C. J. EGGERT.

TRACK LAYING MACHINE.

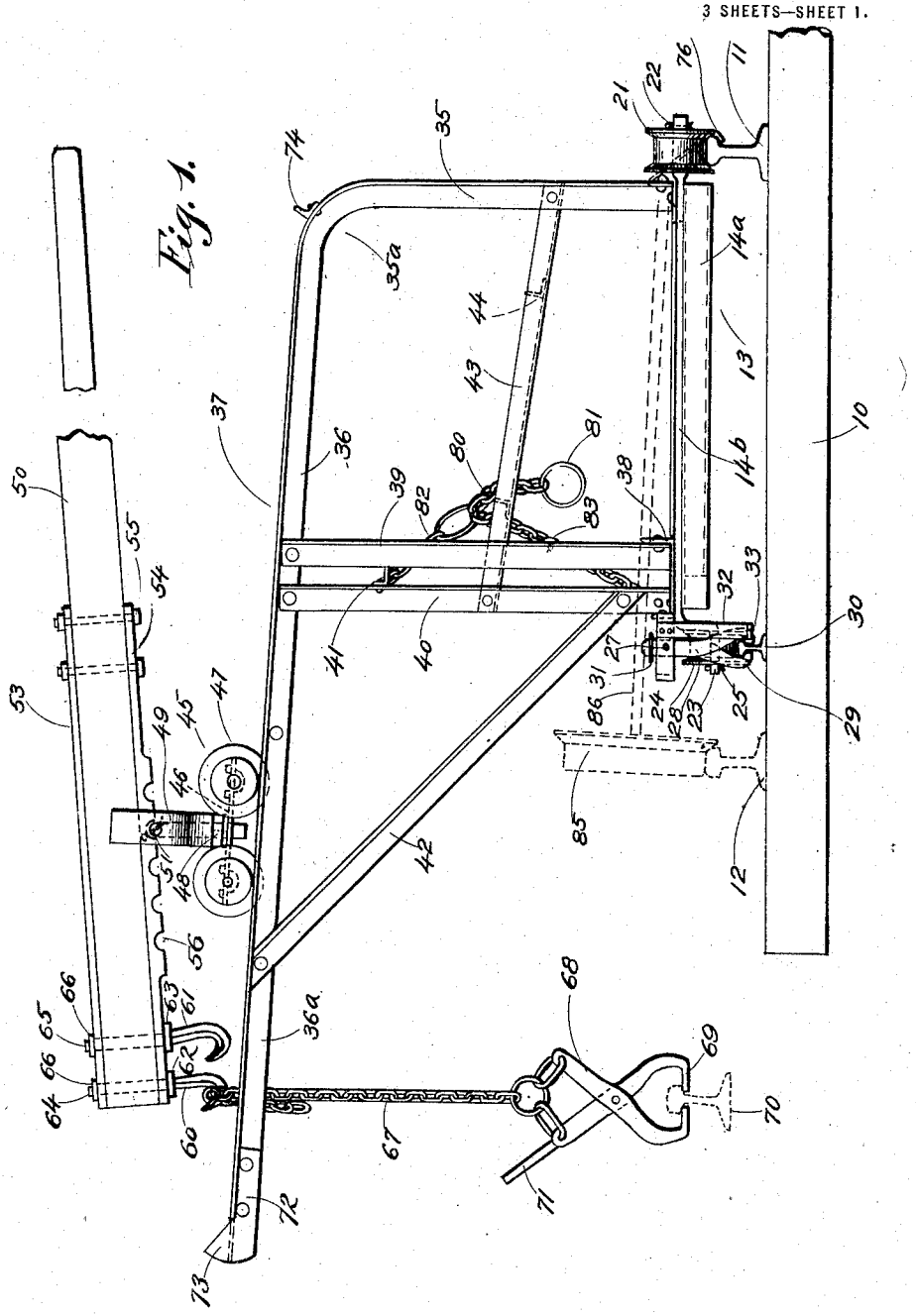
APPLICATION FILED MAY 11, 1914.

1,300,255.

Patented Apr. 15, 1919.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses:

C. E. Burnap

Henry A. Parks

Inventor:

Charles J. Eggert

By Sheridan, Wilkinson and Scott Attys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

C. J. EGGERT.

TRACK LAYING MACHINE.

