

Aug. 14, 1934.

R. G. LE TOURNEAU

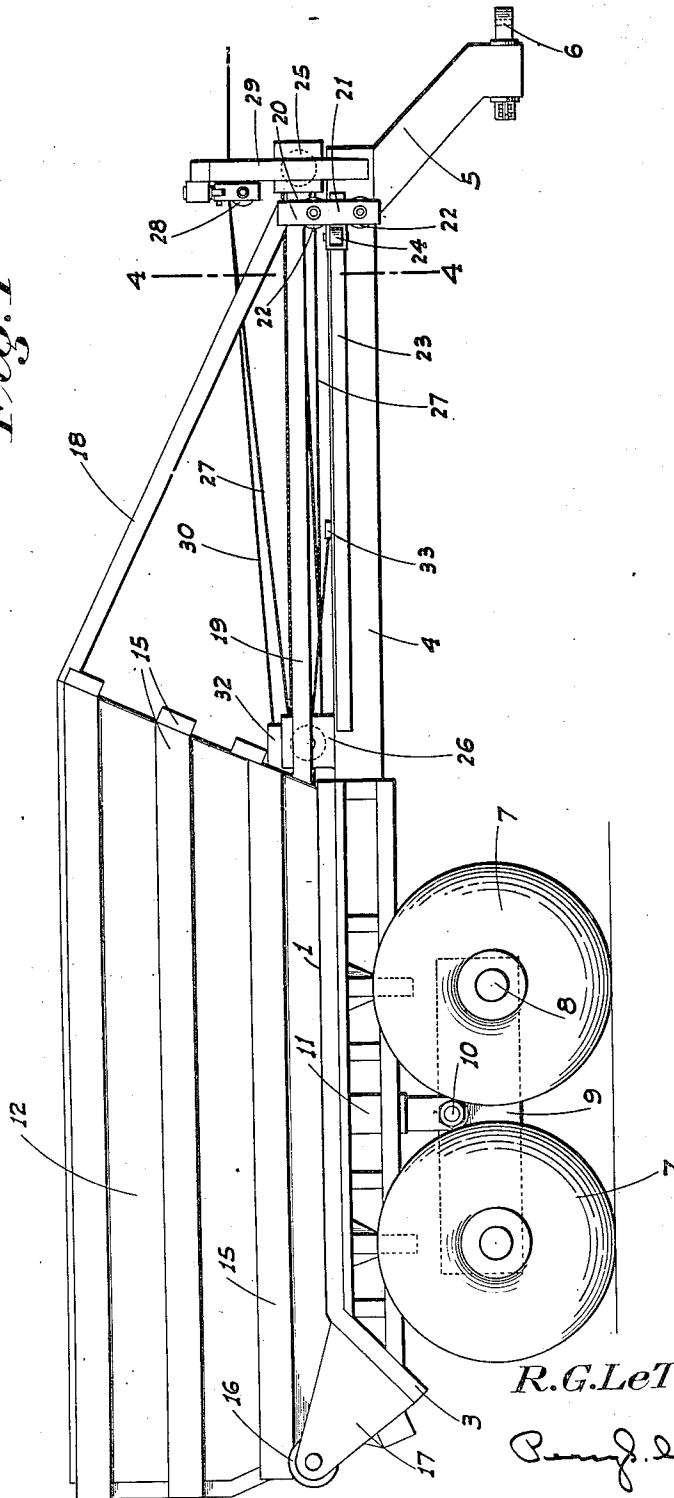
1,969,933

DUMP WAGON

Filed Jan. 22, 1934

3 Sheets-Sheet 1

Fig. 1



INVENTOR

R.G. LeTourneau

Permy J. LeTourneau
ATTORNEY

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R. G. LE TOURNEAU

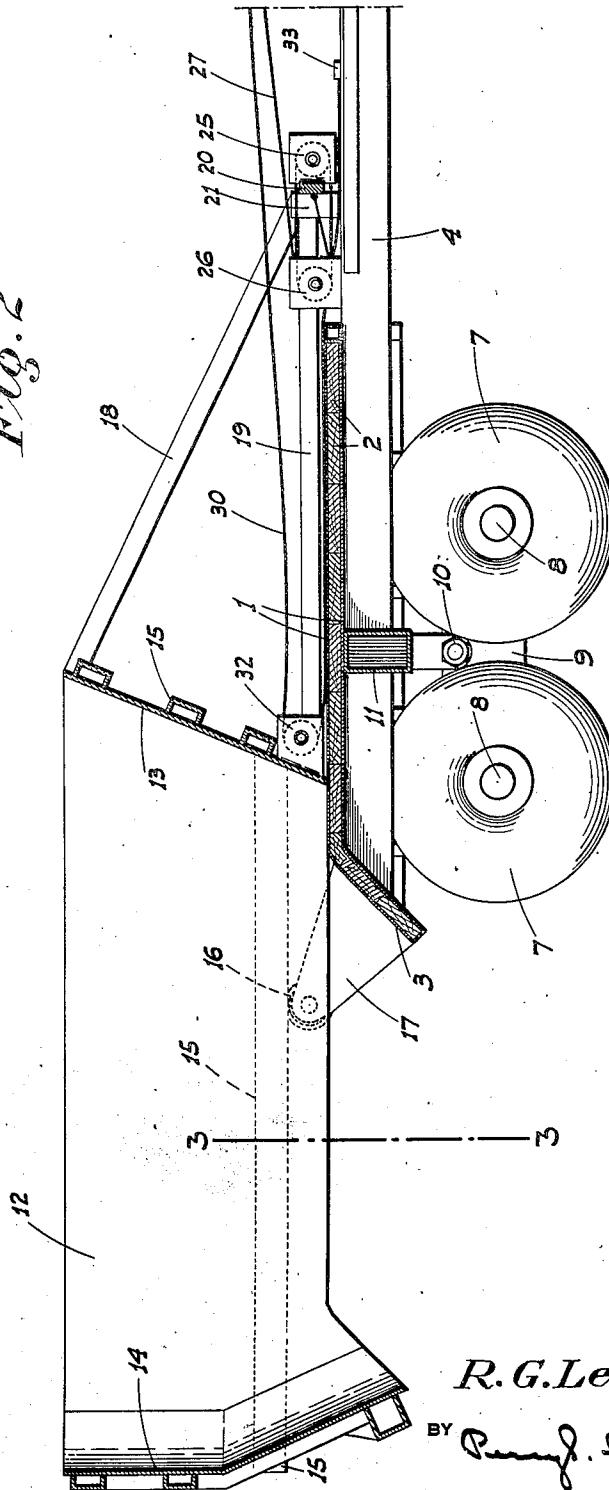
