March 6, 1934. J. L. KOLLER 1,949,481

METHOD OF AND MEANS FOR HANDLING MATERIAL

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Fig. 1.

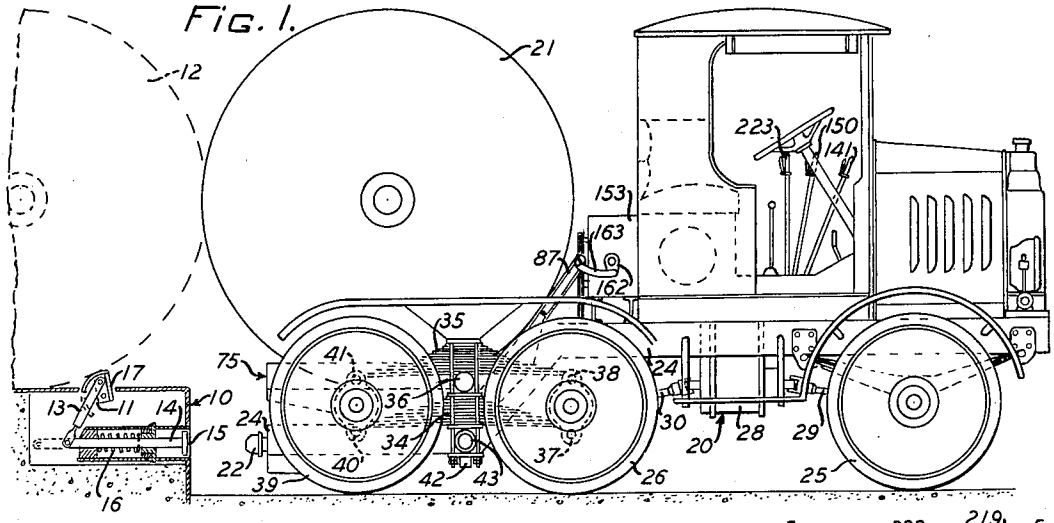
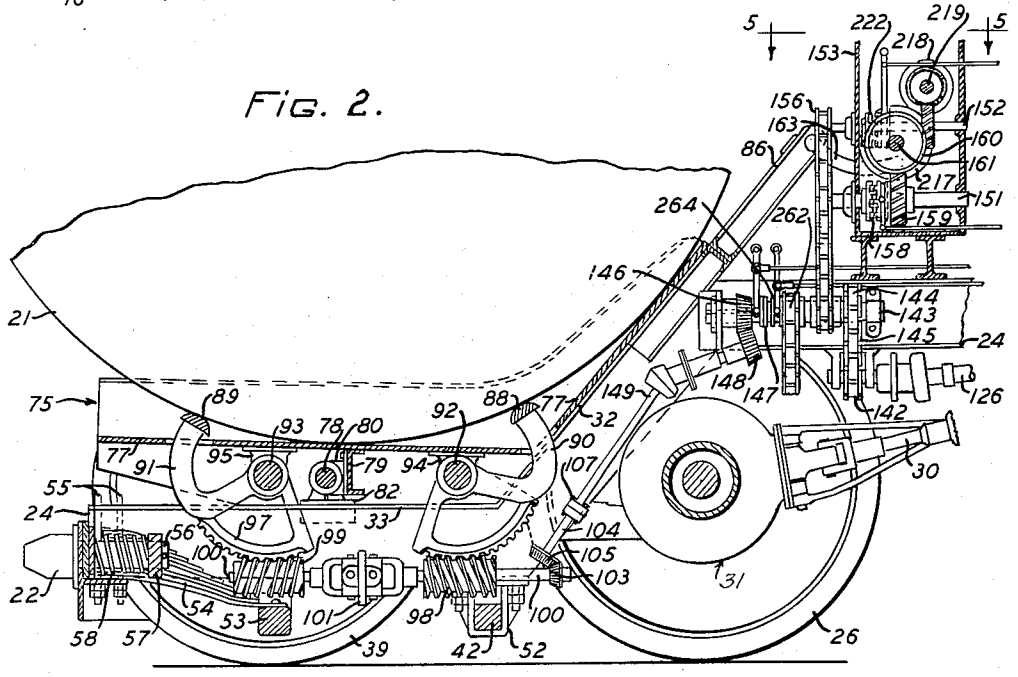



Fig. 2.




INVENTOR
J. L. KOLLER
BY
E. R. Moulan
ATTORNEY

March 6, 1934. J. L. KOLLER 1,949,481

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Fig. 3.

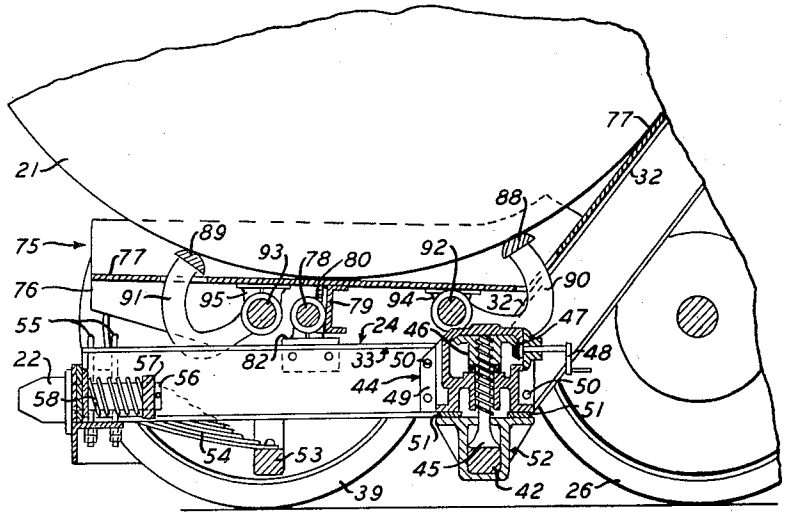



Fig. 4.

