C. H. DASHER.

FRICTIONAL DRIVE FOR MIXERS.

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1,203,102.

Patented Oct. 31, 1916.

2 SHEETS—SHEET 1.

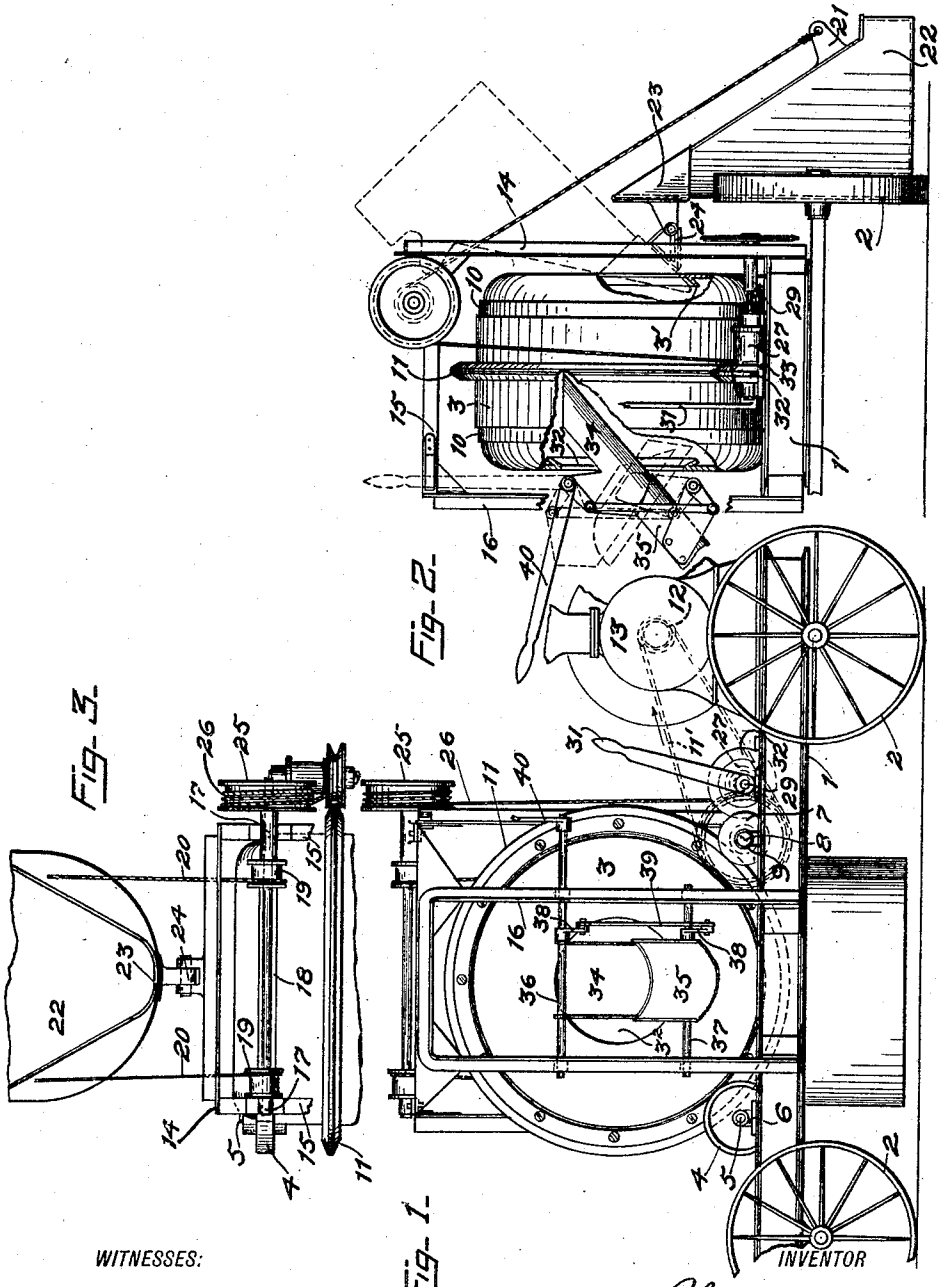


Fig. 1.

