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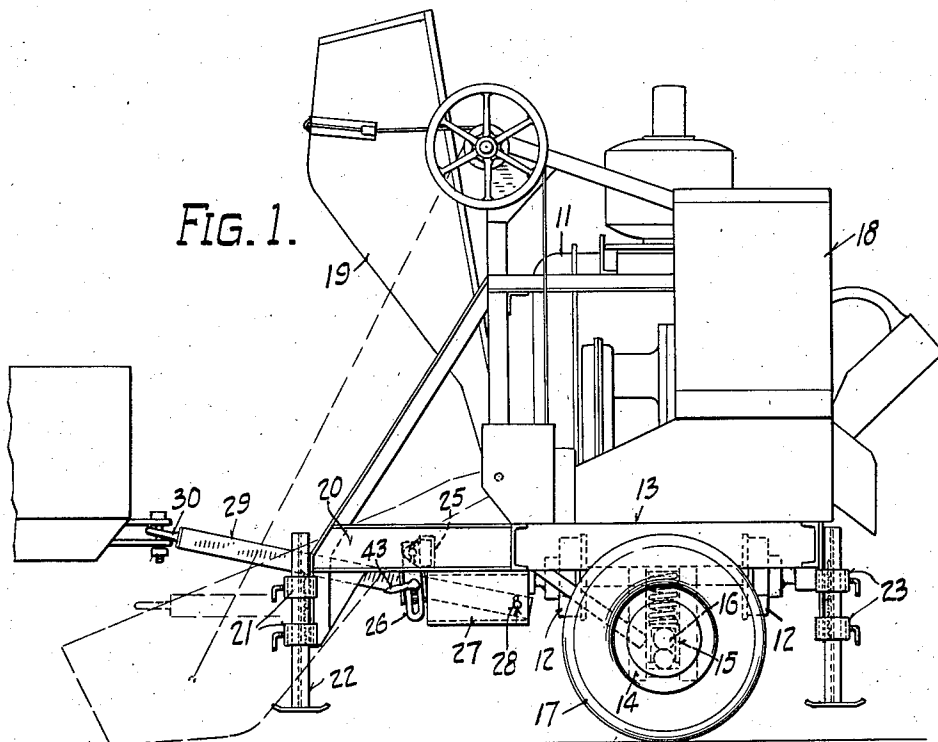
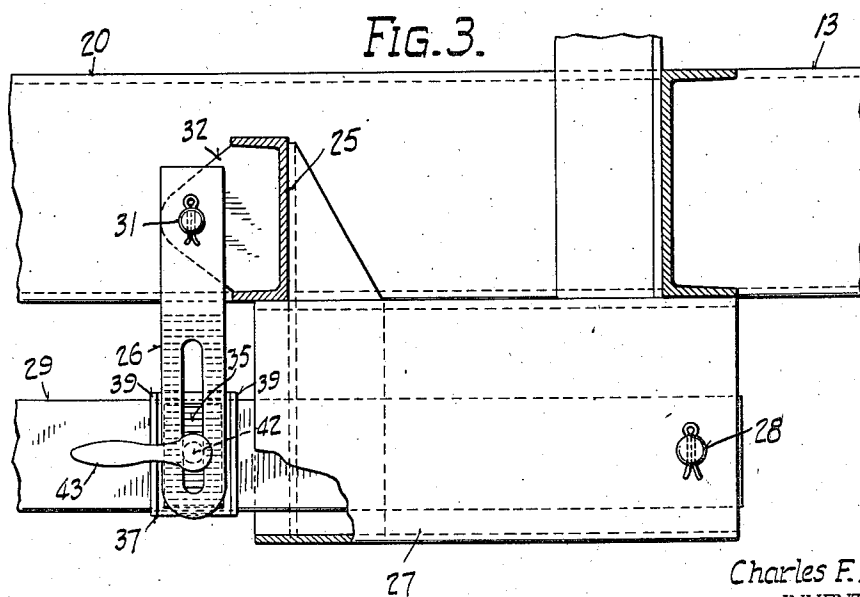
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TOWING ATTACHMENT FOR CONCRETE MIXERS

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TOWING ATTACHMENT FOR CONCRETE MIXERS

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This invention relates to towing attachments for concrete mixers of the two-wheeled type and provides means for adjusting the elevation of the forward end of such attachments in order that the load on the vehicle may at all times be centered closely over the vehicle axle and will not be radically displaced with respect thereto regardless of the height of the attachment on the rear of the truck or other traction device.

