Dec. 21, 1954 J. H. KLINEFELTER 2,697,584

MULTIPLE LIFTING AND TRANSPORTING DEVICE FOR RAILROAD TIES

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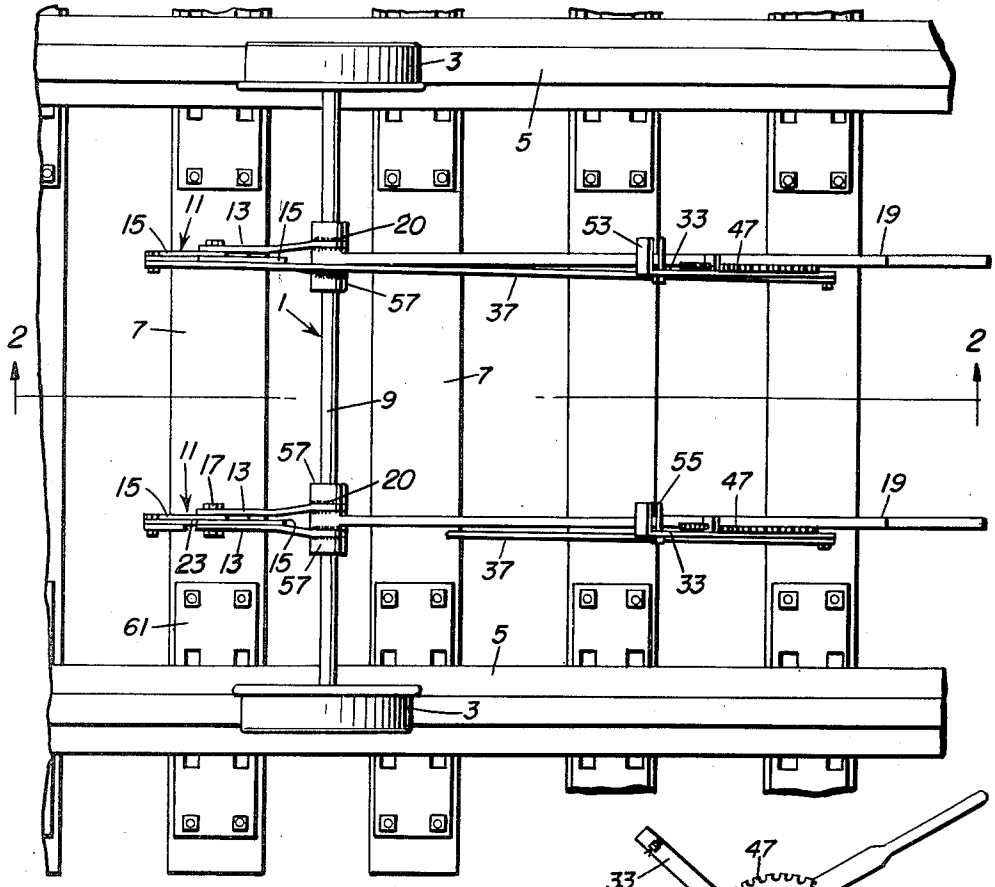


