

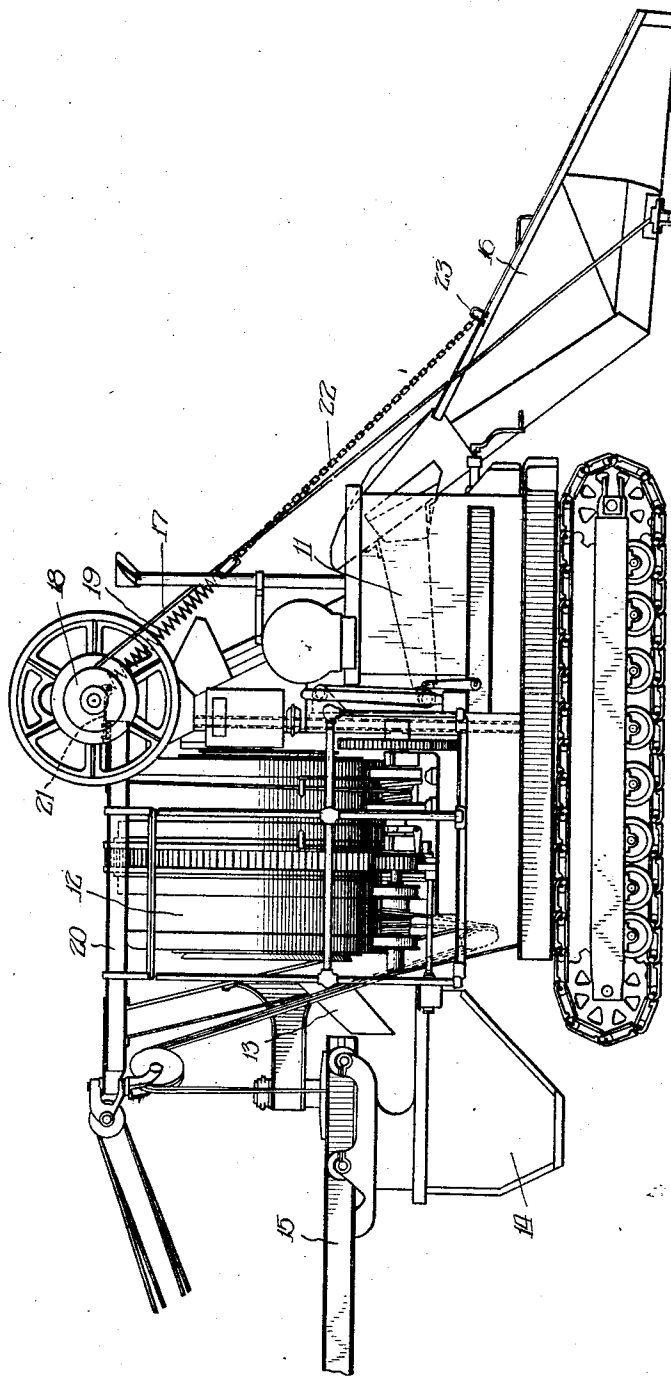
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SNUBBER FOR CONCRETE MIXER SKIPS

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Witness:

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UNITED STATES PATENT OFFICE

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SNUBBER FOR CONCRETE-MIXER SKIPS

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This invention relates to a new and improved snubber for concrete mixer skips and more particularly to a snubber of this character adapted to have the effect of counterbalancing the distributing bucket of the mixer.

The invention is particularly applicable to movable mixers of the type commonly called pavers which have a relatively long boom serving as a trolley to carry a distributing bucket. This boom extends from the forward end of the paver, and the bucket, when loaded with a batch of concrete mixed by the drum during the mixing operation, may be run out to the end of the boom to discharge the concrete at that point. The weight of the bucket and concrete at the end of the boom exercises a very considerable tilting moment and tends to tilt the mixer forwardly. A skip is located at the rear of the paver and is adapted to receive a full charge of the materials to be mixed and then to be elevated to discharge the material into the mixing drum. When in its lower position the skip normally rests upon the ground. The skip is raised and lowered for every batch of material and the skip itself is of considerable weight. The movement of this skip also has a jarring effect upon the paver and its tilting moment varies widely at different positions. When its rests upon the ground the load is taken entirely by the ground and it has no tilting effect on the mixer. As it is lifted from the ground with its load of materials it exercises a very pronounced tilting effect.

