Feb. 22, 1927. 1,618,330

C. F. GERLINGER.

LUMBER CARRIER

Filed Aug. 18, 1926 4 Sheets-Sheet 1

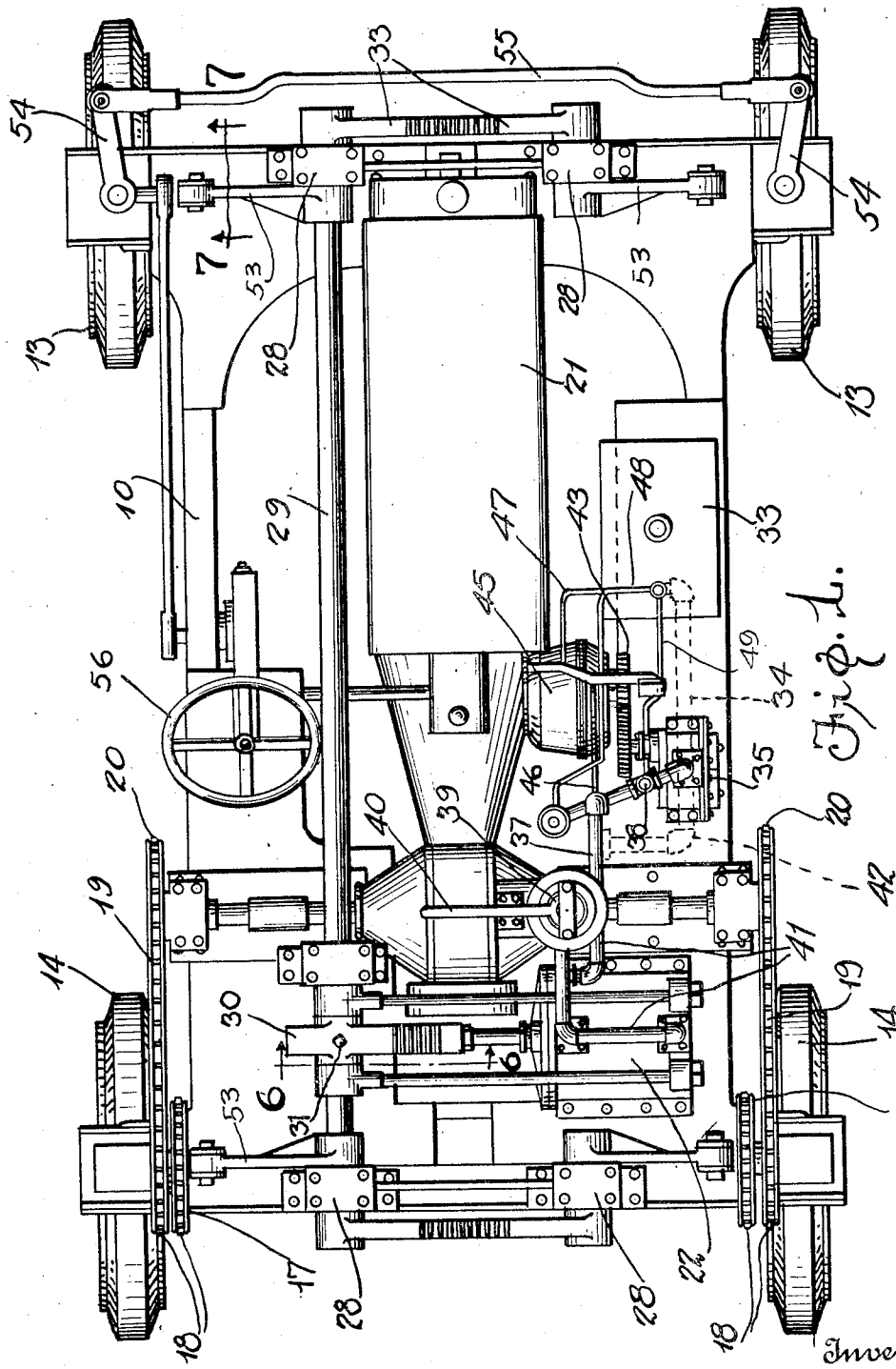


Fig. 1.

