

Jan. 2, 1923.

1,440,722.

S. B. DUNNAM.

LOADING AND UNLOADING MACHINE FOR RAIL TIES.

FILED MAY 17, 1921.

3 SHEETS—SHEET 1.

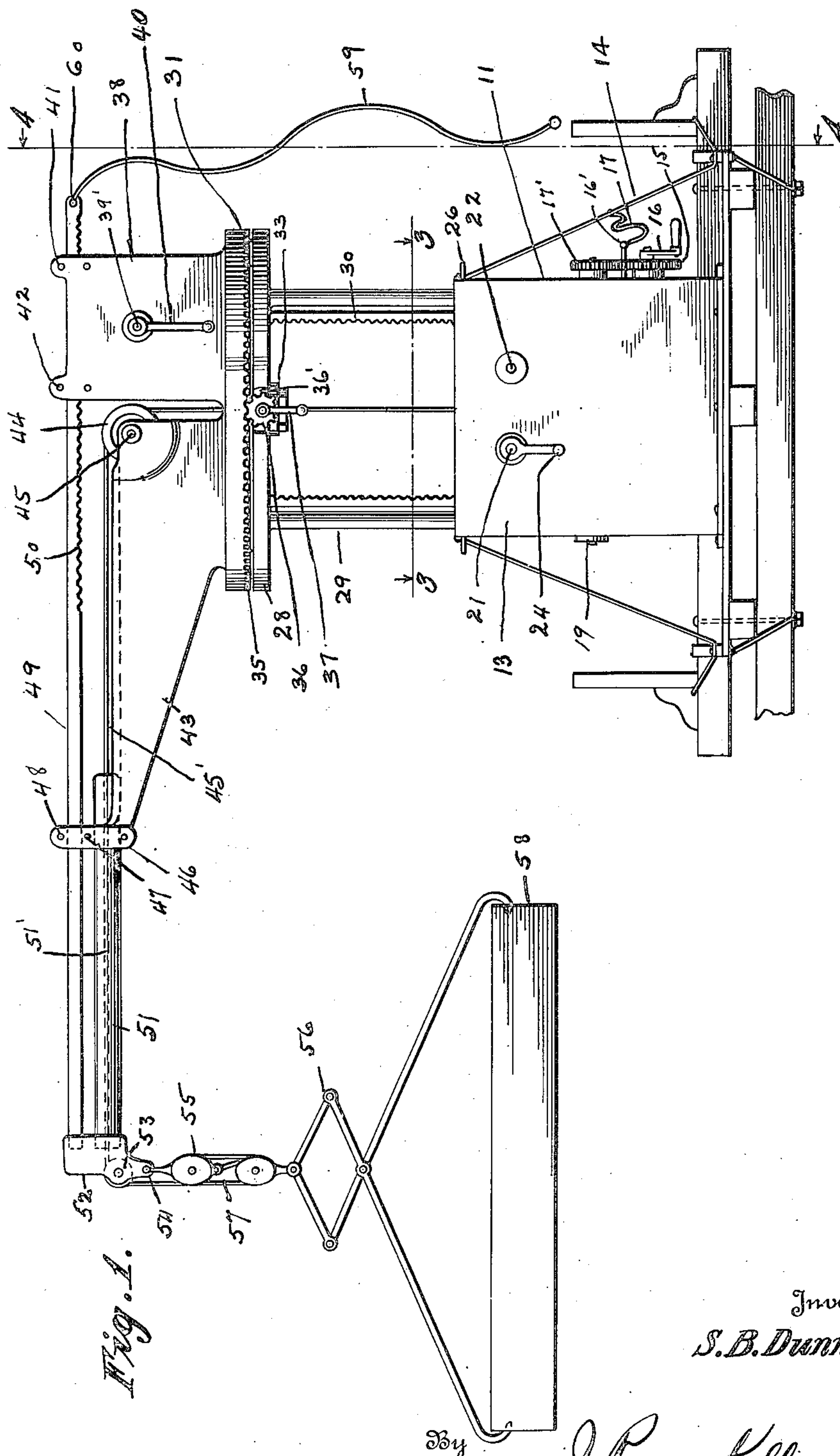


Fig. 1.

