

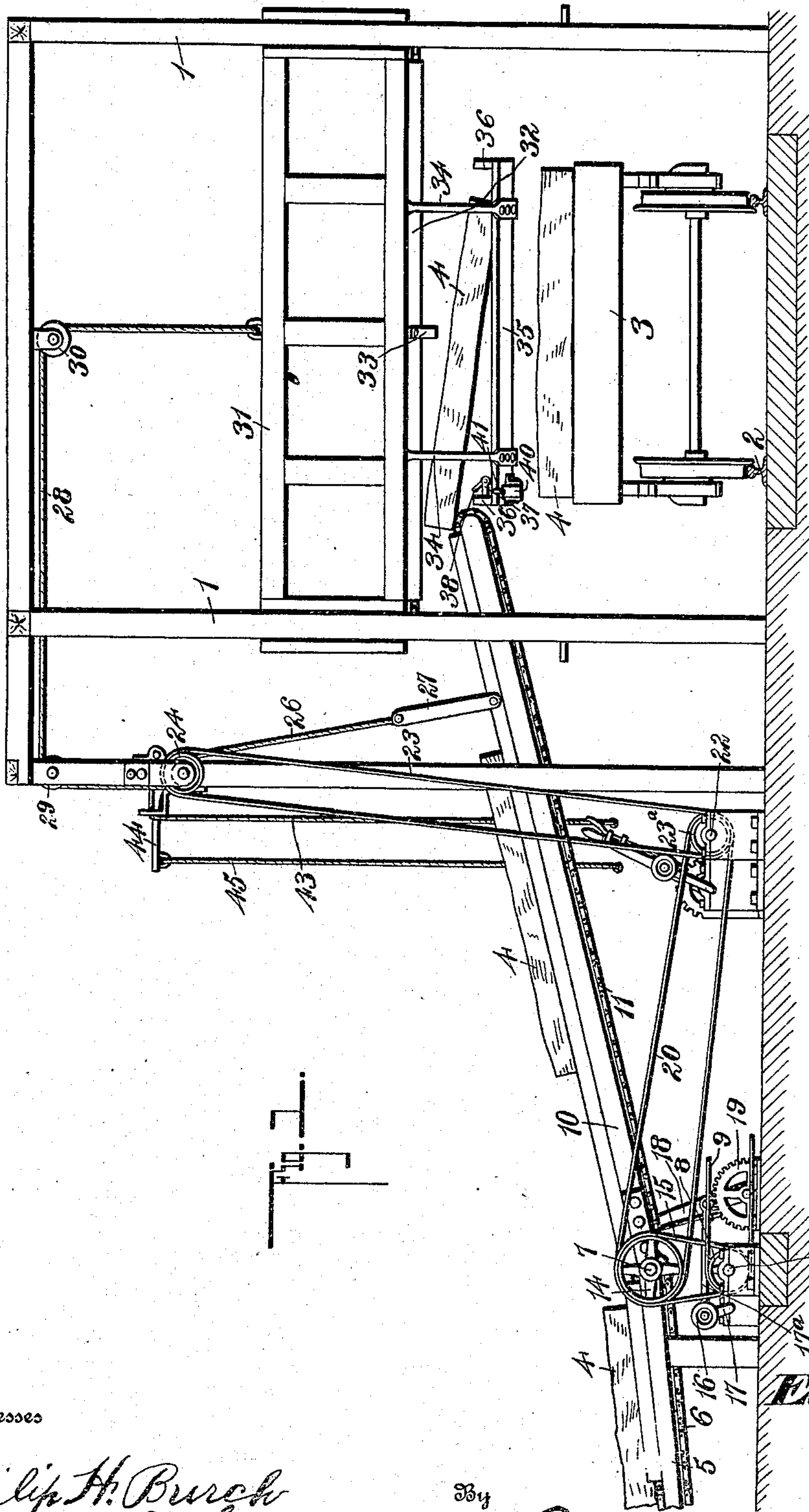
E. PLATTER.
TIE LOADER.

APPLICATION FILED OCT. 24, 1908.

Patented Aug. 31, 1909.

3 SHEETS—SHEET 1.

932,571.