Inventor
Carl F Gerlinger,
L. N. Gillis.
Attorney

Feb. 22, 1927.

1,618,330

C. F. GERLINGER

LUMBER CARRIER

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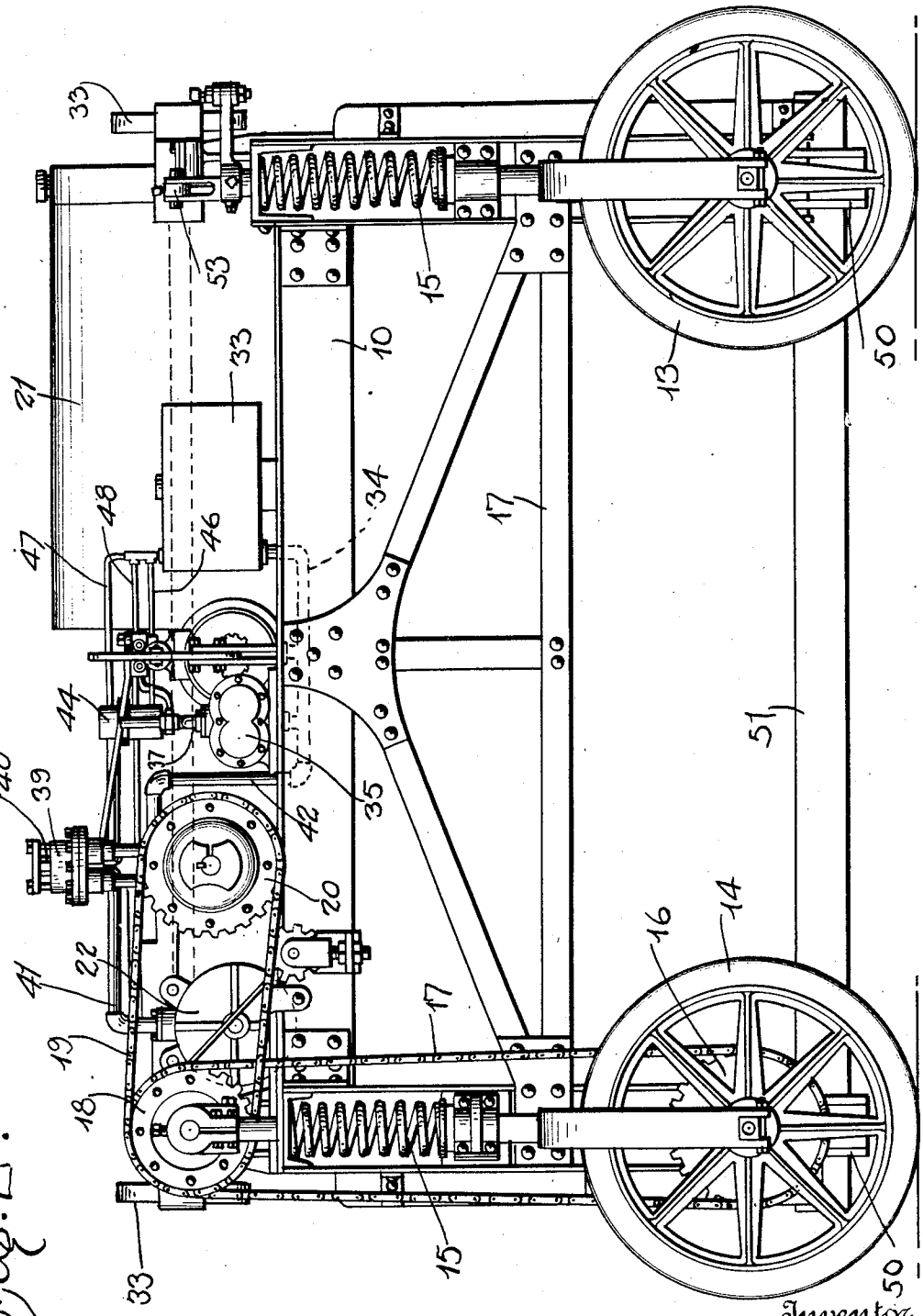


Fig. 2.

