

No. 775,997.

PATENTED NOV. 29, 1904.

C. G. STREICH.
ROLL-OFF LUMBER WAGON.
APPLICATION FILED JAN. 14, 1904.

NO MODEL.

Fig. 1.

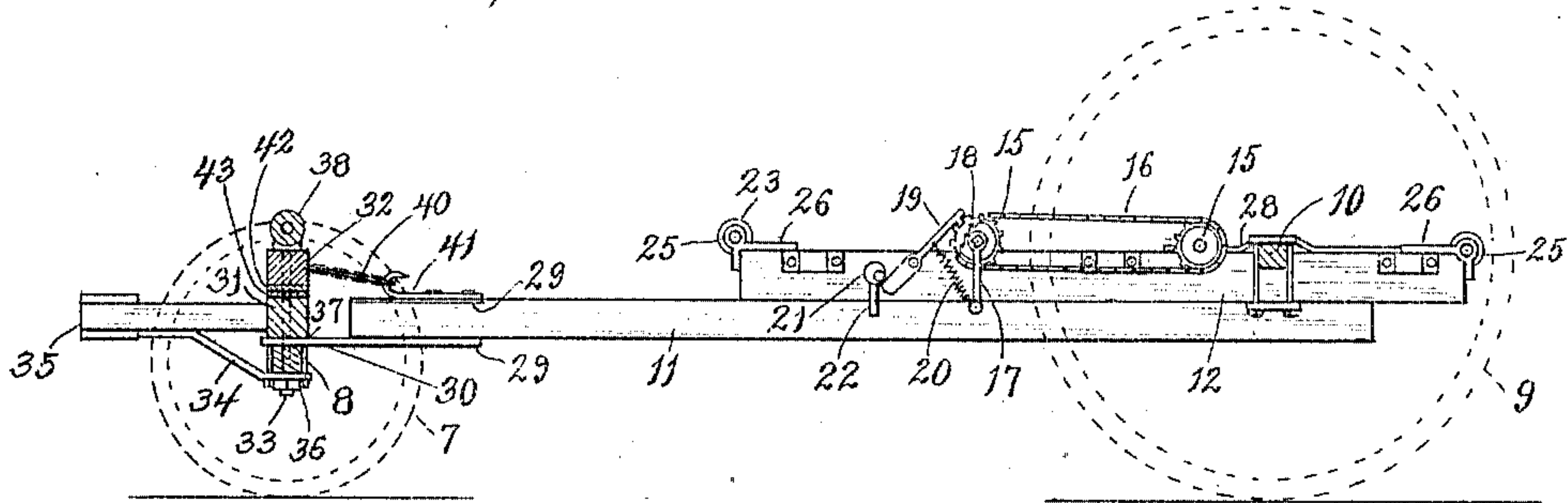


Fig. 2.