Concrete mixers mounted on two wheeled trailers have been used extensively in the building industries because of the ease with which they can be handled and spotted at the building site. Such machines are by necessity of heavy construction, certain models weighing as much as 6500 pounds, and the center of gravity is relatively high, as a consequence of which, if the machine is not centered closely over the axle and maintained in this position, considerable moment of force is developed tending to tilt the machine in one direction or the other.

It has been the practice to design such machines with the center of mass considerably ahead of the wheels, using a towing arrangement which includes a tongue, rigidly secured medially of the forward end of the frame. This is done to insure a down-pull on the truck and prevent the mixer from ever tipping over backward with disastrous consequences. Under this arrangement, however, there is a tremendous load for the operators to lift in order to hitch the machine to a towing device. Either extra men are required to lift the tongue or else there is danger of personal injury if an insufficient number of men attempt to do the job.

It is an object of the present invention to provide a hitching attachment for such vehicles which will enable the weight of the load to be better distributed over the wheels; which will be easier and safer to handle; and which will be strong and durable in service.

Another object of the invention is to provide such an attachment as will accommodate towing connections of varying heights without causing additional tipping of the machine and which in combination with the means for supporting the vehicle when stationed may be connected without lifting or tilting the machine at all.

With the above objects in view, the invention resides in the novel construction, combination and arrangement of parts, as hereinafter described and claimed.

Reference is made to the drawings, in which like numbers are used to designate like parts throughout, and in which:

Figure 1 is a side elevation of a mixing machine and towing attachment, the latter being connected to a truck for transportation;

Figure 2 is a plan view of the frame for the machine shown in Figure 1;

Figure 3 is an enlarged side elevation of the connection between the tongue and mixer frame;

Figure 4 is an enlarged front elevation of the tongue support, parts being broken away;

Figure 5 is a section taken on the line 5—5 of Figure 4.

In the drawings the numeral 11 represents the mixer drum which is mounted for rotation on rolls 12 carried by a frame generally designated 13. Brackets 14, depending at each side of the frame, have at their lower extremities housings 15 carried by an axle 16 on which the wheels 17 are mounted, and the machine may be tipped to and fro about this axle. The machine is also equipped with an engine 18 furnishing power for rotating the drum and a loading skip 19 arranged at the forward end of the frame and co-operating with an opening in the drum for charging the mixer. In general these elements are all conventional and are shown here for purposes of illustration.

Attached to the forward end of the frame 13 (see Figure 2) are channel members or side sills 20 spaced apart a sufficient distance to allow the throat portion of the skip 19 to pass between them when the skip is lowered. At the forward extremities of channel 20 vertical outriggers 21 are provided, having legs 22 adjustable in elevation to additionally support the machine when it is stationed at the site where mixing is done. A pair of outriggers 23 are also provided at the rear of the frame, these outriggers, when lowered, insuring that the machine cannot tip over backward and also when the machine is lifted off the wheels providing a means of support in combination with the forward outriggers entirely independent of the wheels.

Rigidly secured to channel members 20 and spaced a short distance ahead of the main frame 13 is a cross member 25 having brackets arranged medially thereof to which are pivotally connected a pair of depending links 26, the lower extremities of which adjustably support a towing attachment as will be more fully described. Aligned with links 26 and hanging from the forward cross member of the main frame is a box-shaped member 27 apertured on opposite sides to accommodate a pin 28.