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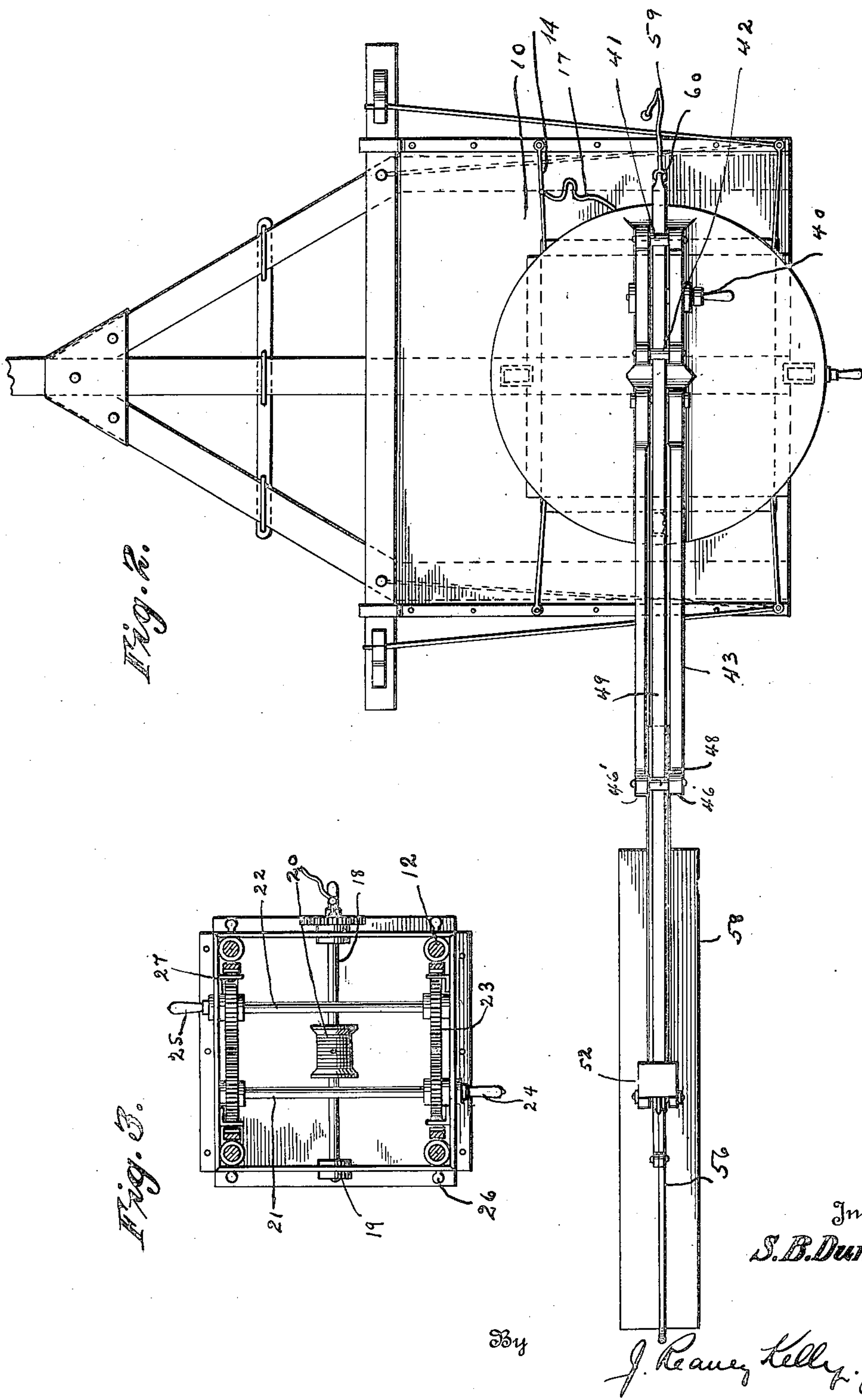
By *J. R. Kelly* Attorney