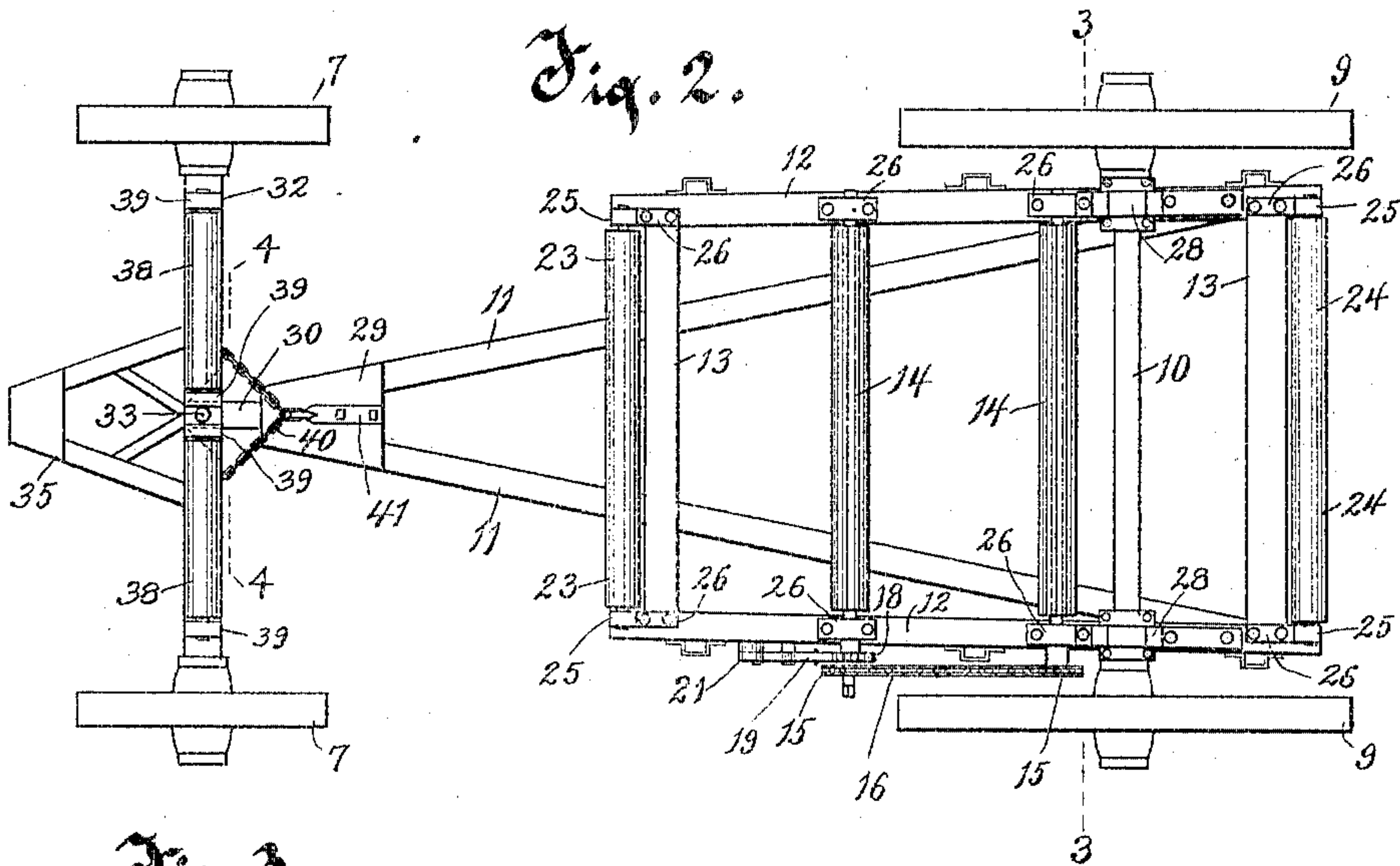


Fig. 3.

