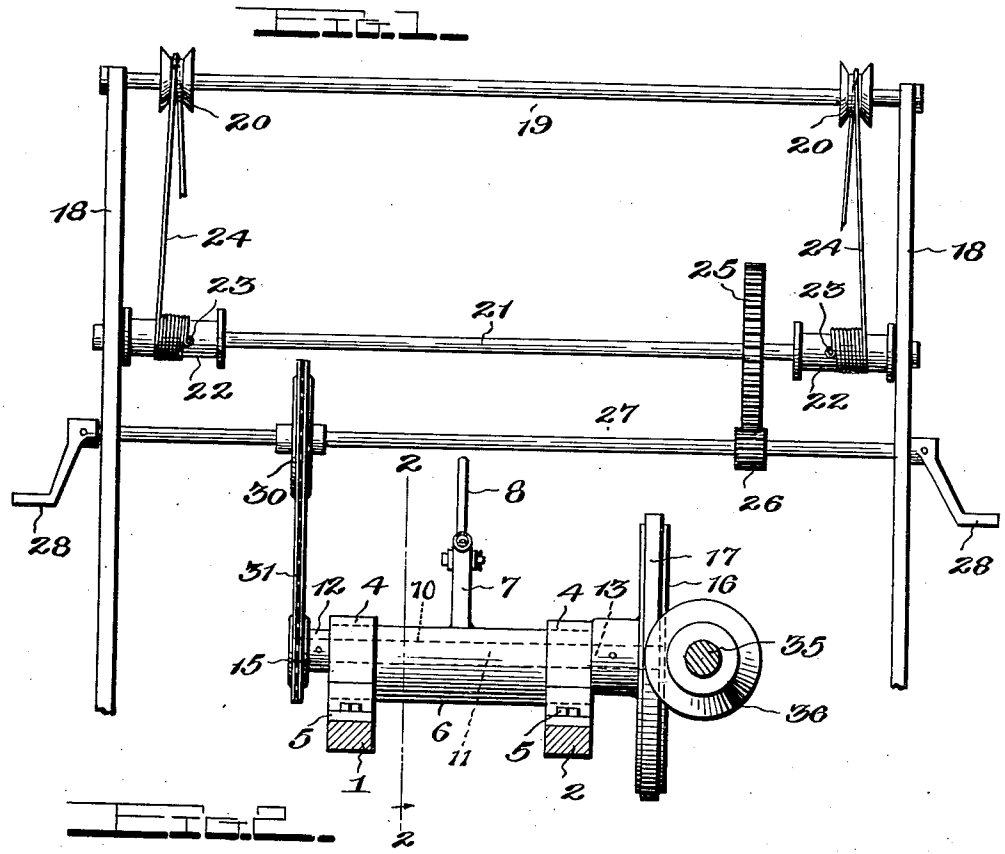
R. L. ARMSTRONG.

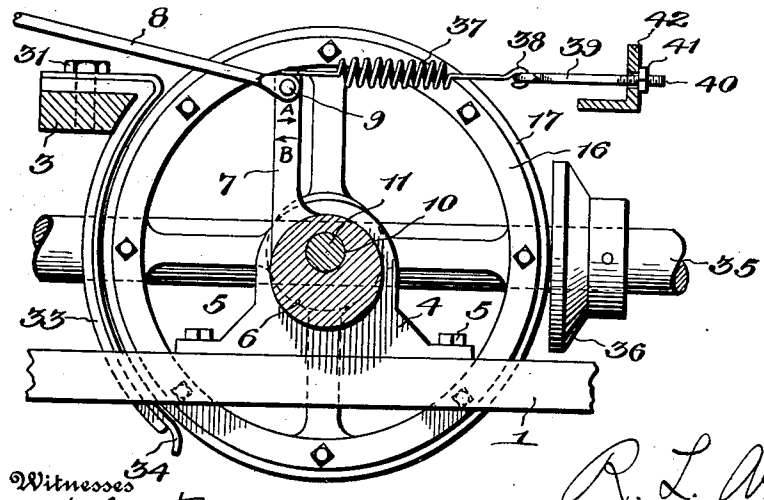
DRIVING MECHANISM.

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Witnesses

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DRIVING MECHANISM.