Inventor
Carl F. Gerlinger,
L. N. Culley
Attorney

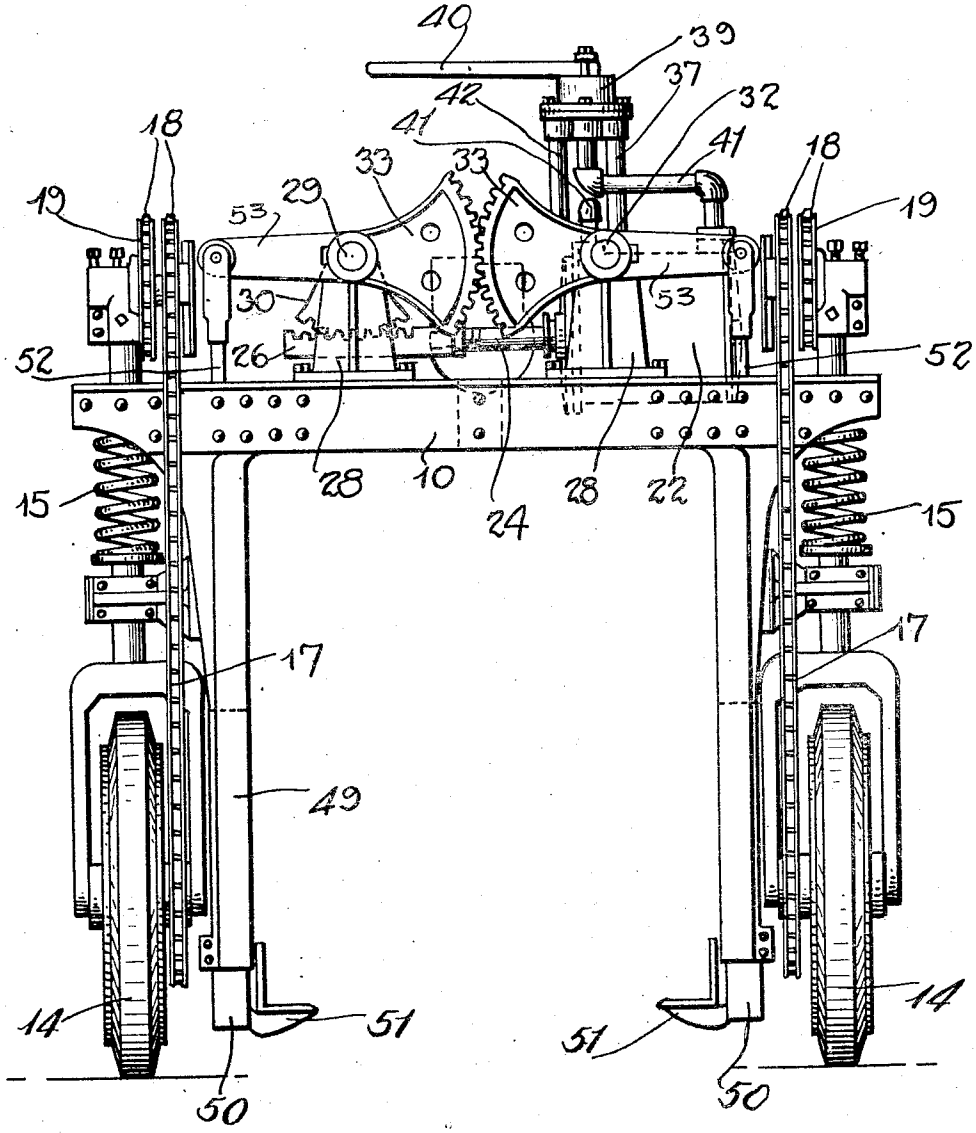
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C. F. GERLINGER

LUMBER CARRIER

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Fig. 3.



Inventor
Carl F. Gerlinger
L. N. Gillis
Attorney

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C. F. GERLINGER

LUMBER CARRIER

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Fig. 4.

