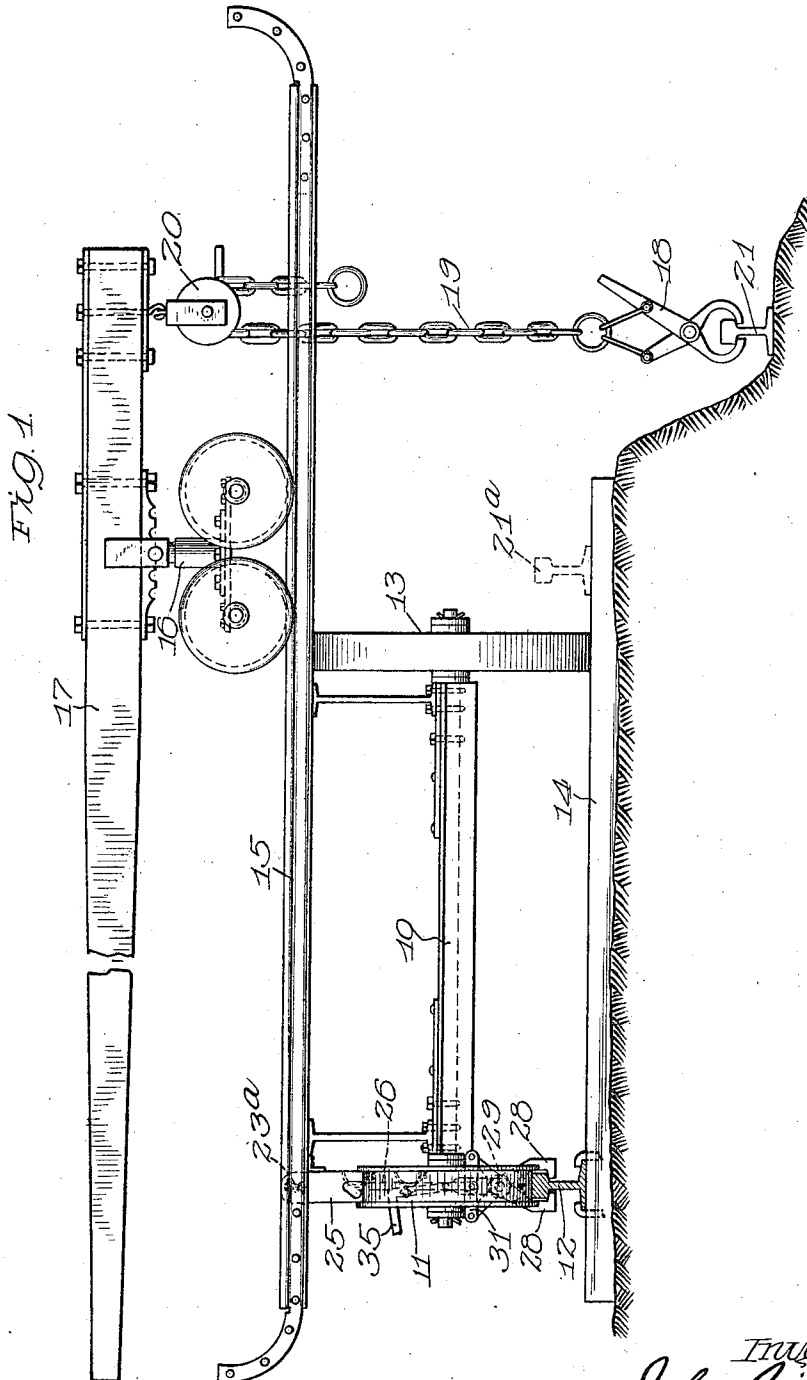


J. REINEHR.
 DEVICE FOR PREVENTING THE TILTING OF RAIL LAYING MACHINES.
 APPLICATION FILED SEPT. 8, 1911.

1,031,869.

Patented July 9, 1912.

3 SHEETS—SHEET 1.



Witnesses:
 W. D. Barnes Jr.
 P. Burkhardt.