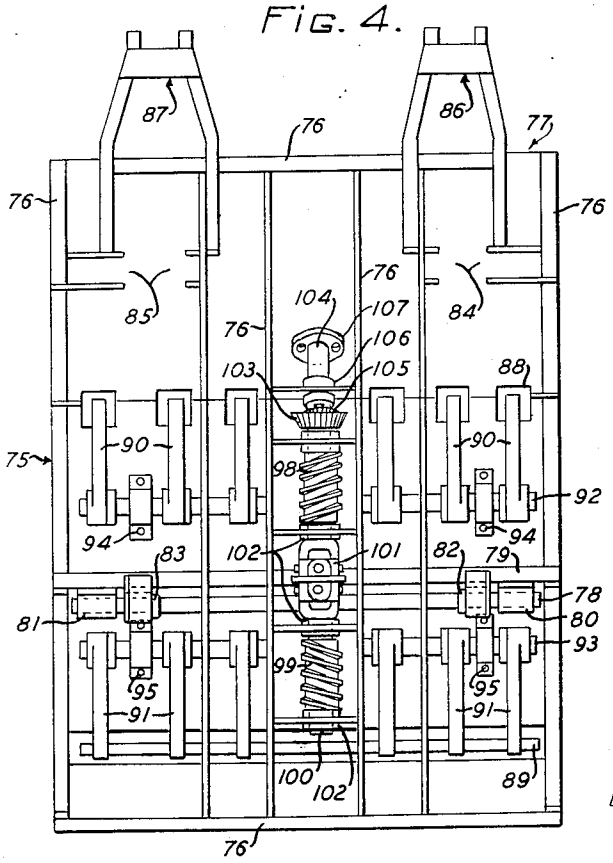
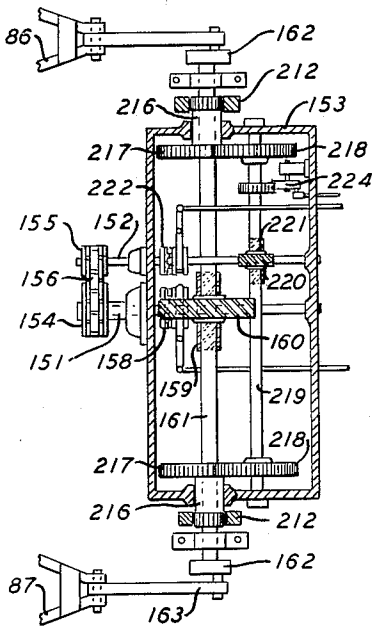



Fig. 5.




INVENTOR
J. L. KOLLER
BY
E. R. Nowlan
ATTORNEY

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Fig. 6.

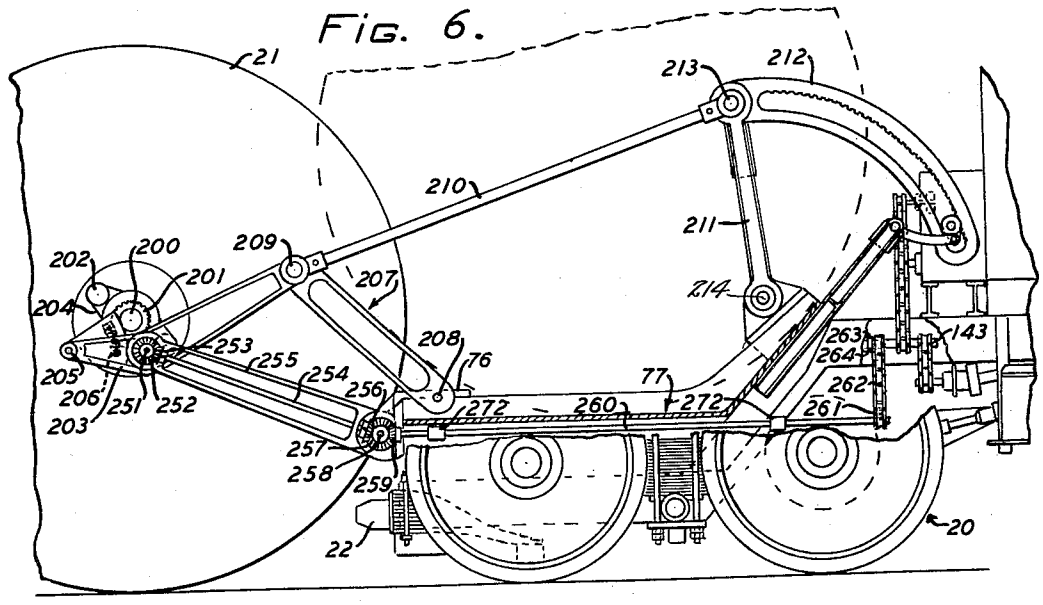
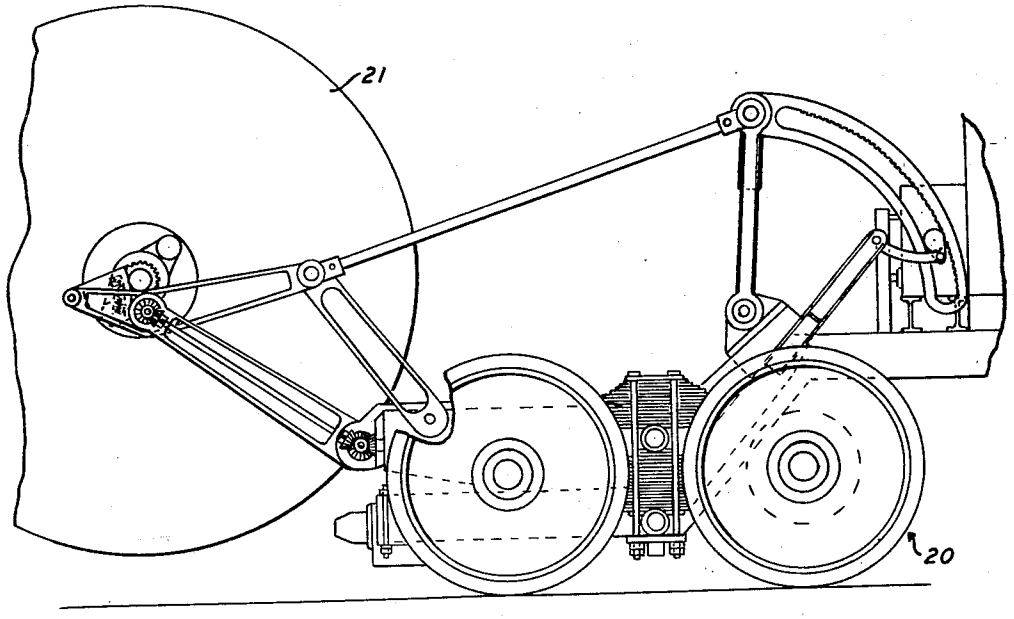



Fig. 7.




