H. O. STAMP.

CHARGING DEVICE FOR CONCRETE MIXERS.

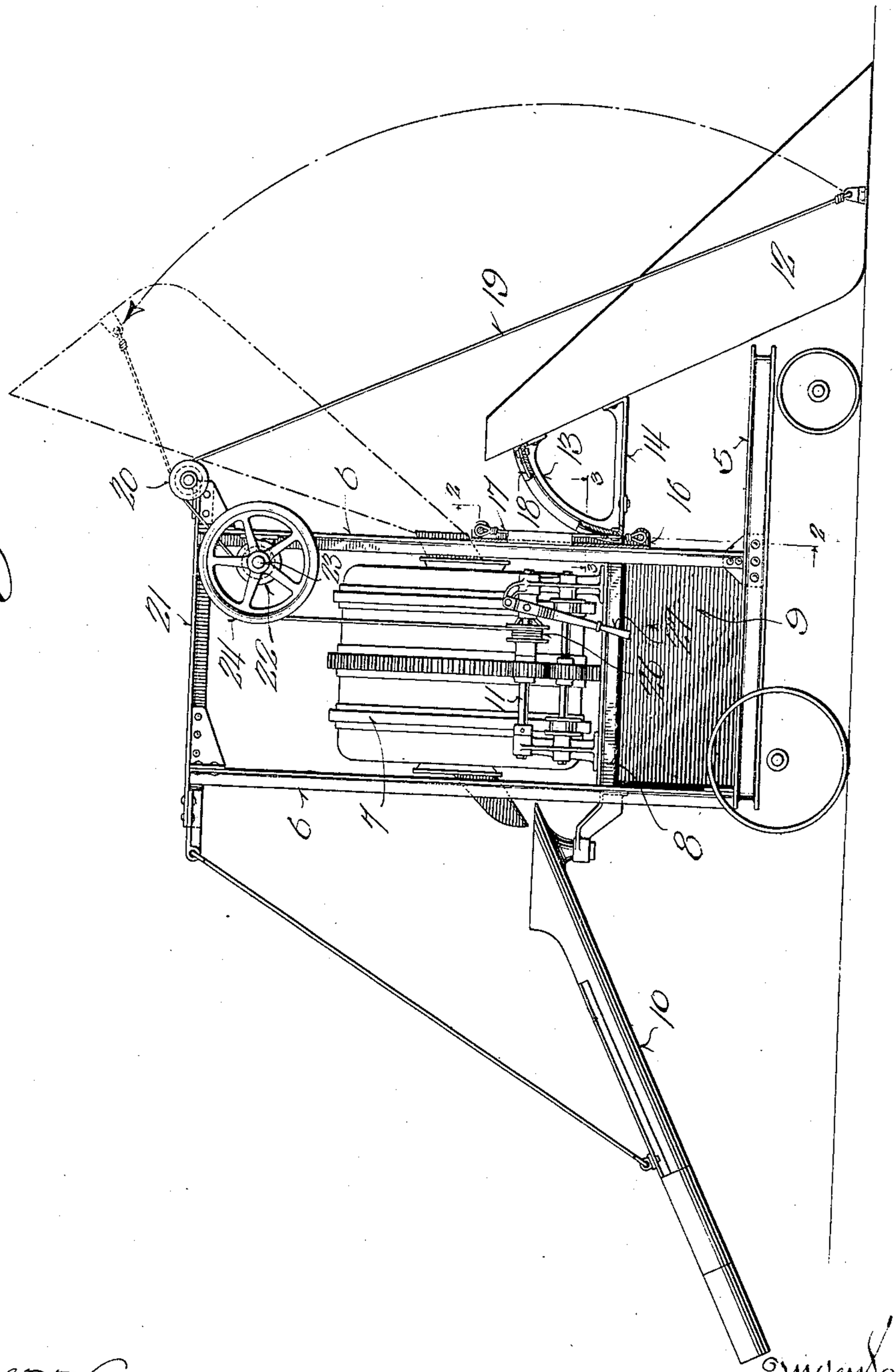
APPLICATION FILED MAY 12, 1917.

1,298,114.