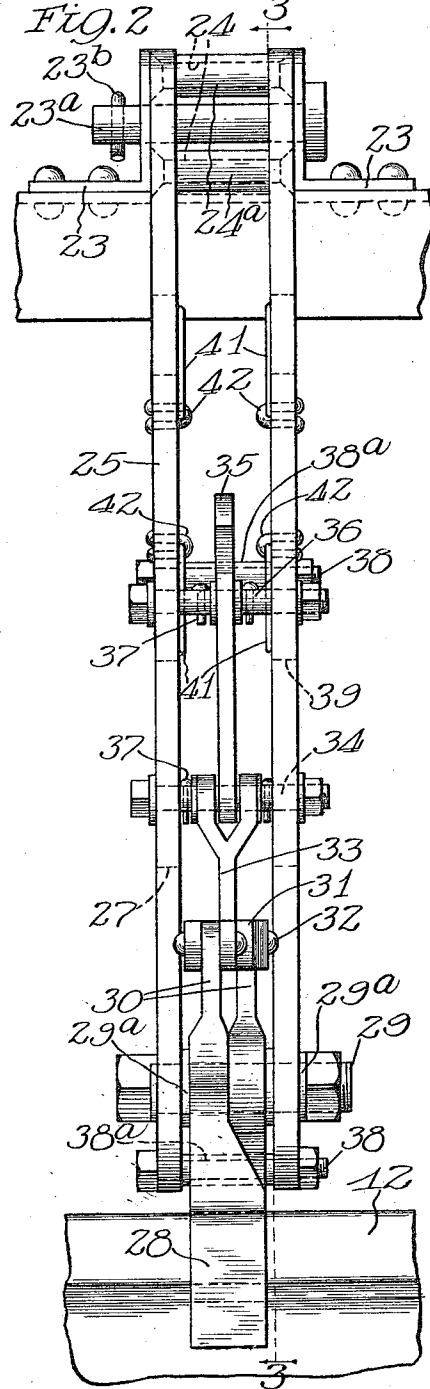
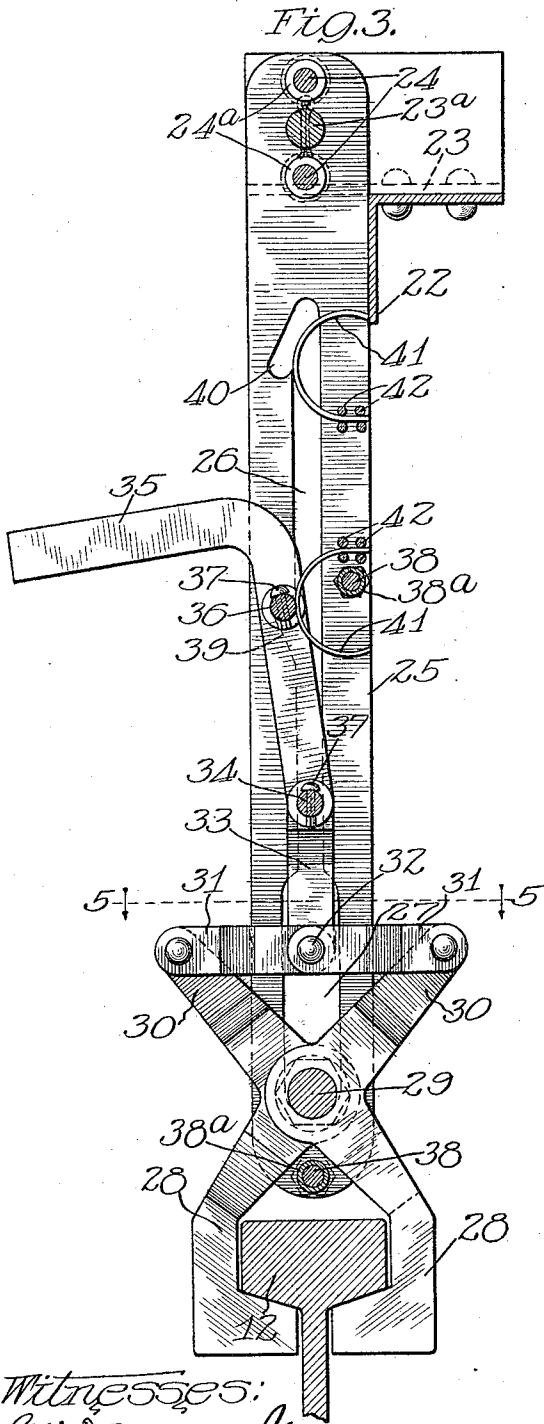
Inventor:
 John Reinehr
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3 SHEETS—SHEET 2.



