

No. 864,603.

PATENTED AUG. 27, 1907.

T. BLIXT.
MIXING MACHINE.
APPLICATION FILED OCT. 22, 1906.

2 SHEETS—SHEET 1.

FIG. 1.

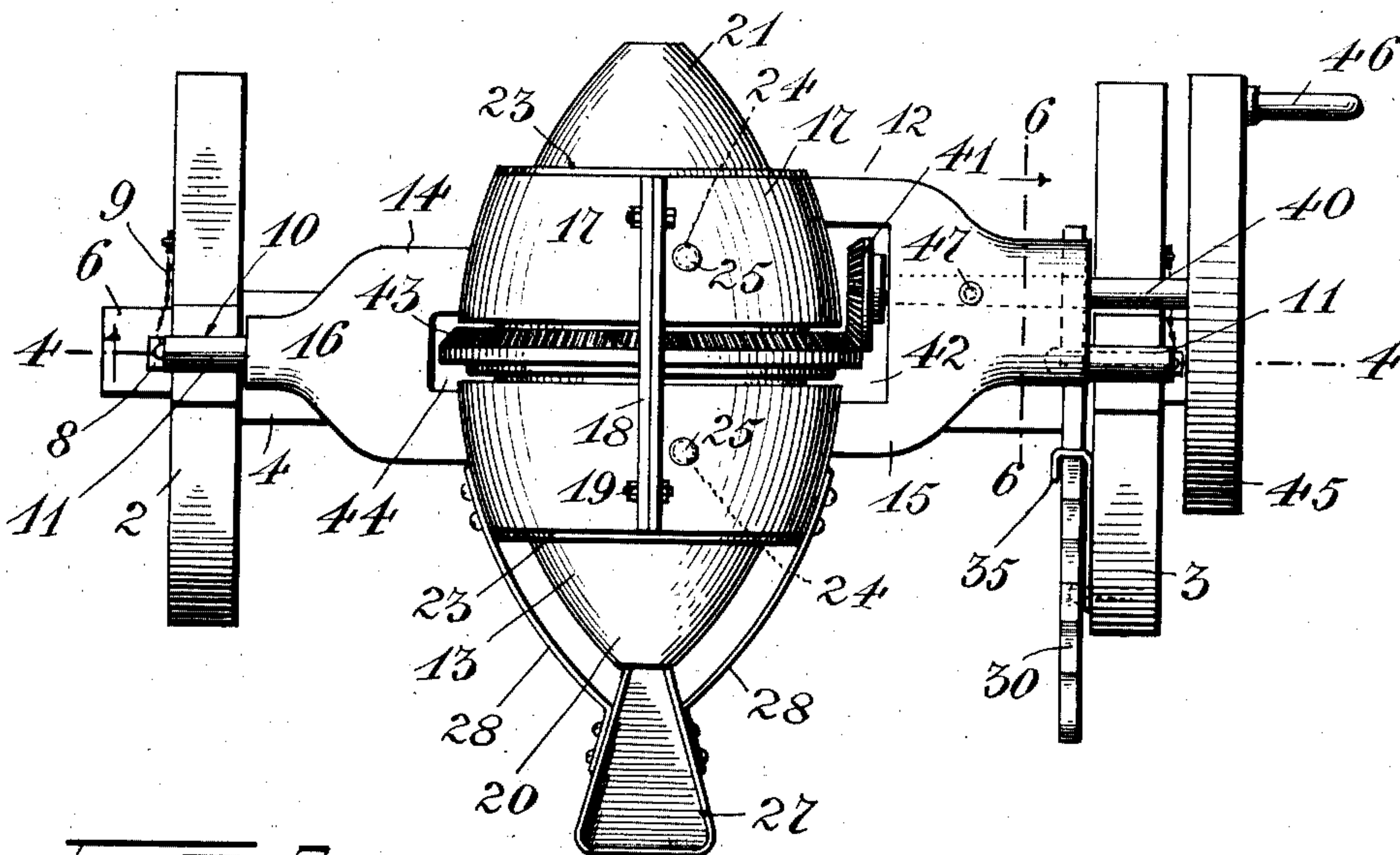


FIG. 3.