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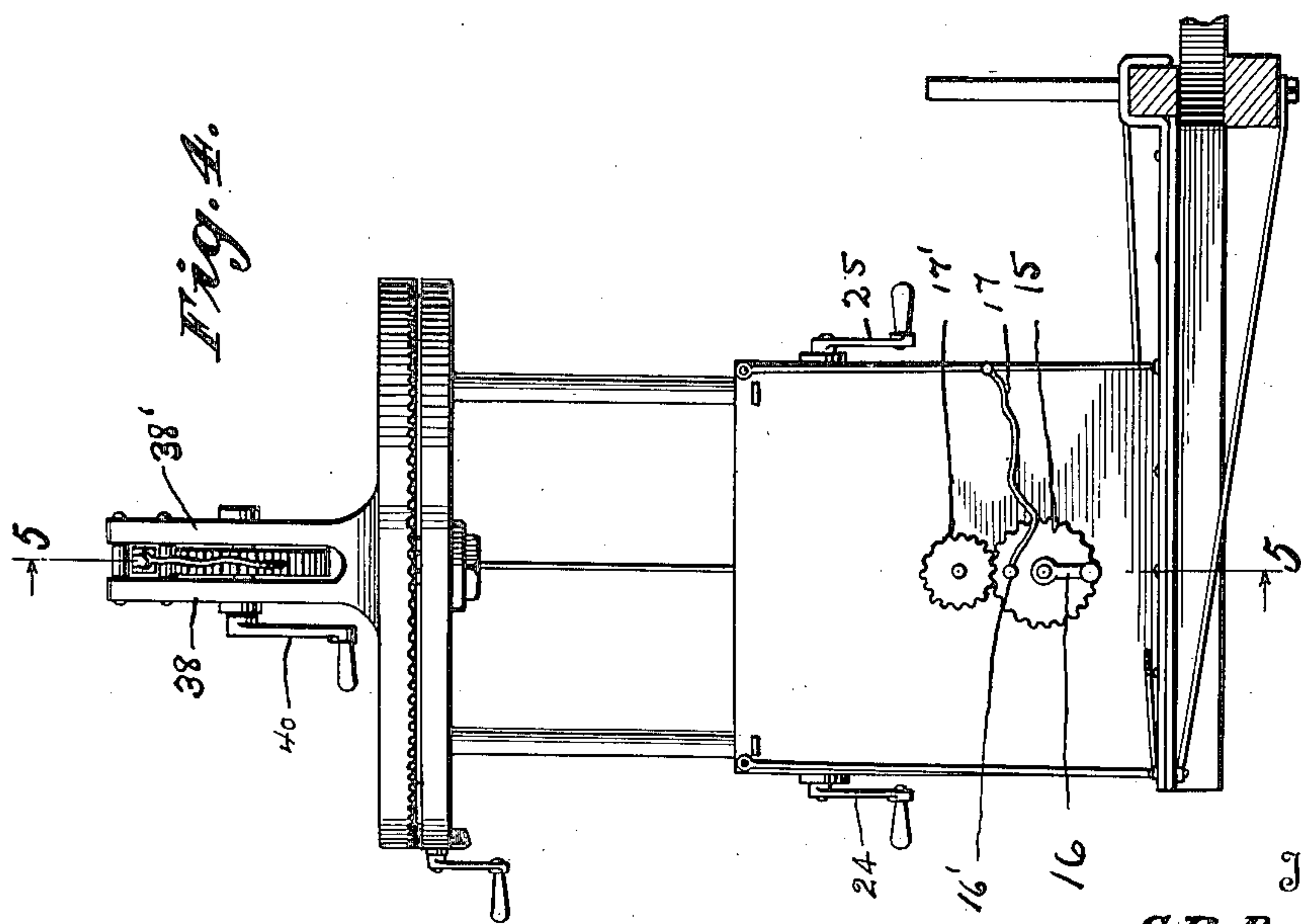