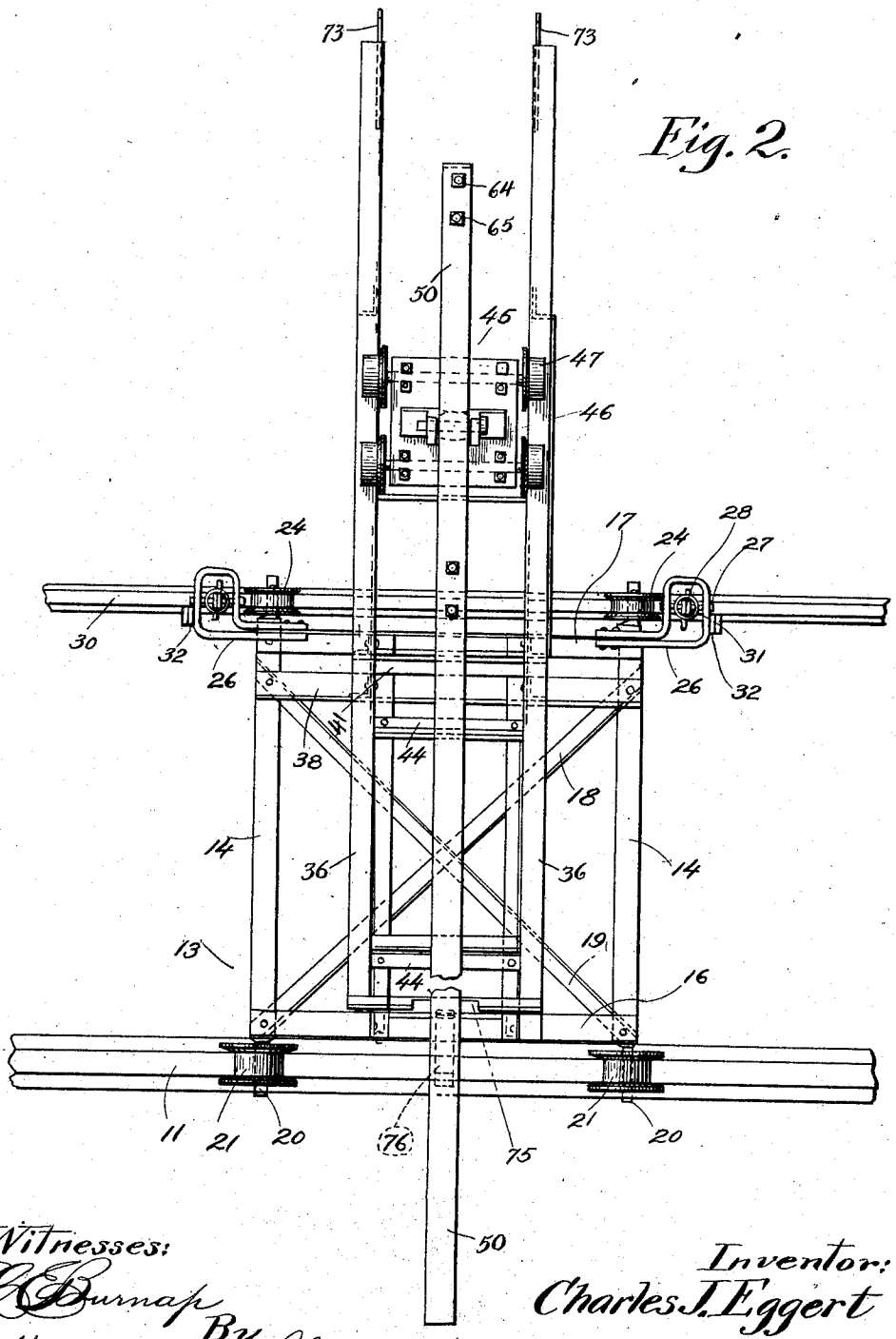
APPLICATION FILED MAY 11, 1914.

1,300,255.

Patented Apr. 15, 1919.

3 SHEETS—SHEET 2.

Fig. 2.