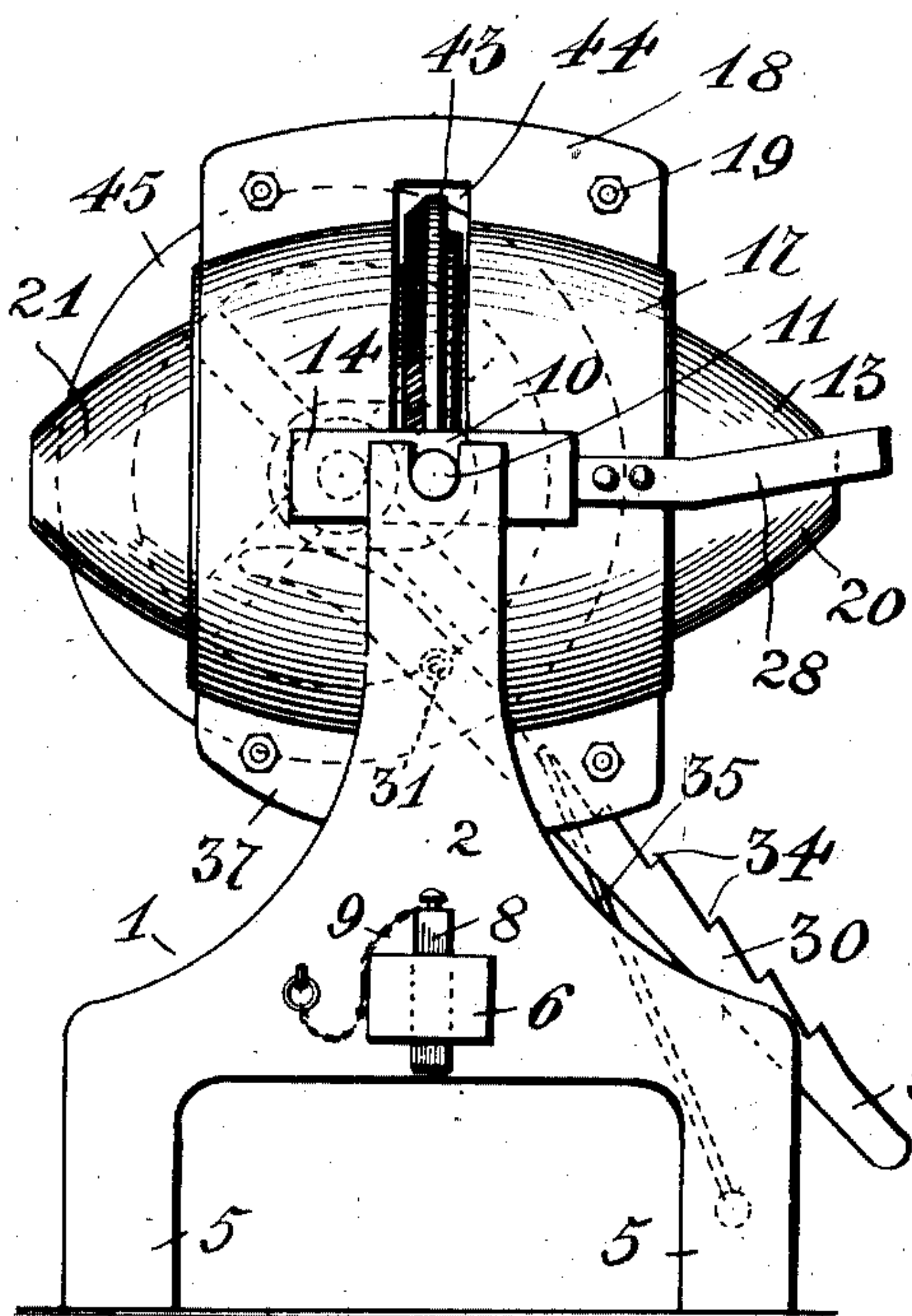
