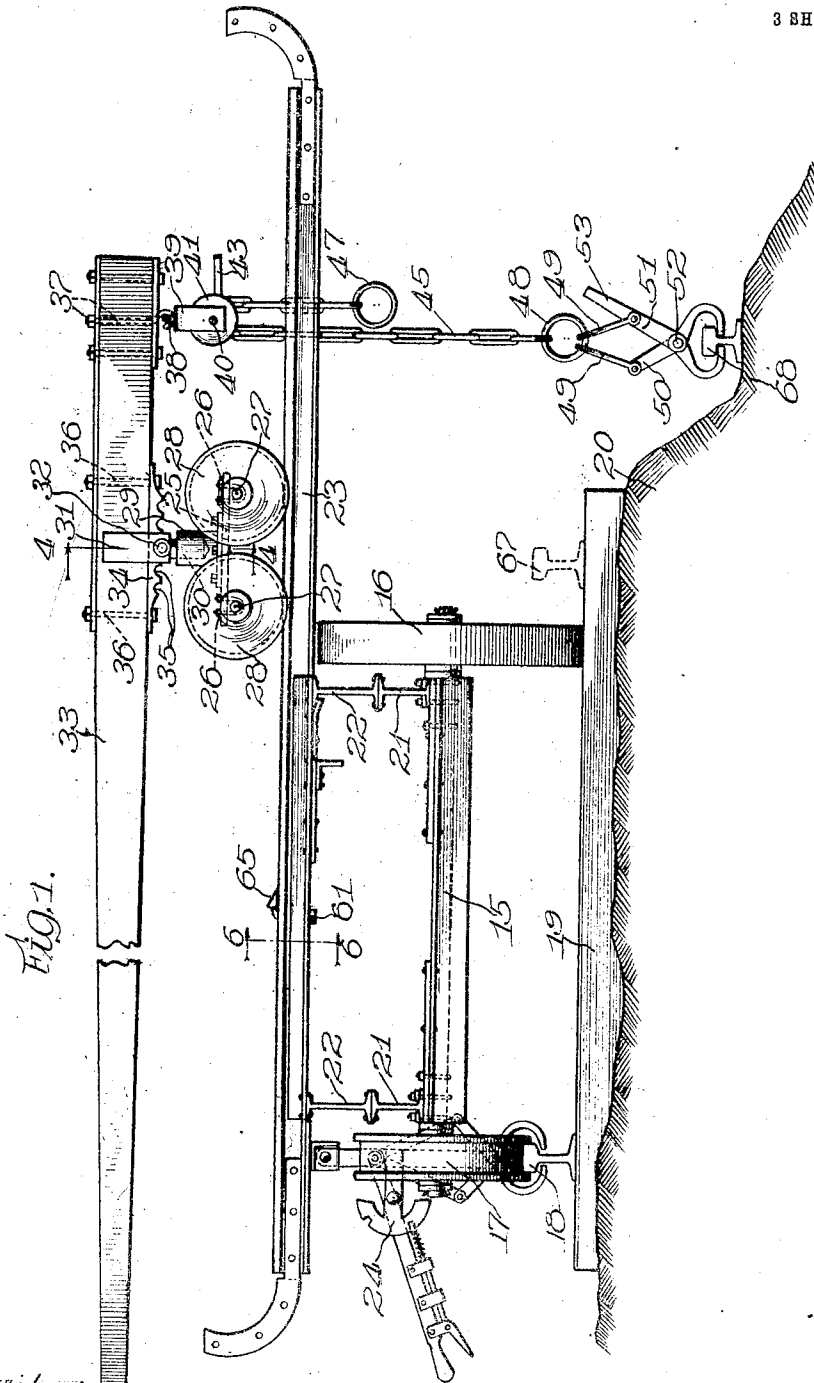


J. REINEHR.
RAIL HANDLING APPARATUS.
APPLICATION FILED OCT. 22, 1910.

992,594.

Patented May 16, 1911.

3 SHEETS-SHEET 1.



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Fig. 2.