Fig. 1

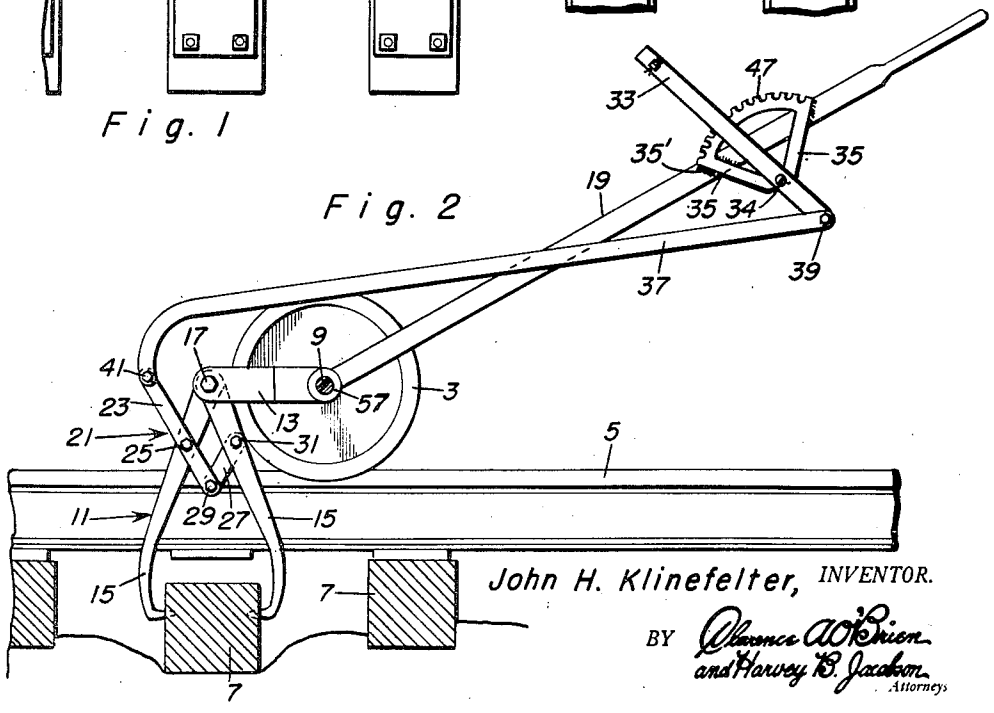


Fig. 2

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Fig. 3

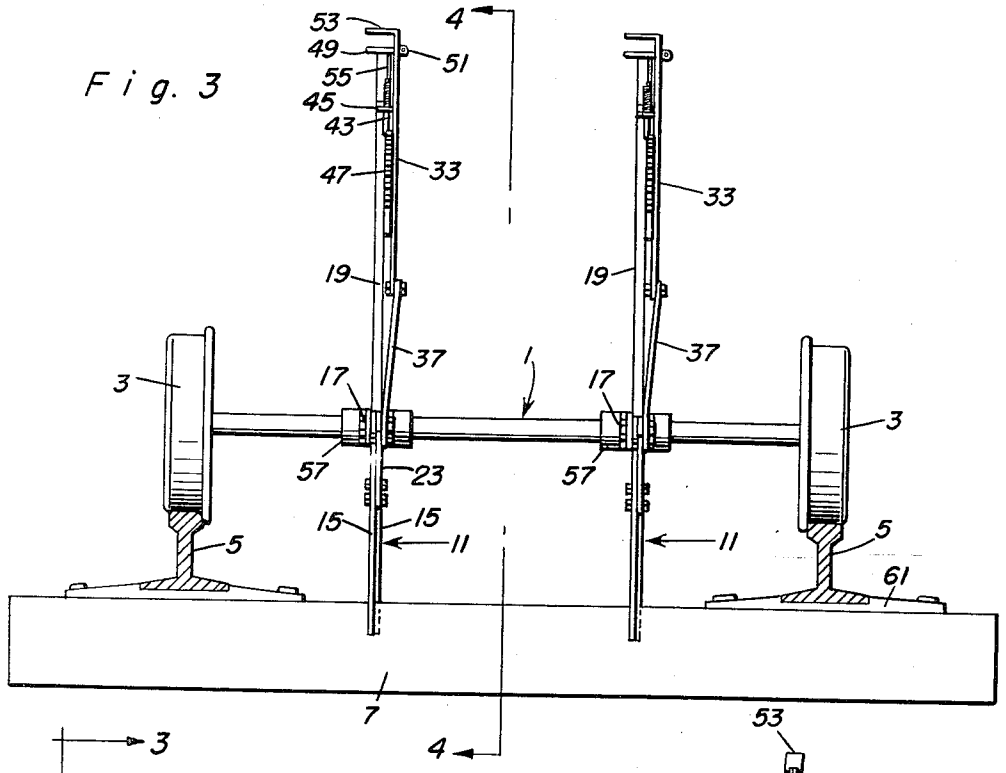
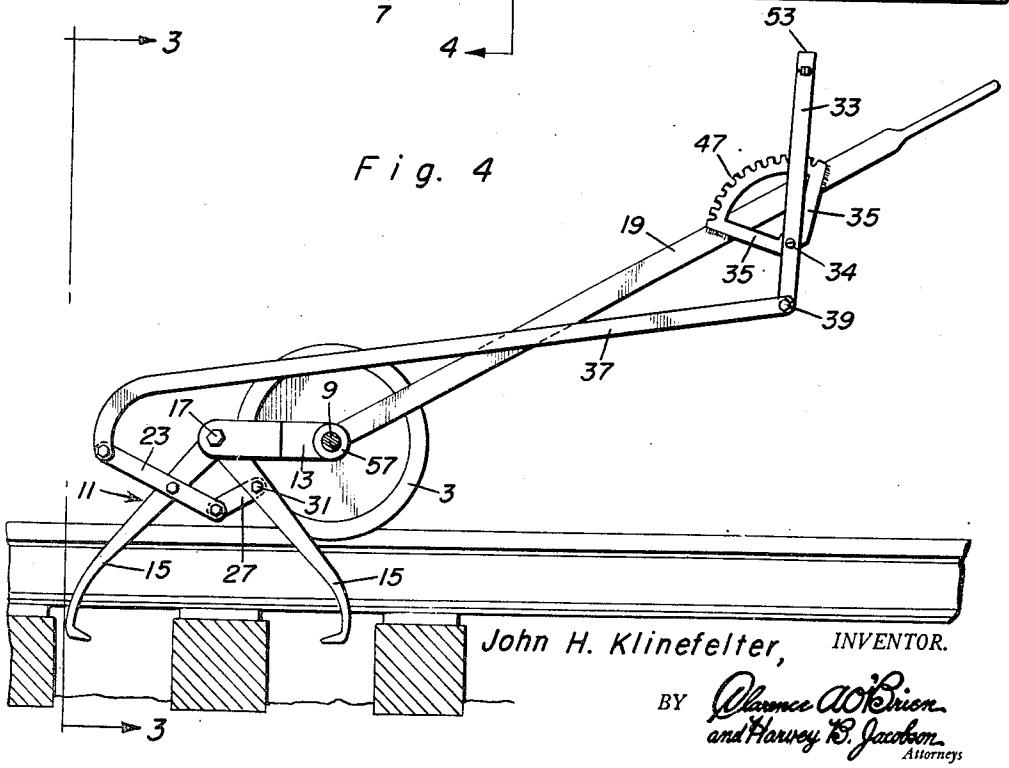


