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R. A. BECKWITH

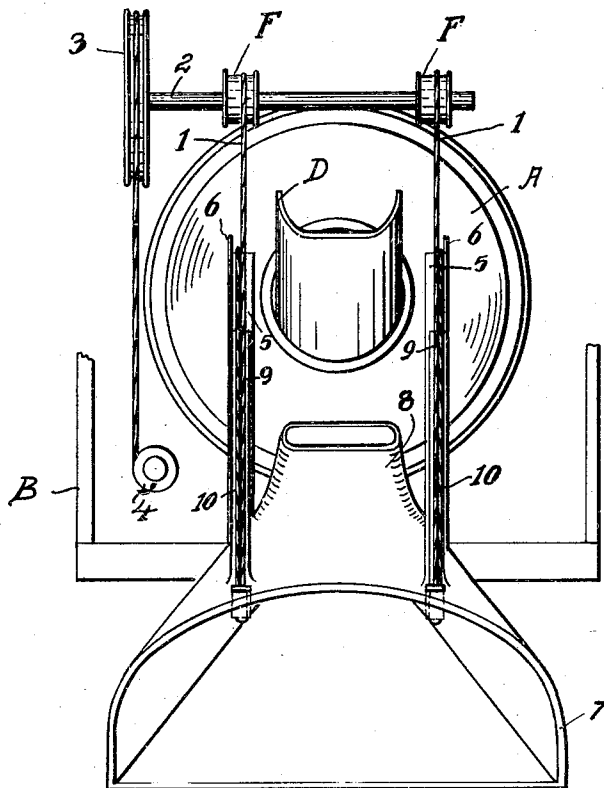
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LOADING SKIP

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2 Sheets-Sheet 2

Fig. 3.



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LOADING SKIP

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The present day construction of paving machines generally includes charging means for the mixing drum in the form of a pivoted loading skip which is located endwise with respect to the machine. This loading skip is adapted to assume a position on the ground wherein it receives aggregates to be charged into the mixer, and is susceptible to operation so that it may be moved into a position in which the aggregates are discharged into the drum. In the now known types of loading skips, a large amount of apparatus is necessarily included in the paving machine with the operation of the skip as their only function.

I propose by this invention to eliminate to a certain degree the apparatus included in the paving machine that is directly associated with the skip and its operation. In attaining this end, I employ a skip of particularly novel construction which is characterized by the utmost simplicity.

More particularly, I avail of rolling members in the form of lobes which are rigidly affixed to the skip itself and which, upon movement on inclined trackways incorporated into the construction of the mixer, move the loading skip from a loading to a discharging position, or vice versa.

A particularly noteworthy feature of the invention is the arrangement of skip hoist cable means employed in conjunction with the lobes on the skip. This feature minimizes to the greatest possible extent, the amount of force needed to elevate the skip. In the old construction very often a large amount of energy was expended due to the pivoted arrangement of the skip wherein pull was exerted from the point below the radial center of the skip's arcuate travel. My novel construction completely obviates this condition. A more particular object of the invention is the provision of means for insuring the smooth and even movement of the skip during its operation. In achieving this object stabilizing cables are employed which are properly arranged with respect to the track ways and lobes to govern movement of the latter with the former. Preferably two cables are employed in conjunction with each

lobe and its corresponding way. One cable has one end fast to the upper end of the way with its other end anchored adjacent to the extremity of the lobe resting on the track when the skip is in loading position, while the other cable has one end affixed to the lower end of the track and is passed over the lobe with its other end anchored to the skip adjacent the other extremity of the curb working surface of the lobe member.

Another point of novelty included in a skip made in accordance with my invention that is worthy of stressing, is the particular construction of the skip itself. This member includes a wide open mouth which is adapted to receive the aggregates and has at its other end a constricted throat or neck portion terminating in a discharge opening. The embodiment of these last mentioned features in my novel skip enable it to assume a position in which the complete discharge of the aggregates into the drum is assured. For the purpose of insuring the operation of the lobes on a track way during all stages of operation and to positively inhibit their leaving said track ways, their latter parts are provided with flanges which prevent any sidewise motion of the lobe members. In a preferred construction, the lobe members are provided with grooves which receive the various hoisting and stabilizing cables.