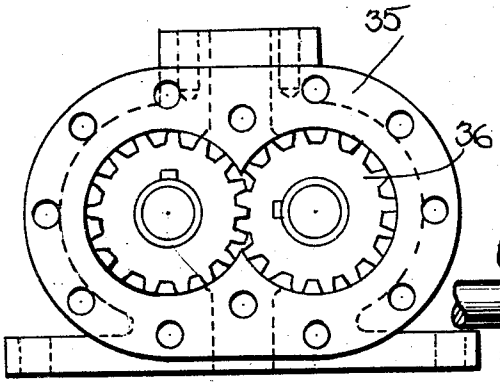
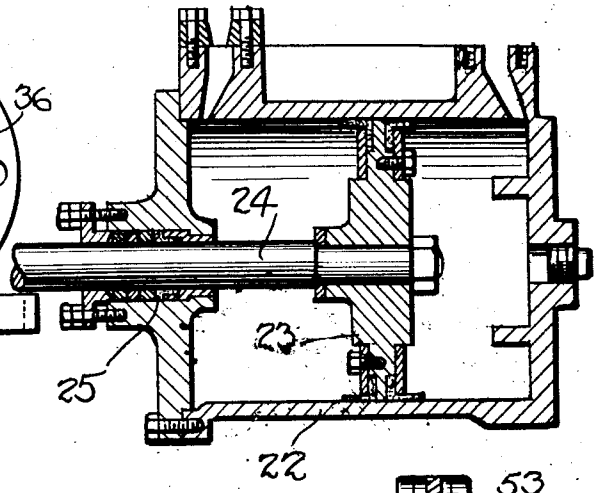


Fig. 5.



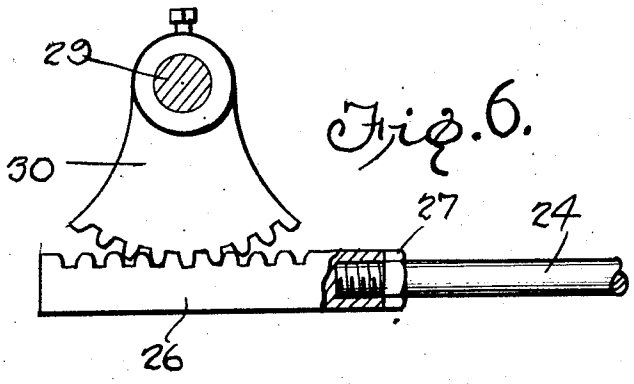


Fig. 6.

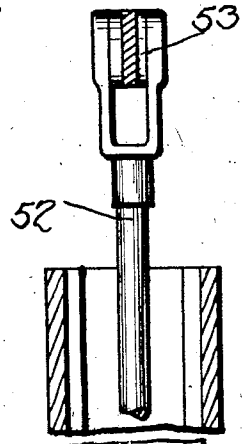
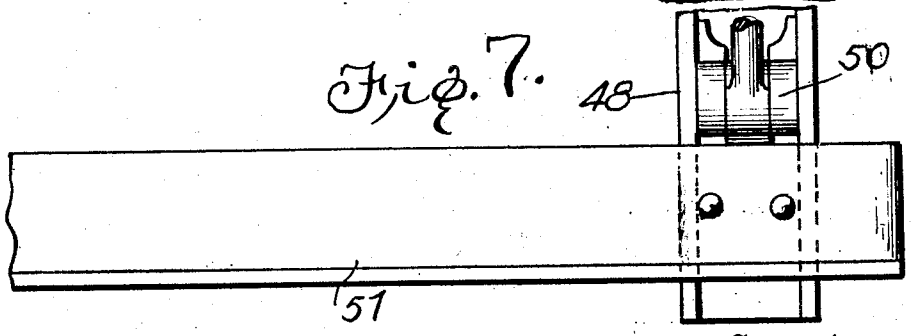


Fig. 7.



Inventor

Carl F Gerlinger,

L. N. Cullen

Attorney

Patented Feb. 22, 1927. 1,618,330

UNITED STATES PATENT OFFICE.

CARL F. GERLINGER, OF DALLAS, OREGON.

LUMBER CARRIER.

Application filed August 18, 1926. Serial No. 130,042.

The invention relates to vehicles and has special reference to a lumber carrier having hydraulic lift means.