Fig. 4



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MULTIPLE LIFTING AND TRANSPORTING DEVICE FOR RAILROAD TIES

John H. Klinefelter, Etna Green, Ind.

Application January 2, 1953, Serial No. 329,285

1 Claim. (Cl. 254—121)

My invention relates to improvements in multiple lifting and transporting devices for lifting railroad ties beneath tracks into position for tamping.

The primary object of my invention is to provide a labor and time saving device adapted to lift a railroad tie beneath the rails and for pushing or pulling on the rails to accurately position the tie for tamping.

Another object is to provide a device for the above purposes embodying multiple lifting devices for lifting the tie at opposite sides of the transverse center and which are operative separately or in unison to lift and position the tie for tamping.

Still another object is to provide in such a device tongs for lifting the tie together with means for closing the tongs against opposite sides of the tie, and means for lifting the tongs upwardly to lift the tie.

Other and subordinate objects, within the purview of my invention, together with the precise nature of my improvements will become readily apparent when the succeeding description and claims are read with reference to the drawings accompanying and forming part of this specification.

In said drawings:

Figure 1 is a fragmentary view in plan illustrating my improved multiple lifting and transporting device mounted on a pair of track rails in position for lifting a tie;

Figure 2 is a view in longitudinal vertical section taken on the line 2—2 of Figure 1;

Figure 3 is a view in vertical transverse section taken on the line 3—3 of Figure 4; and

Figure 4 is a view in vertical longitudinal section taken on the line 4—4 of Figure 3.

Referring to the drawings by numerals, the lifting and transporting device of my invention comprises, as its basic component, a carriage 1 for propelling forwardly and rearwardly and including a pair of flanged side wheels 3 adapted to ride a track rails 5 beneath which ties 7 are to be tamped, the wheels 3 being journaled on the ends of a transverse axle 9 and forming therewith a complete carriage.

A pair of tongs 11 are provided at the front of the carriage 1 at opposite sides thereof between the wheels 3 for opening and closing to grip and release a tie 7 at opposite sides thereof and upon opposite sides of the transverse center of the same adjacent the track rails 5.

The tongs 11 are each pivotally suspended on the carriage 1 for opening and closing and for vertical lifting movement by means comprising separate pairs of laterally spaced, side-by-side tong lifting arms 13 associated with the tongs 11, respectively, and extending forwardly of the carriage 1. The pairs of lifting arms 13 are pivotally mounted at rear ends thereof on the axle 9 for vertical swinging movement with the associated tongs 11 and having the tong arms 15 pivoted at upper ends thereof, as at 17, between the front ends of the associated pair of lifting arms 13 so that said arms 15 are adapted to straddle a selected tie 7.

