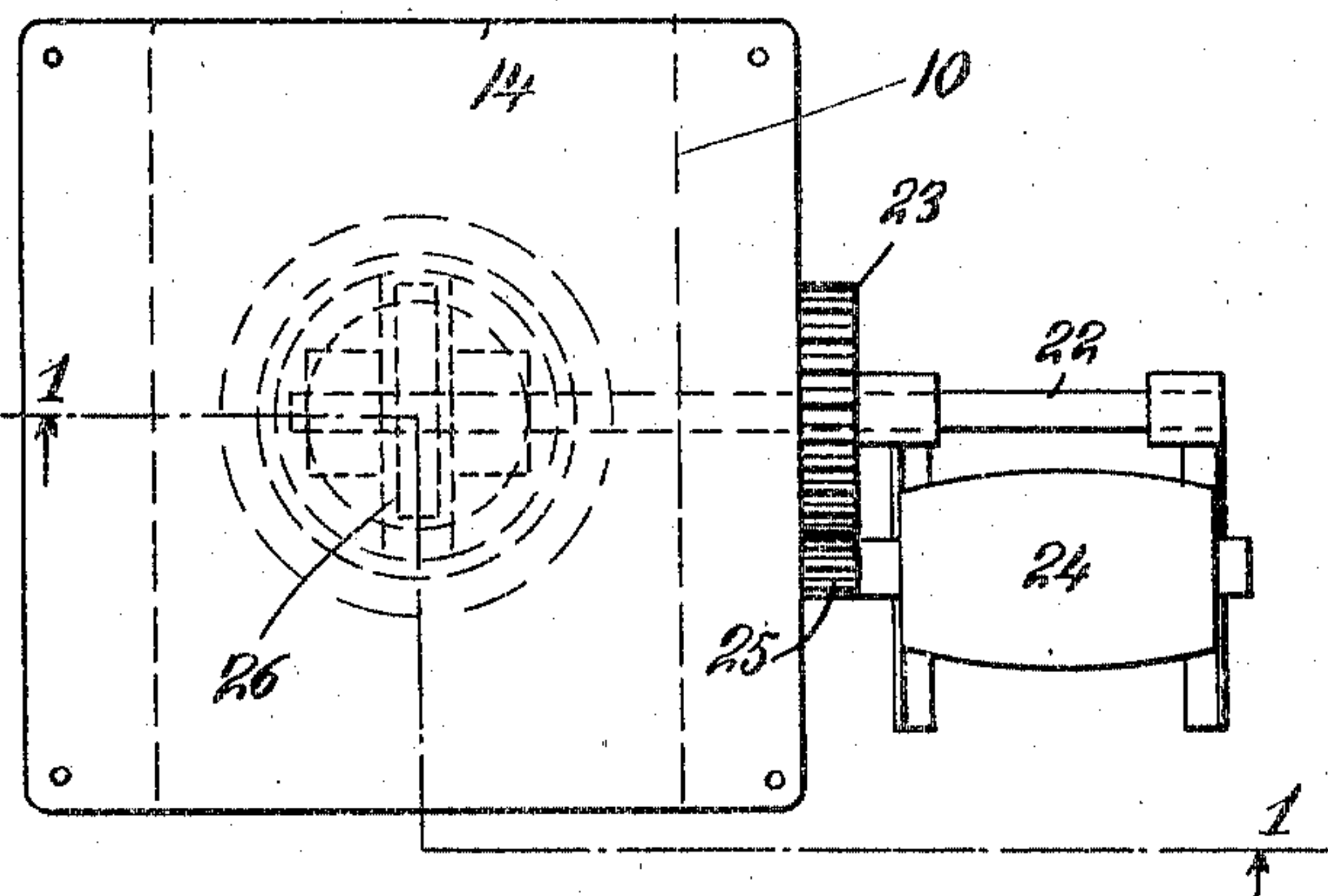


Fig. 4