INVENTOR
J. L. KOLLER
BY E. R. Nowlan
ATTORNEY

March 6, 1934. J. L. KOLLER 1,949,481

METHOD OF AND MEANS FOR HANDLING MATERIAL

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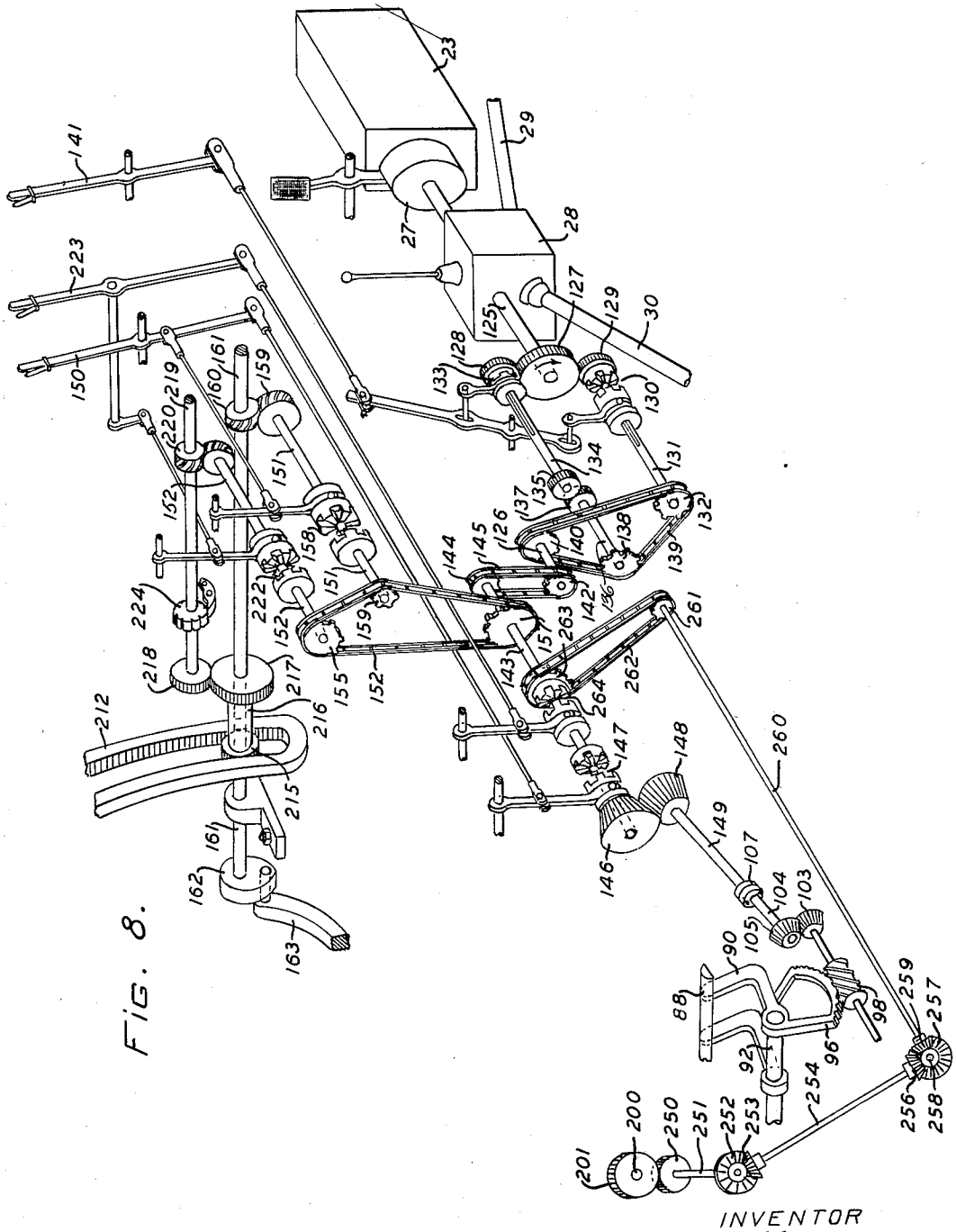


FIG. 8.

INVENTOR
J. L. KOLLER
BY
E. R. Nowlan
ATTORNEY

Patented Mar. 6, 1934

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# UNITED STATES PATENT OFFICE

1,949,481

## METHOD OF AND MEANS FOR HANDLING MATERIAL

Joseph L. Koller, Baltimore, Md., assignor to Western Electric Company, Incorporated, New York, N. Y., a corporation of New York

Application April 9, 1932, Serial No. 604,180

23 Claims. (Cl. 214—65)

The invention relates to methods of and means for handling material and more particularly to methods of and means for loading, carrying and unloading cable, cable reels and other heavy objects requiring transportation from one place to another.

An object of the invention is to provide a road vehicle adapted for loading, carrying and unloading cable reels and other heavy objects requiring transportation from one place to another.

Another object is to provide a loading platform from which the cable reels or other articles can be readily loaded onto the road vehicle.

One of the features of the invention is a so-called six wheel automobile on which heavy cable reels can be readily loaded, transported and unloaded.