Witnesses:

C. E. Burnap

Henry A. Parker

Inventor:

Charles J. Eggert

By Sheridan, Wilkinson and Scott Attys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

C. J. EGGERT.

TRACK LAYING MACHINE.

APPLICATION FILED MAY 11, 1914.

1,300,255.

Patented Apr. 15, 1919.

3 SHEETS—SHEET 3.

Fig. 4.

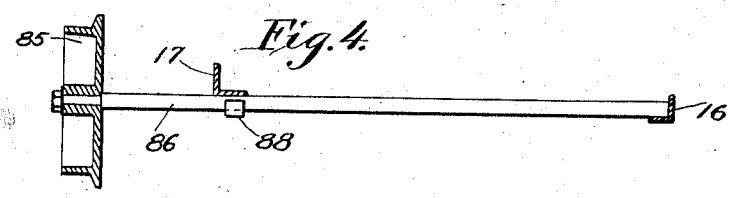
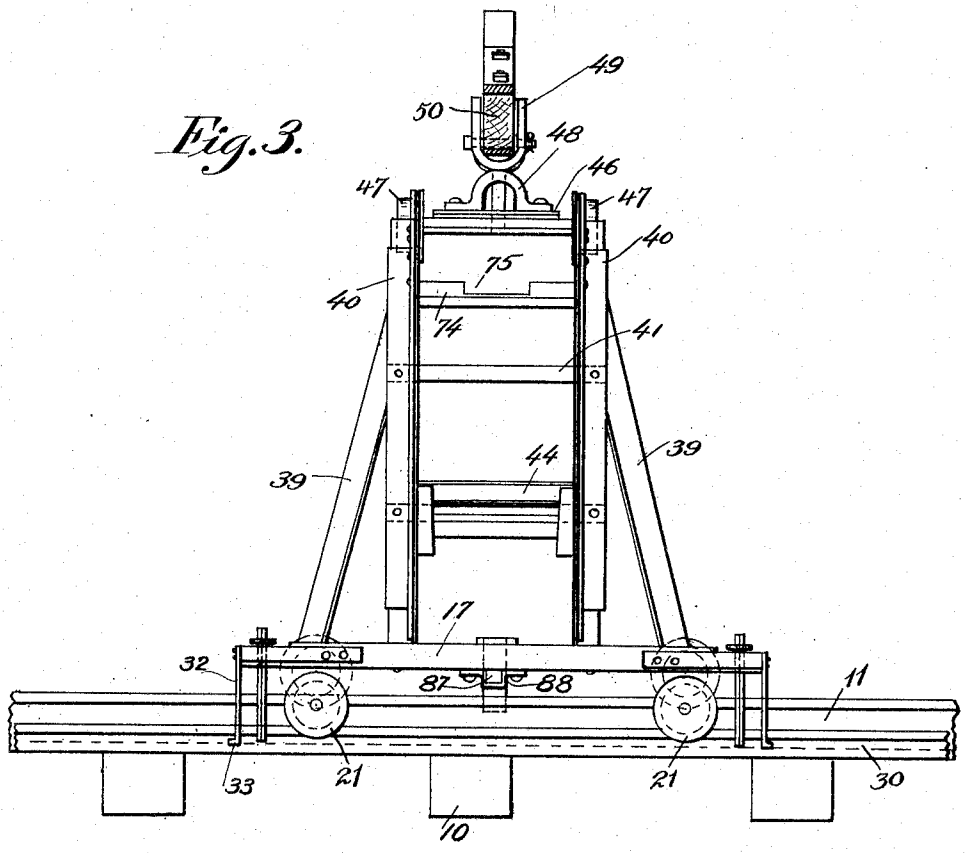


Fig. 3.



Witnesses:
C. Dunlap
Henry A. Parks

Inventor:
Charles J. Eggert

By Sheridan Wilkinson & Scott Attys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES J. EGGERT, OF LA CROSSE, WISCONSIN, ASSIGNOR TO THREE MEN RAIL LAYING MACHINE COMPANY, OF LA CROSSE, WISCONSIN.

TRACK-LAYING MACHINE.

1,300,255. Specification of Letters Patent. Patented Apr. 15, 1919.

Application filed May 11, 1914. Serial No. 837,903.