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Fig. 2



INVENTOR

R. G. LeTourneau

BY

R. G. LeTourneau
ATTORNEY

Aug. 14, 1934.

R. G. LE TOURNEAU

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Fig. 3

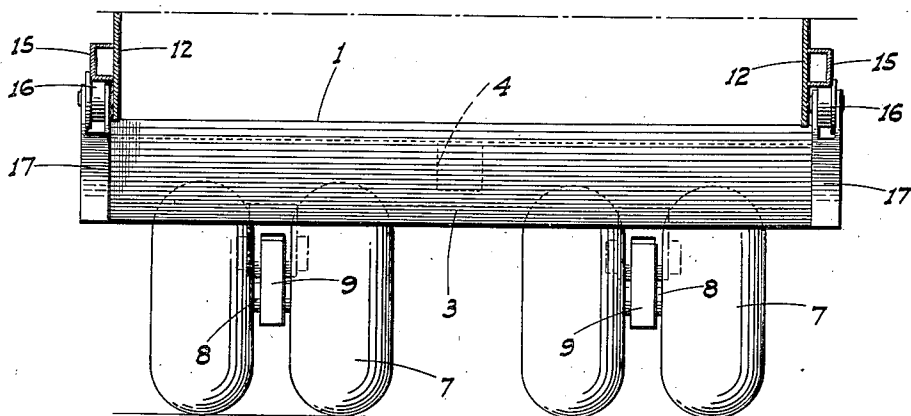
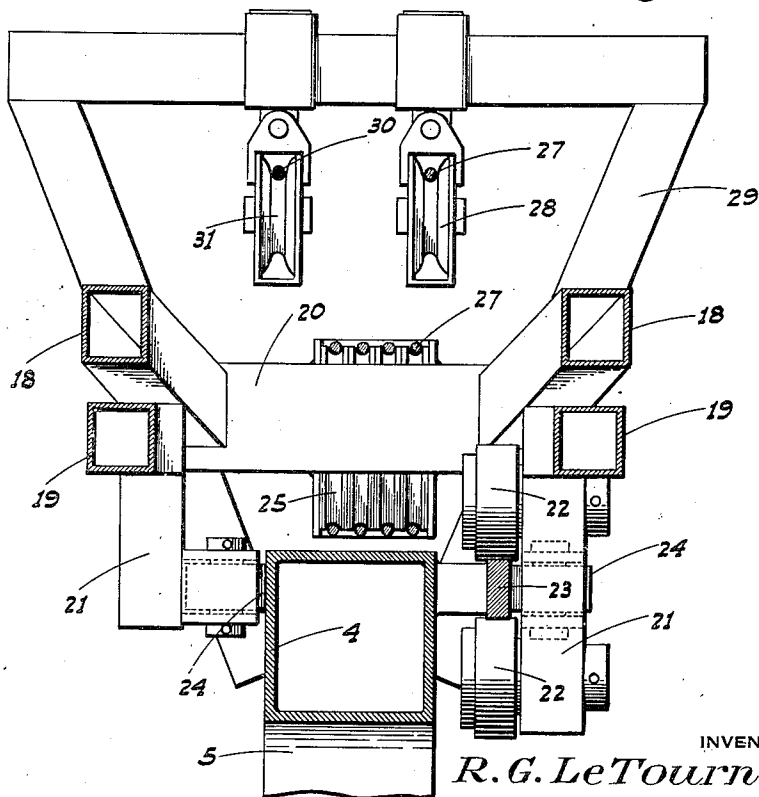