Witnesses:
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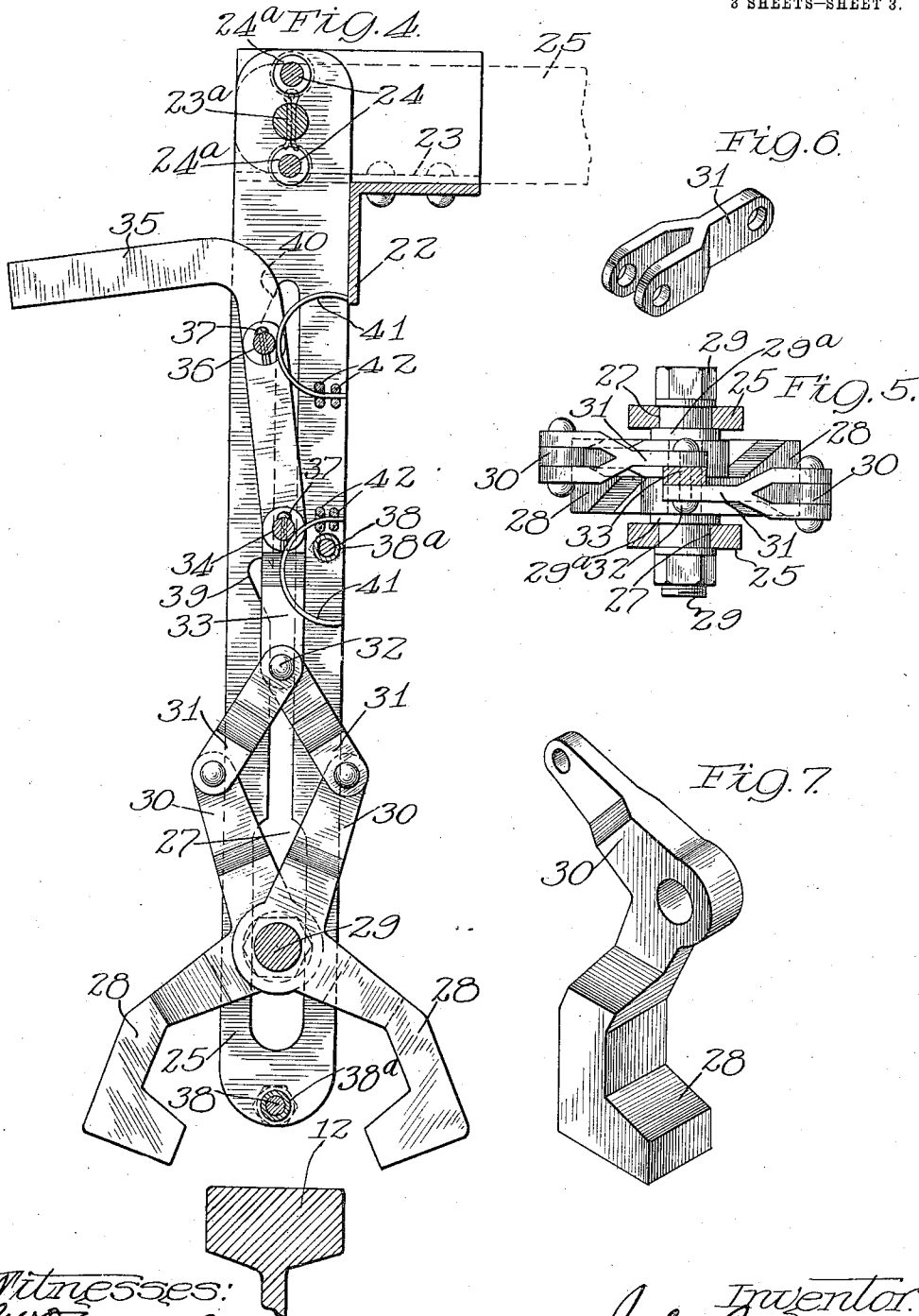
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

JOHN REINEHR, OF SAVANNA, ILLINOIS, ASSIGNOR TO RAIL LAYING MACHINE COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

DEVICE FOR PREVENTING THE TILTING OF RAIL-LAYING MACHINES.

1,031,869.

Specification of Letters Patent.

Patented July 9, 1912.

Application filed September 8, 1911. Serial No. 648,305.

To all whom it may concern:

Be it known that I, JOHN REINEHR, a citizen of the United States, residing at Savanna, in the county of Carroll and State of Illinois, have invented certain new and useful Improvements in Devices for Preventing the Tilting of Rail-Laying Machines, of which the following is a specification.