Patented Mar. 25, 1919.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses:

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By Geo. W. Young

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2 SHEETS—SHEET 2.

Fig. 2.

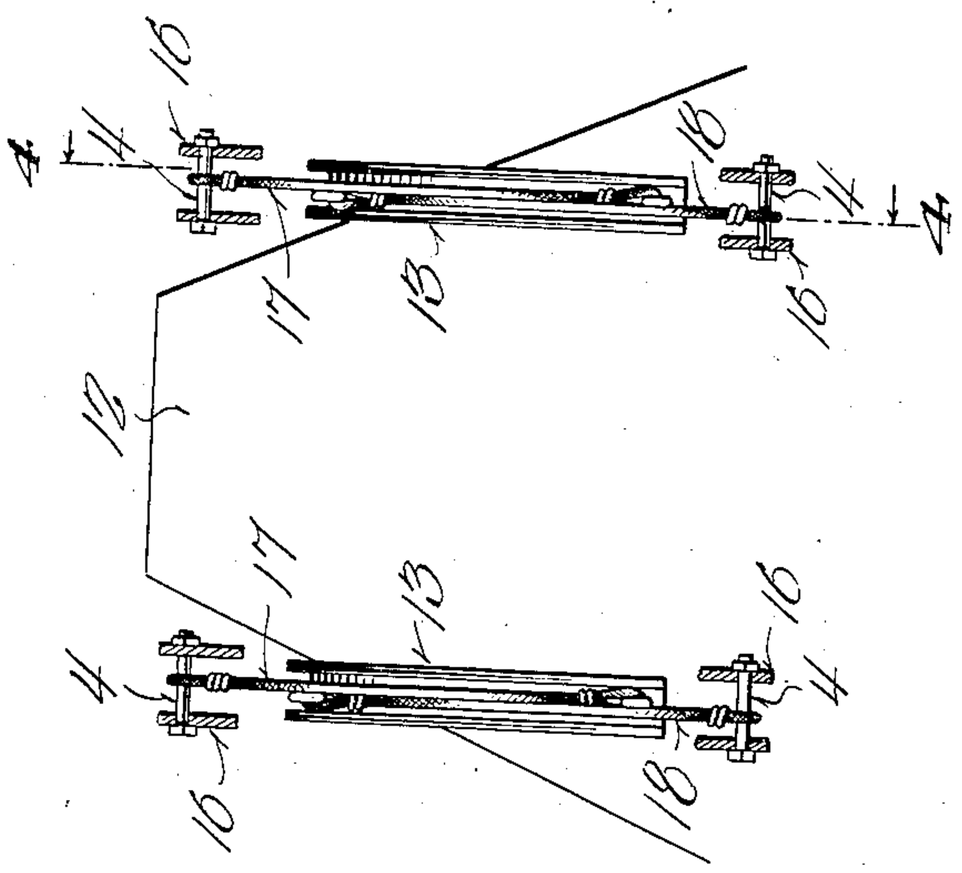


Fig. 4.

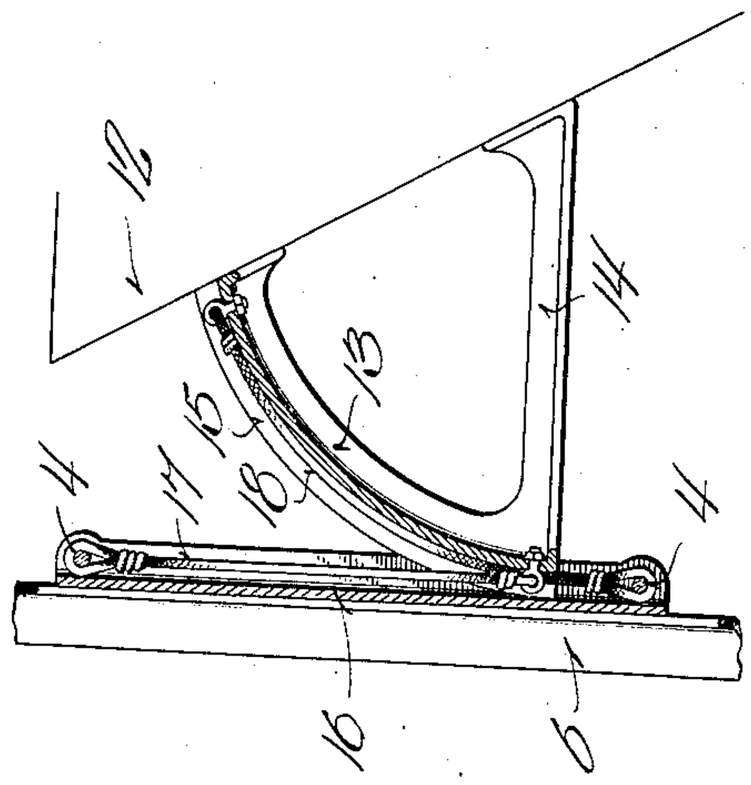
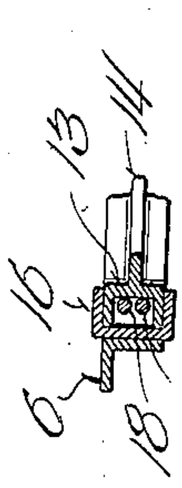


