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VIBRATOR

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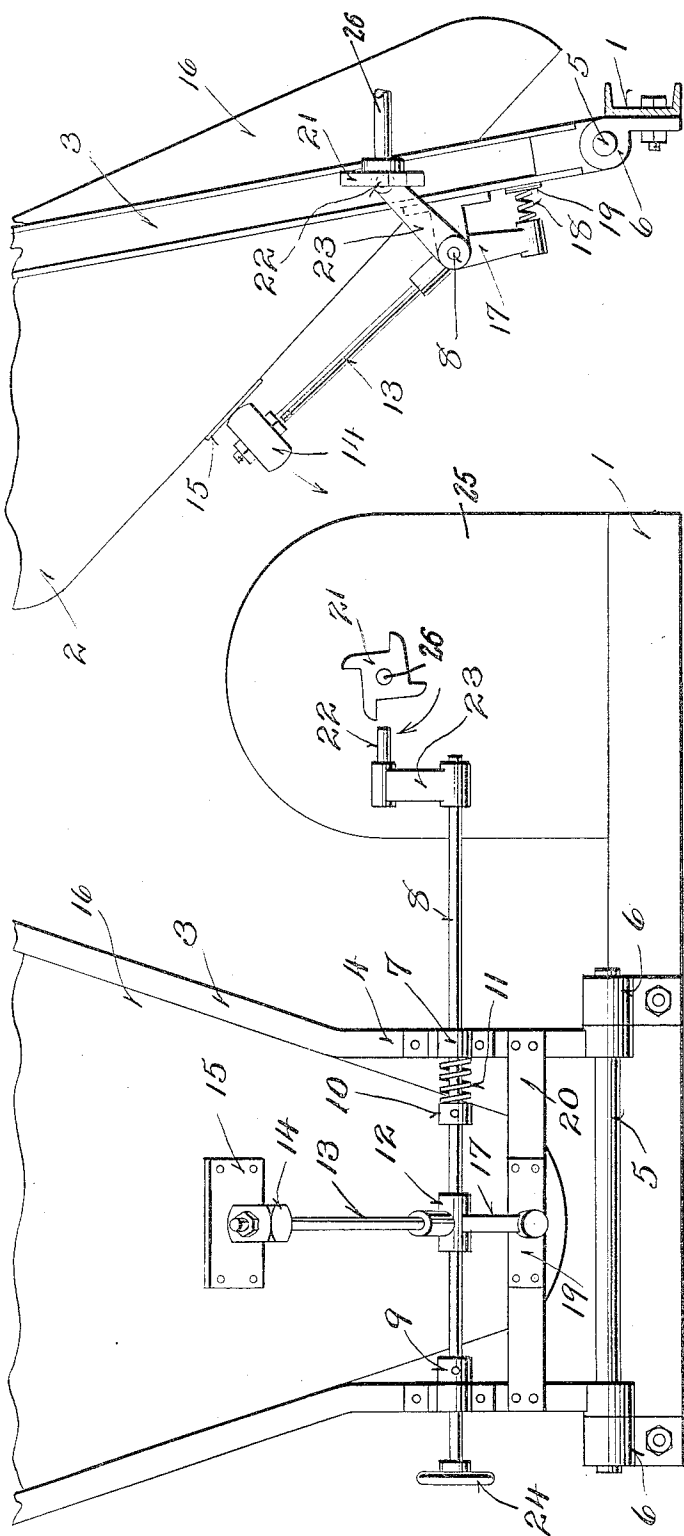


Fig. 2.

Fig. 1.

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VIBRATOR

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This invention relates to new and useful improvements in vibrators and more particularly to a vibrator adapted to be used in connection with a concrete mixer.

5 As a general rule in concrete mixers the material which is being fed to the mixing drum by means of a hoppers bucket has a tendency to stick to the discharge hopper of the bucket and has to be jarred loose by
10 pounding on the bottom of the bucket and the chute portion so that it may be discharged into the drum.

One of the objects of my invention is the provision of a novel type of vibrator adapted
15 to be used in connection with motor-driven concrete mixers so positioned as to operate directly on the chute which discharges the material from the loading bucket into the drum, and is manually controlled so that
20 when the material is being discharged from the loading bucket the device can be thrown into operation to provide a continuous tapping on the discharge chute of the bucket to prevent the material from sticking to the bot-
25 tom of the same.

