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S. SHAFER, JR

CONCRETE MIXING MACHINE

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Fig. 2

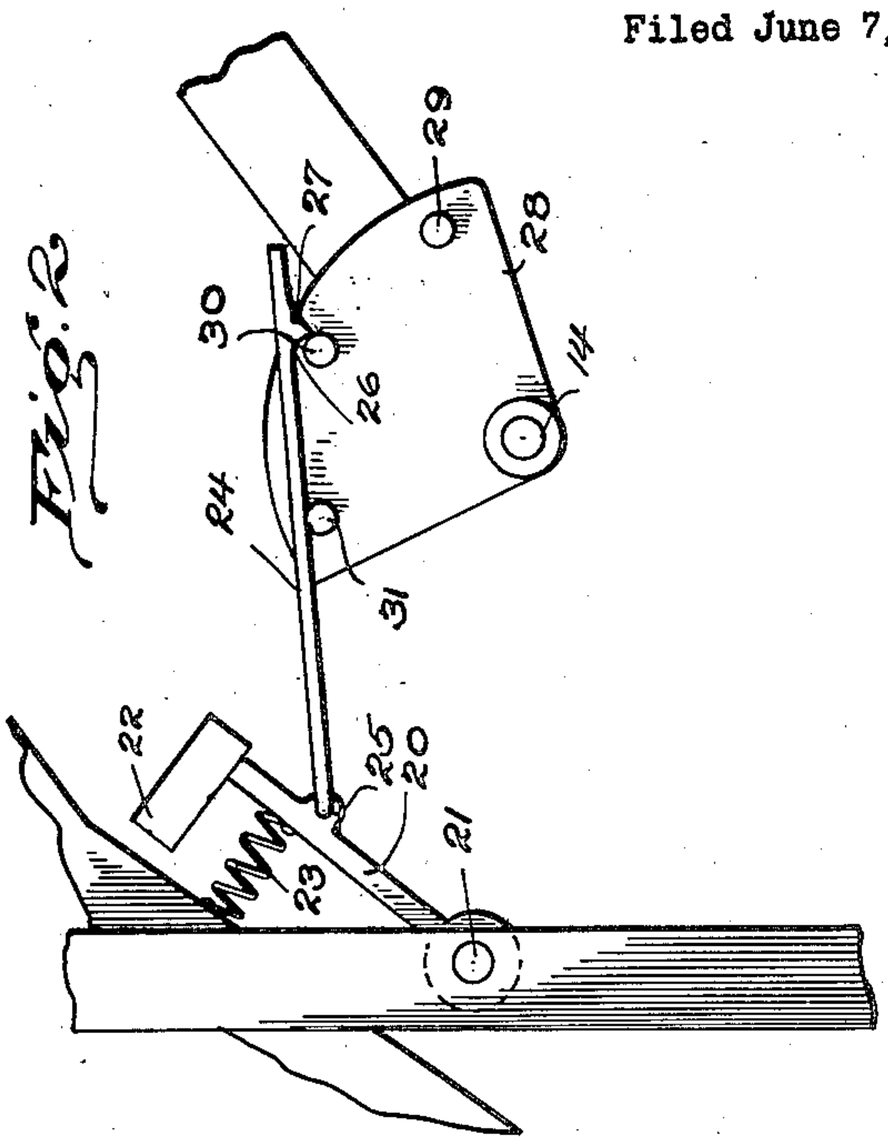

Fig. 1

INVENTOR.

Samuel Shafer Jr.

BY John S. Barker

ATTORNEY.

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SAMUEL SHAFER, JR., OF MILWAUKEE, WISCONSIN, ASSIGNOR TO CHAIN BELT COMPANY, OF MILWAUKEE, WISCONSIN, A CORPORATION OF WISCONSIN.

CONCRETE-MIXING MACHINE.

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This invention relates to concrete mixing machines, and has for one of its objects to provide a device for vibrating or jarring the sub-chute which directs the dry materials from the loading skip into the mixing drum, to the end that any materials which may stick to the walls of the sub-chute will be jarred loose, and the loading of the drum thereby facilitated.

A further object of the invention is to provide a vibrator of the class described which will be automatically actuated through the lowering movement of the skip.

A still further object of the invention is to provide a device of the class described which will be simple in construction, comparatively inexpensive to manufacture and install, and more efficient in action than those which have been heretofore proposed.

With the above and other objects in view which will appear as the description proceeds, the invention consists in the novel details of construction, and combinations of parts more fully hereinafter described, and particularly pointed out in the appended claims.

Referring to the accompanying drawings forming a part of this specification, in which like reference characters designate like parts in all the views;

Figure 1 is a diagrammatic side elevational view of a typical form of concrete mixer, with a vibrating apparatus constructed in accordance with the present invention associated with the sub-chute and loading skip thereof; and

Fig. 2 is an enlarged fragmentary elevational view of the vibrating apparatus, with the parts shown in a different position.

