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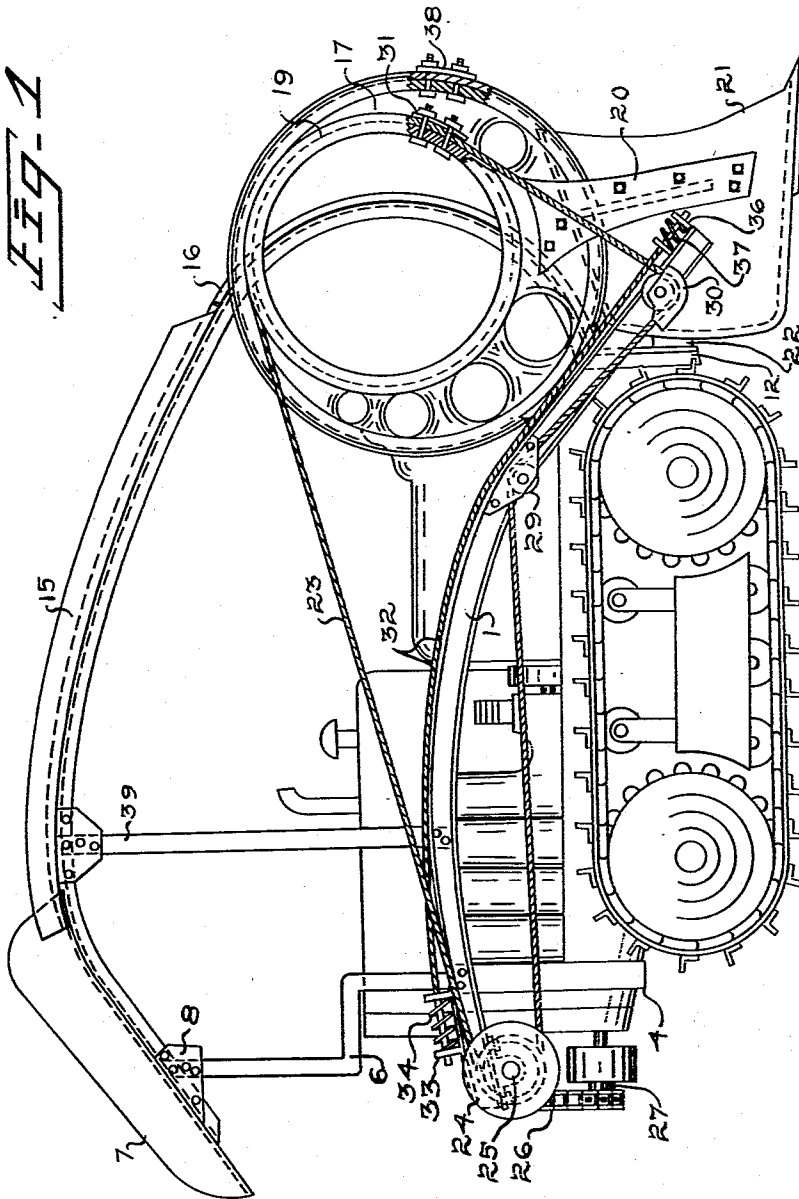
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2,467,029