Another object of my invention is the provision of a vibrating device as set forth above which is mounted on a movable frame for the loading bucket and which is so con-
30 structed and arranged that when the bucket is raised to a discharging position the device can be manipulated for moving the same into operative connection with the driving shaft of the concrete mixer so that a continuous
35 tapping may be imparted to the discharge chute of the loading bucket and prevent the material from sticking thereto so as to cause it to be discharged into the mixing drum.

40 A further object of my invention is the provision of a vibrator as set forth above which is normally urged into an inoperative position and maintained in this position until manually actuated for moving the same to an operative position when required.

45 With the above and other objects in view, the invention consists in the novel features of construction, the combination and arrangement of parts hereinafter more fully set forth, pointed out in the claims and shown
50 in the accompanying drawing wherein:

Fig. 1 is a rear elevation of a portion of a concrete mixer illustrating the application of my improved vibrator;

Fig. 2 is a detailed side elevation of the loading bucket illustrating an end view of the vibrator.

Referring now more particularly to the drawing, it will be noted that I have illustrated one of the side rails of the supporting frame for a portable concrete mixer, the rails
60 being generally indicated at 1. In the construction of certain types of concrete mixers, the loading bucket 2 is supported by means of the side bars 3 which are secured to the
65 sides of the bucket and diverged into parallel ends, as shown at 4. These parallel ends are pivotally mounted upon a shaft 5 supported upon the side rails 1 by the bearings 6.

While only a small portion of the hoppers part of the loading bucket is disclosed, it will
70 be apparent that this bucket is raised and lowered in the same manner as the ordinary loading bucket of a concrete mixer.

The parallel end portions of the members 3 are provided with bearings 7, which support a slidable and rotatably mounted shaft
75 8, a stop collar 9 being mounted upon the shaft for engagement with one of the bearings to limit the movement of the shaft in one direction, a second collar 10 being mounted
80 upon the shaft adjacent the other side rail and normally spaced from one of the bearings by means of a coil spring 11 which has a tendency to normally maintain the shaft 8 in
85 an inoperative position.

Mounted upon the shaft 8 between the bearings 7 and affixed thereto is a sleeve 12 which has extending from one side thereof an arm
90 13 supporting upon its outer end a removable head 14 which is adapted to contact with a small plate 15 secured to the bottom of the discharge chute 16 of the loading bucket. Ex-
95 tending outwardly at an angle from the sleeve 12 at the opposite side from the arm 13 is an arm 17, the outer end of which carries a coil spring 18 bearing against a face plate 19, se-
100 cured to the supporting cross-piece 20. The ends of the cross-piece 20 are attached in any suitable manner to the parallel portions 4 of the side bars 3 and it will be noted that the

plate 19 has a smooth bearing surface so that the end of the coil spring 18 which engages the same will readily move thereover.

Attached to the outer end of the drive shaft 26 of the motive power which operates the concrete mixer is a four-point tappet 21 adapted to engage the contact finger 22 of the arm 23 which is connected to one end of the shaft 8, this operation rocking the shaft 8 in its bearing 7. It will, however, be observed that normally the coil spring 11 maintains the shaft 8 in an inoperative position or in such position as to prevent the contact points of the tappet from engaging the finger 22, but when it is desired to impart a rocking movement to the shaft 8 the hand-wheel 24, which is secured to the outer end of the shaft, may be grasped by the operator to move the shaft longitudinally in its bearings so as to bring the finger 22 into the pathway of the points of the rotating tappet 21. In the drawing the numeral 25 designates a conventional showing for the power plant of the mixer upon whose drive shaft 26 the tappet 21 is mounted and continuously driven. This operation will impart a rocking movement to the shaft 8 and cause the head 14 to be continuously brought into contact with the plate 15 and moved away from the same so as to impart a continuous tapping movement to the chute portion 16 of the bucket 12.

It will also be noted that since the shaft 8 and its associated parts are mounted on the bucket arms 3 they will move therewith to and from discharging position and that the normally inoperative position of the finger 22 relative to the tappet 21 offers no interference to this movement.