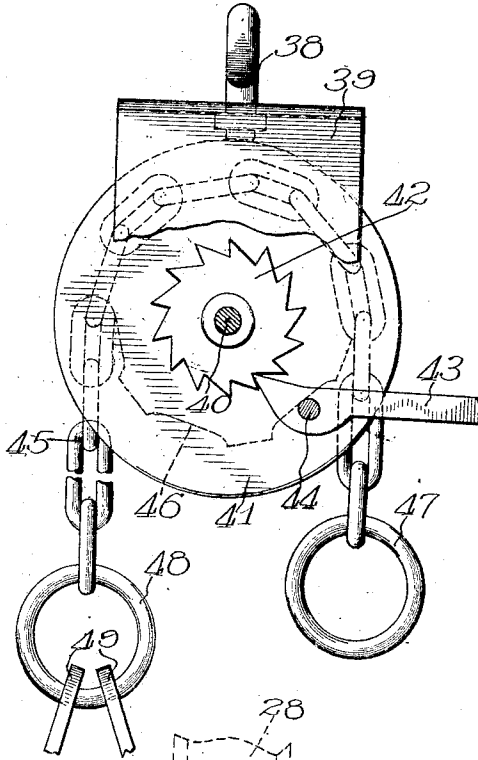


Fig. 3.

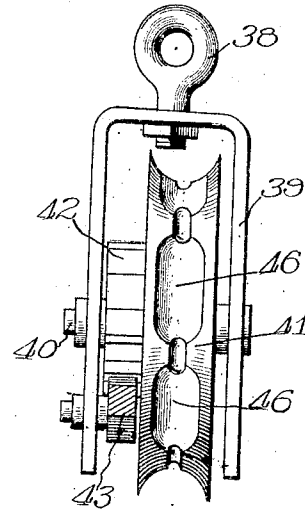


Fig. 6.

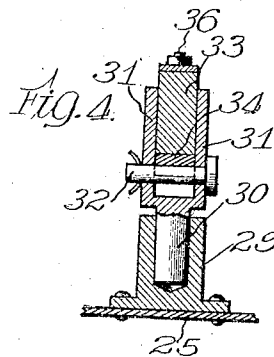
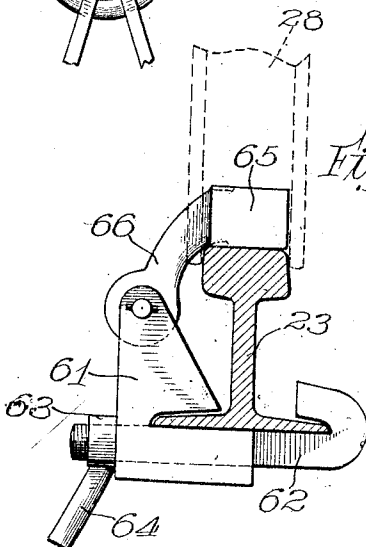
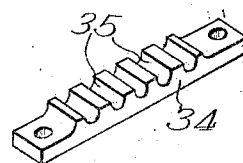


Fig. 5.



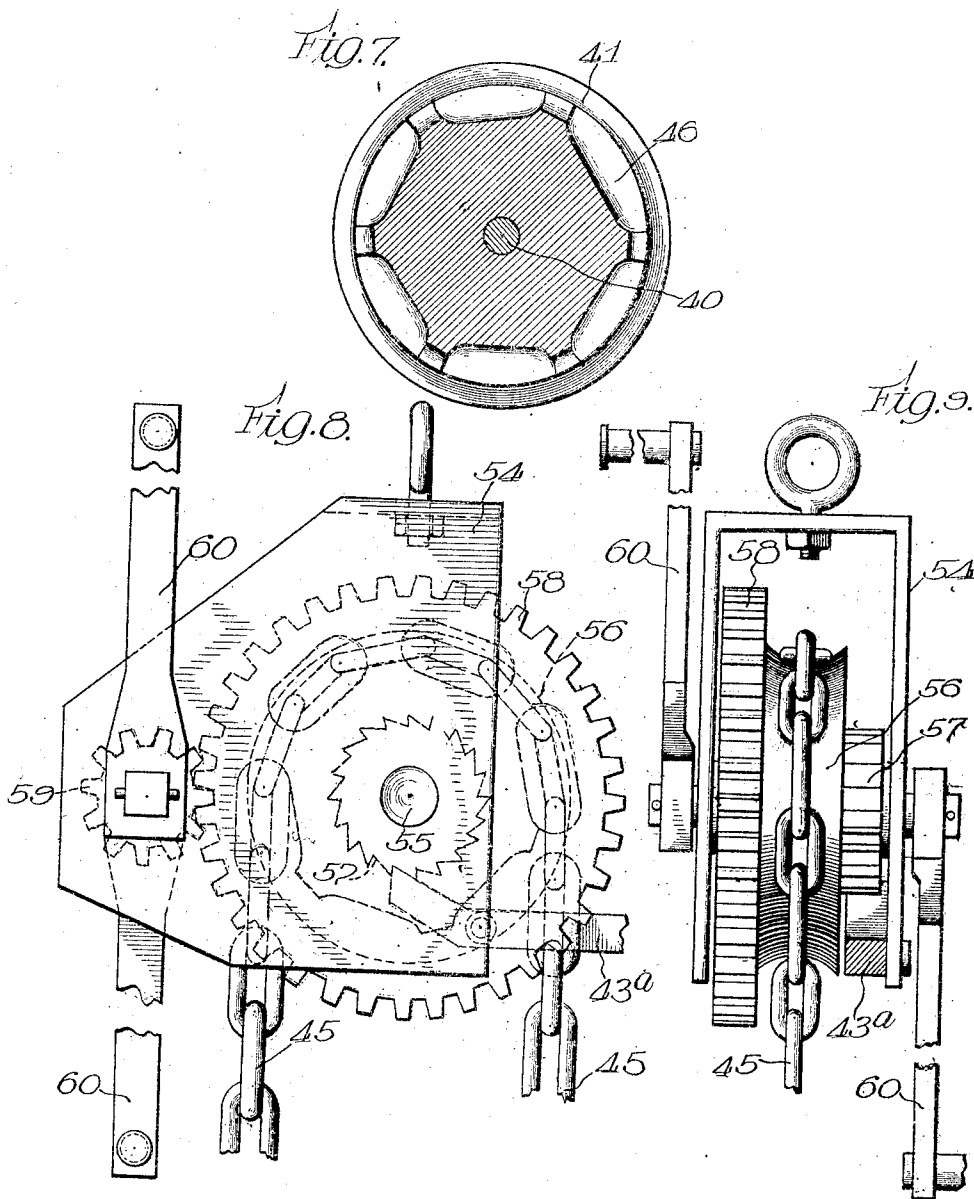
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UNITED STATES PATENT OFFICE.

