J. W. HARRIS.

MACHINE FOR RELAYING RAILS.

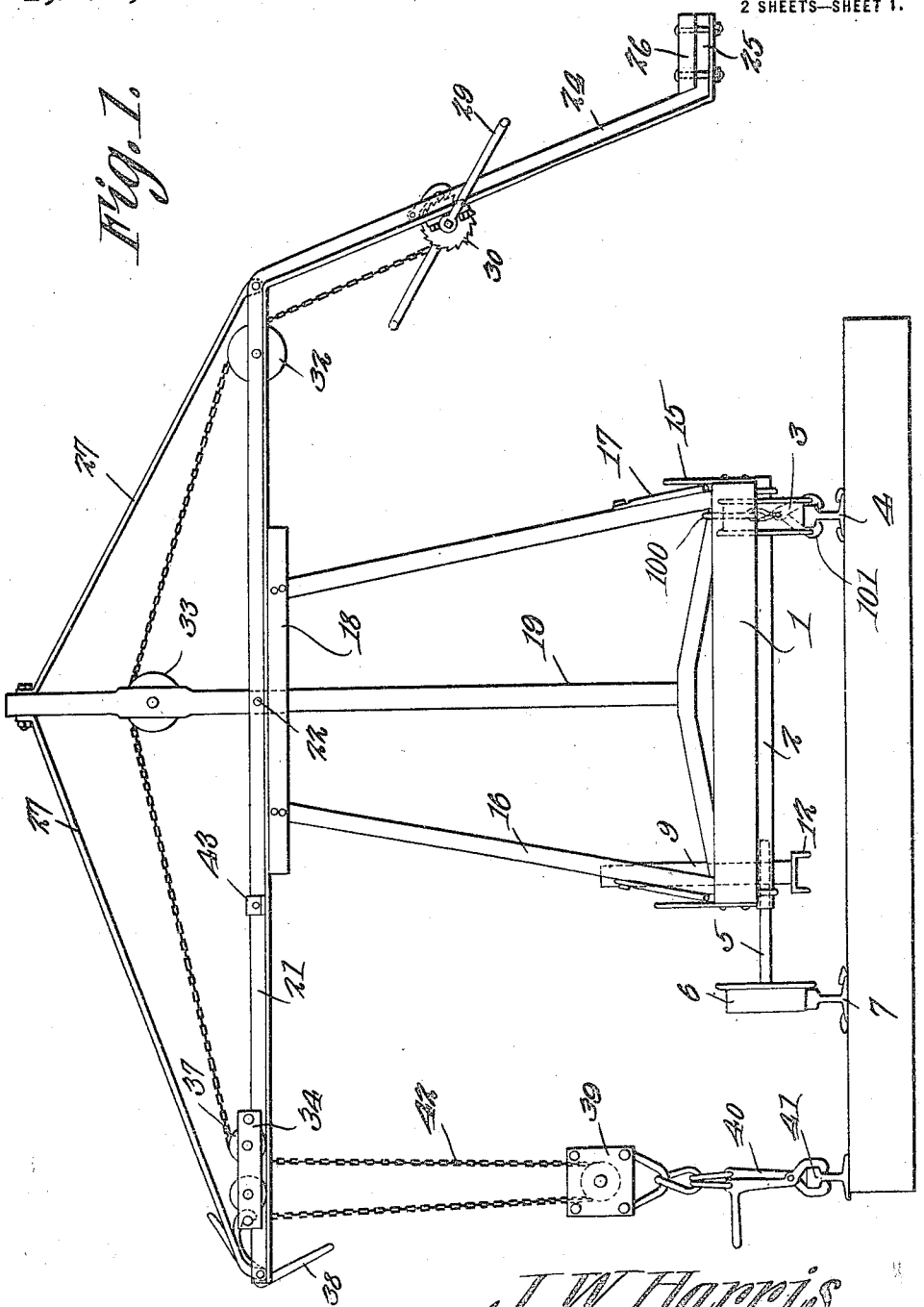
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1,259,093.