Another feature is the provision of means for maintaining the cable reel in a suspended and rotatable position on the vehicle so that cable can be wound from a reel or wound onto a reel.

Another feature of the invention is the provision of means whereby the power plant employed to propel the vehicle may also be used to actuate the means for maintaining a cable reel in a suspended and rotatable position on the vehicle.

The invention will be better understood by referring to the description and accompanying drawings wherein

Fig. 1 is a partial cross sectional view of the loading platform and a side view of the vehicle with a cable reel mounted thereon;

Figs. 2 and 3 are cross sectional views of a part of the vehicle showing the mechanism employed in one embodiment of the invention for loading and unloading the cable reels;

Fig. 4 is a plan view of the bottom of the rear platform and sub-frame of the truck;

Fig. 5 is a plan view of a part of the actuating mechanism;

Figs. 6 and 7 are views of the vehicle showing a part of the mechanism employed in another embodiment of the invention for elevating and lowering a reel and for maintaining it suspended in any position while removing cable therefrom or winding cable thereon, and

Fig. 8 is a schematic view of the actuating mechanism employed.

### *Loading platform*

Referring to Fig. 1 the loading platform 10 is equipped with a chock 11 which, when in the position shown on the drawings, prevents the reel 12 from accidentally rolling off or being pushed from the loading platform 10. An arm 13 is connected between the chock 11 and one end of a plunger 14. A face plate 15 is attached to the other end of the plunger 14. A spring 16 normally maintains the chock 11 in the position shown in Fig. 1. The chock 11 is adapted to pivot around the pin 17 until it is flush with the loading platform 10, when pressure is applied to the face plate 15 to permit the reel 12 to roll off the platform 10.

### *General truck construction*

Referring to Figs. 1, 2, 3, 5 and 8 the truck 20 has a cable reel 21 mounted upon it. The truck 20 is preferably suitably equipped with a plunger 22 which is adapted to engage the face plate 15 of the plunger 14.

The truck 20 is preferably of the so called six wheel type having a motor 23 (Fig. 8) secured to a main frame 24. To propel the truck, power is preferably transmitted to the front wheels 25 and the front pair 26 of the rear wheel assembly through a clutch 27 (Fig. 8) of a suitable type well known in the art, a transmission 28, of a suitable type well known in the art, front drive shaft 29, rear drive shaft 30, a suitable differential on the front axle (not shown) and a suitable differential 31 (Fig. 2) on the axle of the forward pair of rear wheels 26.

### *Main frame*

The main frame 24 preferably has an inclined portion 32 (Fig. 2) and a substantially horizontal lower rear portion 33. The main frame 24 is preferably connected to the four rear wheel assembly by means of two sets of springs. As shown in Fig. 1 each set of springs preferably comprises spring assemblies 34 and 35, separated by a spacer 36. The front ends of springs 34 and 35 are fastened to the axle housing associated with the wheels 26 at 37 and 38 respectively, and the rear end of the springs 34 and 35 are fastened to the axle housing associated with the wheels 39 at 40 and 41 respectively. The centers of the springs 34 and 35 are fastened to a so called pivot axle 42 (Figs. 2 and 3), which is centrally located with respect to the wheels 26 and 39, by means of a bearing 43 fastened to the lower end portion of spring 34, to permit the four rear wheel assembly to pivot about the axle 42.

A pair of jacks 44 (Fig. 3) or other suitable means are preferably provided to permit adjusting the height of the main frame 24 above the pivot axle 42 to compensate for wear on the tires employed and thereby to maintain the height of the main frame at a desired predetermined dis-

tance above the roadway. Each of the jacks 44 preferably comprise a jack screw 45, a gear 46 adapted to be rotated by means of a pinion 47 and a crank 48, and an axle frame bracket 49 secured to the frame 24 by means of screws 50 or other suitable means. The gear 46 is preferably adapted to engage the bracket 49 to move the frame and bracket upward, suitable shims 51 may be placed between the axle guide bracket 52 and the axle frame bracket 49, when the axle frame bracket 49 has been raised to the desired height, to relieve the strain on the threads of the gear 46 and the jack screw 45. The axle 53 to which the rear pair of wheels 39 are fastened is preferably U-shaped to permit the assembly thereof underneath the main frame 24 and not in contact therewith.

Preferably a pair of helper springs 54 are secured between the rear ends of the main frame 24, by U-shaped bolts 55 or other suitable means, and the upper side of axle 53 to take a portion of the load from the springs 34 and 35 while a heavy reel is being rolled onto the truck 20.

The plunger 22 is preferably secured to the rear portion of the main frame 24 by means of a rod 56 which is attached to the plunger 22 and which rod extends through an opening in the rear portion of the frame 24 and also through an opening in a cross member 57. A spring 58 is preferably employed to maintain the plunger 22 in the position shown and to allow it to move forward when excessive pressure is applied to the plunger 22.

*Rear platform and reel stops*

A rear platform assembly 75 (Figs. 1, 2, 3, and 4) is mounted upon the rear portion of the truck. The rear platform assembly preferably comprises a metal sub-frame 76 and a metal platform 77 mounted on and secured to the sub-frame 76 by welding or by other suitable means. The rear platform assembly 75 is arranged to pivot about a suitable rod or bar 78. The rod or bar 78 is secured to a cross member 79 of the sub-frame 76 by means of suitable members 80 and 81. The rod or bar 78 is also rotatably secured to the horizontal portion 33 of the main frame 24 by means of suitable bearings 82 and 83. The platform 77 and the sub-frame 76 preferably has a portion substantially parallel to the horizontal portion 33 of the main frame, and an inclined portion substantially parallel to the inclined portion 32 of the main frame 24, to permit the sub-frame and the platform to be pivoted to a position where portions of the inclined part of the platform 76 (indicated generally on Fig. 4 at 84 and 85) will rest against the inclined portion 32 of the main frame 24. Arms 86 and 87 extend from and are suitably secured to the inclined portion by sub-frame 76 and platform 77. When pressure is applied to the arms 86 and 87 in a horizontal rearward direction, the rear end of horizontal portion of the platform 77 will be lowered sufficiently to allow the reel to roll off the platform.