Fig. 3.



Witnesses:

Inventor:
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UNITED STATES PATENT OFFICE.

HUGO O. STAMP, OF MILWAUKEE, WISCONSIN.

CHARGING DEVICE FOR CONCRETE-MIXERS.

1,298,114. Specification of Letters Patent. Patented Mar. 25, 1919.

Application filed May 12, 1917. Serial No. 168,128.

To all whom it may concern:

Be it known that I, HUGO O. STAMP, a citizen of the United States, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Charging Devices for Concrete-Mixers; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to certain new and useful improvements in loading devices for concrete mixers and refers particularly to loading devices for mixers of the high drum paving mixing type including a bucket or skip pivotally mounted to swing from a position on the ground to a raised position wherein the load is dumped by gravity into the mixer.

Such devices usually include a cable extending from the top of the mixer frame for procuring lifting and lowering movements of the skip, and a considerable inconvenience heretofore encountered in connection with such loading devices has been the difficulty of procuring a proper leverage for the cable, in view of the necessarily large size of the skip and in view of the necessary length of its pivotal movement.

Devices have been heretofore provided involving a pivoted frame to which the skip is in turn pivoted, but such devices have been open to the objection of an irregular and hence somewhat slow movement.

Devices have also been provided embodying a track frame for the skip, but the provision of such a track frame involves an undesired additional amount of structure.

It is therefore the object of my invention to provide a means for raising and lowering the skip of the concrete mixer wherein an efficient leverage is at all times provided for the lifting cable, and whereby a continuous steady movement of the skip is procured from its starting to its dumping position, to thus permit an easy and rapid operation of the skip.

A further object resides in the provision of a changeable or shiftable pivotal connection for the skip with the mixer frame so arranged that the skip will not at any time pass beyond its center of gravity or so near thereto as to retard its downward movement, thereby insuring its proper return to lowered position, and so arranged whereby the continuously uniform movement of the skip may be effected.

With the above and other objects and advantages in view, the invention resides more particularly in the novel combination, arrangement and formation of parts hereinafter described and pointed out in the appended claims.

In the drawings:

Figure 1 is a side elevational view of a concrete mixer having a skip associated therewith in a manner embodying my invention.

Fig. 2 is a vertical sectional view through the pivotal connection of the skip on the line 2—2 of Fig. 1.

Fig. 3 is a fragmentary horizontal sectional view on line 3—3 of Fig. 1, and

Fig. 4 is a vertical longitudinal sectional view through the pivotal connection on the line 4—4 of Fig. 2.

Referring now more particularly to the accompanying drawings, 5 designates the base frame of a concrete mixer provided with the corner standards 6 between which the mixing drum 7 is supported on beams 8 disposed above the engine space 9 of the mixer. The type of mixer just described upon which my invention is especially adapted for use is of the high drum paving mixer type allowing the use of a discharge spout 10 associated with the discharge end of the drum, and driven from the drum is the usual gear shaft 11 disposed at one side thereof.