To all whom it may concern:

Be it known that I, CHARLES J. EGGERT, a citizen of the United States, residing at La Crosse, in the county of La Crosse and State of Wisconsin, have invented certain new and useful Improvements in Track-Laying Machines, of which the following is a specification.

My invention relates to track laying machines, and its purpose is to provide improved apparatus for use in laying the rails of a railway track. My machine is especially adapted for use in re-laying or replacing the rails of a track, although its use is not exclusively confined to that purpose, as will be hereinafter set forth.

As is well known to those familiar with the art, the laying of railway rails on the ties is a very irksome and difficult task, requiring large numbers of men and necessitating great expense to complete the work in what is at best a very slow and tedious manner.

It is then the principal object of my invention to overcome the above named difficulties by providing apparatus of the kind referred to, the use of which will greatly reduce the amount of necessary labor and expense and make possible the laying of railway rails with great relative ease and speed. To this end I provide a machine of the kind hereinafter to be described which may be conveniently moved from place to place and by which a plurality of movements may be given to the rail being laid with relatively little effort on the part of the operators. Other objects will be set forth and made apparent in the following specification taken in connection with the accompanying drawings which form a part thereof. In the drawings:

Figure 1 shows a side elevation of my improved track laying machine;

Fig. 2 shows a top plan view of the same.

Fig 3 shows a front or end elevation of the same; and

Fig. 4 shows a vertical section through an auxiliary wheel and associated parts, showing the shaft in elevation.

Like numerals refer to like parts and elements in the several figures of the drawings, in which the numeral 10 designates a railway tie in position on the road bed serving, together with the other ties of the track, as a support for the rails 11 and 12 which I may hereinafter refer to as the main or permanent rails of a main track, it being understood that these are the rails to be re-laid or replaced.

The truck or car portion of my machine, designated generally by the numeral 13, comprises the side frame members 14 and the end frame members 16 and 17 which are secured together at their meeting points, and maintained in rigid relation to each other by the cross braces 18 and 19. The end frame members 16 and 17 and the cross braces 18 and 19 are preferably of angle iron form although other forms of construction may be used, if desired. Each of the side frame members 14 is made up of a vertically extending portion 14^a and a horizontally extending portion 14^b, each of the latter parts carrying at one end, which I shall hereinafter call the right-hand end, or rear end of the machine, a bearing 20 having journaled thereon a double flanged wheel or roller 21 which is retained in position by the pin 22 and which is adapted to coact with the rail 11. At their left-hand ends the portions 14^b of the side frame members 14 are bent downwardly and terminate in offset bearings 23 having journaled thereon double flanged wheels or rollers 24 which are retained in position on said bearings by the pins 25.

Secured to the end frame member 17, at each end thereof, are brackets 26 which are forwardly bent to form loops adjacent each of the wheels 24. Each of the brackets 26 carries a pin 27 which is in alinement with the center line of the adjacent wheel or roller 24 and each of said pins has pivoted thereon the two arms of a pair of tongs 28. The depending hooked jaws 29 of said tongs extend downwardly to a position adjacent the lower portion of the wheels 24 and are adapted to grip the head of a supplemental temporary or auxiliary rail 30. The upper ends of the arms of said tongs 28 are adapted to fit closely together when the hooked portions 29 are engaging a temporary rail 30 and are arranged to be held in such position by clamping rings 31 which are slipped downwardly over said upper portions, thus maintaining the hooked portions 29 in contact with the rail 30. Each of the brackets 26 has secured thereto a depending guide member 32 having an outwardly extending lug 33 at the lower end thereof, which is adapted to coact with the surface of the