It is an object of the present invention to provide a new and improved snubber for the loading skip of concrete mixers or pavers and more particularly such a snubber which tends to eliminate sudden strain upon pavers due to movement of the skip.

It is a further object to provide a construction of this character in which the snubber renders the load upon the paver, due to the skip, more uniform throughout the skip movement.

It is an additional object to provide snubbers of this type which serve to cause the skip to tend to counterbalance the distributing bucket.

Other and further objects will appear as the description proceeds.

I have illustrated one form of my invention in the accompanying drawings, the single figure of which shows a side elevation, partly broken away, of a paver with my invention attached thereto.

The paver 11 is provided with the mixing drum 12, the discharge chute 13, the distributing bucket 14, and the distributing boom 15. The loading skip 16 is adapted to be drawn up by means of cables 17 passing over pulleys 18 and in its upper position discharges its contents into the mixing drum 12. The snubber springs 19 are connected to the upper portion of the mixer frame 20 at points 21. The lower ends of these springs 19 are connected by chains 22 to the skip 16 at points 23.

In the normal operation of the paver the sand, aggregate and cement are placed in the skip 16. The pulleys 18 are then rotated to wind up the cables 17 and swing the skip upwardly to discharge the material into the mixer drum 12. Water is added by any suitable means. After the concrete is sufficiently mixed it is discharged by chute 13 into the distributing bucket 14. This bucket 14 is then run out by any suitable means to the desired point on the boom 15, and the bottom of the bucket is opened to discharge the concrete.

While the first batch is being mixed in the drum the skip 16 is being filled with another lot of material which is introduced into the drum without loss of time as soon as the first batch is discharged therefrom. It will be understood that the operation is continuous and that while one batch is being run out into the bucket 14, a second is being mixed in the drum and the third is being deposited in the skip.

The skip normally rests upon the ground which, except for the connection afforded by springs 19 and chains 22, would, at this time, take the full load of the skip and its contents. At the moment at which the loaded skip is raised from the ground the full weight of the skip and contents exercises a large tilting moment upon the mixer. The springs

19 and chains 22 tend to equalize the load and also to cushion the lower part of the downward movement of the skip so that it does not bang down heavily upon the ground. The amount of energy stored in the springs 19, when the skip is upon the ground, may be varied according to the circumstances. I have found that by storing a load of fifteen hundred pounds in the springs with pavers of normal size, very satisfactory operation may be had. Even when resting upon the ground, therefore, the springs exercise a pull of fifteen hundred pounds upon the upper portion of the paver frame which has a very material effect in counterbalancing the weight of the bucket when it is run out upon the boom with a batch of concrete.

My improved snubbers, therefore, render the paver more stable in operation and cushion the downward movement of the skip so as to render the paver less noisy and less subject to vibration and jar in operation. They also prolong the life of the skip as it is not injured by hitting the ground so heavily when lowered. The energy stored in the springs also aids in the first portion of the lifting of the skip when the skip and its load are so located as to exercise the greatest resistance to raising and thus reduces the power required for this purpose.

I have shown one form of my invention applied to one specific form of paver by way of illustration, but it is to be understood that it is capable of use with other forms of mixers and I contemplate such changes and modifications as come within the spirit and scope of the appended claims.

I claim:

1. In a concrete mixer, a frame, a discharge boom and bucket extending from one side of the frame, a loading skip upon the other side of the frame, a hoisting cable connecting the skip and the upper portion of the frame, and means in addition to said cable permanently connecting the skip to the upper portion of the frame whereby the skip exerts a load on the frame when the skip rests on the ground in its lower position.

2. In a concrete mixer, a frame, a discharge boom and bucket extending from one side of the frame, a loading skip upon the other side of the frame, a cable connected to the skip and an upper portion of the frame for raising the skip, and means connecting the skip to the frame whereby the skip exerts a load on the frame when the skip rests on the ground in its lower position, said means comprising a spring and flexible connection between the skip and the frame connected to the frame adjacent the connection of the cable thereto.

Signed at Milwaukee, Wisconsin, this 16th day of July, 1926.

ADOLPH W. RYBECK.