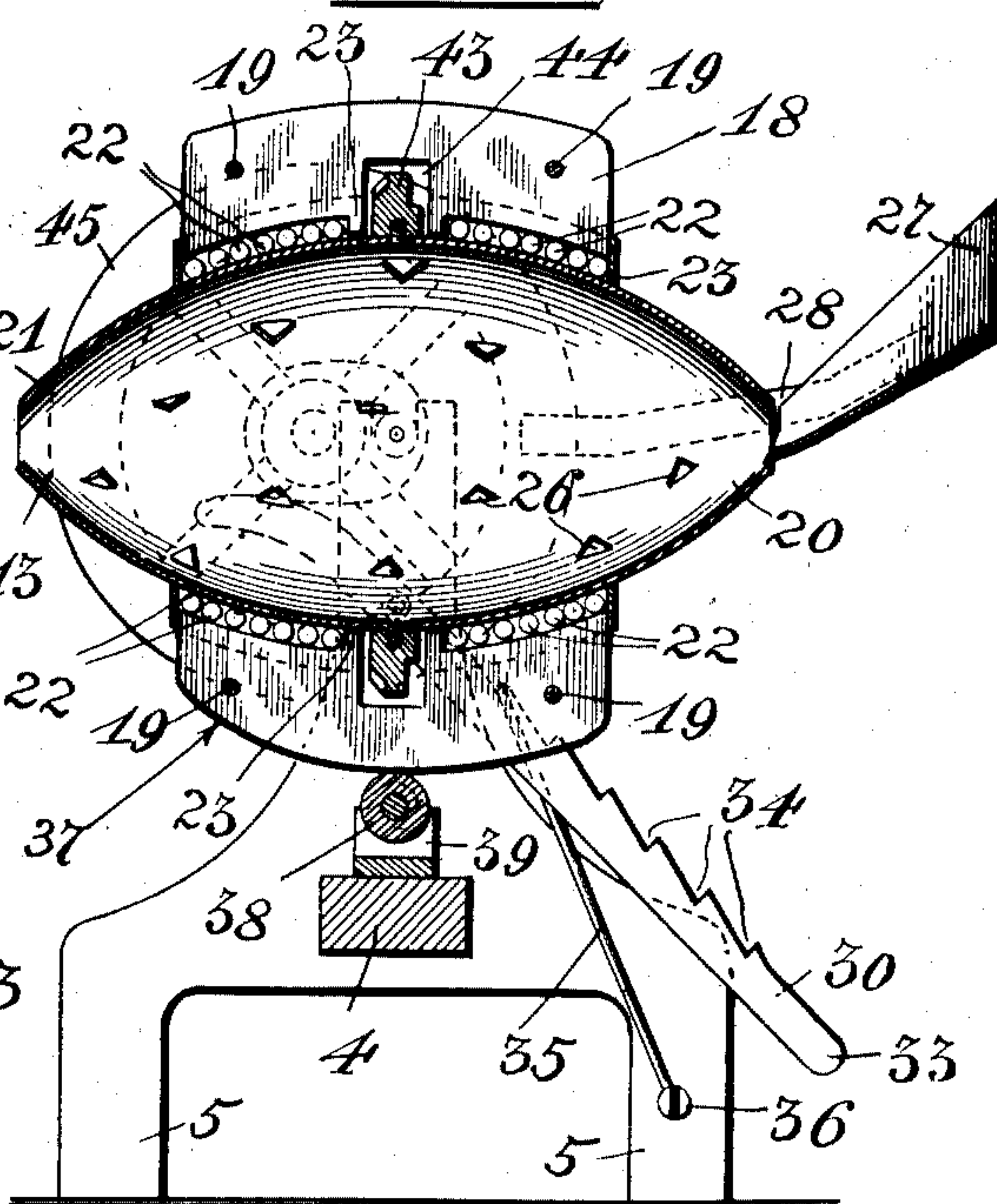