ground when the machine is lowered with the rail 30 absent. These guide members serve to guide the rail 30 into a position parallel with the rail 11 when said rail is released from the tongs 28. At the right-hand or rear end of the machine, two upwardly extending bars 35 are secured to the end frame member 16 and bent forwardly at the point 35ª to form two parallel and forwardly extending track members 36 which are inclined slightly from the horizontal and which extend outwardly of the machine in cantaliver fashion, as shown clearly in Fig. 1. These members 35, 36 are preferably of angle iron construction and arranged with the depending flanges of the portions 36 adjacent each other. It is apparent that the members 36 form a track 37 which extends transversely of the railway track. A cross frame member 38 is secured to the side frame members 14, and has fixed thereto at each end, an upwardly extending brace or frame member 39, each of which has its upper end secured to a depending flange of one of the track members 36. Additional posts or struts 40 are secured to the end frame member 17 and fixed to the track members 36 forwardly of the members 39. A cross brace 41 extends between the posts 40 adjacent the upper ends thereof and serves to maintain the track members 36 in parallel relation with each other. The cantaliver portion 36ª of each track member 36, which extends outwardly and forwardly of the machine to a considerable distance at one side of the railway track, is supported by an inclined brace 42 which is fixed at its lower end to the corresponding of the members 40. The construction of the frame and transverse track 37 is given further rigidity by the braces 43 which extend between the bars 35 and the posts 40, and which have cross braces 44 secured thereto and extending therebetween.

A carriage 45 provided with the frame 46 and the four flanged wheels 47, is adapted to ride upon and coact with the transverse track 37. The carriage 45 is provided with a bolster 48 which has pivoted thereon the bracket 49. An operating beam or lever 50 is pivoted on the bracket 49 by means of the pin 51 and is of sufficient length to extend to a considerable distance at the right of the truck 13 when the carriage 45 is at the forward end of the transverse track 37. The forward end of the operating lever 50 is provided on its upper side with a reinforcing plate 53 and on its lower side with a combined reinforcing and journal plate 54 which are secured together and to the lever 50 by suitable bolts 55. The lower plate 54 is provided with a series of semi-cylindrical grooves 56 which serve as journals for the pivotal connection made with the bracket 49 through the pin 51 and by means of these grooves the relative lengths of the lever 50 at each side of the pin 51 may be varied, as desired. At the forward end and on the lower side of the lever 50 are two chain hooks 60 and 61 having collars 62 and 63 secured thereto which are adapted to abut against the plate 54, and having the stem portions 64 and 65 which extend through the lever 50 and the plate 53 and which are engaged at their upper ends by nuts 66. These hooks thus serve also to secure the plates 53 and 54 to the lever 50. The forward hook 60 is adapted to engage any suitable link of a chain 67 which carries at its depending end a pair of rail tongs 68 having the inturned jaws 69 adapted to engage the head of a rail 70 which is to be transported into position to be fixed to the ties. One of the arms of said tongs 68 carries a handle 71 at the upper end thereof by means of which said tongs may be operated to readily engage or disengage the head of a rail.

It is apparent that after a rail has been engaged by the tongs 68 that the operating lever 50 may be manipulated to elevate said rail from the ground, after which the carriage 45 may be caused to move rearwardly or to the right on the track 37 thereby moving the rail 70 toward the position which it is to occupy on the ties.

Each of the track members 37 carries at the forward end thereof a plate 72 having an upturned lug 73 which is adapted to coact with a roller 47 of the carriage 45 when said carriage is in its extreme forward position and thereby prevent the carriage from running off the track. At the right-hand end of the track 37, movement of the carriage 45 is limited by the bar 74 which extends between the upwardly extending bars 35 adjacent the point 35ª. The bar 74 has a notch 75 in the upwardly extending flange thereof in order to permit a greater downward movement of the operating lever 50.

To prevent the raising of the wheels 21 off of the rail 11, when the carriage is near the forward end of the track 37, I provide a hook 76 which is pivoted on the end frame member 16 and adapted to engage the head of the rail 11.

A chain 80 having a ring 81 at the end thereof, is secured to the cross bar 41 and the end frame member 17, by means of the two chains 82 and 83. By manipulating the operating lever 50 the carriage 45 may be moved into a position on the track 37 adjacent the bar 74 after which the ring 81 may be passed over the hook 61. After this adjustment has been made a downward pressure on the operating end of the lever 50 will tilt the entire machine to a position where it is supported entirely by the rail 11.

When it is desired to transport my ma-

chine a considerable distance on the track, I make use of a flanged wheel 85, shown by dotted lines in Fig. 1, which is rotatably mounted at the end of a square shaft 86. When it is desired to use this wheel, the shaft 86 is inserted through the aperture 87 formed by the bracket 88, which is secured to the underside of the end frame member 17. The shaft 86 is of sufficient length so that when said shaft is inserted through the aperture 87 the inner end thereof will abut against the upwardly extending flange of the end frame member 16.

