No. 890,086. PATENTED JUNE 9, 1908.

P. OLSON.

ROTARY MIXER FOR CONCRETE.

APPLICATION FILED DEC. 31, 1907.

3 SHEETS—SHEET 1.

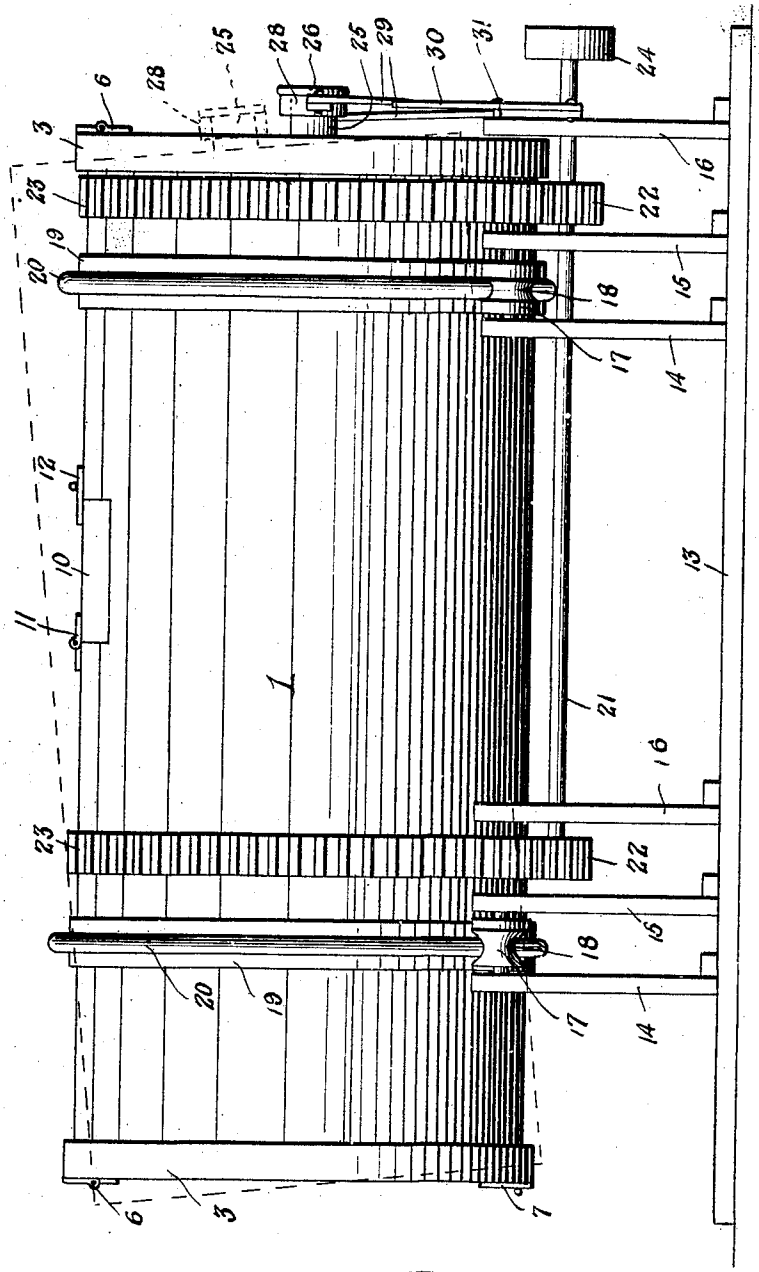


FIG. 1.

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3 SHEETS—SHEET 2.