Witnesses

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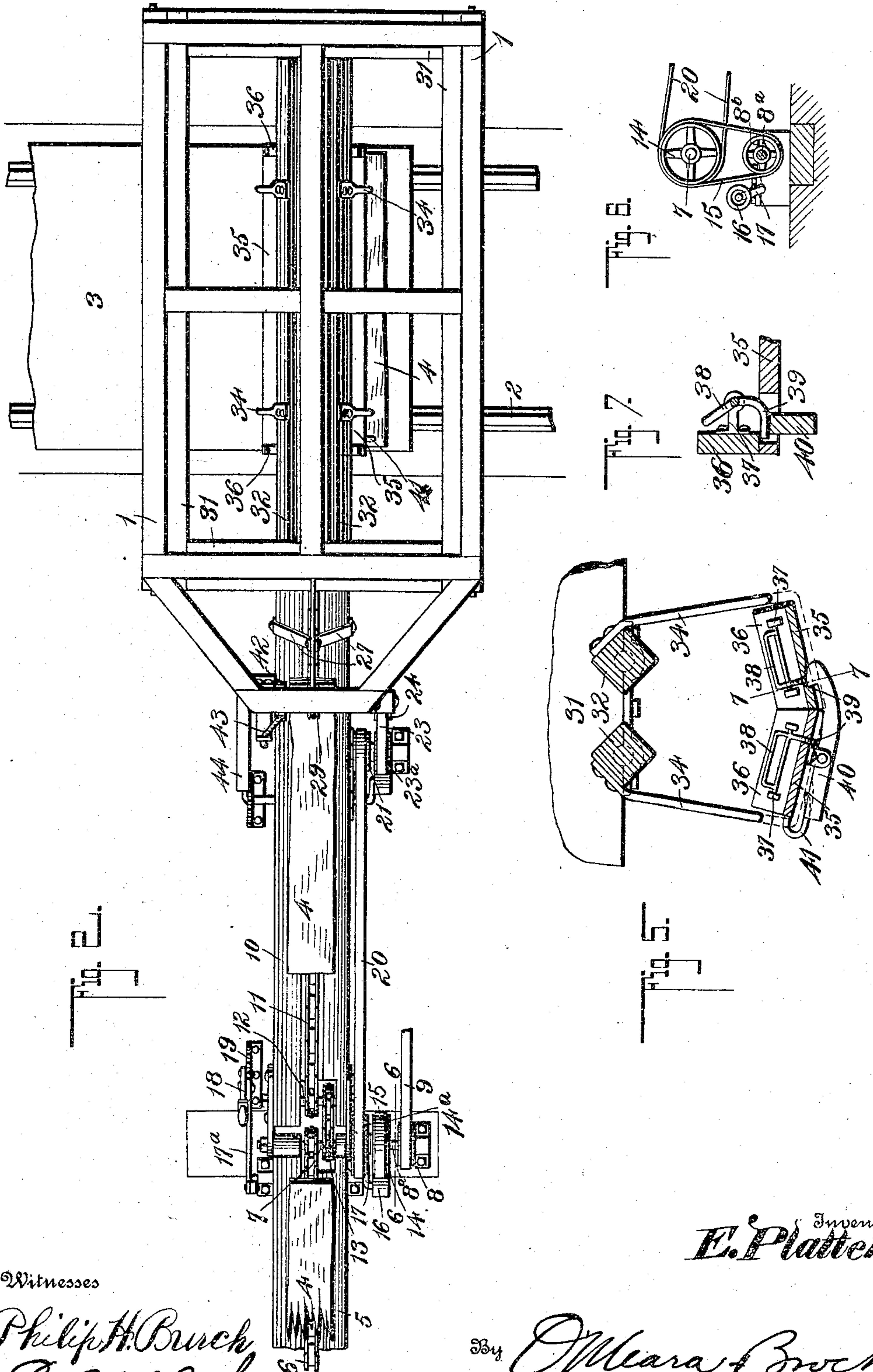
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