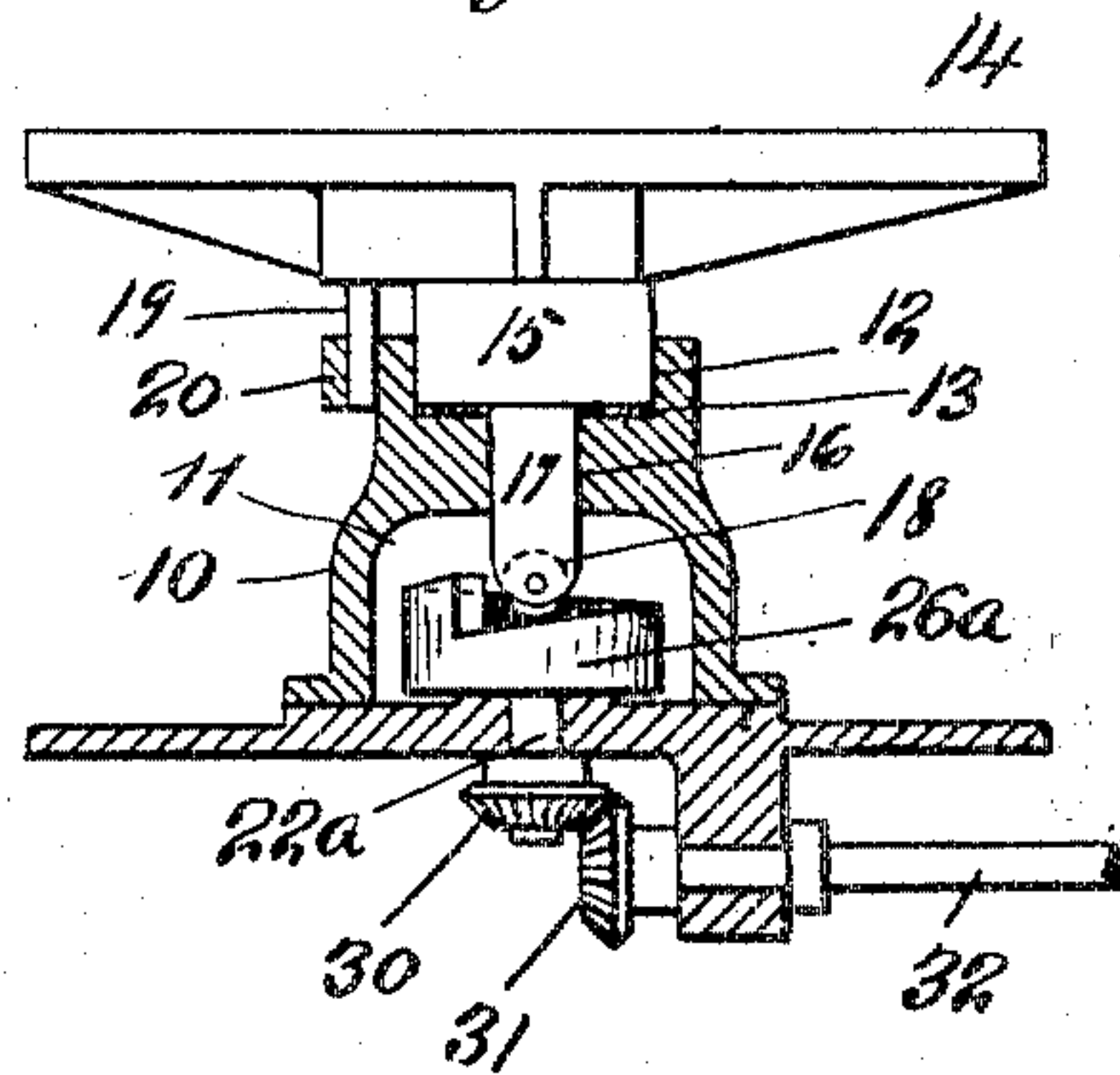


Fig. 5

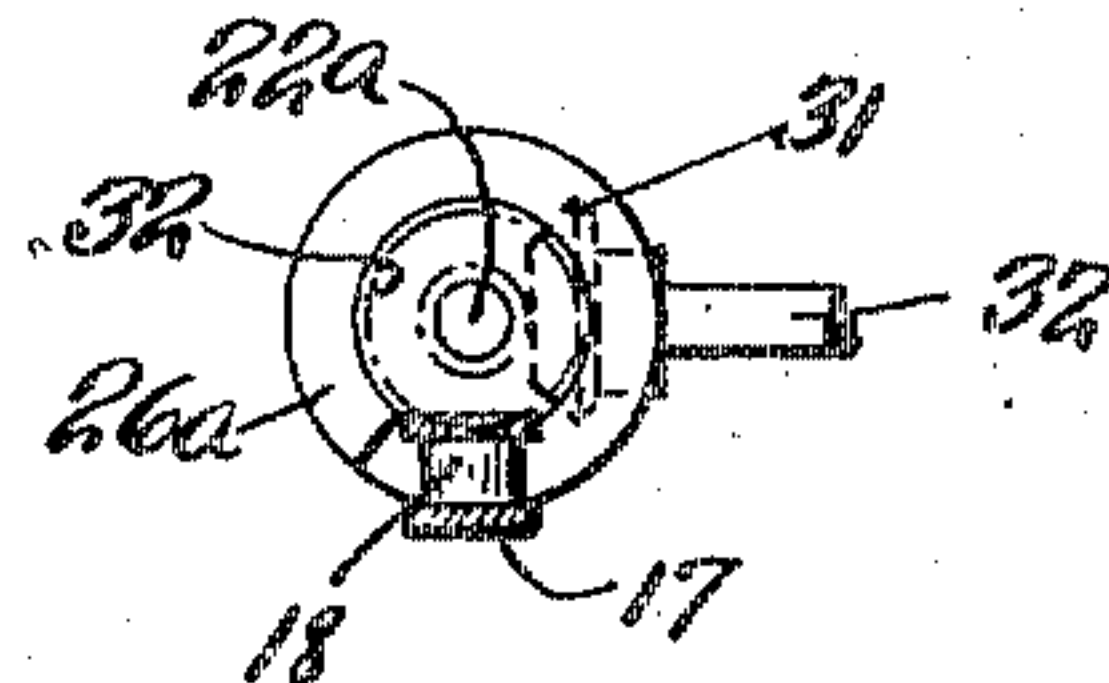