Preferably a pair of reel stops 88 and 89, the height of which above the platform 77 can be adjusted, are associated with the loading platform 77 to hold the reel in a predetermined position on the platform 77 and to prevent the reel from rolling off the truck during transportation thereon. The stops 88 and 89 are preferably attached to a plurality of arcuate shaped gripping members or arms 90 and 91 respectively which are adapted to project through the platform 77. The arcuate shaped arms 90 and 91 are preferably rigidly secured to shafts 92 and 93 respectively. The shafts 92 and 93 are preferably rotatably secured to the under side of platform 77 by any suitable means such as bearings 94 and 95 respectively. Gear segments 96 and 97 are preferably rigidly secured to the shafts 92 and 93 respectively and are adapted to mesh with gears 98 and 99 respectively. The gears 98 and 99 are preferably secured to a shaft 100 which shaft preferably has a universal joint 101 joining the two parts thereof. The shaft 100 is preferably rotatably secured to the sub-frame 76 and platform 77 by means of bearings 102 which bearings are rigidly secured to the sub-frame 76 and/or platform 77 by any suitable means. A gear 103 is secured to the forward end of the shaft 100 and a gear 105 which is adapted to mesh with the gear 103 is secured to a shaft 104. The latter shaft 104 is adapted to rotate in a bearing 106, which bearing 106 is preferably rigidly affixed to the sub-frame 76 and/or the platform 77. A coupling unit 107 is attached to one end of the shaft 104. Rotation of the shaft 104 causes rotation of shaft 100 which in turn causes the gripping members 90 and 91 and their associated stops 88 and 89 to move.

*Pivoting and stop actuating mechanism*

The rear platform pivoting mechanism and the mechanism for raising and lowering the reel stops are preferably actuated by the main truck motor 23 (Fig. 8). The power for actuating these mechanisms is preferably taken from the main transmission 28 through a shaft 125 which rotates when the main clutch 27 is engaged, in order that the main clutch 27 can be used to control the actuation of the platform pivoting and the reel stop mechanism. A suitable mechanism is employed to optionally drive the shaft 126 in either direction. In the embodiment disclosed in Fig. 8, a gear 127 attached to shaft 125 meshes with gears 128 and 129. A clutch 130 is provided to drive a shaft 131 when the clutch 130 is engaged. A gear 132 is attached to the shaft 131. A clutch 133 is provided to drive the shaft 134 when the clutch 133 is engaged. A gear 135 is attached to the shaft 134. A shaft 136 has a gear 137 attached thereto which gear meshes with the gear 135. Another gear 138 is also attached to shaft 136. A chain 139 engages gears 132 and 138 and a gear 140 fastened to shaft 126. A lever arm 141, preferably located in the driver's cab, is provided with suitable connecting links to cause the clutch 130 to engage, and the clutch 133 to disengage when the upper part of the lever arm is moved forward, to cause the clutch 133 to engage and the clutch 129 to disengage when the upper part of the lever arm is moved to the rear, and to cause both of the clutches 129 and 133 to disengage when the lever is moved to a central or vertical position.

Attached to the opposite end of the shaft 126 from gear 140 is a gear 142 (Figs. 2 and 8). A shaft 143 is arranged to be driven by shaft 126 through gears 142 and 144 and a chain 145 which meshes with the gears 142 and 144. A gear 146 is positioned on the shaft 143 and arranged to be driven by the shaft 143 through a clutch 147 whenever the clutch 147 is engaged. A lever 150, preferably located in the driver's cab (Figs. 1 and 8), is provided with suitable connecting links to cause the clutch 147 to engage when the upper portion of the lever 150 is in its rear position. A gear 148 is arranged to mesh with

gear 146, and a shaft 149 is secured to gear 148 and to the coupling 107.

Two shafts 151 and 152 (Figs. 2, 5 and 8) preferably extend within a transmission housing 153 which housing is centrally located between the driver's cab and the arms 86 and 87 of the platform 77. Gears 154 and 155 are attached to shafts 151 and 152 on the outside of the transmission case 153. A chain 156 meshes with gears 154 and 155 and a gear 157 rigidly affixed to the shaft 143. Rotation of the shaft 143 will then cause rotation of both shafts 151 and 152. Located within the transmission case 153 and associated with shaft 151 is a clutch 158. A gear 159 is rigidly secured to the shaft 151 and a gear 160 rigidly affixed to a shaft 161 meshes with gear 159. The shaft 161 is preferably arranged to project through both sides of the transmission case 153. Preferably attached to each end of shaft 161 is a crank 162. Links 163 connect the cranks 162 and the arms 86 and 87 (Figs. 2 and 5). Suitable connecting links are associated with the lever 150 to cause the clutch 158 to engage when the upper portion of the lever 150 is in its forward position.