DIRT LOADER

Filed April 16, 1947

3 Sheets-Sheet 1



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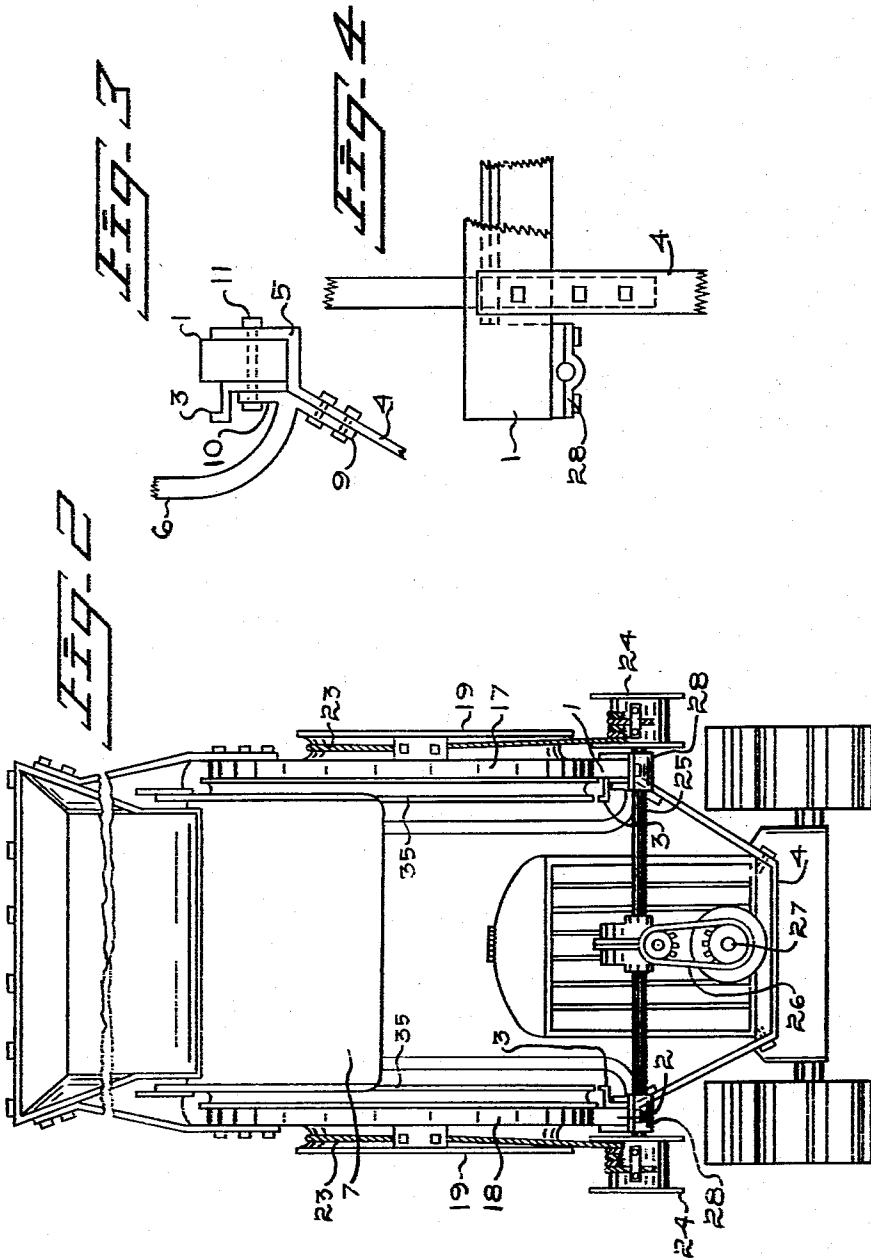
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3 Sheets-Sheet 2



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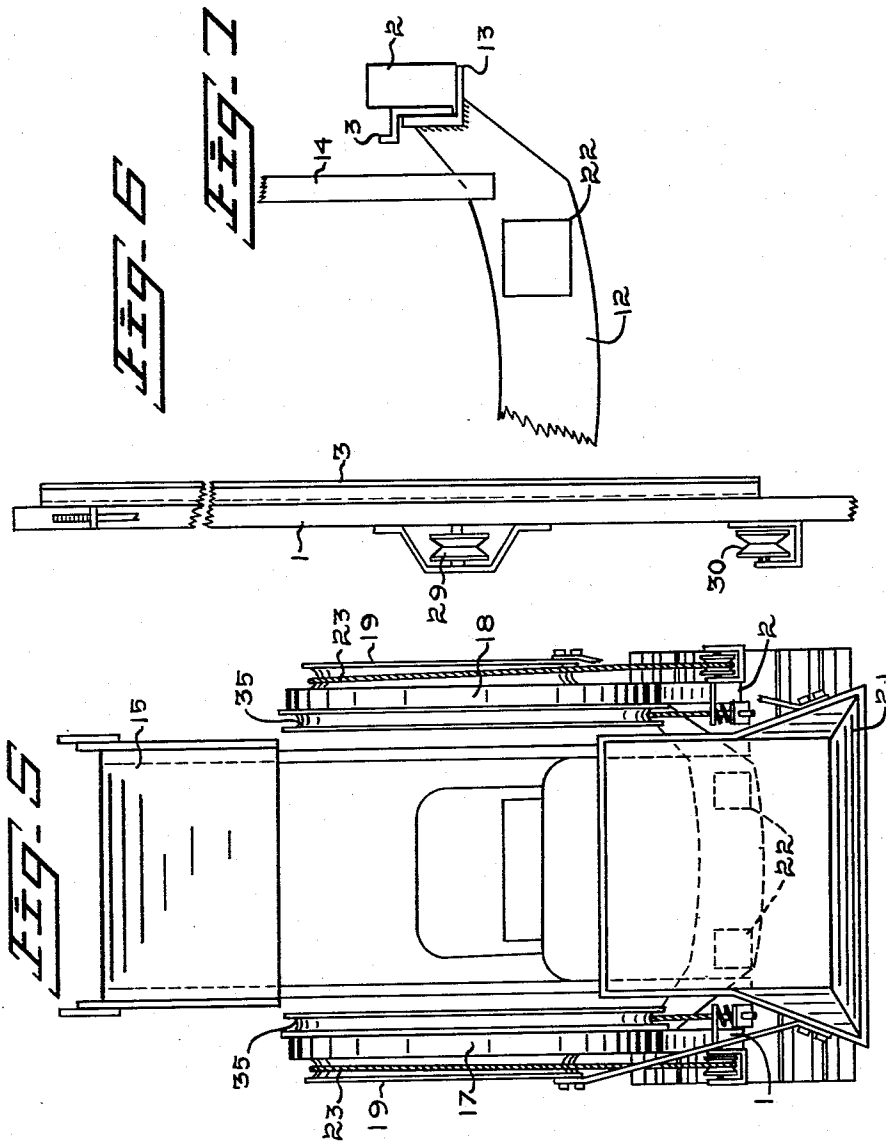
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DIRT LOADER