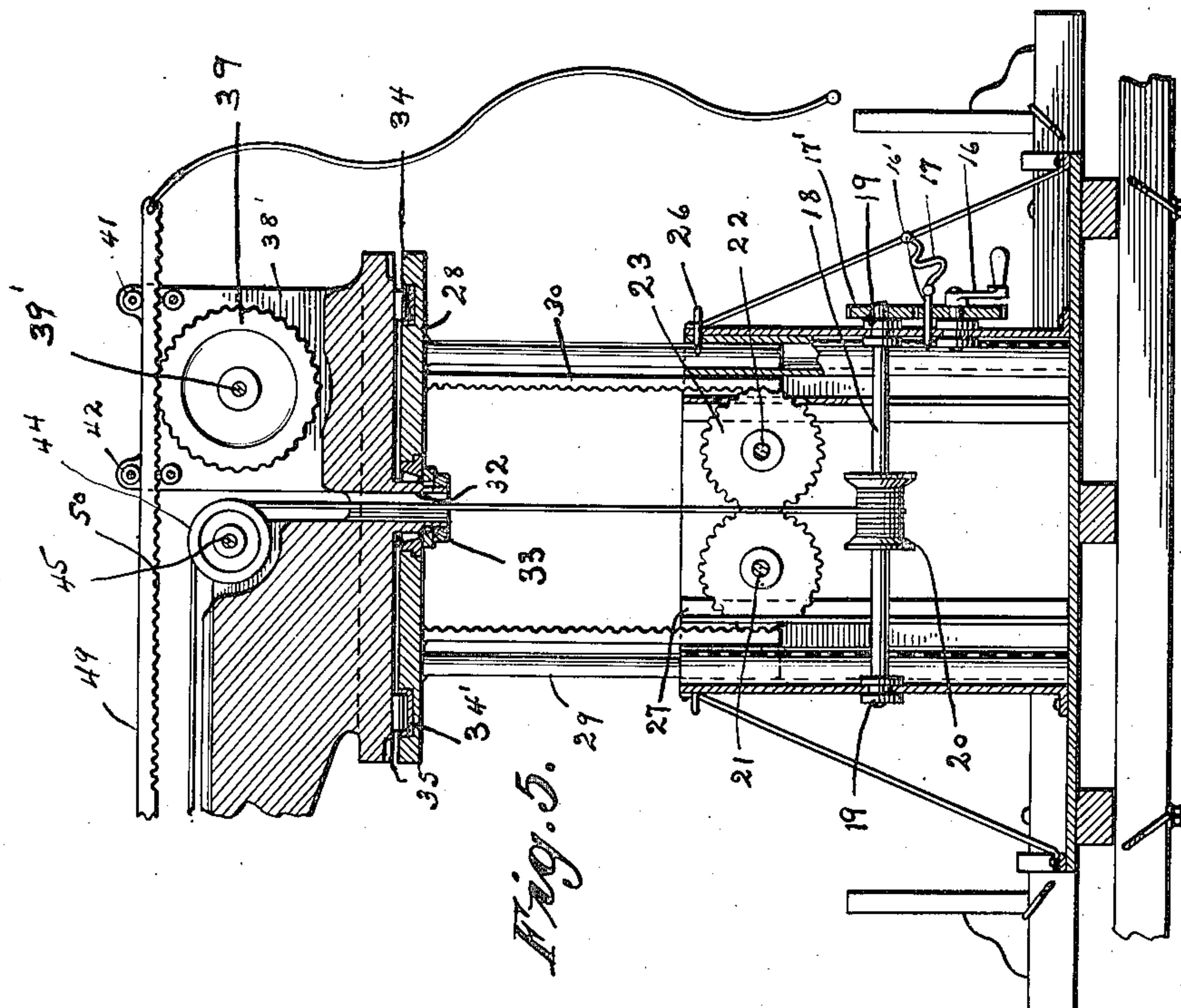
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By