More especially the invention relates to improvements in the lumber carriers illustrated and described in my prior U. S. Patent 1,480,257, date January 8, 1924, and in my copending U. S. application 69,435, filed November 16, 1925.

The principal objects of this invention, like those in the aforesaid application are to eliminate the plurality of cylinders used in the aforesaid patent, to do away with piping complications resulting therefrom, to ensure even hoist at each end and side of the load supporting part of the carrier, and to provide a single hydraulic cylinder for accomplishing these various purposes.

Further important objects of the present invention are to provide a novel arrangement of the hydraulic cylinder whereby the parts may be so proportioned as to permit a suitable lift being given the load with a short stroke cylinder; to provide a novel and improved gear arranged for connecting the piston rod of the hydraulic cylinder to the load carrying members; to provide an arrangement of load lifting means wherein the load carrier will be supported by members which may be so positioned in assembling the device that the load carrier will be parallel to the wheel base, the lifting means being capable of adjustment for this end; and to provide an improved general construction of a lumber carrier of this type.

With the above and other objects in view as will be hereinafter apparent, the invention consists in general of certain novel details of construction and combinations of parts hereinafter fully described, illustrated in the accompanying drawings and specifically claimed.

In the accompanying drawings like characters of reference indicate like parts in the several views, and:

Figure 1 is a plan view of the device.

Figure 2 is a side elevation thereof.

Figure 3 is an end elevation thereof.

Figure 4 is a detail section through the pump used herewith.

Figure 5 is a detail longitudinal section through the hydraulic cylinder.

Figure 6 is a detail section on the line 6—6 of Figure 1 showing the rack and segment drive for the lifting gear.

Figure 7 is a detail section on the line 7—7 of Figure 1 showing the load supporting links and their connections.

In the present embodiment of the invention there is shown a chassis composed of an upper frame 10 and a lower frame 11 which are connected together by braces. At the forward end of this chassis there is provided the usual wheel 13 on each side and at the rear end there are provided similar wheels 14. These wheels are connected to the chassis by means of the spring supports 15 described in the prior application and, the rear wheels are driven by the previously described device comprising the rear sprockets 16, chain 17, sprocket wheels 18, chain 19 and sprocket wheel 20 which is driven from the engine 21.

Mounted on top of the chassis is a cylinder 22 wherein is mounted a piston 23 to which is connected a piston rod 24 extending out through the usual stuffing box 25. This rod is screwed into a rack bar 26, a lock nut 27 being employed to prevent accidental disengagement. At each side of the chassis, on top thereof, is a pair of aligned bearings 28 which are positioned at the ends of said chassis. Through the bearings on the left side of the chassis extends a long shaft 29 on which is mounted a gear segment 30 which is held by some suitable fastening means, as by the set screw 31. The cylinder thus extends transversely of the machine and is located adjacent the rear end thereof. In each of the remaining bearings 28 there is journalled a stub shaft 32 and extending inwardly from the ends of the shaft 29 and the stub shafts 32 are segmental gears 33 which mesh together so that revolution of the shaft 29 causes similar but opposite revolution of the shafts 32. At 33 is a liquid reservoir which is connected by a piping 34 with a rotary pump 35 having a pair of toothed impellers 36. From the top of this pump is a pipe 37 provided with a check valve 38 opening away from the pump which leads to a controlling valve 39 having a handle 40. From this controlling valve pipes 41 lead to opposite ends of the cylinder 22. A return pipe 42 also leads from this valve to the pipe 34. The pump is driven by suitable gearing 43 from the engine 21. By moving this valve to one position water is admitted to the front end of the cylinder and allowed to pass out the rear end while moving the valve to its opposite position reverses

this operation. The pipe 37 is connected to an air chamber or release chamber 44 and in order to control the action of the pump there is provided a governor 45 of any preferred fluid governor type, the controlling pressure for the governor being received through the pipe 46 while the governor discharge pipe is shown at 47 and the air chamber discharge pipe at 48. Inasmuch as no claim is made to the specific construction of either the governor or the valve 39 in the present application it is deemed unnecessary to show the details of these parts.