Fig. 2.

Fig. 3.

WITNESSES:

Wm. F. Drew.

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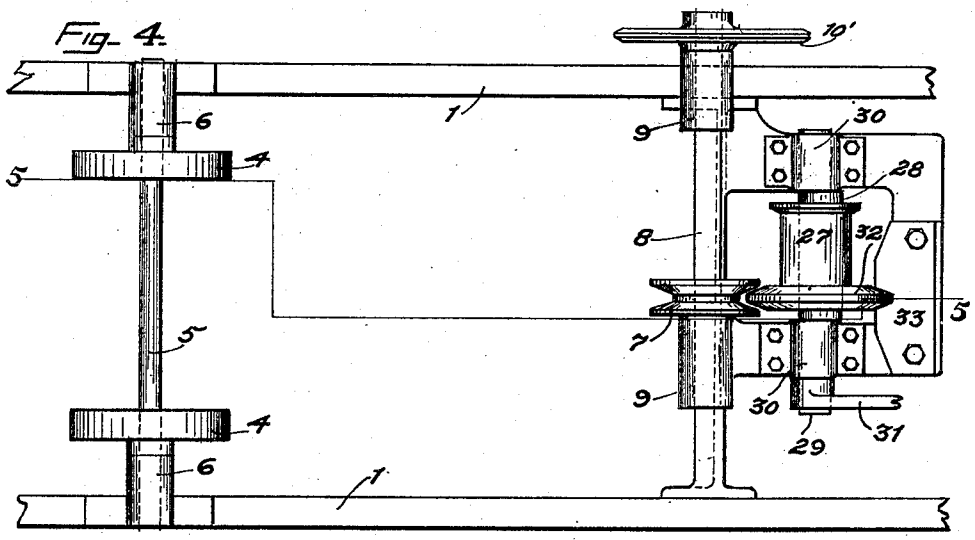
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2 SHEETS—SHEET 2.

Fig. 4.



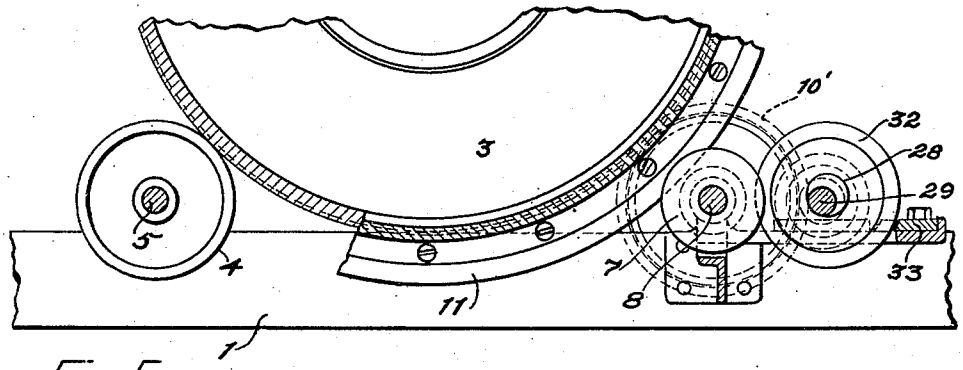


Fig. 5.

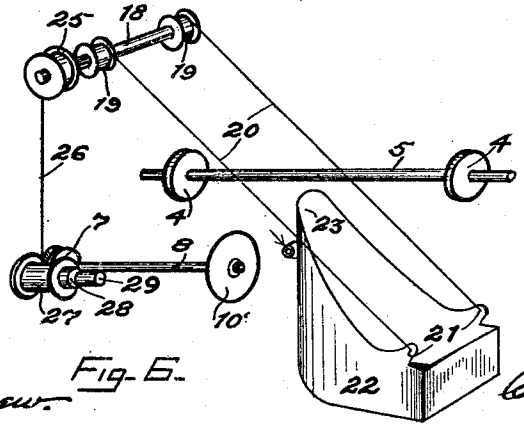


Fig. 6.