From the above description, taken in connection with the drawing, it will be readily apparent that I have provided an improved vibrator device which can be quickly and readily attached to various well-known makes of concrete mixers so as to impart a continuous tapping movement to the chute of the loading bucket when the same is in position to discharge the contents thereof into the mixing drum.

I claim:

1. In a device of the class described, the combination of a slidably and rotatably mounted shaft, an arm projecting from one side of the shaft, a head on the outer end of the arm, a rotatable tappet, means on the shaft adapted to be moved into the path of the tappet whereby to impart a rocking movement to the shaft, and means for moving said first means out of the path of the tappet.

2. In a device of the class described, the combination of spaced supporting members, bearings carried thereby, a shaft slidably and rotatably mounted in the bearings, collars carried by the shaft with one of said collars engaging one of the bearings to limit the

movement of the shaft in one direction, a coil spring on the shaft between the other collar and bearing for normally urging the shaft in one direction, an arm projecting from the shaft between the collars, a head on the arm, means whereby to move the shaft longitudinally against the tension of the spring, means for imparting a rocking movement to the shaft when moved against the tension of the spring, the tension of the spring returning the shaft to its normal position upon release of the first named means.

3. A device of the class described, the combination of a support including spaced bearings, a shaft longitudinally slidably and rotatably mounted in the bearings, means limiting the movement of the shaft in either direction, means operatively associated with said shaft in one of its sliding positions whereby to impart a rocking movement to the shaft and inoperative in another of its sliding positions and a hammer-like member carried by the shaft to be rocked with the same and to be intermittently engaged with an object in the path of the same.

4. In a concrete mixer charging device, a support including a power operated part, a charging device carried by the said support and movable into loading and discharging positions, and a vibrating hammer device for vibrating the bottom of the bucket when the bucket is in discharging position to loosen any particles of the materials which may stick to the bucket, said hammer device being adapted to be engaged by the power operated part when the charging device is in the said discharging position to cause hammering action of the hammering device.

5. In a concrete mixer charging device, a support including a power operated part, a charging device carried by the said support and movable into loading and discharging positions, a vibrating hammer device for vibrating the bottom of the bucket when the bucket is in discharging position to loosen any particles of the materials which may stick to the bucket, said hammer device being adapted to be engaged by the power operated part when the charging device is in the said discharging position to cause hammering action of the hammering device, and manual means for causing engagement of the hammer device with the power operated part when in the last position.

6. In a device of the class described, the combination comprising a movable loading bucket, a motor driven shaft spaced apart therefrom, a rockable shaft carried by the loading bucket, a hammer-like member carried by the rockable shaft, a tappet carried by the motor driven shaft, means on the rockable shaft adapted to be moved into contact with the tappet to impart rocking movement to the rockable shaft and to impart an inter-

mittent movement of the hammer-like member against the bucket.

7. In a device of the class described, the combination comprising a loading bucket, a
5 motor driven shaft spaced apart therefrom, a rockable shaft supported by the loading bucket, a hammer-like member carried by the rockable shaft for contact with the bucket, an engaging finger carried by the rockable
10 shaft, a tappet carried by the motor driven shaft for engagement with the finger to impart movement to the rockable shaft, manually operated means for moving the finger into the path of the tappet for rocking the shaft
15 and imparting an intermittent movement of the hammer-like member against the bucket and means for moving the finger outside of the path of the tappet upon release of the manually controlled means.

20 8. In a device of the class described, the combination comprising a movable loading bucket adapted to be moved to discharging position, a rockable shaft carried by said bucket, a hammer-like member extending out-
25 wardly from the shaft, power operated means adapted to transmit rocking movements spaced apart from said bucket, and means for moving said rockable shaft into or out of rocking engagement with said power operat-
30 ed means at will when the bucket is in discharging position for intermittently engaging said hammer-like member with the bottom of the bucket.

9. In a device of the class described, the
35 combination comprising a loading bucket movable into loading and discharging positions, a bucket vibrating device carried by the bucket and adapted to strike the bucket when the vibrating device is operated, power
40 operated means spaced apart from said bucket and adapted to transmit vibrating movements, and means for moving said bucket vibrating device into and out of vibration transmitting engagement with said power
45 operated means at will when said bucket is in discharging position, said power operating means being rendered inoperative when the bucket is in loading position.

50 In testimony whereof, I affix my signature.
MICHAEL GILSON.

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