FIG. 5.



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C. M. M. M.
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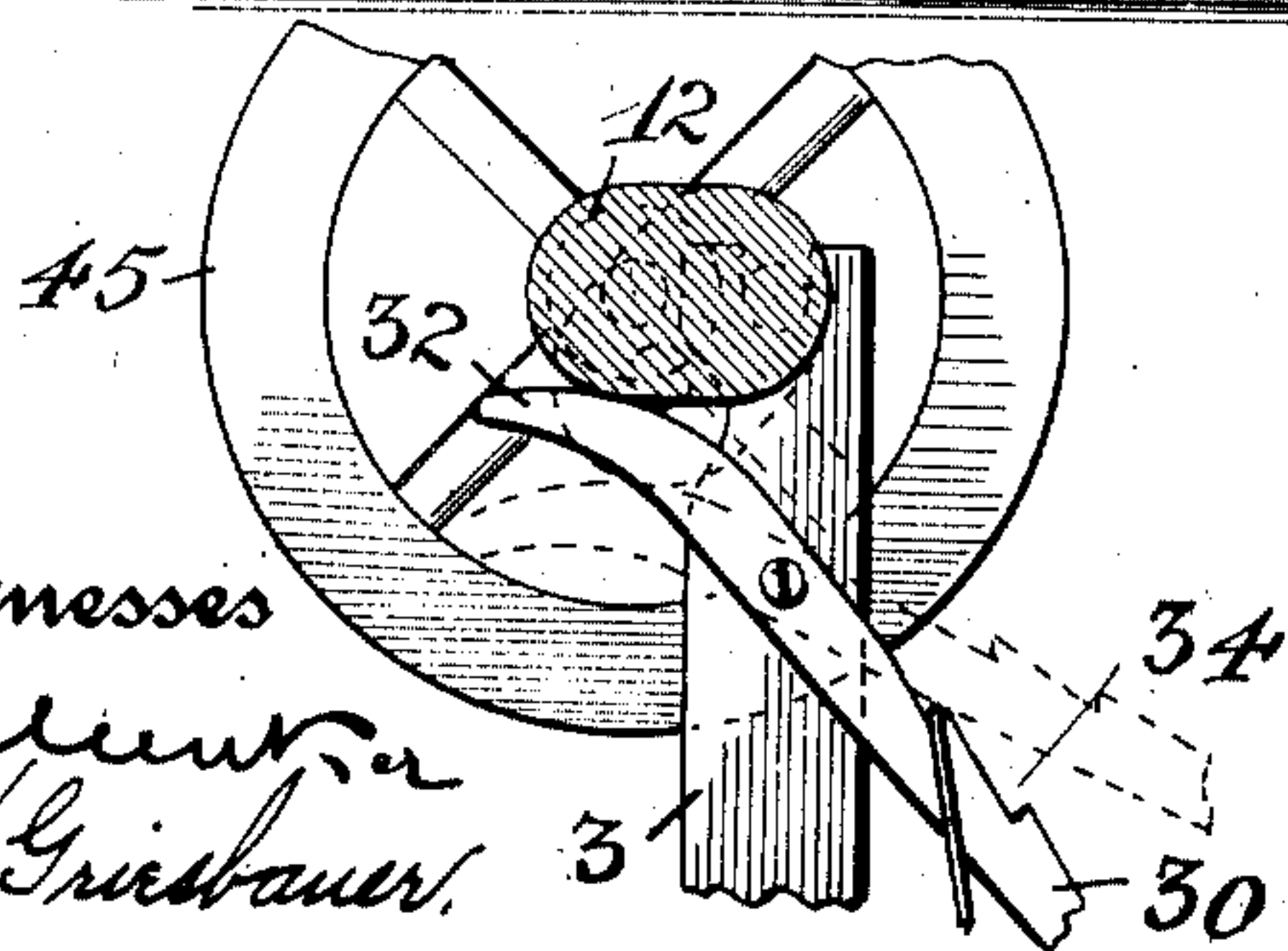
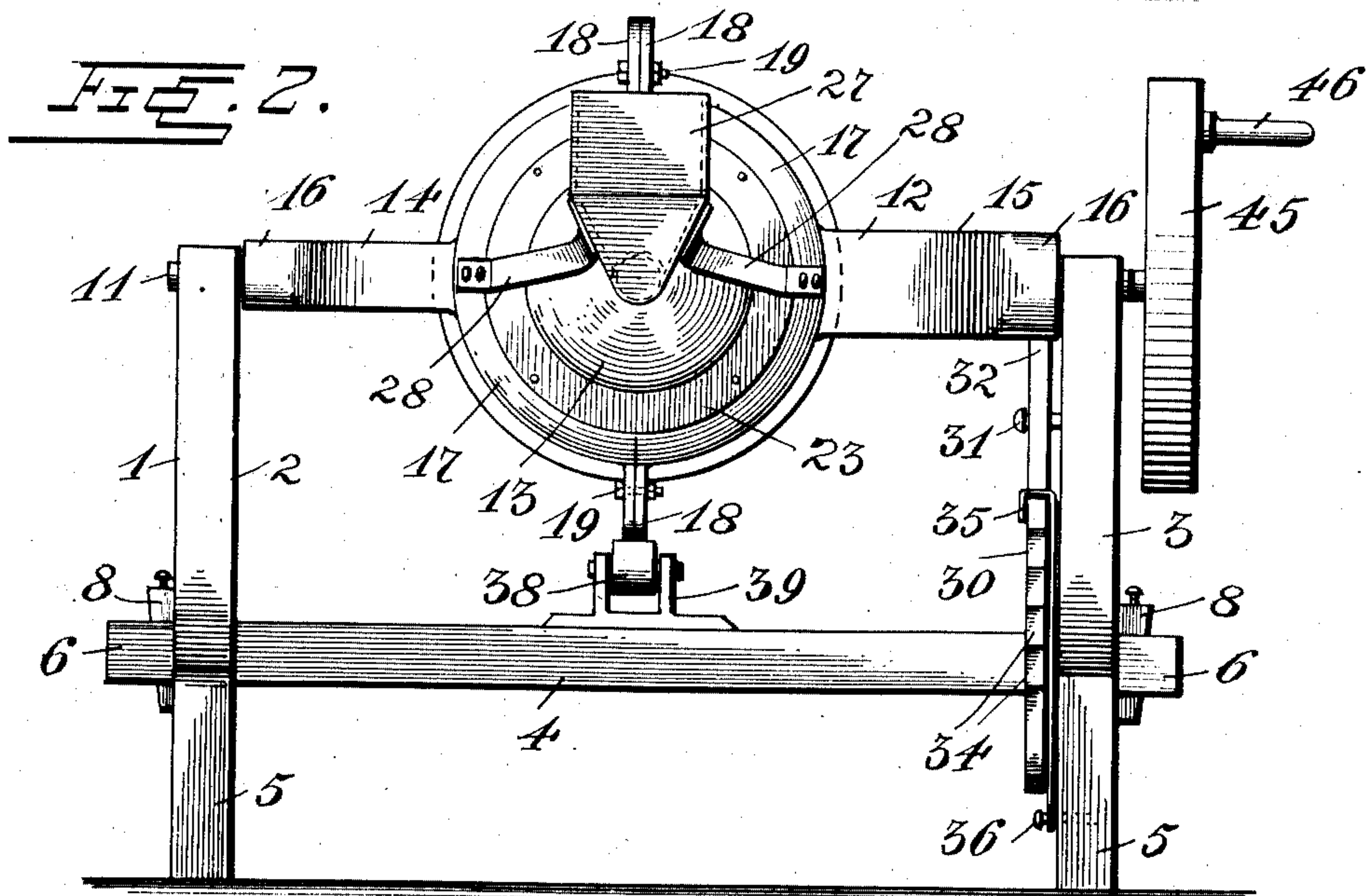
