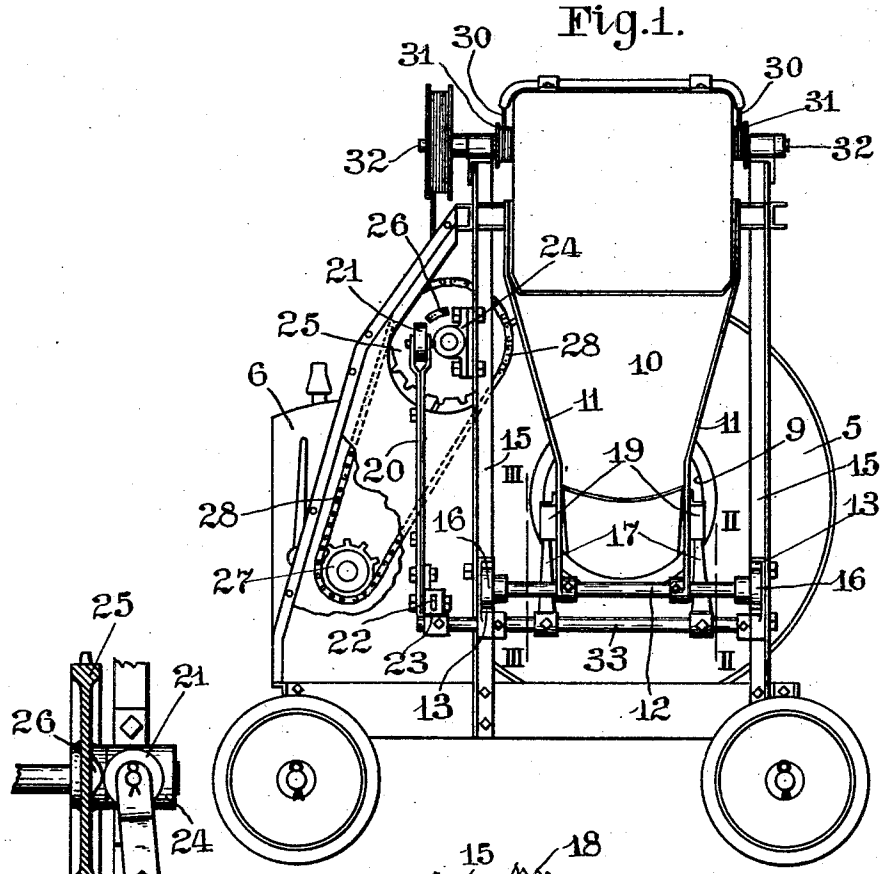
March 29, 1932. J. EGGERT 1,851,242

LOADER AGITATOR FOR CONCRETE MIXING MACHINES

Filed Aug. 1, 1930

Fig. 1.



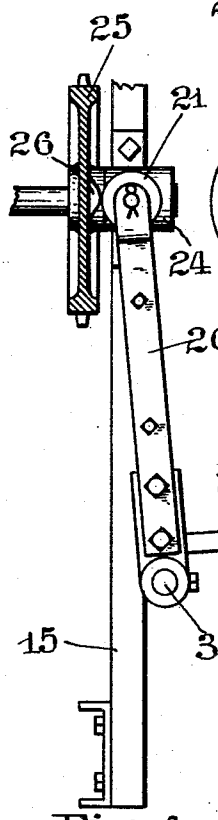


Fig. 4.

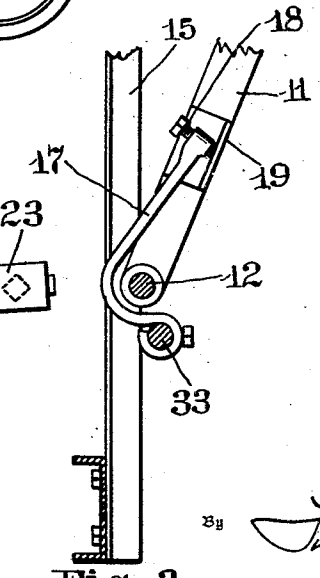


Fig. 3.

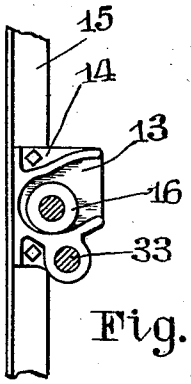


Fig. 2.

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UNITED STATES PATENT OFFICE

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LOADER AGITATOR FOR CONCRETE MIXING MACHINES

Application filed August 1, 1930. Serial No. 472,353.

This invention relates to agitators for concrete mixers.

In the type of mixer in which the mixing drum is charged by means of a charging bucket or skip, so called, that is raised on a pivot to discharge its contents of sand, gravel and cement into the drum the flow of such contents from the bucket is often so tardy as to necessitate pounding the bottom of the bucket with a hammer, heavy bar or other convenient instrument, adapted thereby to shake and compel the movement of sticking material from the bucket. Such pounding indents and disfigures the bottom of the bucket and aggravates the trouble. A number of means have heretofore been proposed, and patented, to automatically bodily agitate the bucket without such pounding, hence the object of the present invention is to provide a simplified, improved and easily assembled means for accomplishing a similar result.

The invention is embodied in the example herein shown and described, the features of novelty being finally claimed.

In the accompanying drawings—

Figure 1 is a view in elevation showing my invention applied to a concrete mixing machine in which the mixing drum is of the rotating but non-tilting type, the view being taken at that side of the machine containing the charging bucket.

Fig. 2 is a fractional detail in elevation and section on the line II—II Fig. 1, illustrating on a larger scale the pivot bearing or support for the bucket, looking to the right.