Fig. 4



INVENTOR

R. G. LeTourneau

BY

Samuel J. Walden

ATTORNEY

UNITED STATES PATENT OFFICE

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DUMP WAGON

Robert G. Le Tourneau, Stockton, Calif.

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5 Claims. (Cl. 298—27)

This invention relates to dump wagons and particularly to one of large capacity adapted to be connected in supporting relation to and drawn by a tractor, and especially intended to be loaded from a power shovel. Such wagons are used extensively in road building operations in connection with cut and fill work, in which case a great capacity reduces the number of trips of the wagon between the cut and a fill in a given time and correspondingly reduces operating costs.

I have determined from actual experiments that less power is needed to push a certain mass of dirt horizontally than is necessary to lift the same, and the principal object of my invention therefore is to provide a dump wagon so constructed that its load may be quickly and easily discharged by power from the tractor without any lifting of the wagon or its load being necessary.

By reason of this feature, together with the fact that I have mounted the wagon on airplane type pneumatic wheels, which have been proven to offer the least drag of any type of wheel, I am able to build a wagon of very large capacity and still haul and control the dumping of the same by a single standard type tractor.

A further object of the invention is to construct the wagon so that there are no working parts exposed to the dirt which would tend to jam and wear the same and prevent efficient operation of the wagon.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views:

Figure 1 is a side elevation of the wagon as in its loading position.

Figure 2 is a sectional elevation of the same in the dumping position.

Figure 3 is a fragmentary transverse section on the line 3—3 of Figure 2.

Figure 4 is an enlarged fragmentary section on the line 4—4 of Figure 1.

Referring now more particularly to the characters of reference on the drawings, the bed of the wagon is preferably built of heavy metal sheetings 1 with thick planking 2 therebetween, making a very rigid and yet relatively light and shock absorbing unit. The bed at its back end is formed with a downward slope for a certain distance and serves as a discharge apron 3.

The bed is supported on a rigid centrally disposed tongue 4 which projects forwardly from the bed for a distance approximately equal to

its length and terminates in a rigid depending arm 5 in which a swivel eye 6 is mounted for connection with the draw bar of a tractor. The level of the eye relative to that of the draw bar of a standard tractor is such that the tongue is substantially horizontal.

At its forward end the tongue is directly supported by the tractor and under the bed it is supported by transversely spaced trucks. Each truck has four air wheels 7, all the wheels being disposed in somewhat close relation both lengthwise and transversely of the bed. The axles 8 of the wheels of each truck are mounted on a rocker beam 9 which is disposed between the corresponding pairs of wheels and is pivoted centrally of its ends as at 10 in connection with a cross beam 11 under the bed and rigid therewith and with the tongue. By means of this construction the bed is supported in a stable non-tipping relation transversely, a large ground bearing area is obtained, and the trucks being separately and swivelly mounted can yield to ground undulations without straining the wagon bed. Also the truck beams being between the pairs of wheels, the shearing strains on the axles and the pivot pins of the beams is distributed more evenly.

The wagon body is made of sheet metal and comprises vertical side walls 12 cut along the bottom to follow the level of the top of the bed and apron, a forwardly sloping front wall 13, and a rear wall 14 which extends down to the bottom edge of the side walls at the rear or to the bottom of the apron. The walls are braced with reinforcing beams 15 extending along the outside of the same, the lower pair of which beams form tracks or rails engaged by rollers 16. These rollers are mounted on brackets 17 rigid with and upstanding from the rear end of the bed to the sides of the body and support the same so that its lower edge just clears the bed.