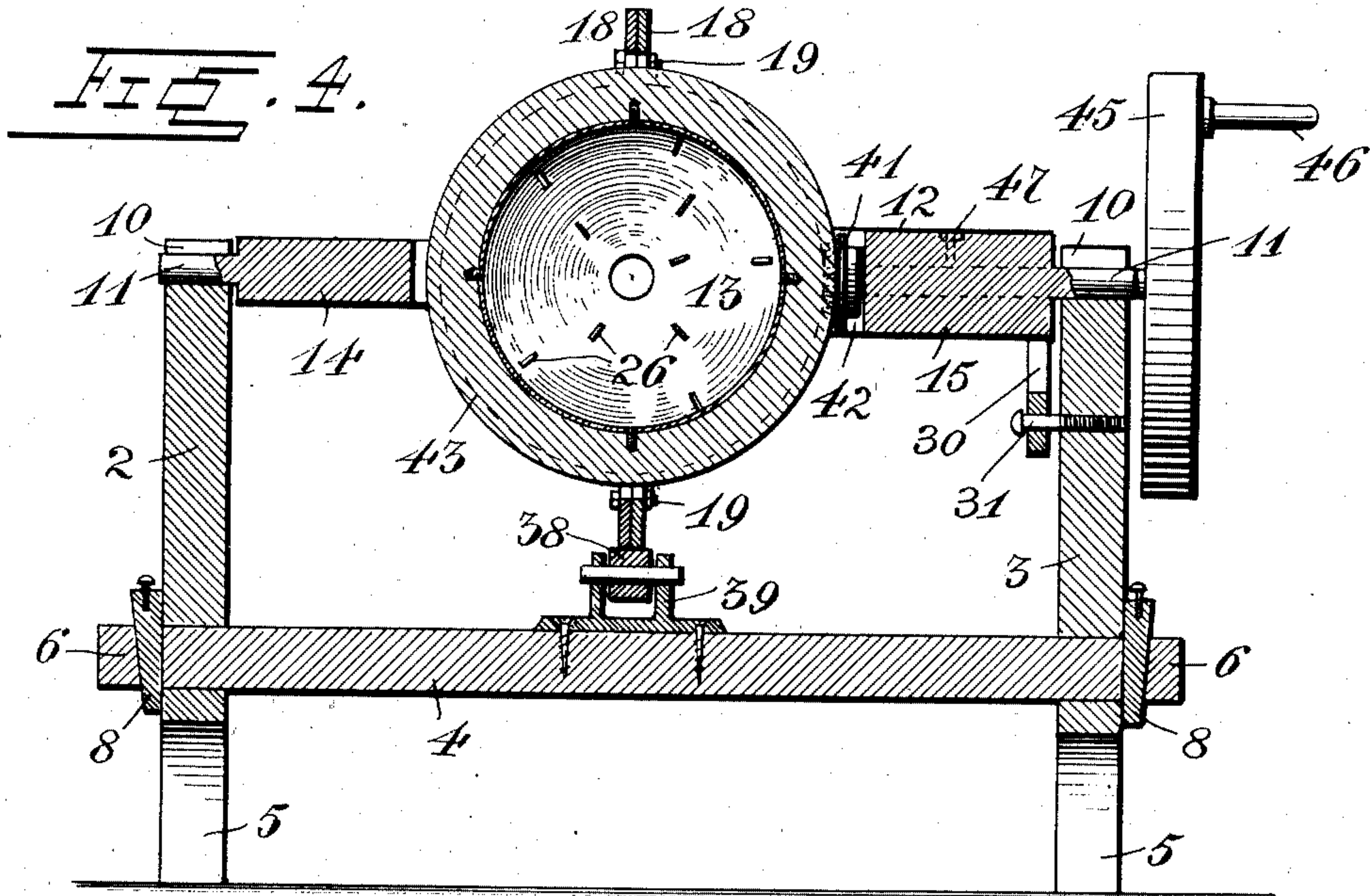
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