J. Reaney Kelly Attorney

UNITED STATES PATENT OFFICE.

SAMUEL B. DUNNAM, OF COLEMAN, TEXAS.

LOADING AND UNLOADING MACHINE FOR RAIL TIES.

Application filed May 17, 1921. Serial No. 470,310.

To all whom it may concern:

Be it known that I, SAMUEL B. DUNNAM, a citizen of the United States, residing at Coleman, in the county of Coleman and State of Texas, have invented certain new and useful Improvements in Loading and Unloading Machines for Rail Ties, of which the following is a specification.

The present invention relates to improvements in cross tie loading and unloading machines and has as its principal object the provision of a machine of this character capable of elevating and lowering the cross tie and also of swinging the cross tie within a circle to a desired position.

Various other objects and advantages of my invention will become apparent during the continuance of the following description.

In the drawings:—

Figure 1 is a side elevation of the device attached to the rear of a wagon.

Figure 2 is a plan view of that part of the device shown in Figure 1.

Figure 3 is a horizontal sectional view on line 3—3 of Figure 1.

Figure 4 is a vertical transverse sectional view taken on line 4—4 of Figure 1.

Figure 5 is a vertical longitudinal sectional view taken on line 5—5 of Figure 4.

My device is shown attached to the rear end of a wagon, for convenience in illustrating, but it may be attached to any platform or other convenient support. Upon the supporting body I place a flat piece of sheet iron or other suitable metal 10 which forms the base of my device. Bolted or otherwise fastened thereto as shown in the drawings, I place a box like structure 11 composed of hollow posts 12 perpendicular to the member 10 and enclosed by sides of suitable material 13. In order to firmly secure the member 11, I provide braces 14 as illustrated. A pinion 15 is journaled to the side of the member 11 and is provided with a handle 16 in order that it may be turned as desired. In order to lock the pinion 15 a key 16' attached to a cable 17 is provided which passes through the pinion and enters an opening in member 13. Meshing with the gear 15 is a gear 17' carried upon one end of a shaft 18 which is journaled in bearings 19 in the sides of the member 13. Shaft 18 is positioned in the approximate center of member 11 and carries equally spaced from the sides thereof a drum 20 for the purpose hereinafter set forth. Above the shaft 18 and at

right angles thereto other shafts 21 and 22 are provided journaled in suitable bearings in the sides 13 of the member 11. Handles 24 and 25 are carried by said shafts outside of the member 13, by means of which shafts may be rotated as desired. Within the member 11, shafts 21 and 22 carry pinions 23 keyed thereto so that they revolve with said shafts when the latter are rotated. Set screws 26 are provided which pass through members 13 into the hollow uprights 12. Guide members 27 are also positioned in member 11 adjacent to pinions 23.

A circular table 28 supported by the standards 29 which are adapted to fit into the uprights 12 is positioned above the member 11. Adjacent to the standards 29 and likewise firmly secured to the underside of the table 28 are rack bars 30 meshing with pinions 23 carried by the shafts 21 and 22.

From this description it can be seen that when the handles 24 and 25 are turned the member 28 will be raised or lowered as the case may be, guide members 27 serving to keep the member 30 in proper position.

Above the table 28 is mounted a movable platform 31 which has a hollow trunnion 32 seated in a bearing 33 of the table 28, whereby it may be turned as desired. In order that the member 31 may revolve easily and with the least possible friction upon the table 28, I provide a circular track 34' therein adapted to receive roller bearings 34 and in order to turn the platform 31 in a horizontal plane as desired I provide teeth 35 on the under face thereof adapted to engage the pinion 36 counter sunk in the table 28 as at 36' and in order to easily turn said pinion I provide it with a handle 37. Upstanding upon the platform 31 are spaced standards 38 and 38' supporting a pinion 39 by means of a shaft 39' which carries at one end a handle 40. Between the spaced standards 38 and 38' are positioned roller bearings 41 and 42 to hold in position the rack bars 49 as will hereinafter be more clearly set forth. Also positioned upon the platform 31 is a supporting arm 43 which supports the pulley 44 journaled in roller bearings 45. In order to facilitate the operation of my device, I provide a channel 45' in the top edge of the arm 43 and short supplemental standards 46 and 46' at the front end thereof. Bearings 47 and 48 are positioned between the supplemental uprights 46 and 46' and between these bearings and the bear-