1,189,336. Specification of Letters Patent. Patented July 4, 1916.

Application filed January 12, 1915. Serial No. 1,857.

To all whom it may concern:

Be it known that I, ROBERT L. ARMSTRONG, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Driving Mechanism, of which the following is a specification.

This invention relates to trucks, and pertains more particularly to the type known as dumping trucks, in which one end of the body is elevated in dumping the body contents.

One of the objects of the invention is to provide a motor truck hoist in which the elevation of the body for dumping purposes can be accomplished either by power or manually, and by the use of but one lever, without disengaging the clutch, and while the truck is in motion.

A further object of the invention is to provide means for locking the body lifting mechanism when the body is in raised or dumping position.

A still further object of the invention is to provide locking means which is operable to lock the lifting mechanism regardless of whether the latter is power or manually operated.

Referring to the drawings: Figure 1 is an elevation of the body raising mechanism showing a portion of the beams of the truck in section; and Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1.

Referring more particularly to the drawings, 1 and 2 designate two of the longitudinal beams of the truck body and 3 one of the cross beams thereof. Secured to the longitudinal beams 1 and 2 are bearings 4 positioned at points directly opposite to each other, and secured in place by the bolts 5. Mounted to rotate in the bearings 4 is a shaft 6, and projecting upwardly therefrom is an integral arm 7 to the upper end of which is pivoted an operating link or lever 8 by means of the bolt 9. The shaft 6 is provided with a longitudinal bore 10 which is eccentric thereto, and extends throughout its entire length as shown in Fig. 1. Mounted in the longitudinal bore 10, is a shaft 11 which is adapted for rotary movement therein, and which has each of its ends 12 and 13 projecting beyond the ends of the shaft 6 and beyond the bearings 4—4. Suitably secured to the end 12 of the shaft 11 as a sprocket 15, and to the end 13 thereof is secured a wheel 16 the periphery of which is provided with a friction surface 17 for a purpose hereinafter set forth.

Suitably secured to the body frame of the truck in any suitable manner, is a pair of uprights or standards 18 in the upper ends of which is mounted for rotary movement a shaft 19. Secured to each end of the shaft 19 are grooved pulleys 20 for a purpose later set forth. Rotatably mounted in the vertical standards 18 at a point below the shaft 19 is a second shaft 21, and adjacent the ends of this shaft 21 are rigidly secured drums 22. Secured to each of the drums 22 as at 23 is a cable 24 which passes upwardly and over the pulleys 20, and has its free end attached to the end of the body of the truck (not shown). Mounted on or keyed to the shaft 21 is a gear wheel 25 which meshes with a gear wheel 26, rigidly carried by a third shaft 27 mounted in the vertical standards 18. On each end of the shaft 27 is a removable crank 28 by which the shaft may be manually operated to rotate the shaft 21 through the medium of the gears 26 and 25 to wind the cables 24 on the drums 22. Rigidly secured to the shaft 27 is a sprocket wheel 30 which is operatively connected to the sprocket 15 by the chain 31.

A curved or arcuate brake shoe 33 is bolted to the beam 3 and has its inner face provided with a friction surface 34. The shoe 33 is curved to conform to the shape of the wheel 16, and is engageable with the latter.

Extending longitudinally of the truck and in suitable driving connection with the engine not shown, is a shaft 35, which has rigidly secured thereto a friction wheel 36 adapted to engage wheel 16.

A spring 37 tensions arm 7 and is connected thereto at one end and at the opposite end is provided with a hook 38. The hook 38 is received by the hooked end of the bolt 39, the opposite end 40 of which is screw-threaded and passes through an opening in the cross beam 42. A nut 41 is threaded on the end 40 of the bolt 39, and bears against the cross beam 42 to form a means by which the tension of the spring 37 is adjusted.

To lift the body of the truck manually,

the shaft 27 is rotated by means of the cranks 28 which effects rotation of the shaft 21 by means of the gears 26 and 25, thereby winding the cables 24 on the drums 22. The wheel 16 is in the position shown in Fig. 2 when the mechanism is manually operated and owing to its being out of contact with either the shoe 33 or the friction wheel 36 is free to rotate.