*Reel elevating and rotating mechanism*

The reel elevating and rotating mechanism (Figs. 6, 7 and 8) is provided to enable the loading of a reel from grade level as shown in Fig. 6, unloading the reel to grade level, and rotation of the reel either free or by power from the truck while in an elevated position as shown in Fig. 7. A reel arbor 200 extends through the center of the reel 21 and a gear 201 is secured to the reel arbor 200 to permit a power rotation of the arbor. A gripping element 202 is also secured to the reel arbor 200 and is adapted to engage the reel 21 to cause positive rotation thereof when the arbor 200 is rotated. A pair of inclined guide arms 203 (Figs. 6 and 7) are associated with the reel arbor 200 on either side of the reel 21. Each of the guide arms 203 has a dog 204 fastened thereto at 205. Each pair of the guide arms 203 and the associated dogs 204 has a spring 206 associated therewith which spring is adapted to hold the dogs normally in the position shown in Fig. 6 and to permit the dog to move downward sufficiently to roll the reel 21 forward and over the guide arm 203 to the position shown in Fig. 6. One end of each of a pair of arms 207 is preferably connected to the sub-frame 76 at 208 and the other end of each of the arms 207 is connected to the guide arms 203 at 209. One end of each of a pair of rods 210 is connected to the guide arms 203 and arms 207 at 209. The other ends of the rods 210 are connected to one end of each of a pair of arms 211 and one end of each of a pair of arcuate shaped brackets 212, by means of a bar or rod 213. The other end of each of the arms 211 are connected to the sub-frame 76 at 214. One of the inner surfaces of each of the arcuate shaped brackets 212 has gear teeth thereon adapted to engage with the teeth on a pair of pinions 215, which pinions are secured to a pair of hollow shafts 216 (Figs. 5 and 8). The hollow shafts 216 are assembled over and adapted to rotate on the shaft 161. Each of the hollow shafts 216 preferably extend within the transmission housing 153 and each has a gear 217 secured thereto. The gears 217 are adapted to mesh with gears 218 and the latter gears are secured to a shaft 219. A gear 220 is fastened to the shaft 219 and is adapted to mesh with a gear 221 which is fastened to shaft 152. A clutch 222 associated with shaft 152 is adapted, when engaged, to cause the rotation of gear 221 when the gear 155 is rotated. A lever 223, preferably located within the cab of the truck as shown on Fig. 1, is provided with suitable connecting links to cause the clutch 222 to engage when the upper part of the lever 223 is in its forward position and to disengage the clutch when the lever 223 is in its central or vertical position and in its rear position. A ratchet wheel 224 is preferably provided to maintain the reel 21 at any desired height.

A gear 250 is secured to one end of a shaft 251 and is adapted to engage the gear 200 on the reel arbor. A bevel gear 252, attached to the other end of the shaft 251, is adapted to engage a bevel gear 253 attached to one end of a shaft 254. The shaft 254 is preferably mounted in bearings in an arm 255 and on the other end of shaft 254 a bevel gear 256 is fastened and adapted to engage a bevel gear 257 which is fastened to a shaft 258. A bevel gear 259 adapted to mesh with the gear 257 is fastened to one end of a shaft 260, on the other end of which shaft a gear 261 is fastened. The shaft 260 is preferably rotatably mounted in bearings 272 which are preferably secured to the sub-frame 76. A chain 262 is adapted to engage the gear 261 and a gear 263 on the shaft 143 and a clutch 264 is adapted, when engaged, to cause the rotation of gear 263 when the gear 157 on shaft 143 is rotated. The clutch 264 is engaged when the lever 223 is in its rear position by means of suitable connecting links and is disengaged when the lever 223 is in its central or forward position.

*Operation*

The truck is moved under its own power in the usual manner without simultaneously operating any of the reel handling devices by placing the lever 141 in its central or vertical position, in which position the clutches 130 and 133 are disengaged and no power is transmitted to the shaft 126.

In loading a reel onto the truck from the loading platform 10, the truck 20 is backed up to the loading platform 10 so that the plunger 22 on the rear of the truck engages the face plate 15 associated with the chock 11 and pushes the plunger 14 in the direction which compresses the spring 16 and pivots the chock 11 around the pin 17 until the chock is flush with the loading platform 10. The reel 20 is then rolled onto the truck 20.

To enable the reel to be readily rolled onto the platform 77 of the truck 20, the platform 77 is pivoted to the position in which the rear end of the platform 77 is substantially level.

The stops 88 and 89 are then raised until they are in contact with the reel 21 as shown in Fig. 2, to prevent the reel from rolling off the truck while it is being transported. This is accomplished by moving the lever 141 in its forward position, and moving the lever 150 in its rear position, while maintaining the lever 223 in its neutral or central position. Power is then transmitted to the gear segments 96 and 97, which actuate the stops 88 and 89, from the motor 23 through the clutch 27, transmission 28, shaft 125, gear 127, gear 129, clutch 130, shaft 131, gear 132, chain 139, gear 140, shaft 126, gear 142, chain 145, gear 144, shaft 143, clutch 147, gears 146 and 148, shaft 149, coupling 107, shaft 104, gears 105 and 103, shaft 100 and gears 98 and 99.

To unload the reel at its destination, the reel stops 88 and 89 are lowered by means of the mech-

anism referred to above in connection with the raising of the reel stops, except that the lever 141 is moved to its rear position which disengages the clutch 130 and engages the clutch 133 to drive the shaft 134, gears 135 and 137, shaft 136 and gear 138, thereby driving the chain 139 in the opposite direction from which it was driven to raise the reel stops.

The reel is then caused to roll off the platform 77 by tilting the rear end of the platform 77 downward to its lowest position. This is accomplished by moving the lever 141 to either the front or rear position and moving the lever 150 to the front position. Power is transmitted from the motor 23 to the links 163 by means of the mechanism referred to above in connection with the actuation of the reel stops up to and including the shaft 143 and in addition gear 157, chain 156, gear 154, shaft 151, clutch 158, gears 159 and 160, shaft 161 and cranks 162.

In handling a reel from grade level the mechanism shown in Figs. 6 and 7 is employed. The reel arbor 200 together with the gear 201 and gripping element 202 is fastened to the reel 21 and either the reel is moved toward the truck or the truck is backed up against the reel with the inclined guide arms 203 at the proper height, so that the dogs 204 are moved downward, beneath the reel arbor 200, until the reel arbor 200 is forward of the dogs 204 when the springs 206 will turn the dogs 204 to the position shown in Fig. 6. This prevents the reel 21 from rolling off the guide arms 203. To raise the reel from this position, the lever 141 is placed in its forward position, the lever 150 in its neutral position and the lever 223 to its forward position. The racks 212 are then moved downward by means of power from the motor 23 through the mechanism described above in connection with the platform tilting to the chain 156 and in addition through gears 155, shaft 152, clutch 222, gears 221 and 220, shaft 219, gears 218 and 217, hollow shafts 216 and pinions 215. To unload the reel to grade level it is only necessary to reverse the direction of rotation of the shaft 126 which will reverse the direction of rotation of pinions 215. This is accomplished by maintaining the lever 150 in its central or neutral position, lever 223 in its front position and moving the lever 141 to its rear position.