ings 41 and 42 is positioned the rack bar 49 which is provided for some distance along its under edge with teeth 50 adapted to mesh with the pinion 39. Slightly beneath the rack bar 49 and parallel thereto is a supporting member 51 positioned between the bearings 47 and the top edge of the arm 43 and adapted to move backward and forward in the channel 45' in said edge. The member 51 is also channelled as at 51' and is together with the rack bar 49 secured at its front end to the member 52 which has its lower end bifurcated to receive the pulley 53 below which it carries as at 54 a series of blocks 55 adapted to receive the cable 57 which passes back over the pulley 53 through the channel portions of the member 51 and the arm 43, then over the pulley 44 and down through the opening in the platform 31 and the table 28 to the drum 20. The lower end of the blocks 55 carries suitable means for engaging the tie 58 which is shown in the present instance in the form of gripping tongs 56.

For convenience a cable 59 is secured at 60 to the rack bar 49 which enables said bar to be pulled backwardly in the event that the teeth 50 get out of mesh with the pinion 39.

From the above description it can be seen that the operation of my device divides itself into several parts. First upon turning handles 24 and 25 the pinions 23 act upon the teeth of the rack bars 30 and elevate or lower as is desired the table 28 which can be held in a desired position by means of the set screws 26 which act upon the upright standards 29. When the handle 37 is turned rotating the pinion 36, the platform 31 can be turned to the right or left as desired. When it is desired to move gripping tongs 56 nearer to or farther away from the axis of rotation of the device, the handle 40 is turned thereby moving the pinion 39 which in turn acts upon the teeth 50 of the rack bar 49 and slides said bar together with the member 51 backwards or forwards as desired. When the foregoing adjustments have been made and the gripping tongs 56 are positioned over the cross tie to be loaded or unloaded the tongs may be lowered to grip the tie by

turning the handle 16 which rotates the pinion 15 meshing with the gear 17' which in turn revolves the drum 20 and unwinds the cable 57. Likewise when it is desired to raise the tie after the tongs are attached thereto, the handle 16 is revolved thus winding the cable 57 upon the drum 20.

What is claimed is:—

1. In a device of the character described, a base, a table movably positioned on said base, means carried by said base to raise and lower said table, a platform mounted upon said table and adapted to rotate thereon, means to rotate said platform counter sunk in said table, gripping means carried by said platform, means to elevate and lower said gripping means, means carried by said platform adapted to adjust said gripping means with reference to the axis of rotation of said platform and means to hold said table and said gripping means in a desired position as described.

2. In a device of the character described, a base, hollow standards upstanding upon said base, a drum positioned above said base and between said standards, means to rotate said drum, a table movably positioned upon said base, supplemental standards to said table adapted to slide within said hollow standards, pinions positioned between said hollow standards, rack bars carried by said table adapted to engage said pinions, whereby said table may be raised or lowered, a platform rotatably mounted on said table, a pinion counter sunk in said table, teeth carried by the under side of said platform engaging said last named pinion whereby said platform may be rotated, a rack bar carried by said platform, means to adjust said rack bar with reference to the axis of rotation of said platform, gripping means carried by said rack bar, a cable connecting said gripping means and said drum and adapted to wind thereabout, whereby said gripping means may be raised and lowered and to hold said table and said gripping means in a desired position, as described.

In testimony whereof I affix my signature.

SAMUEL B. DUNNAM.