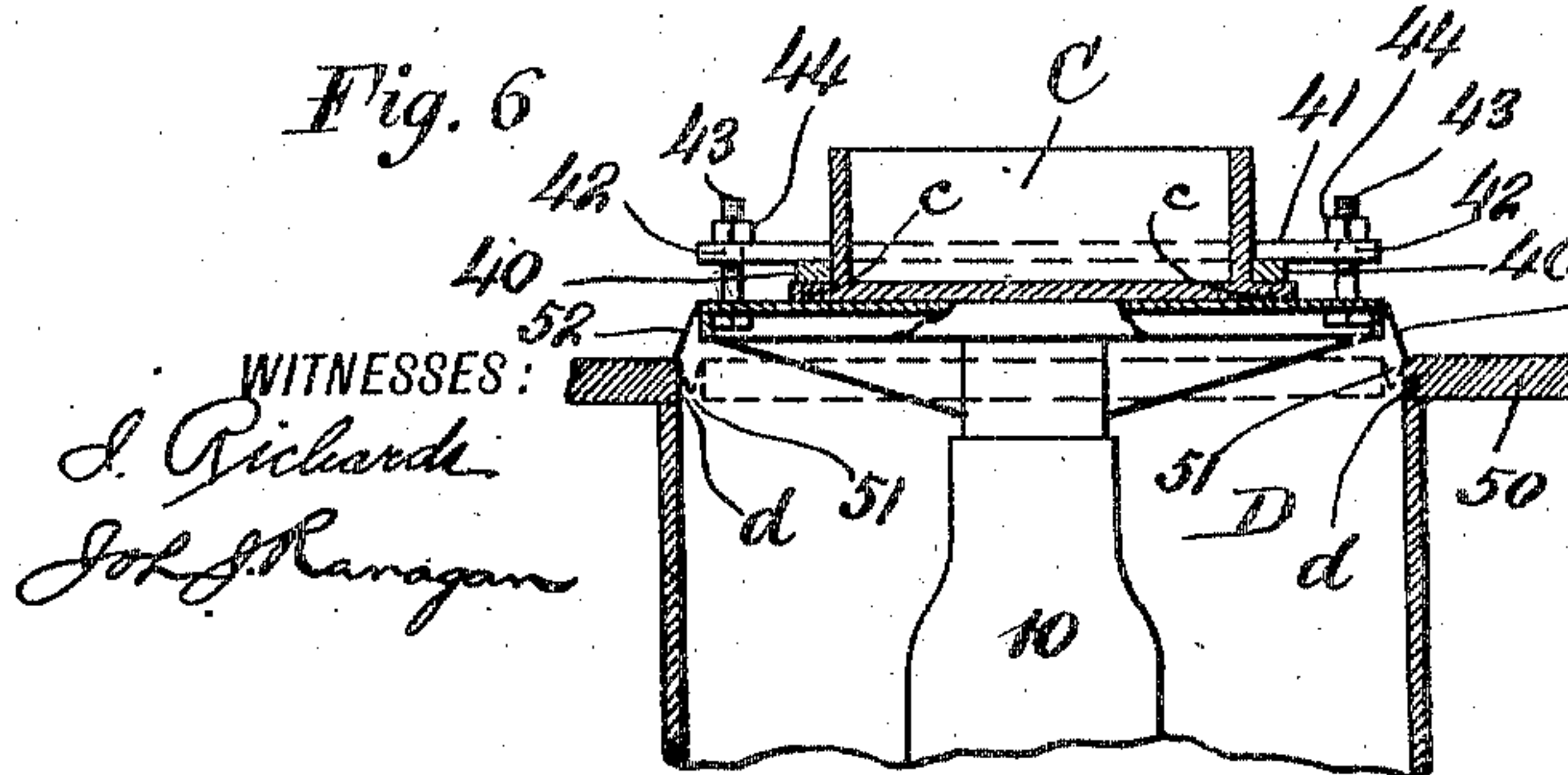