Bars 18 extend forwardly and downwardly in converging relation from the top front corners of the body, while similar horizontal bars 19 extend in converging relation from the front lower corners of the body. At their forward ends these bars are rigidly connected to a cross plate 20 which overhangs the tongue and also to posts 21 which depend alongside the tongue in clearance relation thereto. One post has vertically spaced rollers 22 mounted thereon with their axes horizontal and transverse and which ride on the upper and lower edges of a rail 23 rigid with the tongue on the corresponding side. Other rollers 24 are mounted in connection with both posts on

vertical axes, one of which rollers bears against the outer face of the rail and the other against the outer face of the tongue on the opposite side. These rollers prevent lateral deflection of the wagon bed, while the upper roller 22, together with the rear rollers 16, provide a three-point anti-friction support for the body. A lower roller 22 prevents upward tipping of the body due to its own weight when it is shifted rearwardly from the bed.

The loading and dirt carrying position of the body is of course when said body is disposed directly over the bed as shown in Figure 1. The discharge of the load is effected by pushing the dirt bodily from the bed by the rearward movement of the body, such movement leaving an opening of ever increasing size between the back apron 3 and the back of the body, as is shown in Figure 2.

Such movement is preferably imparted to the body by the following means:

Fixed on the plate 20 is a sheave block 25, while fixed on the tongue 4 just ahead of the bed is another similar block 26. A cable 27 extends between the sheaves being anchored at one end in connection with the sheave 25 and extending from the sheave 26 forwardly over a guide pulley 28 depending from an arch bracket 29 supported from the tongue. From said pulley the cable extends to a power drive on the tractor, which is preferably the power control unit shown in my Patent No. 1,912,645, dated June 6, 1933. With a forward pull on the cable therefore the sheave 25 approaches the sheave 26, and since the wagon body is rigid with said sheave 25 the body is shifted rearwardly relative to the bed, pushing the dirt from the bed and over the apron onto the ground. The apron not only directs the sliding of the dirt onto the ground but enables complete discharge of the dirt to be effected with a shorter rearward movement of the body than would be necessary if the bed were straight from end to end.

The empty body is pulled back onto the bed by suitable means which is preferably another cable 30. This cable passes from the power unit on the tractor over another pulley 31 hung from the bracket 29, thence to and about a single pulley 32 secured on the front end of the body near the bottom, and then to an anchor on the tongue 1 in front of said sheave as shown at 33. Of course when operating the structure the cable 27 is allowed to run slack while the cable 30 is being pulled, and vice versa.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described my invention what I claim as new and useful and desire to secure by Letters Patent is:

1. A dumping wagon including a wagon bed, a bottomless body superimposed on the bed, a draft tongue projecting forwardly from the bed, guide and supporting means between the body and tongue, to permit of longitudinal movement of the body relative to the bed, and means to control such movement of the body.

2. A dumping wagon including a wagon bed, a bottomless body superimposed on the bed, a draft tongue projecting forwardly from the bed, means supporting the body for longitudinal horizontal movement, a sheave fixed on the tongue in front of the body, another sheave mounted in fixed connection with the body in front of said first sheave, a pull cable connecting the sheaves and anchored in connection with said other sheave, whereby the body may be moved back relative to the bed, and separate means to pull the body forwardly.

3. A structure as in claim 2, in which said separate means comprising a sheave fixed to the front end of the body and a pull cable extending rearwardly about said sheave and then forwardly to an anchor on the tongue.

4. A dumping wagon including a wagon bed, a bottomless body superimposed on the bed, a draft tongue projecting forwardly from the bed, rails along the sides of the body, rollers mounted in connection with the bed adjacent its rear end and engaging the rails, a rail along one side of the tongue, a post outwardly of said tongue rail, rollers on the post engaging the top and bottom edges of said tongue rail, bars projecting forwardly from the body and supporting the tongue, means to move the body rearwardly, and means to move the body forwardly.

5. A dumping wagon including a wagon bed having a downwardly sloping rigid apron at its rear end, a bottomless wagon body whose lower edges are shaped to follow the contour of the bed and apron, means supporting the body for rearward horizontal movement relative to the bed from a normally superimposed position thereon, and instrumentalities to control such movement of the body.

ROBERT G. LE TOURNEAU.