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

RAIL-HANDLING APPARATUS.

992,594.

Specification of Letters Patent.

Patented May 16, 1911.

Original application filed August 24, 1910, Serial No. 578,762. Divided and this application filed October 22, 1910. Serial No. 588,544.

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 Rail-Handling Apparatus, of which the following is a specification.

My invention relates to rail laying apparatus of the general character shown in my Patent No. 948,023, granted February 1, 1910; the apparatus therein disclosed being designed particularly for relaying railroad track, that is, making over old track by substituting new rails in the place of the old worn out rails.

The object of the present invention is to provide certain improved constructions, arrangements and devices relating particularly to the apparatus for handling or moving the rails, that are in the nature of improvements upon the machine of my patent above mentioned, which will be hereinafter described and claimed.

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

Figure 1 is an end elevation of the apparatus; Fig. 2, a side view of one form of device for supporting and taking up the slack in the grappling tongs chain; Fig. 3, an edge view of this device; Fig. 4, a sectional view on an enlarged scale, taken on line 4-4 of Fig. 1, looking in the direction of the arrows; Fig. 5, a view in perspective of the fulcrum plate of the lever; Fig. 6, a sectional view on an enlarged scale taken on line 6-6 of Fig. 1, looking in the direction of the arrows; Fig. 7, a sectional view of the chain wheels shown in Figs. 2 and 3; Fig. 8, a side elevation of a modified form of apparatus for taking up slack in the chain, and Fig. 9, an edge view of this device.

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

Referring to the drawings, 1, designates the body of a truck of suitable construction on which the rail handling apparatus of my present invention is supported.

16 designates one of the large flat tired wheels at one side of the truck, these wheels being designed to run upon the ties, or on stringers laid thereon; and 17, one of the double flanged wheels at the other side of the truck adapted to run upon the line of rails 18.

19 designates one of the ties on which the rails are laid, and 20, the earth or other material of the road bed.

Secured to the body of truck 15 are the I-beams 21 supporting another pair of I-beams 22 which carry, preferably detachably, a track 23 on which runs the carriage supporting the rail handling device. As the construction of the truck supporting track 23 forms specifically no part of the present invention, being described and claimed in an application for patent filed by me on August 24, 1910, Serial No. 578,762, of which the present application is a division, the several devices and constructions making up this part of my apparatus will not be described herein in detail.

The truck is preferably kept from tilting when the rail handling apparatus is run out to the outer end of track 23 by means of a suitable grappling device designated 24. This device, however, is described and claimed in my application above noted, and as it is not herein claimed, will not be further adverted to.