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FRICTIONAL DRIVE FOR MIXERS.

1,203,102. Specification of Letters Patent. Patented Oct. 31, 1916.

Application filed December 30, 1914. Serial No. 879,789.

To all whom it may concern:

Be it known that I, CHARLES H. DASHER, a citizen of the United States, residing at Oakland, in the county of Alameda and State of California, have invented certain new and useful Improvements in Frictional Drives for Mixers, of which the following is a specification.

The present invention relates to mixers and more particularly to a type of mixer adapted for use in the making of concrete.

The invention has for its principal objects to provide an improved form of supporting and driving means for the mixing drum; to provide an improved loading device and operating and controlling means therefor.

With the above mentioned and other objects in view, the invention consists in the novel construction and combination of parts hereinafter described, illustrated in the accompanying drawings and pointed out in the claims hereto appended; it being understood that various changes in the form, proportion, size and minor details of construction within the scope of the appended claims may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

To more fully comprehend the invention, reference is directed to the accompanying drawings, wherein—

Figure 1 is a view in side elevation of an embodiment of my invention. Fig. 2 is a view in end elevation with the mixing drum partly broken away, disclosing the feed hopper and material discharge chute. Fig. 3 is a top plan view of a portion of the mixing drum, disclosing the means for rotating the same, the feed hopper and the operating means therefor. Fig. 4 is a view in plan of the hopper supporting and operating means and the eccentrically mounted winding reel for the feed hopper operating means. Fig. 5 is a sectional view taken on line 5—5 of Fig. 4. Fig. 6 is a diagrammatic view of the hopper operating means and the means for operating the mixing drum.

Referring more particularly to the several views of the drawings, wherein like characters of reference designate corresponding parts throughout the several views, the numeral 1 represents a supporting frame provided with the supporting wheels 2 forming a carriage therefor. A tubular mixing drum or cylinder 3 provided with material feed and discharge openings 3′ and 3^2, is carried by the frame 1 and the same rests at one side on the spaced rotatable supporting wheels 4 carried by a shaft 5 supported in bearings 6 on the frame 1. The drum rests at its opposite side on the drive disk 7 having a substantially V-shaped depression in its periphery and carried by a shaft 8 rotatably supported in bearings 9. The drum is formed near its side edges with the annular tracks 10 which rest on the wheels 4 and said drum is formed centrally of its outer surface with an annular outwardly projecting V-shaped trackway 11 which is adapted to rest in the V-shaped depression in the periphery of the driven disk. It will be observed that the drum is supported at three points, and the same is frictionally driven, thus eliminating the rack and gears which often become broken in devices of this class, owing to character of material treated by the machine. It will also be apparent that the greater the load in the drum, the greater the friction between the drum and drive disk.

The shaft 8 carries a sprocket 10′ which is connected preferably by a chain 11′ with the sprocket 12 on a drive shaft of a suitable engine or other source of power 13 carried by the frame 1. A side frame 14 is supported at its lower end on the frame 1 and extends vertically of the side of the drum 3 adjacent the material feed opening 3′ and said frame is connected by the top cross members 15 with a substantially U-shaped frame 16 extending vertically from the frame 1 and positioned adjacent the material discharge opening 3^2.