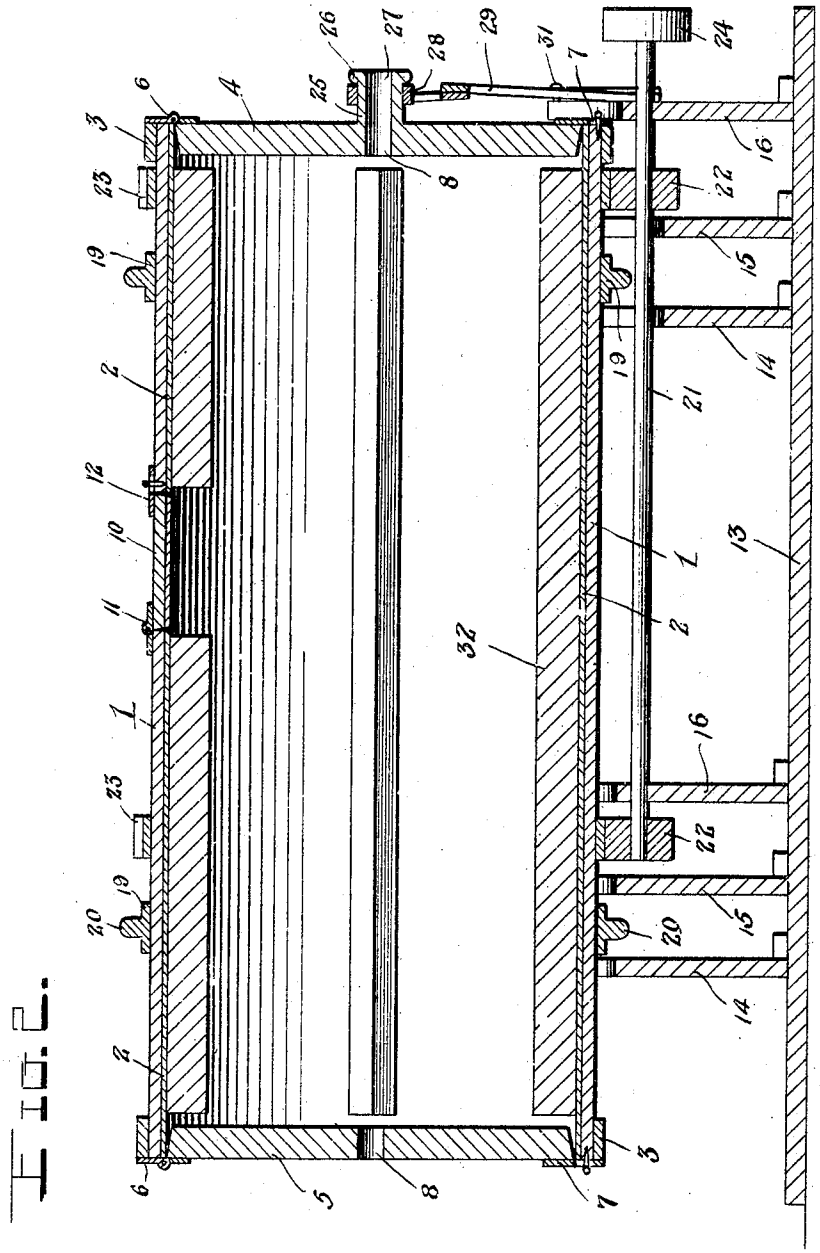


FIG. 2.

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3 SHEETS—SHEET 3.

Fig. 3.