The rail handling apparatus forming the subject matter of the invention herein claimed, consists of a carriage which is adapted to move back and forth on track 23, a lever, a suitable device for grappling the rail which is to be put in place on the ties, and certain other apparatuses and devices used in connection with the above mentioned parts. The carriage, as shown, consists of a platform 25 to which are secured, by means of stirrups 26, the axles 27 carrying wheels 28 adapted to run upon track 23.

Mounted on the platform 25 is a socket 29 adapted to receive the stem 30 of a fork 31 through which extends a fulcrum pin 32 on which turns the lever 33. The latter is preferably provided on its under surface

with a fulcrum plate 34 (Figs. 1, 4 and 5) formed with a number of transverse grooves 35, the plate 34 being secured to the lever by means of bolts 36. The other end of the lever carries a hook 37 which supports the staple 38 of a fork 39 in which is mounted on a pivot 40 a chain wheel 41 to which is rigidly connected a ratchet wheel 42. Ratchet 42 is adapted to be engaged by the gravity pawl 43 mounted on a pivot 44. A chain 45 extends over the chain wheel 41, the perimeter of which is formed with indentations 46 exactly corresponding with the links of chain 45. One end of the chain has a ring 47 and the other end, a ring 48, the latter supporting links 49 connected with the members 50, 51, of the grappling tongs, these members being pivoted together at 52. Preferably the member 51 is longer than the member 50 so as to provide a handle 53.

In Figs. 8 and 9 I have shown a modified form of device for supporting the chain on the lever. A fork 54 is provided in which is rotatably mounted an axle 55 which carries rigidly thereon a chain wheel 56, a ratchet wheel 57, and a gear wheel 58, which latter is meshed by a pinion 59 mounted in the fork 54 so as to be rotated by means of the cranks 60. A gravity pawl 43^a engages with the ratchet wheel 57.

On one or on each of the rails constituting the track 23 are preferably arranged a stop to limit the movement inwardly of the carriage supporting lever 33. A preferred form of stop is shown in Fig. 6. It consists of a standard 61 clamped to the base of the rail 23 by means of a bolt 62 and nut 63 provided with handle 64, and of a stop member 65 preferably wedge shaped, having an arm 66 which is pivotally attached to standard 61.

The operation of the device, as above described, is as follows: In relaying old track it is customary to lay first the rails on one side of the track and then those on the other side. The truck which supports my rail laying apparatus is, therefore, constructed so that it runs on one side on the railroad rails in their ordinary position, and on the other, upon the ties at the side at which the old rails are to be replaced with new ones. In Fig. 1 the position which the new rail is to occupy on the ties is indicated in dotted lines at 67. A new rail ready to be set in this position is shown lying on the shoulder of the road bed and designated 68. Supposing that the old rail has been removed, the truck is pushed along the track opposite rail 68 and the carriage is run out over track 23 until the grappling tongs 50, 51 are as nearly as may be above rail 68. The lever 33 is then tilted downward and the rail grappled. The lever is then tilted in the other direction so as to lift the rail and the carriage is

run in on track 23 until the new rail is directly above the position which it is to occupy on the ties. It is then lowered into position. When the stop device shown in Fig. 6 is used, this device is so positioned on the rail that it stops the carriage at just the proper point to give a proper alinement of the new rail with the rail just laid.

It may happen that the rail has to be lifted a considerable distance to get it from the place where it has been dumped at the side of the road bed to its eventual position on the ties. By making the lever long enough and fulcruming it high enough to get clearance, the rail even in such case could be transported by a single movement of the lever. It is easier, however, to move the rail in such cases by several separate operations of the lever and with this end in view I have provided means for taking up the slack in the chain resulting when the rail is lifted to a higher level than it has previously occupied. In the device shown in Figs. 1, 2 and 3, the slack is taken up by pulling down on ring 47. Supposing that the rail has been partially elevated before this is done, a further manipulation of the lever will lift the rail to a higher point where, by tilting the lever downward, the chain can again be slackened, the slack taken up, and in this manner the rail finally lifted to its position on the ties.

The tongs are constructed with a handle 53 so that they may be conveniently manipulated to grapple and to release the rail. The handle is particularly convenient when the rail is to be released after having been put in position on the ties. In such case the man who has charge of the tongs may slack the chain 45 by lifting up pawl 43 (or 43^a as the case may be) which will allow him to open the tongs by pulling on handle 53. It will be understood that ordinarily railroad track is relaid during the intervals between trains so that every device or arrangement by which time is saved is of considerable importance.

The provision of lever 33 with the fulcrum plate 35 allows the lever to be fulcrumed at different points relative to its length. The stop device is adjustable so as to correspond to different adjustments of the lever.