A pair of laterally spaced, carriage propelling handle bars 19 adjacent opposite sides of the carriage 1 extend upwardly and rearwardly from the axle bar 9. The handle bars 19 are associated with the tongs 11, respectively, and are pivoted at front ends thereof between the pairs of lifting arms 13 associated with the tongs 11 for vertical swinging on said axle bar 9. The handle bars 19 are operatively connected to the pairs of lifting arms 13 by being welded thereto, as at 20.

The tongs 11 are each opened and closed by a linkage

21 thereon comprising a link 23 pivoted intermediate its ends, as at 25, on one tong arm 15 in upstanding position, and a link 27 pivoted, as at 29, 31 to the lower end of the link 23 and to the other tong arm 15, the arrangement being such that pivotal operation of the linkage 21 in opposite directions will open and close the tongs 11.

Lever operated means is provided for operating the linkages 21 comprising an upright hand lever 33 pivotally mounted, as at 34, on a segmental bracket 35 on each handle bar adjacent the rear end thereof, said hand lever being swingable in opposite directions. Each hand lever 33 is operatively connected at its lower end to the link 23 of the tongs 11 associated with the handle bar 19 on which said lever is mounted, the operating connection comprising a connecting bar 37 pivoted to the hand lever 33, as at 39, and to the upper end of the link 23 on the tongs 11 associated with the handle bar 19.

Detent means is provided on each hand lever 33 and its mounting bracket 35 comprising a spring projected detent plunger 43 slidably mounted in a lateral lug 45 on the hand lever and adapted to snap between teeth 47 on the mounting bracket 35 to lock the hand lever 33 against swinging. A hand grip 49 pivoted on the hand lever 33, as at 51, beneath a lateral hand grip 53 on the hand lever, and connected to the plunger 43 by a wire 55 provides means for retracting the plunger 43 to unlock the hand lever 19.

Collars 57 fastened on the axle bar 9 on opposite sides of the pairs of lifting arms 13 prevent lateral displacement of said arms and of the handle bars 19.

The device is operated as follows. The hand levers 33 are first swung clockwise, as viewed in Figures 2 and 4, until the linkages 21 are operated in the proper direction by the connecting bars 37 to open the tongs 11, as shown in Figure 4. The hand levers 33 are then locked and the handle bars 19 swung downwardly to swing the pairs of lifting arms 13 upwardly and thereby lift the tongs 11 upwardly until said tongs are above the tie 7 to be lifted. Next, the carriage 1 is propelled in either direction until the tongs 11 are over the selected tie 7. The handle bars 19 are then swung upwardly, either singly or in unison, to lower the pairs of lifting arms 13 and the tongs 11, either singly or in unison, into straddling position relative to the selected tie 7, as shown in Figure 2. The hand levers 33, or lever, associated with the lowered tongs are then swung counter-clockwise to close the tongs so as to grip the ties 7 at opposite sides thereof, after which the hand lever 19, or levers, as the case may be, is swung downwardly to swing the corresponding or associated tongs 11 upwardly for lifting the tie 7 into position for tamping, as shown in Figure 3. As will be seen, the tongs 11 grip the tie 7 at opposite sides of its transverse center adjacent the usual rail fastening plates 61 if such plates are already bolted to the tie.

Obviously, the carriage 1 may be propelled with the tie 7 partly lifted for properly positioning the tie along the track rails 5. Also, as will be obvious, after the tie 7 is tamped, the tongs 11 may be opened by unlocking the hand levers 33 and swinging the same clockwise.

The foregoing will, it is believed, suffice to impart a clear understanding of my invention, without further explanation.

Manifestly, the invention, as described, is susceptible of modification, without departing from the inventive concept, and right is herein reserved to such modifications as fall within the scope of the appended claim.

Having described my invention, what is claimed as new is:

A device for lifting a railroad tie beneath a pair of rails into position for tamping comprising an axle having side wheels thereon adapted to ride said rails for propelling of the carriage forwardly and rearwardly on the rails, tongs in front of and adjacent opposite ends of the axle for opening and closing to grip a tie therebetween at opposite sides of its transverse center, separate arms pivotally suspending said tongs on said axle for opening and closing and pivoted on said axle for vertical swinging to raise and lower the tongs, a pair of

handle bars fixed to said arms to swing the same and extending laterally from said axle, means on each tong operative to open and close the same, a hand lever on each handle bar, operating connections between each lever and the means on each tong, and means on each handle bar and hand lever for locking the hand lever.

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