My invention relates to a machine for relaying railroad rails consisting of a truck which travels along the road bed running at one side on one line of the rails of the railroad (either the old rails before the spikes are removed or the new rails after having been secured to the ties) the truck being provided with a transversely arranged projecting track on which runs a carriage supporting the instrumentalities for handling the rails operated upon; and the invention has for its object to provide apparatus of novel and improved construction for grappling the truck to the spiked line of rails on which it runs so as to prevent the machine from being overturned when the aforementioned car is run out upon the part of the track projecting beyond the wheels of the truck.

It is essential to the proper operation of a machine of this character, for reasons which will appear, that this apparatus for preventing the tilting of the machine should be very readily and quickly manipulated to seize upon and release hold of the line of rails to which the machine is grappled. It is very desirable at least that the apparatus should be capable of being lifted entirely above the rails and securely held in that position at such times as the machine is being moved from place to place.

My present invention provides a novel form of apparatus having these characteristics.

The invention is illustrated, in a preferred embodiment, in the accompanying drawings, wherein—

Figure 1 is an end elevation of a machine for re-laying railroad rails, the track and road bed being shown in section; Fig. 2, a detail view, in elevation, of the device for grappling the truck on the rail re-laying machine to the spiked line of rails; Fig. 3, a sectional view taken on line 3—3 of Fig. 2; Fig. 4, a view similar to Fig. 3 showing the

grappling tongs in their raised position; Fig. 5, a sectional plan taken on line 5—5 of Fig. 3; Fig. 6, a view in perspective of one of the links of the grappling tongs, and Fig. 7, a similar view of one of the grappling members.

Like characters of reference designate like parts in the several figures of the drawings.

Referring to the drawings, 10 designates a truck provided on one side with the double flanged wheels 11 adapted to run upon a line of spiked rails 12. The truck 10 is shown as being supported on the other side by the broad flat tired wheels 13 of considerably larger diameter than wheels 11 which run directly upon the ties 14.

15 designates a transversely arranged track secured to the truck 10 and projecting quite a distance therefrom on the working side of the machine. A carriage 16 runs upon the track 15 and sustains the instrumentalities employed for handling the rails to be relaid. These instrumentalities are shown as consisting of a lever 17 fulcrumed on the carriage 16, a pair of grappling tongs 18, a chain 19 and a sheave 20 over which the chain 19 runs. As the particular devices employed for handling the rails form no part of my present invention they need not be described in detail. Suffice it to say that the carriage 16 is run out upon the projecting part of track 15, a rail 21 is grappled by the tongs 18, raised by tilting the lever 17 and moved inwardly to its position on the ties indicated by the dotted line figure designated 21^a, and then adjusted longitudinally by movement of truck 10. When the carriage 16 is run out beyond the wheels 13 the whole machine would be overturned if some means were not provided for keeping it in upright position.

The present invention provides a suitable device for grappling the truck to the spiked line of rails 12 so as to prevent the tilting of the machine. It will be understood that in doing this sort of work the rails at one side of the track are unspiked and removed and new rails put in their places and spiked down. The same procedure is followed at the other side of the track. The line of rails 12 may be considered either as the old rails before removal or a new set of rails put into the places of the old ones.

The device for grappling the truck to

the spiked line of rails is preferably constructed as follows: On the longitudinally extending angular frame member 22 of the truck (Figs. 2 and 3) are secured projecting angle irons 23. To these angle irons is pivoted, by means of a bolt 23^a held in place by a cotter pin 23^b, a hanger consisting of two metal strips 25 secured together at its top by the rivets 24 carrying spacing sleeves 24^a. The strips 25 are formed with the slots 26, the lower ends of which are enlarged as shown at 27. A pair of grappling members 28 (Fig. 7) are pivoted on a bolt 29. Washers 29^a may be interposed between the grappling members and the hanger members 25. The angularly projecting arms 30 of the grappling members are connected together by the links 31 (Fig. 6) which are pivoted together by the rivet 32. On the same pivot is a forked link 33 pivotally secured by means of the bolt 34 to the lower end of an angular handle 35. The bolt 34 extends through the slots 26 in the hanger member 25. Preferably a similar bolt 36 passes through the slots 26 above bolt 34 and through the upper part of the handle 35. The bolts 34 and 36 serve as guides for the handle. The handle 35 and link 33 are kept in proper position by means of the screws 37 which pass through the bolts 34 and 36. The hanger members 25 are preferably connected together below the place of attachment to the angle irons 23 by means of the bolts 38 provided with spacing sleeves 38^a. By pressing down on the handle 35 the grappling members 28 are made to close upon the rail 12. By raising the handle the grappling members are disengaged from the rail. Figs. 2 and 3 show the parts of the device in their grappling position. Preferably the hanger members 25 are formed with the notches 39, extending upwardly from the slots 26 into which notches the bolt 36 is received when the grappling members are in engagement with the rail. This effectually locks the apparatus so that accidental disengagement is impossible. A slight upward movement of the handle 35 disengages the grappling members from the rail. A further movement lifts the grappling members entirely above the rail to the position shown in Fig. 4. Preferably the hanger members 25 are formed with the notches 40 downwardly extending from the slots 26 which receive the bolt 36 when the device is in its raised position. I preferably, although not necessarily, provide springs 41 secured to the frame members by the staples 42 for holding the bolt 36 in the notches 39 or 40.