Fig. 6



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LOUIS M. ATHA, OF NEWARK, NEW JERSEY.

JARRING-MACHINE.

967,484.

Specification of Letters Patent.

Patented Aug. 16, 1910.

Application filed August 27, 1909. Serial No. 514,842.

To all whom it may concern:

Be it known that I, LOUIS M. ATHA, a citizen of the United States, and a resident of Newark, county of Essex, and State of New Jersey, have invented certain new and useful Improvements in Jarring-Machines, of which the following is a specification.

My invention relates to improvements in jarring machines for forming sand molds.

One of the objects of the invention is to produce such a machine at low cost and which may be cheaply operated.

Another object of the invention is to so construct the machine that the table on which the flask or mold is placed may be raised at uniform speed and the table dropped without injury to the raising mechanism.

Another object is to so construct a machine that sand and dirt will not drop into the pit in which the machine is placed, but which will throw said dirt or sand away from the machine when the table is being raised.

Another object is to provide improved means for securing flasks or molds of different sizes upon the table.

Other objects will appear from the hereinafter description.

An embodiment of the invention is herein-after set forth and illustrated in the accompanying drawing forming part of this application, but it is to be understood that the invention is not confined to the exact construction here shown and described.

Referring now to the drawing in which the same reference character indicates the same part in the several views: Figure 1 is a side elevation of the machine partly in section taken on line 1 of Fig. 2. Fig. 2 is a plan view. Fig. 3 is a section on line 3 of Fig. 1. Fig. 4 is a sectional view of a modified construction. Fig. 5 is a detail of the construction shown in Fig. 4. Fig. 6 is a sectional view on a smaller scale showing the machine located in a pit and showing the means for keeping the pit free from sand and dirt, said view also showing the means for securing the flask or mold to the jarring table.

The part marked 10 on the drawing represents the bed or base of the machine which may be supported in any suitable manner.

11 is a recess in the base and in which the mechanism for raising the table is located. The upper end of the base is recessed at 12. In the bottom of the recess is a pad or shock absorbing element 13.

14 is the table on which the flask or mold is secured. Projecting from the bottom of the table and fitting snugly in the recess 12 of the base is the plunger 15. Extending from this plunger and through an opening 16 in the upper part of the base into the recess 11 of said base, is a rod 17 having a roller 18 in the end thereof.

19 is a pin which projects from a lug 20 on the upper side of the base into an opening 21 in the table. This pin prevents the table from turning in the base.

Mounted in the base 10 is a shaft 22 having a gear 23 secured thereto.

24 is a motor. On one end of the shaft of the motor and meshing with the gear 23 to drive the same, is a pinion 25. Secured on the shaft 22 and within the recess 11 of the housing is a vertical cam 26 the face of which moves in contact with and under the roller 18 during the rotation of the shaft 22. The highest point of this cam is indicated by the reference letter *a* and the lowest point by *b*.

The continual rotation of the shaft 22 by the motor 24 will cause continuous rotation of the cam 26 which will continuously raise and permit the table to drop, thus jarring, shaking down and packing the sand in the mold secured to the top of the table. The surface of the cam is so shaped that the table is raised at uniform speed and when the point *a* of the cam passes from under the roller, the table will drop with a jar. The roller 18, however, will not fall on the surface of the cam and the table will be supported at the fall by the lower end of the plunger 15 coming in contact with the lower part of the recess 12 in the base of the machine, and the element 13 will take up or absorb the shock of the fall of the table. This element, however, may be dispensed with. By so constructing these parts that the roller 18 will not drop upon the cam, the life of the roller and the cam will be materially prolonged and the shaft 22 will not be hammered out of alinement.