Referring more particularly to the said drawings, the concrete mixer is provided with a frame 10, in which is mounted the mixing drum 11, driven in the usual and well known manner from the motor, not shown. The loading skip 12 is provided with the arms 13, which are pivotally mounted as at 14, in the frame 10; and the said skip in its raised position, indicated in dotted lines in Fig. 1, is adapted to discharge its contents into the sub-chute 15, which guides the said contents into the drum 11, as will be readily understood. The skip is raised by means of the cable 16 and winding drum 17, and is lowered by gravity, in the usual manner.

The vibrating apparatus constituting the present invention comprises an arm 20, pivoted at 21 to a porton of the frame 10, and provided with a head 22 which is adapted to engage the sub-chute 15, as shown in Fig. 1, under the action of the tension spring 23. A bar or rod 24 is pivotally connected to the arm 20 at 25, and is provided with a hook or projection 26, having an inclined or sloping back surface 27. A sector 28, connected to and movable with the skip arm 13, is provided with a plurality of arcuately spaced pins or studs 29, 30, and 31, best shown in the detail views. The said pins or studs project outwardly from the sector, and the rod or bar 24 is arranged to rest thereon, and have its hook member 26 successively engaged thereby, as the sector moves in a clockwise direction (as viewed in Fig. 1) when the skip is lowered.

During such movement, the pin 29 first engages the hook member, and thereby moves the bar 24, together with the arm 20 and head 22 toward the right, as viewed in Fig. 1, against the tension of the spring 23, thus withdrawing the head 22 from contact with the wall of the sub-chute 15. Continued movement of the sector brings the pin 30 into engagement with the under surface of the bar 24, and lifts the said bar, thereby disengaging the hook 26 from the pin 29, whereupon the spring 23 draws the arm 20, head 22, and rod 24 toward the left, causing the head to strike the sub-chute a sharp blow thereby loosening any material which may have adhered to the walls thereof. Further movement of the sector causes the pins 30 and 31 to repeat the cycle of movements just described, as will be readily understood. During the reverse motion of the sector, as the skip is being raised, the pins or studs slide over the inclined face 27 of the hook member 26 without imparting movement to the bar 24, other than to slightly rock the same about its pivot 25.

While one form of the invention has been illustrated and described, it is obvious that those skilled in the art may vary the details of construction, as well as the precise arrangement of parts, without departing from the spirit of the invention, and therefore it is not wished to be limited to the above disclosure, except as may be required by the claims.

What is claimed is:

1. In a concrete mixing machine, the com-

bination with a loading skip and a sub-chute adapted to receive material from said skip, of means operable by the movement of said skip for striking said sub-chute to loosen material adhering to the walls thereof.

2. In a concrete mixing machine, the combination with a loading skip adapted to be raised and lowered, and a sub-chute for receiving material from said skip when in its raised position, of means operable by the lowering movement of said skip, for striking said sub-chute to loosen material adhering to the walls thereof.

3. In a concrete mixing machine, a loading skip; means for raising and lowering said skip; a sub-chute for receiving material from said skip; a vibrator for striking said sub-chute to loosen material adhering to its walls; and means movable with said skip for actuating said vibrator during the lowering movement of said skip.

4. In a concrete mixing machine, a loading skip pivoted for vertical swing; a sub-chute for receiving material from said skip; a pivoted arm adapted to strike said sub-chute to loosen material adhering to its walls; means normally urging said arm into engagement with said sub-chute; and means associated with said skip for withdrawing said arm from engagement with said sub-chute and releasing it, whereby said first named means may return it.

5. In a concrete mixing machine, a loading skip pivoted for vertical swing; a sub-chute for receiving material from said skip; a pivoted arm adapted to strike said sub-chute to loosen material adhering to the walls thereof; a spring urging said arm into engagement with said sub-chute; a hook member carried by said arm; and means movable with said skip for engaging said hook member to withdraw said arm from engagement with said sub-chute.

6. In a concrete mixing machine, a loading skip pivoted for vertical swing; a sub-chute for receiving material from said skip; a pivoted arm adapted to strike said sub-chute to loosen material adhering to its walls; a spring urging said arm into engagement with said sub-chute; a bar pivotally carried by said arm, provided with a hook portion; and a stud movable with said skip for engaging said hook portion to withdraw said arm from said sub-chute.

7. In a concrete mixing machine, a loading skip pivoted for vertical swing; a sub-chute for receiving material from said skip; a pivoted arm adapted to strike said sub-chute to loosen material adhering to its walls; a spring urging said arm into engagement with said sub-chute; a bar pivotally carried by said arm, provided with a hook portion; and a plurality of studs movable with said skip, adapted to successively engage said hook portion and withdraw said arm from said sub-chute, successive studs first engaging said bar to disengage the hook portion from the preceding stud, whereby said sub-chute is struck a plurality of successive blows by said arm.

SAMUEL SHAFER, Jr.