Having described the construction of my machine, I will now set forth, in a general manner, the principles of the operation thereof.

Assuming that it is desired to re-lay the rails of a track and that the new rails have been unloaded from the cars and are in position on the embankment on each side of the railway road bed, I place my machine with the wheels 21 coacting with a rail at one side of the track and after lowering the forward end of the machine until the temporary rail 30 rests on the ties, the tongs 28 are released from said temporary rail by removing the rings 31, after which the rollers 24 will rest on said temporary rail and be free to roll thereon. The tongs need not be entirely disconnected or removed from opposite sides of the rail 30 provided they are detached or released sufficiently from the head of the rail to permit longitudinal movement of the truck on the temporary rail. It will be apparent that after this adjustment has been made, my machine is supported to be moved longitudinally of the track a distance equal to the length of the temporary rail 30. It is, of course, assumed that the rail 12 shown in dotted lines, has been removed from the ties, and that a new rail 70 is to be laid in the position on the ties formerly occupied by the rail 12. After adjusting the hook 76 to engage the head of the rail 11, the operating lever 50 is manipulated to move the carriage 45 to the forward end of the track 37 at which point the forward end of the lever 50 is lowered and the length of the chain 67 is adjusted until the tongs 68 can be conveniently made to engage the head of a rail 70 by manipulation of the handle 71. The right-hand end of the operating lever 50 is then lowered, thereby causing the rail 70 to be elevated from the ground. For this purpose the lever ratio may be altered by varying the position of the pin 51 in the grooves 56. The operators then cause the carriage 45 to move to the right on the transverse track 37, this movement being assisted by the inclination of said track, until the rail 70 has assumed approximately the desired position on the ties of the road bed. It is possible that the new rail may be moved to said position by one such operation as has just been described, but owing to the great length of said rails and the weight thereof, it may be desirable to alternately grip the rail at each end thereof and move each end of the rail into position on the road-bed by separate operations. In order that this may be done, the machine may be conveniently moved on the temporary rail 30 and the rail 11 to the desired position relative to the new rail which is to be laid.

It will be understood that the use of my apparatus is not confined to the laying of the new section of rail in position to be spiked to the ties, since it is adapted to be used with equal advantage for removing the old section of rail from position on the ties.

After one rail has been moved into position to be spiked to the ties, the hook 76 is released from the rail 11 and the tongs 28 are again caused to engage the temporary rail 30 and the hook 61 is caused to engage the chain 80, after which the operating lever 50 is manipulated to tilt the entire machine into a position where it may be moved a limited distance longitudinally of the railway track upon the rail 11, it being understood that during this movement the temporary rail 30 is carried by the machine so that when the operators reach a position on the rail 11 opposite the point where the next section of new rail is to be laid, the lowering of the machine from its tilted position will again cause the temporary rail to rest on the ties in a position parallel to the rail 11. The operation of moving a new section of rail into position to be spiked to the ties is then repeated, the operating lever and other parts of the machine being manipulated in any desired manner in order to effect the result desired. It is of course apparent that during this operation of moving the rail into position to be spiked, the operation of the lever whereby the rail is elevated, may be combined with the movement of the carriage on the track 37 and with a movement of the entire machine longitudinally of the railway track on the temporary rail 30 and the main rail 11.

If it is desired to move my machine a considerable distance along the railway track, the wheel 85 may be utilized so that the entire machine may be pushed or propelled in any convenient manner upon the main rails of the track. It is, of course, apparent that when the shaft 86 is inserted in the aperture 87, the temporary rail 30 and associated parts are elevated out of contact with the ties.

It is thus apparent that I have provided new and novel means for use in laying the rails of a railway track with a very small amount of effort on the part of the operators, and while I have described the operation thereof in connection with the process of relaying a track, it will be understood that my

machine may be used for other purposes not herein specified, and that it may be used for laying a new track when the road bed is first constructed, provided one rail of said track has already been laid, or provided other means be furnished for supporting the wheels 21. It will, of course, be obvious that after the rails at one side of a railway track have been laid or re-laid, my machine may be reversed in its position and used to lay or re-lay the rails at the other side of the track.

