

No. 865,196.

W. E. MARTIN.
LEVELING MECHANISM.
APPLICATION FILED SEPT. 7, 1906.

PATENTED SEPT. 3, 1907.

3 SHEETS—SHEET 2.

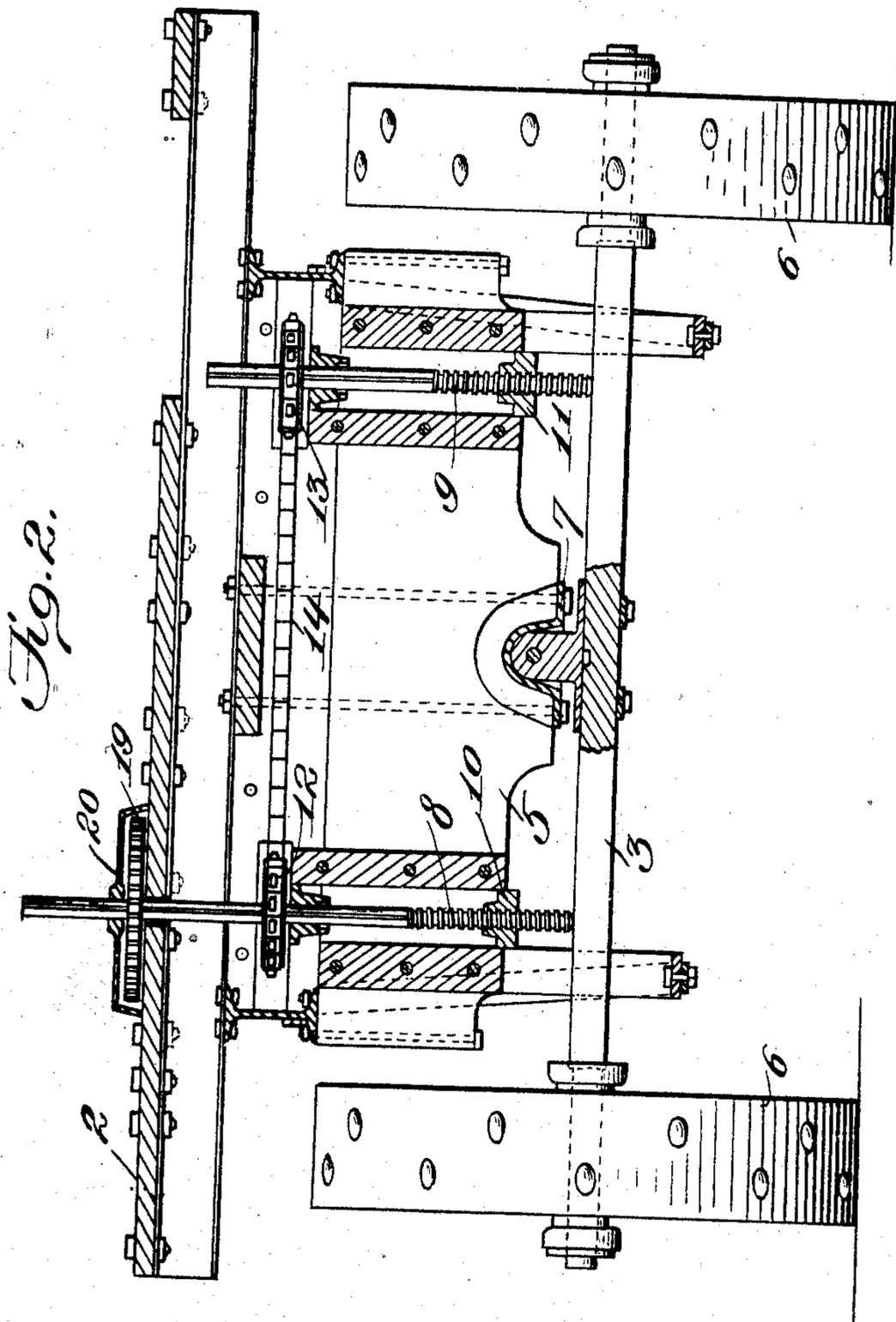


Fig. 2.