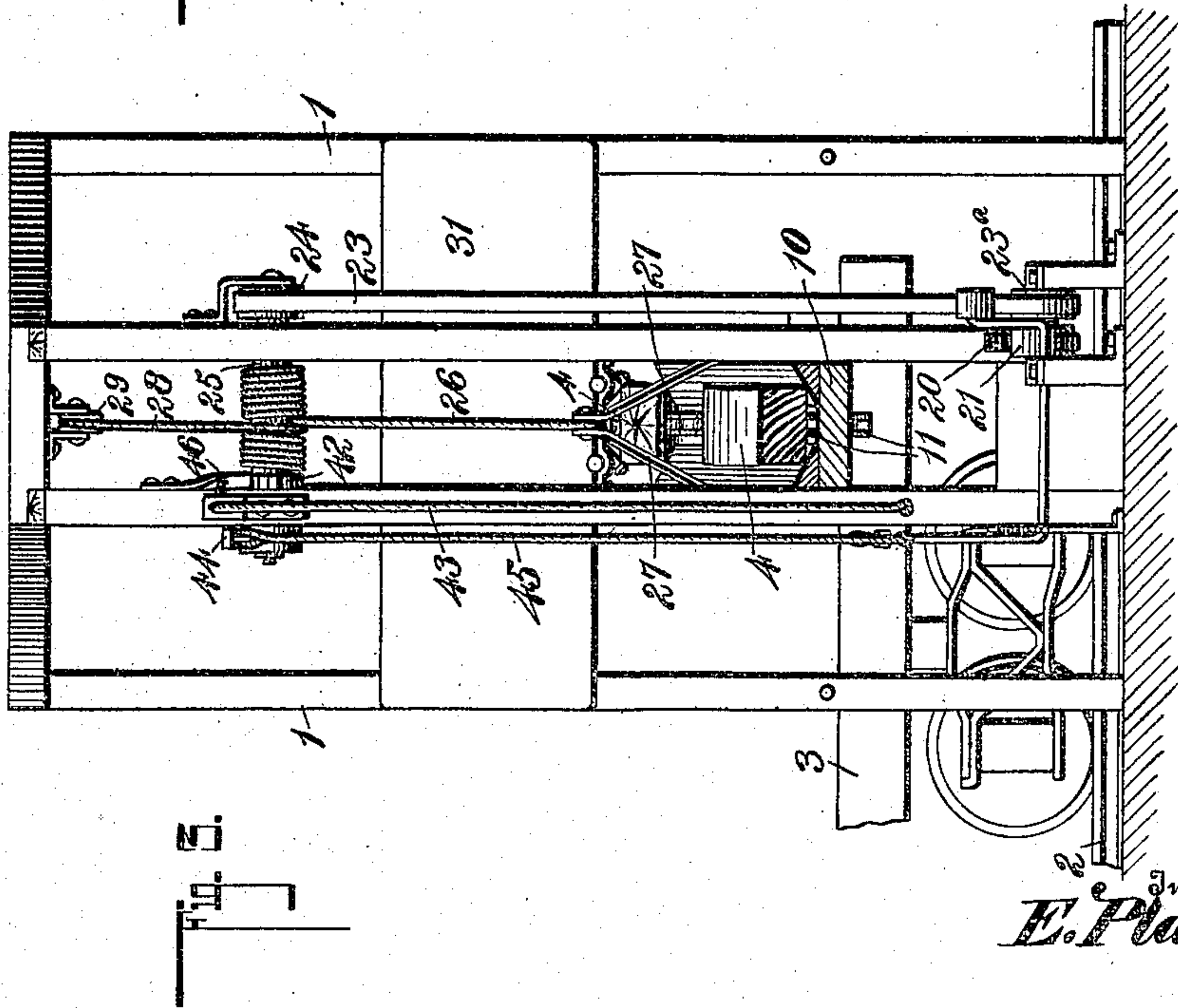
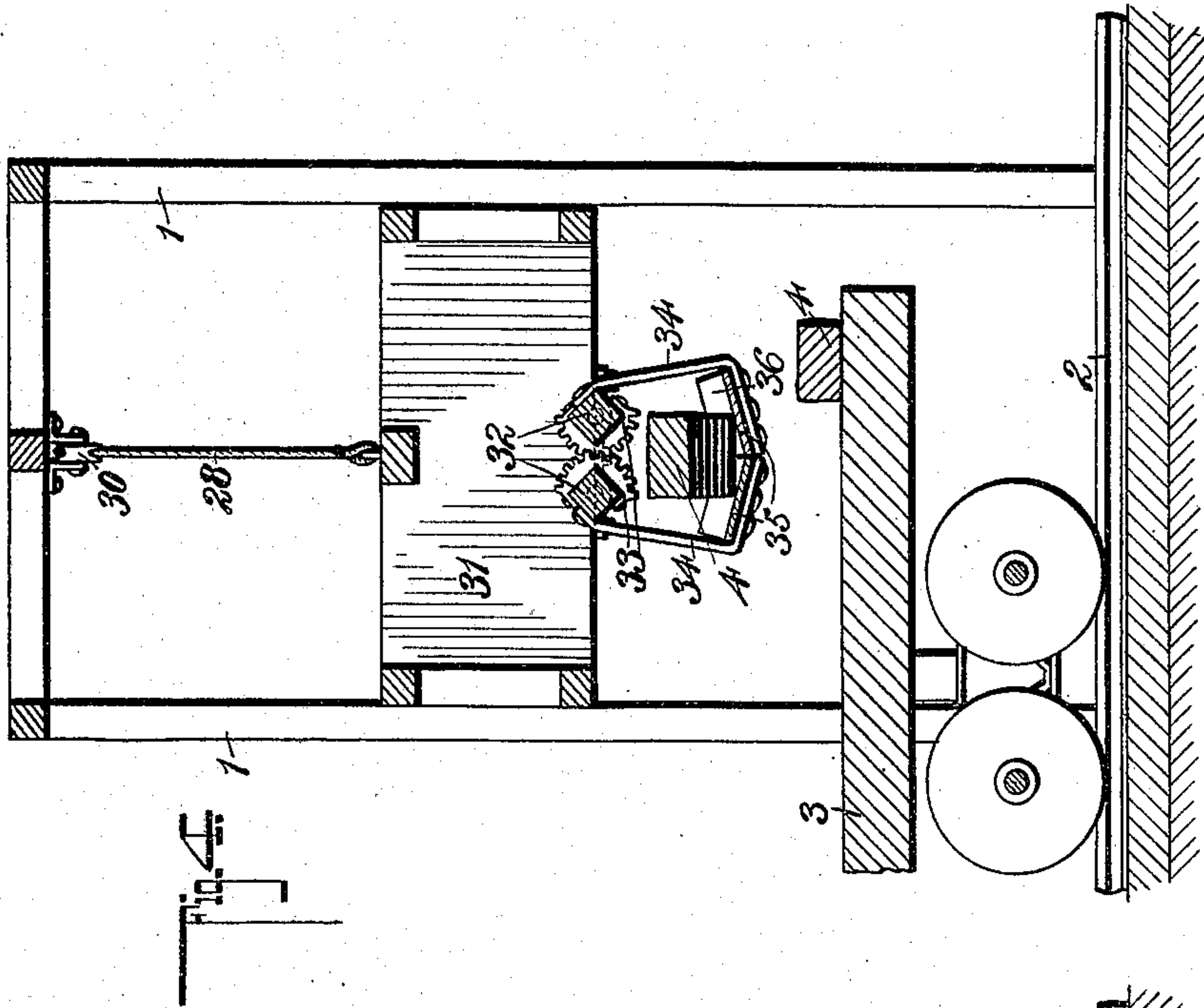
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UNITED STATES PATENT OFFICE.