Although I have shown and described a single auxiliary wheel and a plurality of truck wheels, and have recited a single auxiliary wheel and a plurality of truck wheels in a number of the appended claims, it will be understood that the number of wheels may be varied and equivalents substituted without departing from the scope of the claims.

I have described in detail one particular embodiment of my invention, but it will be understood that certain features thereof may be altered and equivalents substituted as circumstances may suggest or necessity require without departing from the spirit of my invention as defined by the appended claims.

What I claim is:—

1. In a rail-laying apparatus, a truck having wheels for travel on alined rails, and a supplemental rail hung from the truck under other wheels of the same.

2. In a rail-laying apparatus, a truck having wheels for travel on alined rails, and a supplemental rail in rocking suspension from the truck under other wheels of the same.

3. In a rail-laying apparatus, a truck having wheels for travel on alined rails, means for clamping the truck to one of said rails, and a supplemental rail hung from the truck under other wheels of the same.

4. In a rail-laying apparatus, a truck organized for travel on parallel lines of railway track-rails, and means for suspending and carrying an auxiliary rail under other wheels of the truck inside of one of said lines of track-rails.

5. In a rail-laying apparatus, a truck having wheels for travel on alined rails, and a supplemental longitudinally adjustable rail in suspension from the truck under other wheels of the same.

6. In a machine for laying the rails of a railway track, a truck having rollers adapted to coact with a main rail of said railway track, said truck also being provided with rollers adapted to coact with a temporary rail, means to support said truck in position to be moved longitudinally on said main rail, and means carried by said truck for supporting said temporary rail during said movement.

7. In a rail-laying apparatus, a truck having wheels for travel on alined rails, a supplemental rail hung from said truck, and means carried by said truck to coact with and travel on said supplemental rail.

8. In a machine for laying the rails of a railway track, a supplemental rail, a truck having wheels for travel on one rail of said track and on said supplemental rail, and means carried by said truck to support said supplemental rail adjacent one of said wheels.

9. In a rail-laying apparatus, a frame, means carried with said frame to coact with and travel on a rail of a railway track, a supplemental track carried by said frame and arranged to be released in a position opposite said track rail, and means carried by said frame to coact with and travel on said supplemental track when the same is released.

10. In a track-laying machine, a frame, means carried by said frame to coact with and travel on a rail of a railway track, a supplemental rail carried by said frame, means carried by said frame to coact with and travel on said supplemental rail, means to release said supplemental rail in position to support said machine, and means carried by said frame to engage a section of rail to be laid.

11. In a machine of the class described, means to coact with and travel on a rail of a railway track, a supplemental rail, means to engage and support said supplemental rail, means to release said supplemental rail in position parallel to said railway track rail, means carried by said machine to coact with and travel on said supplemental rail when released, and means to engage and lay a section of rail in position parallel to said first-mentioned railway track rail and outwardly of said supplemental rail.

12. In a track laying machine, a truck having wheels arranged for travel on a pair of parallel rails, a releasable rail carried by said truck for supporting said truck when released in position on the road-bed, a track mounted on said truck transversely of said rails, and means arranged to run on said track for moving a section of rail to be laid.

13. The combination in a device for laying track rails, of a pair of rails seated upon the roadbed of and forming a track of narrower gage than the gage of the track to be laid, a truck mounted to run on said narrow gage track, means carried by said truck for engaging a section of rail to be laid and moving the same into the desired position, means to tilt said truck for movement longitudinally on one of said pair of rails, and means carried by said truck to engage and support the other of said pair of rails during said movement.

14. In combination, a main frame, rollers

carried thereby and adapted to roll upon a track, a releasable track member carried by said frame, rollers carried by said frame to coact with said releasable track member when the same is released from said frame, means to engage a section of rail to be laid, and means carried by said frame to support said section of rail.

15. In a track-laying machine, a frame, a portable rail, means carried by said frame to detachably engage said portable rail, means carried by said frame to coact with said portable rail when detached, and means carried by said frame to coact with a main track rail, said machine being adapted to move longitudinally of said track on said detached portable rail and said main track rail.