Witnesses.
C. D. Hester
J. B. Keeler

Inventor
Whitley E. Martin
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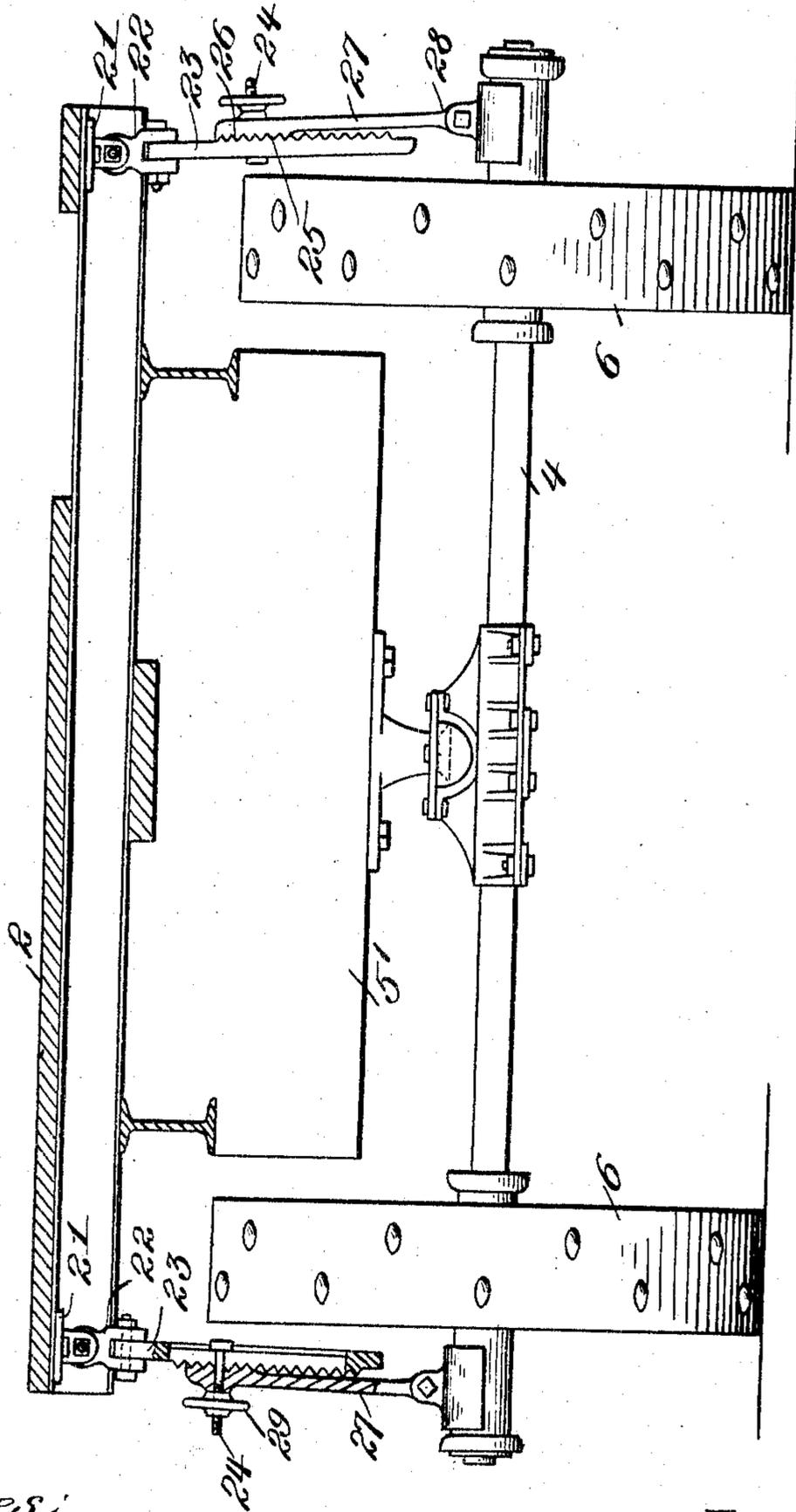
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3 SHEETS—SHEET 3.

Fig. 3.



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UNITED STATES PATENT OFFICE.

WHITLEY E. MARTIN, OF WINSTON SALEM, NORTH CAROLINA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO STANDARD CROSS TIE MACHINE COMPANY, OF NEW ORLEANS, LOUISIANA, A CORPORATION OF LOUISIANA.

LEVELING MECHANISM.

No. 865,196.

Specification of Letters Patent.

Patented Sept. 3, 1907.

Application filed September 7, 1906. Serial No. 333,730.

To all whom it may concern:

Be it known that I, WHITLEY E. MARTIN, a citizen of the United States, residing at Winston Salem, in the county of Forsyth and State of North Carolina, have invented new and useful Improvements in Leveling Mechanism, of which the following is a specification.