In laying rails with a machine of this character it is customary to bolt the fish plates to the rail which has been placed upon and spiked to the ties and heel the next

rail against the laid rail between the projecting fish plates. This longitudinal adjustment of the rail necessitates the moving of the truck 10 backward and forward after the rail has been lifted from the shoulder onto the ties and alined with the rail previously laid. It is therefore essential that the means used for preventing the tilting of the truck when the carriage is run out upon the projecting end of its track should be capable of easy and rapid manipulation. As a matter of practice one of the rail gang stands with his hand on the handle 35 all the time and grapples the truck to the fixed line of rails 12 or releases the grappling means therefrom as the occasion demands. Rapidity of action is very necessary in this operation as the replacing of the rails is done between trains and without interrupting any more than is absolutely necessary the regular traffic over the railroad. It is also essential that the means for holding the truck in its place should be very strong as the weight placed upon the projecting end of the track is very considerable, particularly when heavy rails are handled.

My apparatus, it will be seen, provides means for locking the grappling members in their operative position. This is desirable because the under surfaces of the ball of the rail are inclined so that if not locked the grappling members might have a tendency to slip. The apparatus is likewise securely held in its inoperative position by the engagement of bolt 36 with notch 40. It is also desirable that the entire device for preventing the tilting of the machine should be capable of being disengaged from the rail and turned over upon the truck when the machine is transported from place to place. This is done by turning the hanger 25 on its pivot 23^a to the position indicated by the dotted lines in Fig. 4.

While I have described certain preferred arrangements, devices and constructions it will be understood that there might be some modifications without departure from my invention. I have shown a truck of particular construction and a track consisting of two railroad rails mounted on the truck. It will be clear, however, that the construction of the truck and of the track might be varied very considerably. Therefore I do not limit myself to the particulars shown and described except so far as certain of the claims are specifically limited thereto.

I claim:

1. In a machine of the character described, the combination with a truck, of a device for preventing the tilting of the machine comprising a pair of grappling members which are adapted to extend under the ball and engage opposite sides of one of the rails on which the truck runs, and means for lowering and raising said grappling

members which operates to respectively engage said grappling members with the rail and disengage them therefrom.

2. In a machine of the character described, the combination with a truck, of a device for preventing the tilting of the machine comprising a pair of grappling members which are adapted to extend under the ball and engage opposite sides of one of the rails on which the truck runs, means for raising and lowering said grappling members which operates to respectively engage said grappling members with the rail and disengage them therefrom, and means for sustaining said grappling members in the raised position above the rail.

3. In a machine of the character described, the combination with a truck, of a device for preventing the tilting of the machine comprising a pair of grappling members which are adapted to extend under the ball and engage opposite sides of one of the rails on which the truck runs, means for causing the same to engage said rail and for disengaging said grappling members therefrom and raising the same above said rail, and means for sustaining the grappling members in their raised position.

4. In a machine of the character described, the combination with a truck, of a hanger on said truck, a pair of pivoted grappling members which are adapted to extend under the ball and engage the opposite sides of one of the rails on which the truck runs, said grappling members being vertically movable up and down in said hanger, and means for lowering and raising said grappling members which operates to respectively engage said grappling members with the rail and disengage them therefrom.

5. In a machine of the character described, the combination with a truck, of a hanger on said truck, a pair of pivoted grappling members which are adapted to extend under the ball and engage the opposite sides of one of the rails on which the truck runs, said grappling members being vertically movable up and down in said hanger, means for lowering and raising said grappling members which operates to respectively engage said grappling members with the rail and disengage them therefrom, and means for sustaining said grappling members in their raised position above the rail.