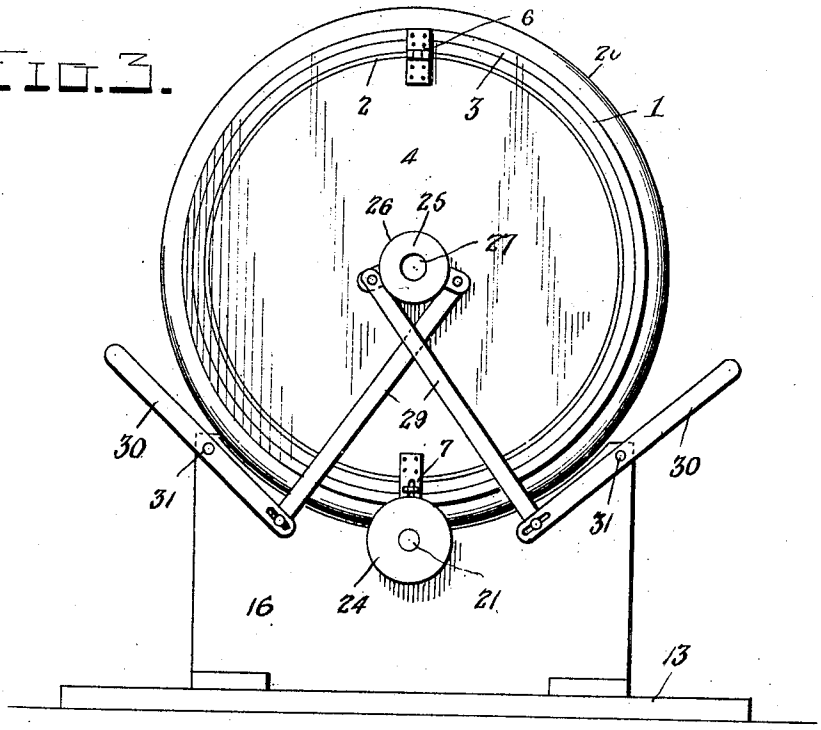
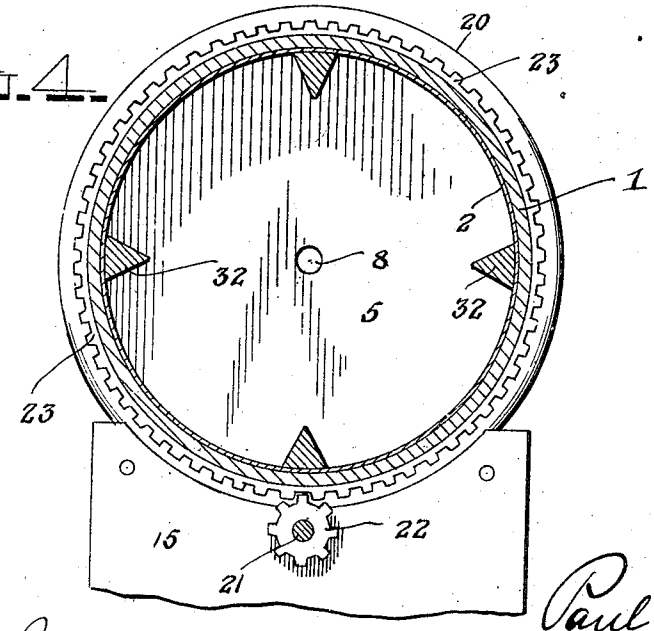


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

PAUL OLSON, OF STOUGHTON, WISCONSIN.

ROTARY MIXER FOR CONCRETE.

No. 890,086. Specification of Letters Patent. Patented June 9, 1908.

Application filed December 31, 1907. Serial No. 408,769.

To all whom it may concern:

Be it known that I, PAUL OLSON, a citizen of the United States, residing at Stoughton, in the county of Dane and State of Wisconsin, have invented certain new and useful Improvements in Rotary Mixers for Concrete, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to improvements in rotary mixers for concrete, cement and the like, and it consists of the novel features of construction and the combination and arrangement of parts hereinafter fully described and claimed.

The object of the invention is to improve and simplify the construction and operation of machines of this character and thereby render the same more durable and efficient and less expensive.

The above and other objects of the invention are attained in its preferred embodiment illustrated in the drawings, in which

Figure 1 is a side elevation of my improved rotary mixer, its body or drum being shown in its tilted position in dotted lines; Fig. 2 is a vertical longitudinal section; Fig. 3 is an end elevation; and Fig. 4 is a transverse section.

The invention comprises a cylindrical body or drum 1 preferably constructed of wood and having a lining 2 of metal. The open ends of the body are reinforced by bands or hoops 3 and are adapted to be closed by heads or doors 4, 5, which latter are hinged at 6 to the bands 3 and are adapted to be secured in their closed position by suitable fastening devices 7. Formed in the center of each of the heads or doors is an opening 8 through which may be passed the end of a hose or pipe for supplying water or other liquid to the interior of the drum. The material to be mixed is introduced into the latter through a filling opening 9 formed in the drum adjacent to its center and closed by a door or cover 10 hinged at 11 and provided with a fastener 12.

The drum 1 is mounted for rotation upon a support or frame comprising a suitable base 13 from which rise two sets of transversely extending upright standards or supports 14, 15, 16. The standards of each set are arranged in parallel relation and are spaced apart as shown, one set being arranged beneath the inner end of the drum and the other set at a suitable distance from its outer end for a purpose presently explained. The upper edge of each of the standards 14, 15, 16 is recessed to receive said drum and journaled between the standards 14, 15 of each set are anti-friction rollers 17 formed with annular grooves 18. Said rollers are engaged by annular bands or rings 19 arranged at suitable points upon the drum 1 and formed with radial ribs or flanges 20 adapted to enter the grooves 18 in said rollers.