This invention relates to leveling mechanism. Said mechanism may be advantageously utilized in a variety of connections, for example, in conjunction with a machine for making railroad ties, such a machine being shown in United States Letters-Patent #778,258, granted to me December 27, 1904, and to which reference may be had. In this particular use the mechanism is employed for leveling the deck or platform upon which certain of the operative parts of such a machine are sustained. A machine of this character embodies a saw and it is essential that the arbor or mandrel of the saw should be kept in a horizontal position during the operation of said machine, and by virtue of my present invention I can assure this result and in a practical, simple and effective manner.

In the drawings accompanying and forming a part of this specification I show in detail one form of embodiment of the invention, which to enable those skilled in the art to practice said invention will be hereinafter fully set forth while the novelty of the invention will be included in the claims succeeding said description.

Referring to the drawings, Figure 1 is a sectional side elevation of leveling mechanism embodying my invention and showing the same in connection with a vehicle. Fig. 2 is a sectional rear elevation and Fig. 3 a sectional front elevation of the parts represented in Fig. 1.

Like characters refer to like parts throughout the several views.

In the drawings I have shown a deck or platform, the same being denoted by 2 and this deck or platform may be utilized as is the deck or platform correspondingly designated in the Letters Patent to which I have herebefore referred. It will be evident, however, that I use the designation deck or platform in a broad sense to cover any part which requires leveling.

Below the deck or platform are a rear axle 3 and a front axle 4. Interposed between the deck or platform and the rear axle 3 is a bolster 5 with which the leveling mechanism in the present case is directly cooperative. The axles 3 and 4 are equipped with wheels, each designated by 6. The bolster 5 is connected with the rear axle 3 for angular adjustment with respect to the latter and this connection may be of any desirable character, for example, a universal joint, such as that denoted in a general way by 7. The front bolster may be connected in like manner with the front axle 4 and in this respect these parts are of the same general character as the cor-

responding parts set forth in the before mentioned patent. The bolsters, therefore, are connected with the respective axles for tilting or tipping motion with respect thereto, the universal joints to which reference has been made constituting convenient pivotal unions between the respective parts.

I have shown as extending downward through the rear bolster 5 leveling screws 8 and 9, the screw 8 on the left in Fig. 2 being right handed, while the screw 9 on the right in said figure is left handed. This arrangement, however, is immaterial, as is the number of screws, although I prefer to employ two, located respectively at opposite sides of the center of motion of the bolster 5.

The rear axle 3 constitutes a convenient bearing for the two leveling screws 8 and 9, for which purpose said screws are supported against said axle which is preferably flattened for this purpose. The bolster 5 carries feed nuts as 10 and 11 through which the respective screws 8 and 9 pass and work. It therefore follows that when the screws are rotated in the same direction, one nut 10 will be elevated, while the other nut 11 will be lowered, the motion of the nuts depending upon the direction in which the screws are turned. To secure the best possible action, I provide means for simultaneously turning the two screws and this result I obtain by an operative connection between the stems or shanks of the screws. In the case of a machine for cutting ties of the type set forth in the herebefore mentioned Letters-Patent it frequently happens that the said machine is stopped on rough or uneven ground, and that the axles thereof stand at an angle to the horizontal. By operating the two leveling screws 8 and 9 the deck or platform of such machine can be readily leveled or brought to a horizontal position. The screw 8 is shown as having feathered or splined thereto a wheel as 12 preferably of sprocket form, while the screw 9 has similarly associated with it a sprocket wheel as 13, the two wheels being connected by a belt as 14 which naturally is of sprocket form, this being one convenient way of operatively connecting the two leveling screws for simultaneous movement. By virtue of the feathered connection between the two sprocket wheels and the corresponding screws the wheels can move up and down with the bolster 5 as the latter is adjusted angularly with respect to the axle 3 or, in other words, is brought into horizontal relation. The sprocket connections described are situated between the deck and the bolster 5 and the sprocket chain 14 extends longitudinally of said bolster.