Patented Mar. 12, 1918.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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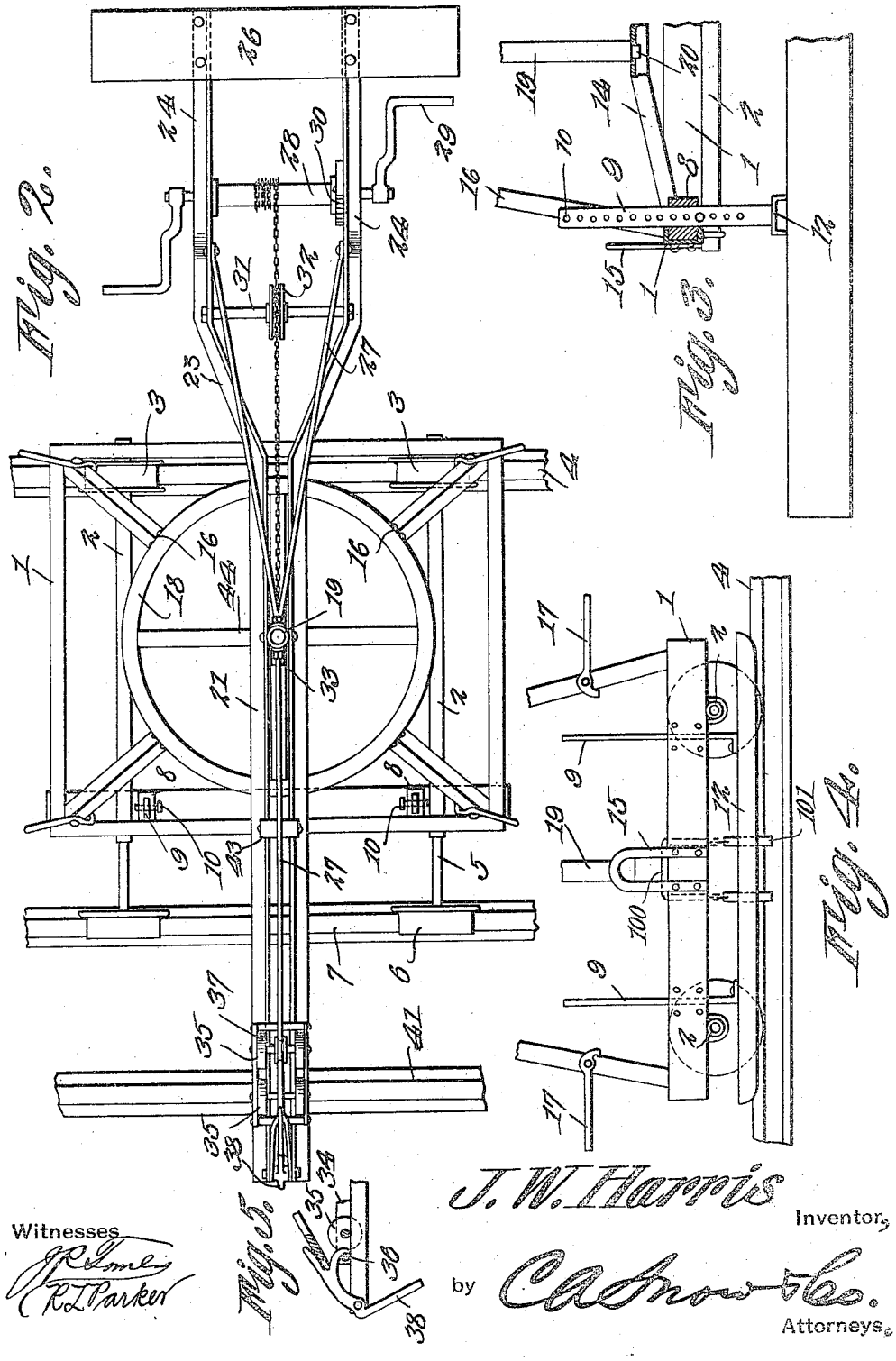


Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

Witnesses

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UNITED STATES PATENT OFFICE.

JOHN W. HARRIS, OF BIRMINGHAM, ALABAMA.

MACHINE FOR RELAYING RAILS.

1,259,093. Specification of Letters Patent. Patented Mar. 12, 1918.

Application filed January 16, 1917. Serial No. 142,697.

To all whom it may concern:

Be it known that I, JOHN W. HARRIS, a citizen of the United States, residing at Birmingham, in the county of Jefferson and State of Alabama, have invented a new and useful Machine for Relaying Rails, of which the following is a specification.

The device forming the subject matter of this application is adapted to be employed for relaying railroad rails. The invention aims to provide novel means whereby the rail which is to be laid may be moved properly to assume its position at gage.

The invention aims to provide novel means whereby the rail may be elevated. Another object of the invention is to provide novel means whereby the rail may be moved endwise.