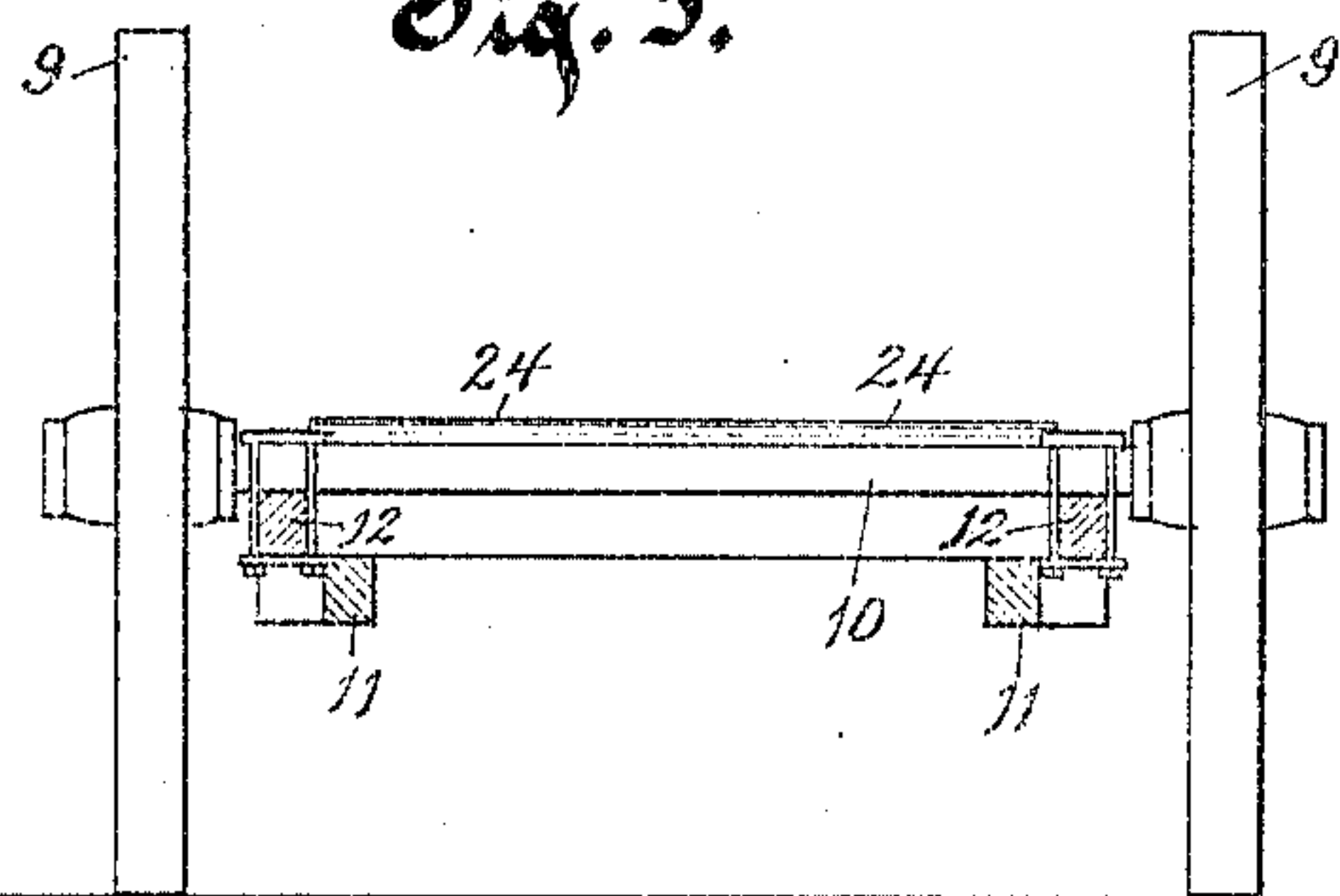
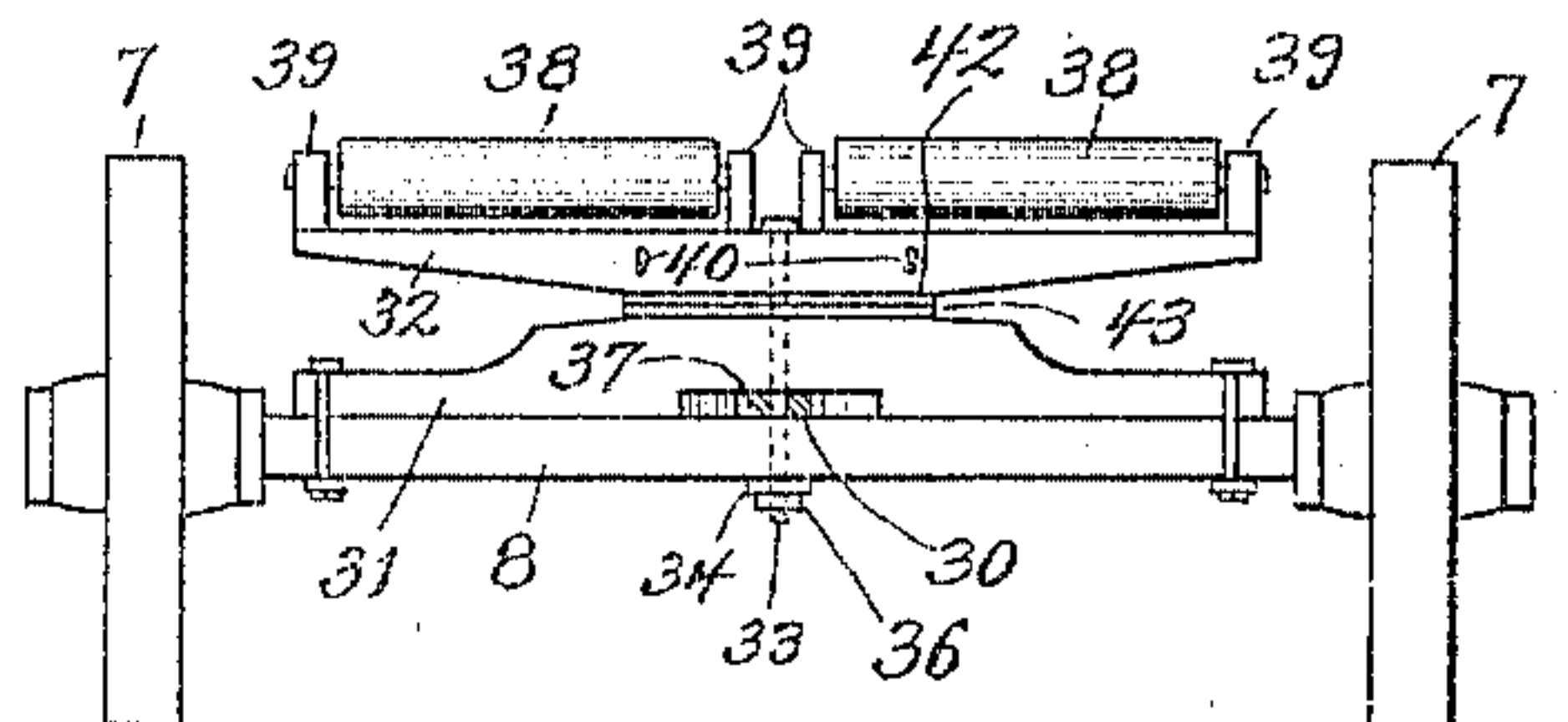