Rotatably supported in bearings 17 on the cross members 15 is a rotatable shaft 18 carrying the winding drums 19 on which wind the flexible members 20 connected at their lower ends to eyes 21 on a suitable hopper 22, open at its upper portion and the side walls thereof converging to form a chute 23. The hopper is pivoted at a point beneath the chute to a bracket 24 carried by the frame 14 and said hopper is capable of being elevated to the dotted line position—Fig. 2, to dump the contents thereof, namely, the material to be mixed, into the mixing drum 3. A drum 25 is carried by the shaft 18 and around the same is wound a flexible member 26 which connects at its lower end with a winding drum 27

mounted on the eccentric portion 28 of a shaft 29 secured at its ends in bearings 30, said shaft carrying an operating lever 31. The winding drum 25 carries an annular flange 32 adapted to be received in the V-shaped periphery of the drive disk when the lever 31 is moved in one direction, and when the lever is moved in the opposite direction, said annular flange 32 is disconnected from the flange of the drive disk and is thrown into engagement with the V-shaped recess in a plate 33 which forms a brake.

Trough shaped members 34 and 35 are carried respectively by the shafts 36 and 37, rotatably supported by the frame 16, and each of said shafts carries an offset crank 38, which cranks are connected by a link 39. The shaft 36 carries a hand lever 40, which, when in its full line position, Fig. 2, causes the inner end of the trough member 34 to project into the drum through the discharge openings 3^2, and the outer end thereof to rest on the inner end of the trough member 35, and the two trough sections when in this position form a downwardly and outwardly inclined discharge chute.

When the lever 40 is in the dotted line position—Fig. 2, the trough sections 34 and 35 overlie each other and project downwardly and a slight distance inwardly into the discharge opening 3^2 and prevent the material from being discharged through the opening 3^2.

The engine or other source of power 13 being operated to drive the connection 11′ in the direction of the arrow—Fig. 1, will cause the drive disk 7 to be rotated, which in turn rotates the mixing drum, and the lever 31 being operated to throw the flange 32 into engagement with the drive disk 7 will cause the drum 27 to be driven in a direction to unwind the connection 26 from the drum 25, which operation will cause the shaft 18 to rotate and wind the connections 20 on the drums 19, raising the feed hopper from the full line position to the dotted line position in Fig. 2. At this time the flange 32 is quickly disengaged from the drive disk 7 by a rapid operation of the lever 31 and is forced into engagement with the braking plate 33 which prevents the drum 27 from rotating and maintains the feed hopper in its elevated position.

When it is desired to lower the feed hopper, the operator momentarily releases the disk 32 from the brake plate 33 and permits the weight of the hopper to cause the connection 26 to unwind from the drum 27.

Having thus described my invention what I claim and desire to protect by Letters Patent is:—

1. In a device of the type set forth, a frame, a pair of axially alined supporting rollers thereon, a rotary member supported adjacent its ends by the rollers, and a single driving roller journaled on the frame and engaging and supporting the member at a point between the points of support of the first rollers, the point of contact of the driving roller with the member being circumferentially spaced from the first rollers, whereby any extraneous pressure to which the member is subjected is at all times centralized upon the driving roller regardless of any shifting of the pressure.

2. In a device of the type set forth, a horizontally disposed rotary member having a peripheral trackway, and a three point support constituting the sole supporting means for the member and comprising a pair of axially alined rollers engaging the member on opposite sides of the trackway, and a drive roller engaging the track at a point circumferentially spaced from the pair of rollers, whereby any extraneous pressure to which the member is subjected is at all times centralized upon the driving roller regardless of any shifting of the pressure.

3. In a device of the type set forth, a frame, a pair of axially alined, flat rimmed, rollers journaled thereon, a driving roller journaled on the frame in spaced relation to the first rollers and provided in its periphery with an annular groove, and a rotary member seated on the rollers and provided with a peripheral trackway intermediate the rollers of said pair and received by the peripheral groove of the driving roller, whereby any extraneous pressure to which the member is subjected is at all times centralized upon the driving roller regardless of any shifting of the pressure.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES H. DASHER.

Witnesses:
H. M. CATTIMORE,
D. B. RICHARDS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."