While I have described a preferred form of apparatus, it will be understood that modifications in form, construction and arrangement might be devised without departing from my invention. Therefore I do not limit myself to the particulars shown and described except so far as the same are made specifically limitations on certain of the claims herein.

I have shown a preferred form of truck for supporting the rail handling device but

it is obvious that other means of support might be employed in place of it.

I claim:

1. In apparatus of the character described, the combination with a truck, of rail handling apparatus sustained on said truck comprising a lever, a rail grappling device, a flexible member to which said rail grappling device is connected, and means on the lever for securing said flexible member thereto, at different points along the length of said flexible member, substantially as and for the purpose described.

2. In apparatus of the character described, the combination with a truck, of rail handling apparatus sustained on said truck comprising a lever, a rail grappling device, a chain which sustains said rail grappling device, a chain wheel on said lever, a ratchet rigid with said wheel, and a dog for said ratchet.

3. In apparatus of the character described, the combination with a truck, of rail handling apparatus sustained on said truck comprising a lever, a rail grappling device, a chain which sustains said rail grappling device, a chain wheel on said lever, a ratchet rigid with said wheel, a dog for said ratchet, and means for turning the wheel so as to take up the slack, substantially as described.

4. In apparatus of the character described, the combination with a truck, of rail handling apparatus sustained on said truck comprising a lever, a rail grappling device, a chain which sustains said rail grappling device, a chain wheel on said lever, a ratchet rigid with said wheel, a dog for said ratchet, and means for taking up the slack in said chain comprising a gear wheel rigid with said wheel and a pinion and crank to operate said gear wheel.

5. In apparatus of the character described, the combination with supporting means, of a lever, a grappling device, a flexible member to which said grappling device is attached and which is movably sustained on the lever, and means for securing the said member to said lever.

6. In apparatus of the character described, the combination with supporting means, of a lever, a grappling device, a flexible member to which said grappling device is attached and which is movably sustained on the lever, and means for securing the said member to said lever comprising a ratchet and a dog for said ratchet.

7. In apparatus of the character described, the combination with supporting means, of a lever, a rail grappling device sustained on said lever, and means whereby said lever may be fulcrumed on the supporting means at different points lengthwise of the lever.

8. In apparatus of the character described,

the combination with supporting means, of a lever, a rail grappling device sustained on said lever, means on said supporting device providing a pivot for the lever, and means on said lever constituting a plurality of bearings for said pivot.

9. In apparatus of the character described, the combination with supporting means, of a lever, a rail grappling device sustained on said lever, means on said supporting means providing a pivot for the lever, and a plate on the under side of said lever having a plurality of transverse grooves providing bearings for said pivot.

10. In apparatus of the character described, the combination with a supporting means, of a socket on said supporting means, a fork having a stem which is received in said socket, a bearing pin in said fork, a lever provided on its under side with a plate formed with a plurality of transverse grooves, and a rail grappling device sustained by said lever.

11. In apparatus of the character described, the combination with a truck, of a transverse track which projects from the truck on the working side, a carriage on said track, a fork pivotally mounted on said carriage and provided with a bearing pin, a lever formed with a plurality of transverse grooves on its under edge, which is received in said fork so as to be fulcrumed on said pin, and a rail grappling device sustained on said lever.

12. In apparatus of the character described, the combination with a truck, of a track, a carriage on said track, a lever which is adapted to be fulcrumed on said carriage at different points lengthwise of said lever, grappling means sustained on said lever, and an adjustable stop device which limits the movement of the carriage in one direction.

13. In apparatus of the character described, the combination with supporting means, of a rail grappling device, lifting mechanism, a flexible member adapted to sustain said grappling device on said lifting mechanism, and means for taking up slack in said flexible member, substantially as described.

14. In apparatus of the character described, the combination with supporting means of lifting mechanism, a flexible member adapted to be attached to said lifting mechanism, a rail grappling device comprising a pair of grappling members pivoted together, links connecting said grappling members to said flexible member, one of said grappling members being prolonged beyond the link so as to form a handle, and means whereby the flexible member may be slacked, substantially as described.

15. In apparatus of the character de-

scribed, the combination with supporting means of lifting mechanism, a chain adapted to be attached to said lifting mechanism, a rail grappling device comprising a pair
5 of grappling members pivoted together, and links connecting said members to said chain, one of said members being prolonged beyond the link so as to form a handle, and a chain wheel on said lifting mechanism on which said chain is supported.

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