TERRY BLIXT, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO WALTER FOSTER, OF
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MIXING-MACHINE.

No. 864,603.

Specification of Letters Patent.

Patented Aug. 27, 1907.

Application filed October 22, 1906. Serial No. 340,077

To all whom it may concern:

Be it known that I, TERRY BLIXT, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented
5 certain new and useful Improvements in Mixing-Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

10 My invention relates to improvements in machines for mixing materials, such as sand and cement, and it consists in certain novel features of construction, combination and arrangement of parts, as will be herein-after described and claimed.

15 One object of my invention is to provide a machine of this character which will be of simple and durable construction, and by means of which the mixing may be effectively and expeditiously performed.

A further object of my invention is to effect improvements in the means for feeding and discharging the material into and from the mixing receptacle or container.

20 The above and other objects, which will appear as the nature of my invention is more fully understood, are accomplished by the construction illustrated in the accompanying drawings, in which,—

Figure 1 is a top plan view of a mixing machine embodying my improvements; Fig. 2 is a side elevation of the same; Fig. 3 is an end elevation; Fig. 4 is a vertical longitudinal sectional view, taken on the line 4—4 of Fig. 1; Fig. 5 is a vertical transverse sectional view; and Fig. 6 is a detail vertical transverse sectional view, taken on the line 6—6 of Fig. 1 and showing the swinging mixer-carrying frame in full lines in its normal position, and in dotted lines in its tilted position.

35 Referring to the drawings by numeral, 1 denotes a frame or support, preferably consisting of two end uprights 2 and 3 connected by a longitudinal bar or beam 4. Each of said uprights is formed with supporting feet 5 upon which wheels or rollers may be mounted, if desired, to permit the frame to be readily transported. The connection between the bar 4 and the uprights 2 and 3 is preferably detachable, and, as shown, consists in forming the ends of the bar 4 with reduced portions
45 6 which project through openings formed in the uprights 2 and 3 and are retained therein by wedge-shaped keys 8. Said keys pass through openings formed in said reduced ends of the bar 4 and are preferably loosely connected to the end uprights by short
50 chains or other flexible connections 9, to prevent them from being lost.

Upon the upper ends of the uprights 2 and 3 are formed semi-circular bearings 10 in which are removably journaled the trunnions 11 upon the ends of an

oscillating or tilting frame 12 which carries a mixing 55 receptacle or container 13. Said frame 12 is preferably constructed of two half-sections 14, 15, which are here shown in the form of metal castings. Each of said half-sections comprises a body portion 16 having at one of its ends one of the trunnions 11, and at its 60 opposite end a transversely extending semi-cylindrical casing section 17 which is formed along its side edges with angularly projecting flanges 18. Said flanges 18 upon the two casing sections 17 are secured together by bolts or other suitable fastening means 19, said 65 sections 17 forming a substantially cylindrical shaped casing, its ends, which are open, being somewhat tapered, as shown. The mixing receptacle or container 13, which is in the form of a hollow cylindrically shaped shell formed with tapered ends 20, 21, is mounted to 70 rotate within the transversely disposed casing 17, ball bearings 22 being provided between the outer surface of said receptacle and the inner surface of the casing 17, to permit the former to rotate with a minimum amount of friction. The ball bearings are retained within the 75 casing by annular plates 23 and are adapted to be inserted into the same through the openings 24 formed in said casing and closed by caps 25, said openings also serving to permit an oil or lubricant to be distributed upon the bearing balls 22. The interior of the mixing 80 receptacle 13 is formed with spirally arranged rows of inwardly projecting and angularly disposed wings or blades 26 which serve to thoroughly agitate or mix the material within the receptacle when the latter is rotated, as will be presently described. The material to be 85 mixed is introduced through the tapered end 20 of said receptacle by means of a tapered trough 27 which is preferably mounted upon the adjacent end of the casing 17 by means of braces 28. The opposite end 21 of the mixing receptacle 13 serves as a discharge for 90 the latter.