Austin Kenneth Greenway, Port Coquitlam,
British Columbia, CanadaApplication April 16, 1947, Serial No. 741,795
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7 Claims. (Cl. 214-148)

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My invention relates to dirt loaders, more particularly having reference to a loader for mounting on a tractor.

In the art to which the invention relates dirt loaders for tractors more usually employ a bucket mounted on a pair of arms pivoted on the tractor and driven from the tractor. For this considerable power is required to elevate the loaded bucket the required height to clear the tractor, particularly in the early part of the lifting movement. Additionally such a loader requires to be operated from the front of the tractor which means balancing the loaded bucket against the lighter end of the tractor.

The present invention contemplates improvements in dirt loaders by provision of a rotating carriage mounted for travel on a track and carrying the loading bucket, by which less power is required for elevation of the bucket and also the bucket may operate from the rear of the machine and thus will balance against the heavy or engine end of the tractor.

One of the objects of the invention is accordingly to provide a dirt loader for tractors employing a carriage travelling on a track and carrying a bucket, and adapted on partial rotation of the carriage to elevate and discharge a load from the bucket.

A further object of the invention is to provide improved means constraining the carriage for travel on the tracks.

A still further object of the invention is to provide novel and effective driving means for the carriage operating from the tractor as a source of power.

A still further object of the invention is to provide a carriage in which power for driving the carriage is eccentric to the axis of the carriage.

Other features and advantages of the invention will become apparent by reference to the accompanying description taken in conjunction with the drawings wherein like characters of reference indicate like parts throughout the several views and wherein—

Fig. 1 is a side view of the device assembled and shown with the bucket at rest ready for a loading operation.

Fig. 2 is a front end view of the device shown with the bucket elevated in the discharging operation.

Fig. 3 is a detail fragment showing the forward mounting for a rail.

Fig. 4 is a detail side view showing a fragment of rail and mounting and including a fragment of the supporting standard for the chute.

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Fig. 5 is a rear end view of the device assembled and with the bucket lowered in position to load.

Fig. 6 is a plan view of a rail for the carriage, partly broken away.

Fig. 7 is a detail view showing a fragment of the bench plate and the rail end, and including a fragment of the supporting rail for the protective cover.

Having reference to the drawings the device is designed to be mounted on a conventional type of tractor as shown, but since the tractor frame must vary with different types the mounting for the loader has only been shown in relation to the tractor.

The loader provides two side rails 1 and 2 to be carried by the tractor spaced apart. Each rail includes a rail proper for travel of the tractor wheel, as more clearly observed by reference to Figure 6, and a flange 3 on the inside of the rail secured thereto and forming a guide for the carriage constraining cables.

The rails 1 and 2 are supported at the forward end of the tractor by a bracket 4, (see particularly Figures 1 and 3) this bracket being secured to the tractor frame. The upper ends of the bracket 4 are shaped, as at 5, to provide seats for the rails 1 and 2. Additionally standards 6 are provided for support of the delivery chute 7, the chute attaching to the standards by plates as at 8. The lower ends of the standards provide tails 9 bolted to the bracket 4 and upstanding lugs 10 that combine with the rail seats 5 and through which, and said seats and rails, are bolts 11 (Fig. 3).

Rearwardly of the tractor the rails 1 and 2 are supported by a bench plate 12, (Figures 5 and 7) said plate being shaped at the ends to provide seats 13 for the rails 1 and 2. The plate 12 further carries standards 14 for supporting the protecting cover 15 for the tractor, these standards providing integral curved portions 16, Figure 1, shaped to conform to the path of travel of the dirt carrying bucket as hereinafter described.

For travel on the rails 1 and 2 is a carriage formed of wheels 17 and 18 spaced apart. These wheels include annular driving flanges 19 eccentric to the axis of the wheels.

To these flanges are attached arms 20 that carry the dirt loading bucket 21 which forms the connecting link for the wheels to make of them a unitary structure travelling on the rails 1 and 2. The bucket 21 is of conventional design, the plate 12 having wear plates 22 against which the bucket comes to rest.