Further, more detailed objects and advantages, will in part become apparent and in part be hereinafter stated, as the description of the invention proceeds. For a full and more complete understanding thereof, reference may be had to the following description and accompanying drawings, in which,—

Figure 1 is a side view of a loading skip made in accordance with my invention shown in elevation, and applied to a paving machine, the latter being shown fragmentarily and diagrammatically, a charging position of the skip being illustrated in dotted lines.

Figure 2 is a view in perspective of a skip, bringing out particularly, the arrangement of the lobes.

Figure 3 is an end view showing the skip as applied to a paving machine, parts of the latter being omitted.

Figure 4 is a fragmentary illustration of a portion of one of the lobes, bringing out particularly the groove construction thereof.

In Figures 1 and 3, parts of a mixing machine with which this invention is particularly related, are shown, and which are, generally speaking, a mixing drum A mounted on framework B, carried by a tractive support C. A discharge chute D is properly located with respect to the mouth of mixing drum A. Skip hoist drums are shown at F, and have skip hoist cables which are wound thereabout. Drums F are operated through a driving connection consisting of shaft 2, and drums 3 and 4, the latter being driven through a medium of suitable connection with the power plant of the apparatus.

Inclined ways 5, are mounted on the framework B and have one end adjacent to the chute D, while the other ends are slightly spaced above the surface upon which the paver is operating. The outer edges of the ways 5 are preferably provided with flanges 6, for the purpose to be hereinafter set forth.

A loading skip 7, has a narrow throat or spout 8, through which aggregates are delivered into the chute D, when the skip is in a discharging position. Lobes 9 are rigidly associated with, and fastened to the skip 7, and are provided with grooves 10. The hoisting cables 1 pass over the lobes 9, resting in the grooves 10, and have their ends affixed to the skip adjacent to the termination of the lobe, as shown at 11. It will be apparent that when the cable 1 is wound up on drums F, the lobes 9 are caused to roll on trackways 5, being held thereon by the flanges 6. This action moves the skip from the full line position of Figure 1, in which position it is adapted to receive aggregates, into the dotted line position of this figure, wherein the aggregates are passed into the mixing drum A.

The skip is also provided with two sets of stabilizing cables, shown at 12 and 13. The cables 12, each have one of their ends made fast to the upper end of the inclined ways 5, while the other ends are made fast to the skip adjacent to the lobes. The cables 13 have their ends made fast to the bottom of the inclined ways 5, while their other ends are affixed to the skip at 11. As the lobes operate on the trackways, one of these lobes is wound thereon while the other is unwound therefrom. Upon reverse movement of the lobes, reverse action takes place.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent in the United States, is:—

1. In a concrete mixing machine of the class described, the combination with a loading skip having a discharge end, of roller means affixed to the skip adjacent to the discharge end, track ways on which the roller means are adapted to operate, and means including cables, parts of which pass over said

roller means and in contact therewith for causing operation of the roller means on the track ways to move the skip into various operative positions.

2. In a concrete mixing machine of the class described, the combination with a loading skip, of lobes thereon, and instrumentalities for moving the skip from loading to discharging position with a rolling swinging action of the skip, said instrumentalities including cables, said cables passing over said lobes and in contact therewith.

3. In a concrete mixing machine of the class described, the combination, with inclined track ways, of a skip including roller members adapted to operate on the track ways, and cable hoist means engaging and imparting to the roller members a rolling action on the track ways to move the skip from loading position to discharging position.

4. Concrete mixing apparatus of the class described, comprising, in combination, track ways adapted to terminate adjacent a mixing drum of said apparatus, a loading skip having lobes for operating on the track ways, and means for causing movement of the lobes on the track ways, said means comprising hoisting cables passing over and in contact with the lobes and connected to the skip at a point in proximity to the lobes.

5. Concrete mixing apparatus of the class described, comprising, in combination, a skip having a large receiving mouth and a constricted neck portion with a discharge opening, said neck portion being inclined at substantially an acute angle with respect to the mouth portion and means for moving said skip from loading to discharging position.

6. Concrete mixing apparatus of the class described, comprising, in combination, track ways adapted to terminate adjacent to the mixing drum of said apparatus, a loading skip having lobes for operating on the track ways, and means for causing movement of the lobes on the track ways, said means comprising hoisting cables passing over and in contact with the lobes and connected to the skip at a point adjacent to the lobes.

In testimony whereof I affix my signature.

RAYMOND A. BECKWITH.