It will be seen upon reference to Figs. 1 and 6 of the drawings, that the trunnions 11 are disposed eccentrically upon the oscillating or tilting frame 12, that is to say, one side of the said frame is overbalanced, 95 the body portion 16 of the half-section 15 of said frame being of greater size and weight than the corresponding portion of the other section 14. Owing to this construction, it will be seen that when said frame is hung upon the uprights 2, 3, its overbalanced side or portion 100 will swing downwardly and, since the discharge end 21 of the mixing receptacle is located upon said side, the said receptacle will be tilted to permit its contents to discharge through the opening in said end 21. In order to support the overbalanced side or portion of 105 said swinging frame to hold the latter normally in the horizontal position shown in Figs. 2 and 3 of the drawings, I preferably employ a lever 30 which is pivoted

intermediate its ends at 31 upon the inner side of the upright 3. The front end or arm 32 of said lever is curved and adapted to engage and support the enlarged portion 16 of the half-section 15 of the frame 12. The
 5 long end or arm 33 of said lever is formed upon its upper edge with a series of notches or teeth 34, one of which is adapted to be engaged by the hooked end of a locking dog or catch 35 which has its opposite end pivotally mounted, as at 36, upon said upright 3. To
 10 assist in supporting the swinging or tilting frame 12, the flanges 18 upon the underside of the casing 17 are curved or arc-shaped, as shown at 37, and are adapted to engage a supporting friction roller 38 which is journaled in a block or bearing 39 secured centrally upon
 15 the bar 4 of the frame 1.

In order to rotate the mixing receptacle 13, I preferably journal, in the enlarged or overbalanced portion of the frame 12, a shaft 40 which has secured upon its inner end a pinion 41 disposed in a recessed portion
 20 42 of said frame. Said pinion meshes with a toothed gear 43 which is secured upon the outer side of the receptacle 13 and rotates in a recessed portion 44 of the casing 17, as shown. The outer end of the shaft 40, which projects beyond the upright 3, has secured upon
 25 it a fly wheel 45 which is provided with a crank handle 46, by means of which, said wheel, and hence said shaft, may be rotated. If desired, the shaft 40 may be driven by power by placing tight and loose pulleys upon the same, as will be readily understood. In the
 30 frame 12 is provided a covered lubricating opening 47, through which oil or other lubricants may be supplied to the shaft 40.

The use, operation and advantages of my invention will be readily understood upon reference to the
 35 drawings. It will be seen that when the receptacle 13 is in its normal position, that is, in a horizontal plane, the material to be mixed may be introduced into the same through its inlet end 20, and that when the handle 46 is rotated, said receptacle will, through the gears
 40 41, 43 upon the shaft 40, be rotated to thoroughly mix

its contents. When it is desired to discharge said contents, the dog 35 is disengaged from the lever 30 and the long arm of the latter is elevated, to permit the swinging frame 12 to tilt to the position shown in dotted lines in Fig. 6 of the drawings. In this position, 45 the receptacle 13 will be inclined downwardly with its discharge end 21 lowermost, so that the contents of said receptacle may pass out of the same.

While I have shown and described the preferred embodiment of my invention, it will be understood 50 that I do not wish to be limited to the precise construction herein set forth, since various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention. 55

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

1. In a mixing machine, the combination of a main frame, a tilting frame pivotally mounted therein on one side of the center of weight thereof, a receptacle carried 60 by the tilting frame and mounted for revolution therein, a lever fulcrumed to the main frame and engaging the tilting frame on the weightier end thereof, and means connected to the main frame to lock said lever in an adjusted position. 65

2. A mixing machine comprising a frame having journal bearings and an intermediate supporting friction roller, a tilting frame having trunnions to turn in said bearings and a curved rib to engage said supporting roller, a transversely 70 disposed hollow mixing receptacle mounted to rotate in said tilting frame and having inlet and outlet openings at its opposite ends and angularly disposed internal agitating wings, a gear wheel upon said receptacle, a shaft in said tilting frame, a pinion upon said shaft, in mesh with said gear, means for rotating said shaft, and means for 75 supporting the overbalanced portion of said tilting frame, substantially as described and for the purpose set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

TERRY BLIXT.

Witnesses:

JAS. T. BUCHANAN,
 FRED. C. GROTE.