If desired, the recess 11 may be filled with

oil so that the parts inclosed therein may be run in oil.

In Fig. 4 I have shown a modified construction of the cam and means for operating the same. In this construction I have shown a horizontal cam 26^a consisting of a ring so mounted in the housing that the face of this cam on the edge of the ring will move under the roller 18. This cam ring is secured to the stud 22^a on the lower end of which is a bevel gear 30 meshing with another bevel gear 31 on the end of the shaft 32 driven by suitable power.

To secure a flask to the top of the table and to permit the use of different sized flasks thereon, the following means have been provided. The flask to be secured is marked C and has outwardly projecting flanges c around the four sides thereof. 40 represents two bars extending over the top of two of the flanges on opposite sides of the mold. Extending along the other two sides of the mold and over the top of the ends of the bars 40 are plates or bars 41 having holes 42 in the ends thereof through which pass the bolts 43 secured at each corner of the table and projecting upwardly therefrom. 44 represents nuts which are placed on the ends of these bolts after the bars 40 and 41 are in place. By pressing up on these nuts the bars 41 are forced down on the ends of the bars 40 securely clamping the flask to the top of the table and the construction is such that the bars 40 can be placed closer together or moved farther apart so that a flask of smaller or greater area may be placed and securely held on the table.

The machine is usually mounted in a pit below the floor level so that the table will be substantially on the same level as the floor. In Fig. 6 the machine is shown so mounted in which D represents the pit and 50 the floor. The floor has an opening d substantially of the same shape and area as the table of the machine. In such a construction, however, there is an opening 51 between the inner edge of the floor and the edge of the table so that when a flask is being filled, or frequently during the operation of the table, dirt will fall through said opening into the pit and onto the machinery contained therein so that "trouble" is caused. To prevent sand, dirt and the like from falling through said opening 51, I have secured to the edge of the table and the inner edge of the floor a flexible strip 52. When the table is in its lowest position and on a level with the floor this strip will fold up, as shown in dotted lines. When the table is raised by the cam, as hereinabove described, this strip will be spread into the position shown by full lines. Owing to the movement of the table this strip 52 is spread quickly and will throw or

flip away from the table any sand or dirt that may be on said strip. This construction not only prevents sand, dirt, etc., from falling into the pit through the opening 51, but throws the same away from the table and out on the floor 50 during the rapid upward movement of the table.

Having now described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a device of the class described, a base having a recess therein, a cushion at the bottom of the recess, a table, means connected to the table, a cam to contact with said means to raise the table, said cam being so constructed as to permit the table to drop suddenly and to contact with the cushion.

2. In a device of the class described, a base having a recess therein, a cushion at the bottom of the recess, a table, a plunger connected to the table and movable in said recess, a rod connected to the plunger and passing through an opening in the base, a cam to contact with said rod to raise the table, said cam being so constructed as to permit the table to drop suddenly and the plunger to contact with the cushion to hold the rod out of contact with the cam.

3. In a device of the class described, a base having a recess in the top thereof and a closed recess in the bottom thereof, a table, a pin to prevent the table from turning, a plunger connected to the table and movable in the recess at the top of the base, a rod connected to said plunger and extending into the second recess, a shaft mounted in the base, means for rotating the shaft, a cam secured to said shaft and mounted in said second mentioned recess, said cam contacting with said rod and so constructed as to raise the table and to permit it to drop suddenly, and the plunger to contact with the bottom of the first mentioned recess to hold the rod out of contact with the cam.

4. In a device of the class described, a base, a table mounted in said base, means for raising the table to permit it to drop suddenly, a flask having flanges mounted on said table, rods projecting from the top of the table, and bars connected to said rods and said flanges to secure the said flask to the table.

5. In a device of the class described, a floor having an opening therein, a table in said opening with a space between the edges of the table and the floor, means for reciprocating the table, and flexible connections between the edges of the table and the floor covering said recess, as and for the purpose set forth.

6. In a device of the class described, a floor having an opening therein, a table in said opening with a space between the edges

of the table and the floor, a pit underneath
said table, means in the pit for raising the
table above the floor and to permit it to drop
to its normal position, and a flexible member
5 connected to the edges of the table and to the
edges of the floor to cover the space be-
tween the edges of the table and the floor.

In witness whereof I have hereunto set

my hand at New York county of New York
and State of New York, this 20th day of 10
August, 1909.

LOUIS M. ATHA.

In presence of—

JOHN J. RANAGAN,
ISABEL R. RICHARDS.