Fig. 4.



Witnesses:

C. H. Keeney.

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Fig. 5.

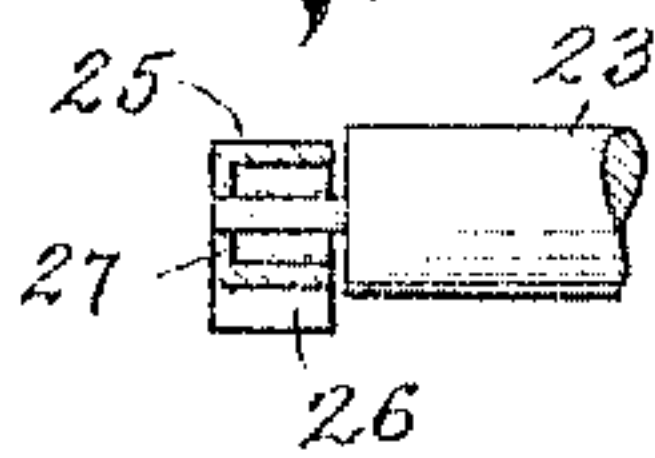
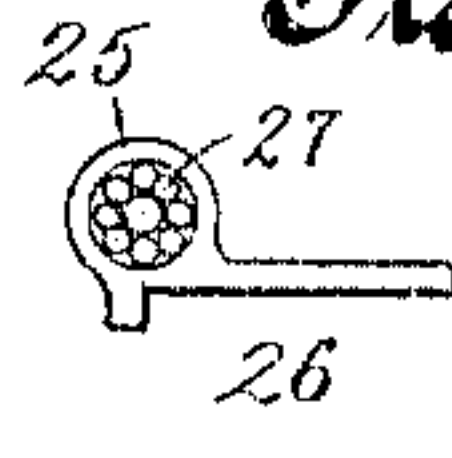


Fig. 6. Inventor.



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UNITED STATES PATENT OFFICE.

CHARLES G. STREICH, OF OSHKOSH, WISCONSIN.

ROLL-OFF LUMBER-WAGON.

SPECIFICATION forming part of Letters Patent No. 775,997, dated November 29, 1904.

Application filed January 14, 1904. Serial No. 188,939. (No model.)

To all whom it may concern:

Be it known that I, CHARLES G. STREICH, residing at Oshkosh, in the county of Winnebago and State of Wisconsin, have invented
 5 a new and useful Improvement in Roll-Off Lumber-Wagons, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

10 This invention has relation to improvements in roll-off lumber-wagons.

One of the objects of the invention is to provide a construction in the above class of wagons, whereby the frame is disposed at a sufficiently low point and yet at the same time the
 15 width of the track is not sacrificed—that is to say, a low-down frame is provided, while yet the necessary loading-space in a standard-track wagon is preserved.

20 A further object is to provide an arrangement whereby the wagon is so constructed that the front wheels on a turning of the wagon in either direction will pass beneath the load, and thereby permit of a very short
 25 turn.

A still further object is to provide a construction of such character that the entire weight of so much of the load as is above the front axle comes directly on said axle.