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For driving the carriage, cables 23 are provided, one to each wheel 17 and 18. The cables 23 are trained over the flanges 19 and are driven from pulley wheels 24 on a shaft 25 driven by a chain connection 26 from a power take-off shaft 27 of the tractor, the shaft being supported rotatable in bearing brackets 28 on the rails 1 and 2. The cables 23 are further trained over idler sheaves 29 and 30 on the rails 1 and 2. The cables are anchored to the annular flanges 19 by bolts 31.

For constraining the wheels 17 and 18 for travel on the rails 1 provide cables 32, one to each wheel. These cables are forwardly fixed to the rails by bracket members 33 including springs 34 for maintaining the tension of the cables. The cables then pass once around annular grooved flanges 35 on the wheels and are rearwardly secured in bracket members 36 on the rails and include springs 37 for maintaining the tension of the cables. The cables are further anchored to the wheels 17 and 18 by bolts, as at 38.

The protective cover 15 is of sheet metal and forms a shield for the tractor and over which the bucket 21 travels to deliver dirt to the discharge chute 7, this cover and chute mounting on the members 16 and being intermediately supported by standards 39.

In the operation of the machine, with the bucket loaded, the carriage is caused to travel on the rails 1 and 2 by the cables 23, the eccentric flanges 19 regulating the travel of the carriage. The carriage wheels are outside the members 16 with the bucket travelling over said members to deliver the dirt.

By means of the cables 32 the carriage is constrained for travel on the rails 1 and 2. By mounting the bucket 21 on the rear of the tractor the weight of the bucket is balanced by the engine weight. The movement of the carriage ensures travel of the bucket with a minimum expenditure of power.

While I have herein disclosed a preferred embodiment of my invention it is obvious that changes in the construction and arrangement of parts and elements would be permissible, and in so far as such changes come within the spirit and scope of the invention as defined in the appended claims they would be considered a part hereof.

What I claim and wish to secure by Letters Patent is:

1. In a dirt loader for tractors, a track for mounting on the tractor, said track providing spaced rails, a carriage comprising spaced wheels adapted for travel on the rails and a bucket carried thereby fixed to the wheels, the carriage wheel rims providing grooved flanges, a cable for each of said wheels constraining the carriage for travel on the tracks, said cables having their ends fixed at opposite ends of the track with the cables trained on and wholly encircling the carriage wheels, and means for driving the carriage, said driving means being connectable to the tractor as a source of power.

2. A dirt loader comprising a frame for mounting on a tractor, said frame providing spaced rails, a carriage including wheels adapted for travel on the rails, said wheels providing grooved annular flanges, said carriage including a loading bucket fixed thereto, cable means anchored to the frame and carriage constraining the carriage for travel on the rails, said cables being trained on and wholly encircling the carriage wheels, a chute receiving material from the bucket

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in the discharging operation, and driving means for the carriage comprising grooved annular flanges on the carriage, a power take-off on the tractor including pulley wheels, and cables forming the driving connection between said pulley wheels and grooved flanges.

3. A device as defined in claim 2 wherein the grooved annular flanges are eccentric to the axis of the carriage and the driving cables are anchored thereto.

4. A dirt loader for tractors as defined in claim 2 wherein the carriage comprises spaced wheels and including arms on the flanges by which the loading bucket is carried fixed thereto, said flanges being eccentric to the axis of said wheels.

5. A loader for tractors comprising a frame providing spaced parallel tracks, said tracks being curved in their forward part to provide an elevation, a carriage for travel on the tracks comprising spaced wheels and a bucket carried by the wheels fixed thereto, said wheels including grooved annular flanges and further providing annular driving flanges fixed to the wheels eccentric to the axis thereof, cables constraining the carriage for travel on the tracks, said cables having their ends fixed at opposite ends of the tracks and being trained on and wholly encircling the grooved annular flanges of the carriage wheels and including means securing the cables to said wheels, a power take-off from the tractor, cables forming the driving connection between the power take-off and carriage through the driving flanges of the carriage wheels, means anchoring the driving cables to the carriage, and a discharge chute into which material from the bucket is delivered.

6. A dirt loader for tractors comprising a track providing rails, means mounting the rails on the tractor spaced apart, a pair of wheels rotatable on the rails, cable means constraining the wheels for travel on the rails, further cable means for driving the wheels, a power take-off from the tractor for the cable driving means, a bucket carried by the wheels, a slideway on the tractor over which the bucket travels in a discharging operation and a delivery chute receiving material from the bucket.

7. A dirt loader for tractors comprising a track, means mounting the track on a tractor, a carriage mounted for travel on the track, said carriage comprising a pair of wheels rotatable on the rails and a bucket carried thereby, means individually constraining the carriage wheels for travel on the track, means for moving the carriage on the track, said moving means being connectable to be driven from the tractor, a delivery chute receiving material from the bucket and a protective cover for the tractor over which the bucket travels.

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