Another object of the invention is to provide novel means for supporting the truck while the rails are being relaid, it being possible to trundle the truck along the track, when desired.

Another object of the invention is to provide novel means whereby the operator may, by his weight, counterbalance the machine so that it can be trundled along the track readily on one set of wheels, when the other set of wheels has been removed, and when an adjustable ground-engaging support is in use.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the present invention appertains.

With the above and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings:—

Figure 1 shows in side elevation, a machine constructed in accordance with the present invention;

Fig. 2 is a top plan of the machine;

Fig. 3 is a fragmental cross section showing the support as it will appear when in use and after one set of wheels has been removed;

Fig. 4 is a side elevation of the machine, showing the support and attendant parts; and

Fig. 5 is a fragmental detail showing a portion of the carriage.

In carrying out the present invention there is provided a truck including a frame 1 having loops 15 at its sides. The main frame 1 of the truck carries tubular axles 2 supporting wheels 3 adapted to traverse one rail 4 of a railroad track. Telescoped removably into the axles 2 are axles 5 carrying wheels 6 adapted to engage the other rail 7 of the track. Secured to the frame 1 at one side thereof and adjacent the removable wheels 6 are guides 8 in which standards 9 are vertically adjustable, the standards 9 being connected at their lower ends by a foot 12, the standards and the foot constituting a vertically adjustable support. The standards 9 are provided with openings 10, and pins 11 are inserted through the guides 8 and through any of the openings 10 to adjust the position of the foot 12 with respect to the ground.

When the machine is being trundled along the track 7—4, that is, when the machine is not in use, the axles 5 are journaled in the tubular axles 2 and the wheels 6 coöperate with the rail 7. When, however, the device is in use, in relaying rails, then the wheels 6 and their axles 5 are removed, the support 9—12 being slid downwardly to engage with the ballast or the ties, as shown in Fig. 3. Owing to the construction last above described, the truck can be held in a relatively fixed position, while the rail is being relaid.

The side portions of the main frame 1 of the truck are connected by an upwardly arched base bar 14. The main frame 1 of the truck carries an auxiliary frame comprising converging posts 16 and an annular top frame 18. The posts 16 of the auxiliary frame may carry pivoted handles 17, whereby the structure can be lifted entirely off the track 7—4 when desired.

A vertical shaft 19 is journaled in a cross bar 44 connecting opposed portions of the top frame 18, and is journaled at its lower end, as shown at 20, in the base bar 14. A cross arm 21 is secured at 22 to the shaft 19 and slides in contact with the upper edge of the top frame 18 when the shaft 19 is rotated. The cross arm 21 preferably is made up of a pair of angle members located side by side, the constituent members of the

cross arm 21 flaring adjacent one end of the cross arm, as shown at 23, and merging into depending outwardly inclined extensions 24 having horizontal ends 25 supporting a platform 26. Downwardly and outwardly inclined guys 27 extend between the top of the shaft 19 and the outer portions of the cross arm 21 and aid in supporting the cross arm. A drum 28 is journaled in the parts 24 of the cross arm 21 and is actuated by cranks 29, or in any other suitable manner, the cranks being accessible to a person standing on the platform 26. A pawl and ratchet mechanism 30 prevents a retrograde movement of the drum 28. A shaft 31 is carried by the side portions of the cross arm 21 and supports a rotatable idler 32. A sheave 33 is journaled in the shaft 19 above the cross arm 21.

A carriage 34 is mounted to reciprocate on the parallel portions of the cross arm 21 and includes wheels 35 engaging the constituent members of the cross arm. At its outer end, the carriage 34 is provided with a keeper 36. A sheave 37 is journaled on the axle which connects one pair of the wheels 35 of the carriage. A latch 38 is pivotally mounted on one end of the cross arm 21 and is adapted to coöperate with the keeper 36. Adjacent the top frame 18, the constituent members of the cross arm 21 are connected by a stop 43. The numeral 39 denotes a pulley block carrying a pair of tongs 40 or any other suitable means adapted to grip the rail 31 which is to be relaid. The numeral 42 denotes a flexible element, one end of which is connected to the carriage 34. The flexible element 42 passes downwardly through the pulley block 39, upwardly across the sheave 37 on the carriage 34, inwardly across the sheave 33 on the shaft 19, across the idler 32 on the shaft 31 and is secured to the drum 28.