30 With the above primary and other incidental objects in view the invention consists of the devices and parts or their equivalents, as hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is
 35 a side elevation of my improved wagon, parts in section and the wheels shown in dotted lines. Fig. 2 is a plan view of the improved wagon. Fig. 3 is a transverse section on the line 3 3 of Fig. 2 looking toward the rear of
 40 the wagon. Fig. 4 is a transverse section on the line 4 4 of Fig. 2 looking toward the front of the wagon. Fig. 5 is a fragment of one of the rollers and the box for the end journal thereof, the said box being in sec-
 45 tion; and Fig. 6 is an inner side view of the box illustrated in Fig. 5.

Referring to the drawings, the numerals 77 indicate the front wheels; 8, the front axle; 9 9, the rear wheels; 10, the rear axle, and 11
 50 11 the longitudinal timbers constituting the

reach and which connect the forward and rear portions of the wagon. Mounted above these timbers and secured fast thereto is a roll-frame, preferably of rectangular form and comprising side pieces 12 12, which provide
 55 means for journaling the rolls and the cross-bars 13 13, the said cross-bars connecting the side pieces 12 preferably at points slightly removed from the extremities of said side pieces. The inner rolls are indicated by the
 60 numerals 14 14 and are provided with longitudinal grooves or flutes, and the journals at corresponding ends of these rolls are extended outwardly laterally and have mounted
 65 thereon sprocket-wheels 15 15, which are connected by means of a sprocket-chain 16. One of these extended journals is also formed or provided with a crank-handle 17. The end
 70 journal which carries the crank-handle has also mounted fast thereon a ratchet-wheel 18, which occupies an inner position on said journal with relation to the sprocket-wheel
 15 and is adapted to be engaged by a pawl 19. A coiled spring 20 is connected at one end to the pawl and at its opposite end to the
 75 framework.

A cam 21 is eccentrically pivoted to the same side piece of the roll-frame to which the pawl 19 is pivoted. This cam is provided with a depending handle 22. When the handle of
 80 the cam is turned toward the left of Fig. 1, the said cam acts on the short arm of the pawl 19 and throws the upper engaging end of said pawl out of engagement with the
 85 ratchet-wheel 18. The said ratchet-wheel is then free to be turned by the crank-handle 17, and in view of the fact that the two fluted rollers 14 are connected by means of the sprocket-chain 16 said fluted rollers are neces-
 90 sarily turned together by the actuation of the handle. The turning of these rollers is for the purpose of effecting the loading and unloading of the lumber. The lumber or load, it will be understood, extends across these
 95 rollers, and when the pawl is disengaged from the ratchet the crank-handle is turned toward the rear of the wagon, and this will have the effect, through the rotation of the fluted rollers rearwardly, to move the lumber
 100 or load to the rear and off the rear end of the

wagon. When the unloading operation is not being effected, the pawl 19, of course, is thrown into engagement with the ratchet-wheel in order to prevent the rotation of the fluted rollers, or if at any time during the unloading operation it is desired to stop said operation temporarily the pawl may be permitted to engage the ratchet-wheel, so as to lock the fluted rollers against rotation.

It will be noticed that the side pieces 12 of the roll-frame are divergent rearwardly, so that the rear of the loading-space of the wagon is a little wider than the front thereof. By this construction the unloading is facilitated, inasmuch as the divergence toward the rear prevents any clogging, and consequently the lumber is permitted to pass freely off the rear end of the wagon.

The roll at the forward end of the frame is indicated by the numeral 23 and the roll at the rear end of said frame by the numeral 24. These rolls 23 and 24 are adapted to revolve freely in either direction. I prefer that the bearings for the end journals of all the rolls shall comprise circular boxes 25, said boxes being formed with or carried by straps 26, said straps being secured to the upper edges of the side pieces 12 of the roll-frame. These several boxes contain a series of elongated antifriction-rollers 27. The journals of the rolls extend into these boxes and are surrounded by the antifriction-rollers. All the rolls are thereby enabled to turn with the greatest freedom, and the crank-handle is also permitted to be operated so as to positively rotate the fluted rolls with a minimum of labor.

The rear axle 10, instead of being cranked and dropping below the frame, as is usual in this class of wagons, rests upon the upper edges of the side pieces 12 of the roll-frame and is secured thereto in any desirable manner, preferably by means of straps 28 passing over said axle and secured at their ends to the top edges of the side pieces 12. The longitudinal timbers 11 are converged toward the front of the wagon and are connected at their front converged ends by means of plates 29 29.