When it is desired to raise the body of the truck by the engine, the operator moves the arm 7 by means of the link 8, thereby rocking arm 7 in the direction of arrow A and rotating the shaft 6, and owing to the eccentricity of the shaft 11 the wheel 16 is caused to be moved into engagement with the friction wheel 36. Upon engagement of the friction wheels 16 and 36 the sprocket wheel 15 is caused to be rotated, and through the medium of the chain 31 and the sprocket 30 the shaft 27 is rotated whereby through the gears 26 and 25 the shaft 21 is rotated to wind the cables 24 on the drums 22. When the body of the truck has been elevated to the desired position, the operator exerts pull on the link 8 thereby rocking the shaft 6 in the direction of the arrow B, and due to the eccentric relation of the shaft 11 to the shaft 6, the wheel 16 is caused to frictionally engage the shoe 33 whereby same is held against rotation and the truck body is sustained in elevated position.

When it is desired to lower the truck body, it is necessary to move arm 7 in the direction of the arrow A whereupon the wheel 16 will be disengaged from the shoe 33 and the truck body will be lowered by gravity.

The entire structure requires but small space and will operate the heaviest loads regardless of any strained position of the truck, and in addition does not interfere with the other mechanism of the automobile.

What is claimed is:

1. In combination, a supporting structure, said structure including spaced frame members, a driving means, a rotatable shaft journaled on said spaced frame members of the supporting structure and formed with a longitudinal bore, a radial integral arm carried by the shaft, a coiled spring secured to the outer end of the arm for normally holding the shaft in one position, means for adjusting the tension of the spring, a lever secured to the outer end of the arm for moving it against the action of the spring, a second shaft rotatable in the bore of the first shaft and projecting therefrom, a wheel fixed to a projecting end of the second shaft and adapted to be moved into operative engagement with the driving means on imparting rotary movement to the first shaft, and brake means adapted to coöperate with the wheel when disengaged from the driving means.

2. In combination, a supporting structure including spaced frame members, a single shaft journaled on the frame members and spanning the space therebetween, said shaft being formed with an eccentrically disposed bore extending throughout its length, a second shaft rotatable in the bore of the first shaft and projecting at its opposite ends beyond the frame members, a transmission element on each projecting end of the second shaft, another transmission element with which one of the first transmission elements is adapted to engage on partially rotating the first shaft, and means for partially rotating the first shaft.

3. In a motor truck, the combination with a supporting structure including spaced frame members and a driving shaft, of a shaft journaled on said spaced frame members and spanning the space therebetween, the axis of said second shaft being at right angles to said driving shaft, said second shaft having a bore, formed longitudinally therethrough and located off center, a third shaft journaled in the bore and projecting from the opposite ends of the bored shaft, a friction wheel on one end of the third shaft, a friction disk on the driving shaft operatively engaging the friction wheel, means to normally hold the wheel and disk in operative contact, a brake, means to rotate the bored shaft so as to move the friction wheel out of operative contact with the disk and into engagement with the brake, and a transmission element on the opposite projecting end of the third shaft.

4. In combination, a supporting structure including spaced frame members, a single shaft journaled on the frame members and spanning the space therebetween, said shaft being formed with an eccentrically disposed bore extending throughout its length, a second shaft rotatable in the bore of the first shaft and projecting at its opposite ends beyond the frame members, a transmission element on each projecting end of the second shaft, another transmission element with which one of the first transmission elements is adapted to engage on partially rotating the first shaft, and an arm extending laterally from the first shaft at a point between the frame members of the supporting structure.

5. In combination, a supporting structure including spaced frame members, a single shaft journaled on the frame members and spanning the space therebetween, said shaft being formed with an eccentrically disposed bore extending throughout its length, a second shaft rotatable in the bore of the first shaft and projecting at its opposite ends beyond the frame members, a transmission element on each projecting end of the second shaft, another transmission element with which one of the first transmission elements is adapted to engage on partially rotating

the first shaft, an arm fixed to the first shaft at a point between the frame members of the supporting structure, an operating link connected to the arm for rocking it, and spring means connected to the arm for normally tending to hold the engageable transmission elements separated.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ROBERT L. ARMSTRONG.

Witnesses:
G. H. MORGAN,
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."