In practical operation, let it be supposed that the rail 7 of Fig. 1 is to be replaced by the rail 41, and that the rail 7 has been removed. Then the wheels 6 are detached, the axles 5 being slid out of the tubular axles 2. The support 12—9 is depressed until it engages the ties as shown in Fig. 3, and the pins 11 are inserted into the proper openings 10 in the standards 9, so as to support the truck frame 1 in a substantial horizontal position. The latch 38 is engaged with the keeper 36 of the carriage 34, as shown in Fig. 5, to hold the carriage at the outer end of the cross arm 21. One or more operators standing on the platform 26 rotate the drum 28 by means of the cranks 29, the flexible element 42 thus being reeled onto the drum, and the rail 41 being elevated. When the latch 38 is detached from the keeper 36, the carriage 34 moves inwardly until the carriage abuts against the top 43. The rail 41 thus is located in the proper place, at gage. Since the shaft 19 is rotatably mounted, the rail 41 may be moved endwise.

After one rail has been laid in the manner hereinbefore set forth, the left hand side (Fig. 1) of the truck may be lifted up, so as to cause the foot 12 of the vertically adjustable support to clear the ground. Then the truck can be pushed forwardly into a new position, the wheels 3 riding on the rail 4. This lifting of the left hand side of the truck frame requires no great exertion, because the operators, standing on the platform 26, serve as a counterweight and, if desired, one or more additional persons can stand on the platform 26 to effect the necessary counter-poising of the machine, so that it can be trundled along on the wheels 3.

The structure can be lifted off the track 4—7 at any time by means of the handles 17, and the handles 17 can be folded downwardly when the occasion for the use thereof has passed.

When it is required that the truck be moved for any considerable distance along the rails 7—3, then the support 9—12 is raised up and held in an elevated position by the pins 11, the axles 5 being inserted into the tubular axles 2 and the wheels 6 being engaged with the rail 7, as shown in Fig. 1.

Bars may be inserted through the loops 15, to facilitate the lifting of the machine on and off the track. That side of the frame 1 which is next to the platform 26 may carry a saddle 100 supporting grips coacting with the rail 4. These grips 101 engage the rail 4 somewhat loosely, so that the truck can be moved readily along the rails 4 and 7. However, should the truck tilt slightly, when the rail 41 is raised up, the grips 101 will engage the rail 4 and prevent an appreciable tilting movement of the truck.

Having thus described the invention, what is claimed is:—

1. A device for relaying rails, embodying a truck; permanent wheels at one side of the truck; removable wheels at the opposite side of the truck; a vertically adjustable ground-engaging support carried by the truck adjacent the removable wheels and adapted to be used interchangeably therewith; a frame upstanding from the truck; a cross arm carried by the frame and provided at one end with a platform on which an operator may stand to effect a counterbalancing of the truck when the truck is tilted and trundled on the permanent wheels; a rail-lifting means carried by the other end of the cross arm; and mechanism for actuating the rail-lifting means, said mechanism being accessible from the platform.

2. A device for relaying rails, embodying a truck; tubular axles carried by the truck; permanent wheels carried by the tubular axles and located at one side of the truck;

removable axles telescoped into the tubular axles; other wheels carried by the removable axles and located at the opposite side of the truck; rail-lifting means carried by the truck; and a movable ground-engaging support carried by the truck and adapted to be employed, to the exclusion of the said other wheels, when the lifting means is in operation.

3. In a device of the class described, a wheel-mounted truck; a frame carried thereby; a substantially vertical shaft journaled in the frame; a cross arm carried by the shaft; a rail-lifting means located at the one end of the cross arm; a depressed platform carried by the other end of the cross arm and disposed relatively close to the ground whereby an operator may ascend the platform and counteract the weight of the lifting means; and mechanism for actuating the rail-lifting means, said mechanism being accessible from the platform.

4. A device for relaying rails, embodying a truck; permanent wheels at one side of the truck; laterally adjustable wheels at the opposite side of the truck; a vertically adjustable ground-engaging support carried by the truck adjacent the adjustable wheels and adapted to be used interchangeably therewith; a frame upstanding from the truck; a cross arm carried by the frame and provided at one end with a platform on which an operator may stand to effect a counterbalancing of the truck when the truck is tilted and trundled on the permanent wheels; a rail lifting means carried by the other end of the cross arm; and mechanism for actuating the rail lifting means, said mechanism being accessible from the platform.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JOHN W. HARRIS.

Witnesses:
R. R. STOTLAR,
C. D. WELLER.

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