The reel 21 can be held in any position above ground level, such as the position shown in Fig. 7, and rotated by power from the motor 23. This is accomplished by moving the lever 150 to its central or neutral position, the lever 123 to its rear position, and the lever 141 to either the forward or rear position (depending on the direction of rotation of the reel 21 that is desired). Power is transmitted from the motor 23 to the shaft 143 (as described above in connection with the reel stops) and in addition through gear 263, chain 262, gear 261, shaft 260, gears 259, 257 and 256, shaft 254, gears 253 and 252, shaft 251 and gears 250 and 201.

To allow the free rotation of the reel 21 at any position above grade level the clutch 264 is disengaged by moving the lever 223 out of the rear position.

It is to be understood that the invention is not to be limited to the particular embodiments shown, nor to the specific arrangements that have been described and shown in detail, but only by the scope of the appended claims.

What is claimed is:

1. In a reel handling truck, an adjustable platform adapted to carry the reel, arcuate gripping members for positioning said reel on said platform, means for controlling the height of said platform, means for pivotally moving said platform on an axis extending transversely of the truck and means for actuating said arcuate gripping members.

2. In combination, a reel handling apparatus and a reel loading platform having a reel retaining chock, said reel handling apparatus comprising a road vehicle having a projecting member adapted to engage said reel retaining chock.

3. In a vehicle, a main frame, a pair of leaf springs, a pivot axle secured to the leaf springs and means secured to the frame for adjusting the inclination of the frame above the pivot alxle.

4. In a platform for a reel handling vehicle, two arcuate shaped arms secured below said platform and extending upward through said platform for positioning the reel on the platform and means for actuating said arms to engage the reel.

5. In a reel handling vehicle, a platform to carry the reel, arcuate shaped arms for positioning the reel on the platform, and means for actuating said arcuate shaped arms comprising a shaft, a gear segment secured to said shaft and a gear adapted to be rotated to actuate said gear segment.

6. In a platform for a reel handling vehicle, a substantially horizontal portion and an inclined portion, a cross member secured to said platform, a pivot bar rotatably secured to said cross member, arcuate shaped arms for positioning the reel on the platform and means for actuating said arms comprising a pair of gear segments, a pair of gears adapted to engage said gear segments, a divided shaft, a universal joint joining the segments of the divided shaft and transmission means secured to one end of said shaft.

7. In a road vehicle, a main frame, a running gear comprising one pair of wheels located at the front of said vehicle and another pair of which are located at the rear of the vehicle, a rear axle associated with said rear pair of wheels, a pair of leaf springs arranged to transmit the load carried by said vehicle to said rear axle, and a pair of leaf springs each having one end thereof fastened to the rear of said main frame and the other end thereof connected to the rear axle.

8. In a reel handling vehicle, for selectively loading and unloading reels to and from grade level or to and from a loading platform, a motor, a frame, a shaft adapted to be selectively rotated by said motor in either direction, a vehicle platform on said vehicle for receiving the reel, reel elevating means for loading and unloading the reel from grade level comprising a reel arbor adapted to be secured to the reel, and means including an arcuate shaped rack, and a rotatable gear for driving said rack and driven by said motor through said shaft, and means for unloading said reel from the vehicle platform comprising pivoting means located between said frame and said vehicle platform about which said vehicle platform is adapted to pivot, and transmission means connected between said shaft and said vehicle platform for lowering the rear of said vehicle platform to allow the reel to roll off the vehicle.

9. In a vehicle, a motor, a pair of driving wheels, means including a transmission for connecting said motor and said driving wheels, reel elevating apparatus, a shaft adapted to be selectively rotated in either direction connected between said transmission and said reel elevating appa-

ratus, said reel elevating apparatus comprising a reel arbor adapted to be secured to a reel, means adapted to engage said reel arbor, a rod connected to said last mentioned means, an arcuate shaped rack connected to said rod, a rotatable gear for driving said rack, and transmission means selectively operable by said first mentioned shaft for rotating said gear.

10. In a vehicle, a motor, a pair of driving wheels, means including a transmission for connecting said motor and said driving wheels, reel elevating apparatus, a shaft adapted to be selectively rotated in either direction and connected between said transmission and said reel elevating apparatus, said reel elevating apparatus comprising a reel arbor adapted to be secured to a reel, a pair of inclined guide arms, a pair of dogs, a rod connected to one of said inclined guide arms, an arcuate shaped rack connected to said rod, a rotatable gear for driving said rack, and means for rotating said gear, said last mentioned means comprising a hollow shaft secured to said last mentioned gear, a second gear secured to said hollow shaft and transmission means selectively operable by said first mentioned shaft for rotating said last mentioned gear.

11. In a four wheel drive road vehicle, a main frame, a running gear comprising six carrying wheels, one pair of which is located at the front of said vehicle and attached to said frame by a pair of leaf springs and the other four of which are located at the rear of the vehicle, two adjacent the rear axles for said other four wheels, a pair of inverted leaf springs having the ends thereof attached to the housings of and located above said rear axles, a second pair of inverted leaf leaf springs having the ends thereof attached to the housings of and located below said rear axles, a pivot axle for said four rear wheels located between said rear axles and below said main frame, means for securing the centers of said inverted springs together and to said pivot axle, means for adjusting the inclination of said main frame above said pivot axle and for transmitting the load upon said main frame to said pivot axle, and a third pair of leaf springs, each having one end thereof fastened to the rear of said main frame and the other end thereof fastened to one of said rear axles.