The towing attachment, which is illustrated, comprises a tongue 29, of box-like cross section,

its forward end carrying an eye 30 for attachment to the towing machine, and its opposite end which extends within member 27 being apertured to accommodate pin 28 previously described. In this manner the tongue is pivoted and by locking the tongue at a point removed from its pivotal support, the forward end may be held at any desired elevation. This may be accomplished as follows:

Links 26 are pivoted on a pin 31 extending between brackets 32 carried by the cross member 25, the two links being spaced apart to straddle tongue 29. The lower portion of each link is provided with serrations 33 on the side facing the tongue, these serrations being arranged at right angles lengthwise of the link or generally parallel to the tongue. A bar 35, of approximately the same width as a link 26, is disposed between the tongue and each of the links, each bar having mating serrations 36 arranged for locking engagement with serrations on the links. Lateral displacement of the serrations is to some extent prevented by channel shaped members 37, each of which has a web portion 38 arranged to lie flat against one side of the tongue while the channel flanges 39 accommodate with some clearance the side edges of the links 26.

Locking bars 35 are preferably secured or cast as an integral piece with channel members 37 and they are properly spaced with respect to the tongue by means of a bushing 41 to which they are secured and which extends through the tongue in a manner enabling pivoting thereof. The whole assembly is locked by means of a pin or bolt 42, which extends through aligned apertures at the lower extremities of links 26 and bushing 41, and a hand nut 43 engaging the threaded end of the bolt. When the hand nut 43 is loosened, the tongue may be pivoted about pin 28 to raise or lower the forward end. Such movement swings pin 42 and results in a displacement of the serrations on the links 26 with respect to the serrations on the locking bars 35, but since the locking bars are free to pivot on the tongue (within the clearance afforded between the channel flanges and the links), the serrations may be maintained in parallel relation in a variety of positions. Subsequently on tightening the hand nut, the tongue may be locked in adjusted position.

One of the principal advantages of the invention arises from the fact that the outriggers may be lowered and the machine firmly stationed while the tongue is still attached to the truck in such a manner that the weight of the machine is properly centered over the wheels. This is possible because in initially attaching the tongue its elevation may be adjusted to maintain the mixer at the proper angle of tilt for stationing on level

ground. When it is desired to subsequently move the machine, the tongue may be adjusted for connection to the truck, regardless of the height of the latter's attachment, and since the machine is supported by the outriggers, it is unnecessary to lift it.

It should also be appreciated that the adjustable attachment shown enables the tongue to be readily disconnected and removed from the machine, as is necessary in order to lower the skip when the machine is stationed. By providing outriggers at the forward end of the machine, well ahead of the main frame, the total load including that which is lifted by the skip is disposed between the forward outriggers and the vehicle axle.

The invention having been described, what is claimed is:

1. In a portable concrete mixer of the two-wheeled-type having a frame pivotally mounted on the axis of said wheels, a pair of adjustable outriggers disposed forwardly of said mixer, a towing attachment pivotally secured to said frame and means arranged rearwardly of said outriggers for locking said towing attachment in one of a plurality of pivoted positions with respect to said frame, whereby said attachment may be connected to a towing vehicle while said mixer is supported on said outriggers.
2. In combination with a two-wheeled vehicle having a concrete mixer mounted thereon, a frame having a pair of side sills extending in front of said mixer, a vertically adjustable leg mounted on the forward extremity of each of said side sills, a skip for loading said mixer arranged to be lowered between said legs, a towing device arranged to extend between said sills and to support said vehicle when said skip is held in elevated position, and means disposed rearwardly of said legs for locking said towing device with its forward end in one of a plurality of elevated positions whereby said device may be connected to a means of locomotive power while supported on said legs.
3. In a concrete mixer mounted on a two-wheeled vehicle, the combination of a frame having forwardly extending side bars, vertically adjustable outriggers supporting said side bars, a loading skip disposed for movement between said side bars, a transverse member connecting said side bars and lying below said skip, a towing member arranged for extension between said side bars when said skip is in elevated position, and means for attaching said towing member to said cross member, whereby the forward end of the towing member may be disposed in one of a plurality of elevated positions for attachment to a towing vehicle.

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