An important feature of my invention is the improved construction of the front truck of the wagon, whereby the front axle is disposed at such a low point as to enable the highest point of the peripheries of the front wheels to pass under the load, and thereby permit of a very short turning of the wagon in its loaded condition. Referring to this improved construction, the numeral 30 indicates an extension from the under plate 29 and which projects forwardly above the front axle 8. On top of and secured to the front axle 8 is the axle-feed 31, and above the axle-feed is the front bolster 32. A king-bolt 33 passes through a strap 34, extending rearwardly from the hounds 35, and said bolt also passes through the front axle 8, the axle-feed 31, and the bol-

ster 32, the upper end of said king-bolt being provided with a head which bears against the upper edge or side of the bolster 32. The lower extremity of the king-bolt is threaded to receive a locking-nut 36, which is turned upon the bolt against the strap 34. In order to permit the extension 30 of the plate 29 to pass or extend onto the upper side of the front axle 8, the axle-feed 31 should be recessed. This recess is indicated by the numeral 37, and said recess diverges rearwardly, so as to permit the front axle to turn freely without binding, which would necessarily occur if the extension 30 of the plate 29 extended into a recess with parallel walls. It is necessary that the front truck of the wagon should be provided with a roller-bearing surface to permit the lumber or load to be readily shoved onto the wagon and rearwardly to the rear truck; but in view of the fact that the king-bolt in this particular construction extends upwardly through the front bolster 32 it is impracticable to employ a long single roller, inasmuch as in such event the extension of the upper end of the king-bolt through the bolster 32 would be interfered with. Instead of employing a long single roller on the front truck, therefore, I employ two short rollers 38 38, the end journals of which have their bearings in bearing-arms 39, extending upwardly from the bolster 32. Besides the connection formed between the front and rear trucks of the wagon by the extension 30 of the lower plate 29 I also provide a flexible connection consisting of a chain 40, which at opposite ends is connected to the bolster 32 and is then extended rearwardly to engage with a hook 41, secured above the upper plate 29. The fifth-wheel of the front truck is composed of the bearing-plates 42 and 43, which are in bearing contact with each other, and the former is secured to the under side of the bolster 32 and the latter to the upper side of the axle-feed 31. By the improved construction of front truck above described it will be seen that the front rollers are carried at a sufficiently high point to support the load at such height that the front wheels 7 are permitted to pass under the load when the wagon is turned, and not only is the turning thereby provided for, but a very short turn is permitted. By this construction also the whole weight of that portion of the load above the front axle is directly on said axle.

In explanation of the advantages of my invention it is to be stated that in roll-off lumber-wagons as commonly constructed in order to bring the frame at a sufficiently low point the rear axle is cranked. The crank formation of this axle necessarily compels the employment of a longer axle than is ordinarily used in wagons of this character, and this necessarily makes the wagon too wide for the standard loading-room reserved for that class of wagons, which is thirty-eight inches in the case of the standard narrow-track wagons of

four feet six inches. For instance, in this crank-axle form of construction in order to have the ordinary loading-room of thirty-eight inches on a narrow-track wagon the track of said wagon would have to be six inches wider than the actual loading-width required, and even then it would not run in the track. On the other hand, if the crank-axle wagon is the proper size to run in the track then the loading-room is reduced to thirty-two inches. In my improved construction, however, where the rear axle is mounted on the top edges of the roll-frame the wagon is lowered to the requisite degree, and at the same time the proper width for ordinary loading capacity is maintained, and at the same time the wagon is of the standard-track measurement. Furthermore, my construction is such that a stronger, lighter, less expensive, and more durable wagon is provided.

While I have styled my invention as a "roll-off lumber-wagon," yet I do not wish to be understood as restricting myself specifically to a "wagon" so called, inasmuch as the same construction would be applicable to a vehicle in the form of a cart, truck, or to a vehicle in the form of a sled employing front and rear runners connected to the axles.

What I claim as my invention is—

1. In a roll-off lumber-vehicle, the combination of a rear truck formed or provided with an upward extension, a rear straight axle having its ends secured to said upward extension, rear ground-engaging devices mounted on the opposite ends of the rear axle, rolls having their journals mounted in bearings therefor in the upward extension, a front axle, ground-engaging devices at the ends of said axle, and a connection between the front axle and the rear truck.