For the purpose of rotating the drum 1 provide beneath it, in suitable bearings, in the standards 16, a longitudinally extending shaft 21 on which are secured, between the standards 15, 16, pinions 22 which mesh with ring gears 23 secured upon the drum 1. Upon the projecting inner or rear end of the shaft 21 is a driving pulley 24 which may be connected to a suitable source of power.

By mounting the drum 1 as above described, it will be seen that it may be tilted longitudinally or endwise as indicated in dotted lines in Fig. 1 for the purpose of discharging its contents from its outer end which is closed by the door or head 5. This tilting of the drum is effected by providing upon the center of its head 4 a projection or boss 25 formed at its outer end with an annular flange 26 and having a longitudinal bore or opening 27 which registers with the opening 8 in the head 4 so as to receive a water supply hose or pipe. The projection or boss 25 is loosely engaged by a sleeve or collar 28 to which are connected the upper ends of rods 29, the lower ends of which latter are pivoted to the inner ends of transversely extending levers 30. These levers are pivoted intermediate their ends at 31 upon the standard 16 at the inner end of the drum and the outer ends of said levers project from opposite sides of the machine and may be moved downwardly by hand when it is desired to raise the inner end of the drum.

Upon the interior of the drum may be arranged any suitable means for mixing the material therein but I preferably provide a plurality of longitudinally extending ribs or blades 32 which project radially from the inner face of the wall of the drum as more clearly shown in Fig. 4. It will be noted that these ribs or blades will lift the material and turn it over as the drum rotates so that the material will be thoroughly agitated and mixed.

In operation, the sand, gravel, cement or the like which is to be mixed is introduced

into the body or drum 1 through the inlet opening 9 and the door or cover 10 is then placed in position. The hose or pipe which is to supply the water or other liquid is then introduced through the opening 8 in either end or head of the drum. When power is applied to the shaft 21 to rotate the same its motion will be imparted through the gearing 22, 23, to the drum which will be rotated upon the rollers 17. After the material has been thoroughly mixed the head or end 5 at the outer end of the drum is opened and the drum is then tilted by depressing the outer end of either one of the levers 30. When this is done the links or rods 29 will lift the inner end of the drum, the flange 20 on the band or ring 19 adjacent the outer end of the drum serving as a fulcrum for the latter. Owing to the provision of the straight longitudinal mixer ribs within the drum it will be seen that its contents will be readily discharged when the drum is tilted.

While I have shown and described the preferred embodiment of my invention I wish it understood that I do not limit myself to the precise showing set forth and that various changes in the form, proportion and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus described my invention what I claim is:

1. In a rotary mixer, the combination of a support, two sets of grooved anti-friction rollers, a mixing drum having open ends and a filling opening intermediate its ends, closures for the ends of the drum and said filling opening, flanged rings upon the drum to engage said rollers, one of said flanged rings being arranged a suitable distance from the outer end of the drum, ring gears upon the drum, a drive shaft in said support, pinions upon said shaft in mesh with said gears, an apertured concentric projection upon the closure at the inner end of the drum, a loose sleeve upon said projection, oppositely projecting levers pivoted on the support and links connecting the inner ends of said levers to said sleeve, substantially as described.

2. In a rotary mixer, the combination of a support, grooved anti-friction rollers thereon, a mixing drum, a band upon the drum suitably distant from its outer end and provided with an annular flange to engage the grooves in said rollers and means at the inner end of the drum for elevating the same.

3. In a rotary mixer, the combination of a support, grooved anti-friction rollers thereon, a mixing drum, a band upon the drum suitably distant from its outer end and provided with an annular flange to engage the grooves in said rollers, a concentric projection upon the inner end of the drum, a lever and a link connected to the lever and loosely engaged with said concentric projection.

4. In a rotary mixer, the combination of a support, a drum rotatably mounted thereon and adapted to tilt endwise, a concentric projection at one end of the drum, a sleeve loosely mounted on said projection, a pair of transversely disposed levers pivoted intermediate their ends on opposite sides of the support and a pair of crossed links having their upper ends pivoted to said sleeve, and their lower ends loosely pivoted to the inner ends of said levers.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

PAUL OLSON.

Witnesses:
J. E. BRICKSON,
JAMES RICHARDSON.