6. In a machine of the character described, the combination with a truck, of a hanger on said truck; a pair of pivoted grappling members which are adapted to extend under the ball and engage the opposite sides of one of the rails on which the truck runs, said grappling members being vertically movable up and down in said hanger; means for closing the grappling members on said rail and for opening the

same and raising them above said rail, and means for holding the grappling members in the elevated position.

7. In a machine of the character described, the combination with a truck, of a hanger on said truck; a pair of pivoted grappling members which are adapted to extend under the ball and engage the opposite sides of one of the rails on which the truck runs, said grappling members being vertically movable up and down in said hanger; and means for manipulating the grappling members which closes the same when they are moved downwardly and opens them when they are raised.

8. In a machine of the character described, the combination with a truck, of a hanger on said truck consisting of a pair of slotted strips, a pair of grappling members pivoted together, a pair of links pivoted to the grappling members and to each other; a handle pivotally connected with the links, and a transversely arranged member connected with the handle and adapted to be guided in the slots in the hanger.

9. In a machine of the character described, the combination with a truck, of a hanger on said truck consisting of a pair of slotted strips, a pair of grappling members pivoted together, a pair of links pivoted to the grappling members and to each other; a handle pivotally connected with the links, and a transversely arranged member connected with the handle and adapted to be guided in the slots in the hanger, said slots being formed with notches for the purpose specified.

10. In a machine of the character described, the combination with a truck, of a hanger on said truck consisting of a pair of slotted strips, a pair of grappling members pivoted together, a pair of links pivoted to the grappling members and to each other; a handle pivotally connected with the links, a transversely arranged member connected with the handle and adapted to be guided in the slots in the hanger, said slots being formed with notches for the purpose specified, and springs adapted to hold said transverse member in said notches.

11. In a machine of the character described, the combination with a truck, of a hanger pivotally sustained from said truck, a pair of grappling members supported by said hanger which are adapted to extend under the ball and engage opposite sides of one of the rails on which the truck runs, and means for lowering and raising said grappling members on the hanger which operates to respectively engage said grappling members with the rail and disengage them therefrom.

12. In a machine of the character described, the combination with a truck, of a hanger consisting of a pair of slotted strips

secured together and pivotally sustained from said truck, a pair of grappling members pivoted together, a pair of links pivoted to the grappling members and to each other, and a handle pivotally connected with the links, a transversely arranged member connected with the handle and adapted to be guided in the slots in the hanger, said slots being formed with notches for the purpose specified.

13. In a machine of the character described, the combination with a truck, of a hanger pivotally sustained on the truck, grappling members which are movably sustained on the hanger so that they may be raised and lowered, and means connected with said grappling members for causing the same to engage with and be disengaged from one of the rails on which the truck runs.

14. In a machine of the character described, the combination with a truck, of a hanger pivotally sustained on the truck, grappling members which are movably sustained on the hanger so that they may be raised and lowered, means connected with said grappling members for causing the same to engage with and be disengaged from one of the rails on which the truck runs, and means for holding said grappling members in raised position above the rail.

15. In a machine of the character described, the combination with a truck, of a hanger, means for pivotally connecting the hanger to the truck so that it may take a vertical position or be folded back upon the truck, grappling members which are movably sustained on the hanger so that they may be raised and lowered, and means connected with the grappling members for causing them to engage with and be disengaged from one of the rails on which the truck runs.

16. In a machine of the character described, the combination with a truck, of a

hanger, means for pivotally connecting the hanger to the truck so that it may take a vertical position or be folded back upon the truck, and grappling means carried on said hanger adapted to be engaged with one of the rails on which the truck runs.

17. In a machine of the character described, the combination with a truck, of a hanger, means for pivotally connecting the hanger to the truck so that it may take a vertical position or be folded back upon the truck, a pair of grappling members pivoted together and sustained on said hanger, and means for causing said grappling members to engage with or be disengaged from one of the rails on which said truck runs.

18. In a machine of the character described, the combination with a truck, of a grappling device for preventing the tilting of the machine, comprising a pair of grappling members pivoted together, links pivoted to the ends of the grappling members and to each other, and a handle pivotally connected with the links; said grappling device being movably sustained on the truck so that it may be raised and lowered with respect to the rail.

19. In a machine of the character described, the combination with a truck, of a grappling device for preventing the tilting of the machine, comprising a pair of grappling members pivoted together, links pivoted to the ends of the grappling members and to each other, and a handle pivotally connected with the links; said grappling device being movably sustained on the truck so that it may be raised and lowered with respect to the rail, and means for holding the grappling device in raised position with said grappling members above the track.

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Witnesses:

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