The bucket or skip 12 is of usual shape, comprising bottom sections disposed at an obtuse angle and side walls taperingly reduced toward the discharge end of the skip. For securing the skip to the forward standards 6 of the mixer frame, arcuate rockers bars 13 are secured to the bottom of the skip adjacent its discharge end and extend inwardly therefrom and terminate in brace-legs 14 secured also to the bottom of the skip. These arcuate rocker bars are each provided with outturned side flange portions 15 which engage between the side flange portions of vertically disposed channel track beams 16 carried by the intermediate portions of the forward standards 6. A flexible cable 17 is secured at the upper end of the channel beam 16 and at the lower or outer end of the rocker bar. A second flexible cable 18 is secured to the lower end of the channel beam and to the upper or inner end of the rocker bars, these cables being disposed between the flanges 15 of the rocker bars and said cables obviously

serve to retain the rocker bars against displacement from the channel beams, and at the same time permit a rocking movement of the bars against the beam to thus afford a shifting pivot for the skip upon upward movement of the skip. It is incidentally noted that instead of a pair of cables, a single cable could be employed for each rocker bar provided with an intermediate loop disposed about the rocker bar.

For raising and lowering the skip on this shiftable pivot, cables 19 are secured to the outer portions of the sides of the skip and these cables are trained about pulleys 20 carried by the forward ends of horizontal beams 21 at the upper extremities of the standards 6, said cables being wound on drums 22 carried by a shaft 23 supported by the forward standards. Also mounted on this shaft is a relatively large drum 24 on which is wound one end of a cable 25 which has its other end wound on a drum 26 on the shaft 11, rotation of this drum being controlled by a suitable and perferably conventional clutch including the actuating lever 27.

Thus an exceedingly simple and efficient skip has been provided which involves a minimum amount of structure and which permits a maximum compactness of structure. As indicated by the arrow in Fig. 1, the skip has a uniformly continuous movement to and from dumping position, to thus permit its rapid and easy operation, in contradistinction to heretofore provided loading devices of this type embodying abruptly shiftable pivot points.

It will also be apparent from the foregoing description taken in connection with the drawings that the outer end of the skip never passes its center of gravity or near enough thereto to retard its return movement, thereby insuring its ready return for reloading, while in the majority of the loading devices now in vogue, to empty the skip thereof, the same is drawn so near its center of gravity as to retard its return or downward movement.

What is claimed is:

1. A loading device comprising a support, a skip having a rolling and then pivotal connection with the support, and means for raising the skip from a loading to a discharging position, the pivot of the skip when in discharging position being relatively closer thereto than when in loading position, substantially as described.

2. A loading device comprising a supporting frame, a loading skip, an initial pivotal connection between said frame and skip when the skip is in a loading position, a final pivotal connection between the frame and skip when the skip is in discharging position, a continuously shifting pivotal connection between said frame and skip intermediate the said initial and final pivot points whereby said pivot points change from a position giving maximum initial leverage at the beginning of upward movement of the skip to a position giving a maximum return leverage when in discharging position, and hoisting means connected with the skip near its outer end for raising the same from loading to discharging position, substantially as described.

3. A loading device comprising a supporting frame, a loading skip, means for raising and lowering said loading skip, and means operative incidental to the application of continuous substantially even lifting power to the skip for progressively reducing the speed of lifting movement of the skip, said means being operative to progressively increase the speed of lowering movement of the skip incidental to an even operation of said first named means.

4. In a high drum paving mixer, a loading device therefor comprising, in combination, a support, upwardly extending channel tracks carried by the support, a loading skip, arcuate rocker arms carried by the skip near its inner end and including outturned side flange portions engageable in the channels of the track members, flexible members secured at the end portions of the tracks and connected with the rocker arms to hold said arms in rocking and pivotal engagement with the track members, said rocker arms having an initial pivotal movement, a rocking movement and then a final pivotal movement when the skip is being raised from loading to discharging position, the final pivotal movement of the skip being relatively closer to the skip than the initial pivotal movement whereby to provide a maximum initial leverage at the beginning of upward movement of the skip and a maximum return leverage when the skip is in discharging position, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee, in the county of Milwaukee and State of Wisconsin.

HUGO O. STAMP.