12. In combination, a reel handling apparatus, and a reel loading platform having a reel retaining chock, said reel handling apparatus comprising a road vehicle having a frame, a projecting member secured to said frame and adapted to engage said reel retaining chock, wheels for carrying said frame, a reel arbor and reel engaging means associated with said frame, a power plant for propelling said vehicle, an operator's position for controlling said vehicle, means actuated by said power plant adapted to be controlled from said operator's position to elevate said reel handling means, and means actuated by said power plant and adapted to be controlled from said operator's position for rotating said reel arbor.

13. In combination, a reel handling apparatus, and a reel loading platform having a reel retaining chock, said reel handling apparatus comprising a road vehicle having a main frame, a pair of leaf springs, a pivot axle extending below said main frame and secured to the leaf springs, and a projecting member secured to said frame and adapted to engage said reel retaining chock.

14. In combination, a reel handling apparatus, and a reel loading platform having a reel retaining chock, said reel handling apparatus comprising a road vehicle having a main frame, a projecting member secured to said main frame and adapted to engage said reel retaining chock, a motor, a pair of driving wheels, means including a transmission for connecting said motor and said driving wheels, reel elevating apparatus, a shaft adapted to be selectively rotated in either direction connected between said transmission and said reel elevating apparatus, said reel elevating apparatus comprising a reel arbor adapted to be secured to a reel, means adapted to engage said reel arbor, a rod connected to said last mentioned means, an arcuate shaped rack connected to said rod, a rotatable gear for driving said rack, and transmission means selectively operable by said first mentioned shaft for rotating said gear.

15. In a reel handling vehicle, a frame, wheels for carrying said frame, a pivot bar secured to said frame, a cross member rotatably secured to said pivot bar, a platform secured to said cross member, means for rocking said platform on said pivot bar, a reel arbor and reel engaging means associated with said frame, a power plant for propelling said vehicle, an operator's position for controlling said vehicle, means actuated by said power plant and adapted to be controlled from said operator's position to selectively rock said platform on said pivot bar, elevate said reel engaging means, or rotate said reel arbor.

16. In a reel handling vehicle, a main frame, a pair of leaf springs, a pivot axle extending below said main frame and secured to the leaf springs, a pivot bar secured to said frame and located above said pivot axle, a cross member rotatably secured to said pivot bar and located above said pivot axle, a platform secured to said cross member, and means for rocking said platform on said pivot bar.

17. In a reel handling vehicle, a platform, a cross member secured to said platform, a pivot bar rotatably secured to said cross member, a motor, a pair of driving wheels, means including a transmission for connecting said motor and said driving wheels, reel elevating apparatus, a shaft adapted to be selectively rotated in either direction connected between said transmission and said reel elevating apparatus, said reel elevating apparatus comprising a reel arbor adapted to be secured to a reel, means adapted to engage said reel arbor, a rod connected to said last mentioned means, an arcuate shaped rack connected to said rod, a rotatable gear for driving said rack, and transmission means selectively operable by said first mentioned shaft for rotating said gear, or for rocking said platform on said pivot bar.

18. In a reel handling vehicle, a main frame, wheels for carrying said frame, a platform secured to said frame, two arcuate shaped arms for positioning the reel on the platform, a reel arbor and reel engaging means associated with said frame, a power plant for propelling said vehicle, an operator's position for controlling said vehicle, means actuated by said power plant and adapted to be controlled from said operator's position to elevate said reel engaging means, to rotate said reel arbor, and to actuate said arcuate shaped arms to engage the reel.

19. In a reel handling vehicle, a main frame, a pair of leaf springs, a pivot axle extending below said main frame and secured to the leaf springs, a platform secured to the main frame above said pivot axle, two arcuate shaped arms for positioning the reel on the platform, and

means for actuating said arms to engage the reel.

20. In a reel handling vehicle, a platform, two arcuate shaped arms for positioning the reels on the platform, a motor, a pair of driving wheels, means including a transmission for connecting said motor and said driving wheels, reel elevating apparatus, a shaft adapted to be selectively rotated in either direction connected between said transmission and said reel elevating apparatus, said reel elevating apparatus comprising a reel arbor adapted to be secured to a reel, means adapted to engage said reel arbor, a rod connected to said last mentioned means, an arcuate shaped rack connected to said rod, a rotatable gear for driving said rack, and transmission means selectively operable by said first mentioned shaft for rotating said gear, or for actuating said arms to engage the reel.

21. In a reel handling vehicle, a main frame, a pair of leaf springs, a pivot axle extending below said main frame and secured to the leaf springs, wheels for carrying said frame, a reel arbor and reel engaging means associated with said frame, a power plant for propelling said vehicle, an operator's position for controlling said vehicle, means actuated by said power plant and adapted to be controlled from said operator's position to elevate said reel engaging means, and means actuated from said power plant and adapted to be controlled from said operator's position for rotating said reel arbor.

22. In a vehicle, a motor, a pair of driving wheels, means including a transmission for connecting said motor and said driving wheels, an operator's position for controlling said vehicle, reel elevating apparatus, a shaft adapted to be selectively rotated in either direction connected between said transmission and said reel elevating apparatus, said reel elevating apparatus comprising a reel arbor adapted to be secured to a reel, means adapted to engage said reel arbor, a rod connected to said last mentioned means, an arcuate shaped rack connected to said rod, a rotatable gear for driving said rack, and transmission means adapted to be controlled from said operator's position selectively operable by said first mentioned shaft for rotating said gear.

23. In a reel handling vehicle, a main frame, a pair of leaf springs, a pivot axle extending below said main frame and secured to the leaf springs, a motor, a pair of driving wheels, means including a transmission for connecting said motor and said driving wheels, reel elevating apparatus, a shaft adapted to be selectively rotated in either direction connected between said transmission and said reel elevating apparatus, said reel elevating apparatus comprising a reel arbor adapted to be secured to a reel, means adapted to engage said reel arbor, a rod connected to said last mentioned means, an arcuate shaped rack connected to said rod, a rotatable gear for driving said rack, and transmission means selectively operable by said first mentioned shaft for rotating said gear.

JOSEPH L. KOLLER.