Fig. 3 is a similar view on the line III—III, Fig. 1, illustrating the agitator arm, looking to the right.

Fig. 4 is a detail in elevation and section looking at the left hand side of Fig. 1 with parts omitted to avoid confusion.

In the views the character 5 designates the mixing drum it being rotated by means of suitable mechanism driven by a suitable engine at 6, all as usual. At one end the drum has a charging opening as seen at 9.

The character 10 designates the charging bucket, it having side straps 11, 11, connected at their forward ends to a cross bar 12. The ends of said cross bar project into socket bearings 13 formed in castings 14 bolted to upright portions of the stationary frame members 15, 15. The bearings are upwardly inclined, as shown, and open at their ends; and the ends of the cross bar where they extend into said bearings are preferably equipped with anti-friction rollers 16. These bearings constitute the pivoting support for the bucket on which pivot the bucket is raised to and lowered from mixer charging position by means of cables 30 winding and unwinding from spools 31 on a shaft 32, as usual.

Because said socket bearings 13 are larger than the rollers 16 and elongated in the inclined direction the bucket can be agitated by agitating or shaking the cross bar 12. The bottoms of said sockets are rounded and larger than the anti-friction bearings so that when the bucket is vibrated by pressure in a horizontal direction the bucket is also given an up and down movement by said bearing. The inclined lip at the lower side of the bearing socket prevents the bucket from being shaken out of said bearing while the opening to the bearing permits the easy dropping of the cross bar and rollers into them.

On a cross rock shaft 33 journaled in said frame members 15, 15 are secured shaker crank arms 17, 17, each having threaded through its upper end a set screw 18, the point of which bears against a projecting plate 19 secured to the outer face of the strap 11.

On the end of the rock shaft 16, where it projects beyond the frame member nearer the engine, is secured a rocker arm 20 that has at its upper end an anti-friction roller 21. The lower end of said arm 20 is provided with a lateral arm 22 having a weight 23 adjustable thereon, the function of the weight being to remove and hold the arm 20 from operating position except when the loader bucket is elevated to drum charging position.

Journaled in a suitable bearing 24 secured to the frame member 15 nearer the engine is a large sprocket wheel 25 having on its face a cam projection 26; and driven by the engine is a small sprocket wheel 27 having thereon a sprocket chain 28 that extends around the large sprocket wheel 25 for driving the latter.

The anti-friction roller 21 is adapted to be brought into the path of the cam projection 26 when the loader bucket is elevated into charging position by the contact of the plates 19 with the rocker arms 17; and when the loader bucket is lowered to ground position the weight 23 removes the roller 21 from said path but only to the extent limited by the contact of the rocker arms 17 with the cross bar 12.

Each time the bucket is raised to charging position it is agitated by the means described to accelerate and insure the discharge of its load into the mixing drum, and each time the bucket is lowered to ground position the agitator is rendered inoperative thereby avoiding noise otherwise made by the action of the cam projection on the roller and relieving the engine of the work of operating the same.

The forms of the parts can be changed without departing from the gist of the invention as claimed.

What I claim is:

1. In a concrete mixing machine including a mixing drum, an engine for rotating the drum, loader bucket for charging the drum, said loader bucket pivoted for raising the bucket to charging position, means acting on the bucket when in drum charging position for agitating the bucket on said pivot consisting of a rocker arm and a wheel independent of the drum, said wheel provided with a cam turned by the engine acting on said rocker arm.

2. In a concrete mixing machine including a mixing drum, an engine for rotating the drum, and a loader bucket for charging the mixing drum, an enlarged stationary socket bearing for directly and pivotally supporting the loader bucket and means acting on the bucket when in drum charging position for bodily vibrating the bucket on said socket bearing.

3. In a concrete mixing machine including a mixing drum, an engine for rotating the drum, and a loader bucket for charging the mixing drum, an enlarged stationary socket bearing for directly and pivotally supporting the loader bucket, agitating means acting on the bucket when in drum charging position for bodily vibrating the bucket on said socket bearing and means for releasing said vibrating means from operating position when the bucket is moved from discharging position.

4. In a concrete mixing machine including a mixing drum, an engine for rotating the drum, a loader bucket for charging the mixing drum, an enlarged stationary socket bearing for pivotally supporting the mixing drum, and means driven by the engine independently of the mixing drum for vibrating the loader bucket on said socket bearing when the bucket is in drum charging position.

5. In a concrete mixing machine including a mixing drum, an engine for rotating the drum, a loader bucket for charging the mixing drum, an enlarged stationary socket bearing for pivotally supporting the mixing drum, and means driven by the engine independently of the mixing drum for vibrating the loader bucket on said socket bearing when the bucket is in drum charging position, said last named means including a wheel provided with a cam.

6. In a concrete mixing machine including a mixing drum, an engine for rotating the drum, a loader bucket for charging the mixing drum, an enlarged stationary socket bearing for pivotally supporting the mixing drum, and means driven by the engine independently of the mixing drum for vibrating the loader bucket on said socket bearing when the bucket is in drum charging position, said last named means including a rocker arm acting on the bucket and a wheel provided with a cam acting thereon.

7. In a concrete mixing machine including a mixing drum, an engine for rotating the drum, a loader bucket for charging the mixing drum, an enlarged stationary socket bearing for pivotally supporting said bucket, and means driven by the engine independently of the mixing drum for vibrating the loader bucket on said socket bearing when the bucket is in drum charging position, said last named means including a rocker arm acting on the bucket, and a wheel provided with a cam acting thereon, and means whereby said rocker arm is withdrawn from operating position when the bucket is lowered from drum charging position.

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