16. In a track-laying machine, a main frame, a portable rail, means carried by said main frame to detachably engage said portable rail, means carried by said frame to coact with said portable rail when detached, means carried by said frame to coact with a main track rail, said machine being adapted to move longitudinally of said track on said detached portable rail and said main track rail, means to support a section of rail to be laid, and means to move said section of rail transversely of said track.

17. In a machine of the class described, a truck, means whereby said truck may be supported in position on one rail only of a railway track to move longitudinally thereof, a temporary rail carried by said truck, means to release said temporary rail from said truck in position parallel to said track rail, and means carried by said truck to coact with said temporary rail when released, whereby said truck may be supported on said temporary rail and said track rail for movement longitudinally of said track.

18. In combination, a truck having wheels arranged for travel on alined rails, an auxiliary wheel detachably mounted on said truck and arranged for travel on alined rails parallel to said first-named rails, and means carried by said truck for engaging and moving a section of rail to be laid, said auxiliary wheel being normally detached when said rail engaging means is in operation.

19. In a rail-laying apparatus, a truck having wheels for travel on alined rails, a supplemental rail hung from the truck under other wheels of the same, and a supplemental wheel attached to said frame for travel on alined rails parallel to those aforesaid.

20. In a rail-laying apparatus, a truck having wheels for travel on alined rails of a railway track and on a supplemental rail parallel to said alined rails, and a supplemental wheel arranged for travel on alined rails parallel to said first-mentioned rails and arranged to elevate certain of said wheels out of operative position.

21. In a rail-laying apparatus, a truck having wheels for travel on alined rails, a supplemental rail hung from the truck under other wheels of the same, a supplemental wheel for travel on alined rails paralleling those aforesaid, and an axle carrying said supplemental wheel, said axle being attachable to the frame of said truck to provide for sustaining the supplemental rail and its opposing wheels in elevated position above the adjacent roadbed.

22. In a rail-laying apparatus, a truck having wheels for travel on alined rails, and a supplemental rail hung from the truck under other wheels of the same, in combination with a detachable axle carrying a wheel by which to mount said truck on other alined rails opposite those aforesaid and thereby elevate said supplemental rail out of normal position.

23. In a track-laying machine, a frame, rollers carried by said frame and arranged to travel on the alined rails of a railway track, other rollers carried by said frame for travel on alined rails parallel to said first mentioned rails, means carried by said frame for moving a section of rail to be laid, and means to permit the operation of said rail-moving means for tilting said machine transversely of said track and supporting the same on said first-mentioned alined rails.

24. In a machine for laying the rails of a railway track, a temporary rail, a truck supported by one rail of said track and by said temporary rail and adapted to roll longitudinally thereof, a track supported by said truck transversely of the direction of movement thereof, a carriage mounted to move on said transverse track, an operating lever pivoted on said carriage, a hook secured to said lever, and means to secure said hook to the frame of said truck, whereby said truck may be tilted by said lever to be supported only by the rail of said track and to be moved longitudinally thereon.

25. In a machine for laying the rails of a railway track, a temporary rail, a truck supported by one rail of said track and by said temporary rail and adapted to roll longitudinally thereof, a track supported by said truck transversely of the direction of movement thereof, a carriage mounted to move on said transverse track, an operating lever pivoted on said carriage, a hook secured to said lever, means to secure said hook to the frame of said truck, whereby said truck may be tilted by said lever to be supported only by a rail of said track and to be moved longitudinally thereon, and means carried by said frame to support said temporary rail during said movement.

26. In a machine for laying the rails of a railway track, a truck having wheels adapt-

ed to coact with a main rail of said railway track and with a temporary rail parallel thereto, means to support said truck in position to be moved longitudinally on said main rail, and tongs carried by said truck for supporting said temporary rail during said movement.

27. In a machine for laying the rails of a railway track, a truck having wheels adapted to coact with a main rail of said railway track and with a temporary rail parallel thereto, means to support said truck in position to be moved longitudinally on said main rail, tongs carried by said truck for supporting said temporary rail during said movement, means to release said tongs when it is desired that said machine be supported on said main rail and temporary rail, and guide members to direct said temporary rail into a position parallel to said main rail.

In testimony whereof, I have subscribed my name.

CHAS. J. EGGERT.

Witnesses:
ANDREW LEE,
CARRIE MARSH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."