I have shown extending through the deck or platform 2 a vertically disposed shaft which is in parallelism with the two leveling screws 8 and 9 and the lower

end of which is stepped in a bearing as 16 fastened to the bolster 5. This shaft 15 may be rotated in any suitable way, for example, by means of a hand crank as 17 suitably fastened to the upper end thereof. The shaft 15 has keyed thereto a pinion as 18 represented as meshing with a gear as 19 feathered on the screw shaft, or, as I have hereinbefore termed it, screw 8. The gear and intermeshing pinion are covered by a cap or boxing as 20 fastened to the deck or platform 2. The gear 19 moves with the deck 2 and relatively to the screw 8 as the deck is brought into horizontalism. In practice, the hand crank 17 will be within convenient reach of an attendant standing on the deck or platform 2 and it follows that when the crank shaft 15 is turned the two screws 8 and 9 will, through the operative connections with said shaft, be simultaneously turned or so as to angularly adjust the bolster 5 with respect to the axle 3. The front bolster is, of course, correspondingly adjusted. I arrange between the deck 2 and the front axle 4 jacks which are shown in Figs. 1 and 3, and one of which will be now specifically described. Other means, however, may be provided for this purpose, but I find that the two jacks are satisfactory to effectively support the forward end of the platform as do the screws 8 and 9 at the rear of said platform. As indicated, one of these jacks will be set forth in detail, such description applying to the other jack. The under side of the deck or platform near the front thereof has fastened thereto a bracket as 21 to which is pivoted the swivel member 22, to which in turn is jointed the bar 23 slotted for the passage of the bolt 24 and having teeth as 25 on its outer face for engagement by teeth as 26 on the head end of the bar 27, which latter is equipped with a swiveled foot as 28 having a bearing against the forward axle 4. These jacks are located in line longitudinally respectively with the screws 8 and 9 and they form longitudinally adjustable supports, one of them being lengthened, while the other is shortened to a similar extent and which extent depends upon the amount of adjustment of the deck. When a jack is in operative position, the teeth 26 will be engaged with the teeth 25, a hand wheel or nut 29 on the bolt 24 bearing solidly at this time against the outer face of the bar 27. To effect the adjustment of the jack 6 the hand wheel or nut 29 is operated sufficiently to disengage the teeth 26 from the teeth 25, at which time the deck or platform can be brought to horizontal relation when the two hand wheels 29 are simultaneously set up. The two jacks, therefore, form effective longitudinally adjustable supports between the forward axle 4 and the forward end of the deck or platform 2.

It will be understood that the slots in the bars 23 extend longitudinally thereof to provide for adjustment of the two jacks. The rear bolster 5 and the front bol-

ster 5' are rigidly connected with the deck 2 in any desirable way.

What I claim is:

1. The combination of a deck, a bearing member, a bolster between the deck and bearing member and tiltable with respect to the latter, leveling screws supported by said bearing member and located at opposite sides of the center of motion of said bolster, and nuts movable with the bolster and through which the screws pass, each nut and cooperating bolt having a thread opposite to that of the other nut and cooperating bolt. 60
2. The combination of a deck, a bearing member, a bolster between the deck and bearing member and tiltable with respect to the latter, leveling screws supported by said bearing member and located at opposite sides of the center of motion of said bolster, and nuts through which the screws pass, each nut and cooperating bolt having a thread opposite to that of the other nut and cooperating bolt, and an operative connection between the two screws for causing their simultaneous turning. 65
3. The combination of a deck, a bearing member, a bolster between the deck and bearing member and tiltable with respect to the latter, leveling screws supported by said bearing member and located at opposite sides of the center of motion of said bolster, nuts through which the screws pass, each nut and cooperating bolt having a thread opposite to that of the other nut and cooperating bolt, an operative connection between the two screws for causing their simultaneous turning, and a shaft operatively connected to one of the screws and extending upward from said deck. 70
4. The combination of a wheeled axle, a deck, a bolster connected with the deck and jointed with the axle for tilting movement, right and left handed screws operatively connected and located at opposite sides of the center of motion of the bolster, said screws having a bearing against said axle, and nuts connected fixedly with the bolster for receiving the respective screws. 75
5. The combination of a wheeled axle, a deck, a bolster connected with the deck and jointed with the axle for tilting movement, right and left handed screws operatively connected and located at opposite sides of the center of motion of the bolster, said screws having a bearing against said axle, nuts connected fixedly with the bolster for receiving the respective screws, and a manually operated shaft geared to one of said screws. 80
6. The combination of a wheeled axle, a deck, a bolster connected with the deck and jointed with the axle for tilting movement with respect to the latter, oppositely threaded screws at opposite sides of the center of motion of the bolster, bearing against said axle, feed nuts fixedly connected with the bolster and through which the respective screws pass and work, wheels movable with the bolster and feathered on the shanks of said screws, a driving connection between the wheels, and means for turning one of the shafts. 85
7. The combination of a deck, front and rear axles, leveling means between the deck and one of the axles, and longitudinally adjustable supporting means between the other axle and the deck. 90

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses. 95

WHITLEY E. MARTIN.

Witnesses:

THOS. E. LANDQUIST,
FRDC. F. BARNSON.