2. In a roll-off lumber-vehicle, the combination of a rear truck, comprising a reach and a roll-frame mounted above the reach, a rear straight axle having its ends secured to said roll-frame, rear ground-engaging devices mounted on the ends of said axle, rolls having their journals mounted in bearings therefor in the roll-frame, a front axle, ground-engaging devices mounted on the ends thereof, and a connection between the front axle and the rear truck.

3. In a roll-off lumber-vehicle, the combination of a rear truck formed or provided with an upward extension, a rear straight axle secured to the upper edges of the side pieces of said upward extension, rear ground-engaging devices mounted on the opposite ends of the rear axle, rolls having their journals mounted in bearings therefor in the upward extension, a front axle, ground-engaging devices at the ends of said axle, and a connection between the front axle and the truck.

4. In a roll-off lumber-vehicle, the combination of a rear truck formed or provided with an upward extension, a rear straight axle hav-

ing its ends secured to said upward extension, rear ground-engaging devices mounted on the ends of the axle, rolls extending across the upward extension and mounted in suitable bearings therefor in said upward extension, a plurality of said rolls having roughened or fluted surfaces to engage the lumber resting thereon, sprocket-wheels on the extended journals of the fluted rolls, a crank-handle connected to one of said extended journals, a ratchet-wheel on the extended journal carrying the crank-handle, a sprocket-chain connecting the two sprocket-wheels, a pawl normally engaging the ratchet-wheel, and a pivoted cam adapted when turned in one direction to act on the pawl and throw the same out of engagement with the ratchet-wheel, and a coiled spring connected at one end to the pawl and at its other end to a fixed point.

5. The combination of a rear truck, an axle mounted in bearings therefor in the rear truck; ground-engaging devices on the ends of said axle, a front axle, ground-engaging devices mounted on the ends thereof, a plate extending forwardly from the rear truck and above the front axle, an axle-feed secured to the upper side of the front axle, the forwardly-extending plate passing between said axle-feed and front axle, and seated in a recess provided therefor in one of said parts, a bolster above the axle-feed, rolls carried by the said bolster and having their inner ends spaced a distance apart, the said rolls being carried by the bolster at such height as to permit the front wheels in the turning of said wheels to pass beneath the load resting on said rolls, and a king-bolt passing through the front axle, axle-feed and bolster, the said front axle being turnable on or with said bolt.

6. The combination of a rear truck, an axle mounted in bearings therefor in the rear truck, ground-engaging devices mounted on the ends of said axle, a front axle, ground-engaging devices mounted on the ends thereof, a plate extending forwardly from the rear truck and above the front axle, an axle-feed secured to the upper side of the front axle, the forwardly-extending plate passing between said axle-feed and front axle and seated in a recess provided therefor in one of said parts, a bolster above the axle-feed, a fifth-wheel comprising plates one secured to the upper side of the axle-feed and the other to the under side of the bolster and in bearing contact with each other, rolls carried by the bolster and having their inner ends placed a distance apart, the said rolls being carried by the bolster at such a height as to permit the front wheels in the turning of said wheels to pass beneath the load resting on the rolls, and a king-bolt passing through the front axle, axle-feed, fifth-wheel, and bolster, the said front axle being turnable on or with said bolt.

7. In a roll-off lumber-vehicle, the combination of a rear truck formed or provided with

a roll-carrying frame, said frame increasing in width toward and to the rear end of the vehicle, a rear axle secured to the rear truck, rear ground-engaging devices mounted on the
5 opposite ends of the rear axle, a front axle, ground-engaging devices at the ends of the said front axle, and a connection between the front axle and the rear truck.

8. The combination of a rear truck, an axle
10 mounted in bearings therefor in the rear truck, ground-engaging devices on the ends of said axle, a front axle, ground-engaging devices mounted on the ends thereof, an axle-feed secured to the upper side of the front axle, a
15 bolster above the axle-feed, rolls carried by the said bolster and having their inner ends

spaced a distance apart, the said rolls being carried by the bolster at such height as to permit the front wheels in the turning of said wheels to pass beneath the load resting on
20 said rolls, a king-bolt passing through the front axle, axle-feed and bolster, the said front axle being turnable on or with said bolt, and a connection between the rear truck and the front portion of the wagon.
25

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES G. STREICH.

Witnesses:

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ANNA F. SCHMIDTBAUER.