Depending from the chassis are four guide legs or standards 49 wherein slide crossheads 50 and at each side these crossheads are connected in pairs by the load carrying angles 51. It will be observed that these angles extend longitudinally of the machine close to and inside of the wheels at each side. Connected to each of these crossheads is a lift link 52 which extends up through the upper part of the chassis and has its upper end pivotally connected to the free end of a rock arm 53. These rock arms are fixed to the shafts 29 and 32 respectively, the shaft 29 carrying two of the arms. These rock arms further extend outwardly from the shafts so that when the piston moves in one direction all four rock arms will be simultaneously lifted. Consequently both of the load carrying angles will be simultaneously lifted. By properly positioning the rock arms on their shafts the angles 51 are positioned parallel to each other and in the same horizontal plane. Under these circumstances it can be understood that moving the valve handle 40 to lifting position lifts all of the crossheads simultaneously while moving it to lowering position permits all of these crossheads to drop simultaneously.

The front wheels form the steering wheels and the steering is affected through the usual arms 54 connected by a tie rod 55, one of the arms 54 forming part of a steering knuckle which is suitably connected in the usual manner to a steering wheel 56.

There has thus been provided a simple and efficient device of the kind described and for the purpose specified.

It is obvious that minor changes may be made in the form and construction of the invention without departing from the material spirit thereof. It is not, therefore, desired to confine the invention to the exact form herein shown and described, but it is desired to include all such as properly come within the scope claimed.

Having thus described the invention, what is claimed as new, is:

1. In a lumber carrier, a wheel supported chassis, load carrying members extending longitudinally of the chassis at each side thereof and between the wheels, guide standards depending from the upper part of the chassis, crossheads slidable vertically in said standards, links extending upwardly from said crossheads, a single hydraulic cylinder, shafts on opposite sides of said chassis and extending longitudinally thereof, rock arms fixed on said shafts and having their free ends connected to the upper ends of the links, gearing connecting the shaft on opposite sides of the chassis to cause the shafts to rotate in unison, and an operative connection between one of the shafts and the cylinder.

2. In a lumber carrier, a wheel supported chassis, load carrying members extending longitudinally of the chassis at each side thereof and between the wheels, guide standards depending from the upper part of the chassis, crossheads slidable vertically in said standards, links extending upwardly from said crossheads, a single hydraulic cylinder, a pair of aligned bearings on each side of the chassis, a single shaft journalled in one pair of the bearings, stub shafts each supported in one of the remaining pair of bearings, gears fixed on the first shaft, a gear fixed on each of the stub shafts and meshing with a respective gear on the first shaft, rock arms fixed on said shafts and having their free ends connected to the upper ends of said links, and an operative connection between said cylinder and the first shaft.

3. In a lumber carrier, a wheel supported chassis, load carrying members extending longitudinally of the chassis at each side thereof and between the wheels, guide standards depending from the upper part of the chassis, crossheads slidable vertically in said standards, links extending upwardly from said crossheads, a single hydraulic cylinder, shafts on opposite sides of said chassis and extending longitudinally thereof, rock arms fixed on said shafts and having their free ends connected to the upper ends of the links, gearing connecting the shafts on opposite sides of the chassis to cause the shafts to rotate in unison, a piston in said cylinder, a piston rod carried by said piston and projecting from said cylinder, a rack carried by said rod, and a gear fixed to one of said shafts and meshing with said rack.

4. In a lumber carrier, a wheel supported chassis, load carrying members extending longitudinally of the chassis at each side thereof and between the wheels, guide standards depending from the upper part of the chassis, crossheads slidable vertically in said standards, links extending upwardly from said crossheads, a single hydraulic cylinder, a pair of aligned bearings on each side of the chassis, a single shaft journalled in one pair of the bearings, stub shafts each supported in one of the remaining pair of

bearings, gears fixed on the first shaft, a gear fixed on each of the stub shafts and meshing with a respective gear on the first shaft, rock arms fixed on said shafts and having their free ends connected to the upper ends of said links, a piston in said cylinder, a piston rod carried by said piston and projecting from said cylinder, a rack carried by said rod, and a gear fixed to the first mentioned shaft and meshing with said rack.

In testimony whereof I affix my signature.

CARL F. GERLINGER.