EDGAR PLATTER, OF RANCHESTER, WYOMING.

TIE-LOADER.

932,571.

Specification of Letters Patent.

Patented Aug. 31, 1909.

Application filed October 24, 1908. Serial No. 459,379.

To all whom it may concern:

Be it known that I, EDGAR PLATTER, a citizen of the United States, residing at Ranchester, in the county of Sheridan and State of Wyoming, have invented a new and useful Improvement in Tie-Loaders, of which the following is a specification.

This invention relates to a device for loading ties upon cars either from a stack of ties or from a dock or water basin, into the latter of which ties could be floated.

The object of the device is to convey ties into a position immediately above the car and to then drop them in position upon and transverse to the car.

Another object of the invention is to provide means for raising vertically the tie tripping mechanism so that as a stack of ties are built upon the car the mechanism may be gradually elevated, thus enabling the ties to be deposited one upon the other without dropping the first ties loaded from a considerable height.

A further object of my invention is to devise an apparatus of this kind which will load a large number of ties per day and which will at the same time require but a few men to operate, and very little manual handling of the ties. To accomplish this result, the device is provided with means for placing the ties in position in a cradle which automatically drops them upon a car holding the tie until its full length has been delivered to the cradle, thus stacking the ties upon the car with their ends practically even.

The invention consists in the novel features of construction, arrangement and combination of parts hereinafter described, pointed out in the claims and shown in the accompanying drawings, in which:—

Figure 1 is a side elevation, showing my invention in use. Fig. 2 is a plan view. Fig. 3 is a section through an inclined conveyer looking toward a fixed vertical frame. Fig. 4 is a sectional view through the vertical frame, said section being taken parallel to track rails. Fig. 5 is an enlarged detail sectional view illustrating a certain tripping and locking mechanism. Fig. 6 is a detail section on the line 6—6 of Fig. 2. Fig. 7 is a detail sectional view on the line 7—7 of Fig. 5.

In these drawings 1 represents a vertical frame which extends over a track 2 so that a car 3 can be run into the frame 1, the side

members of the frame being arranged upon opposite sides of the track and the top of the frame extending across the track and at a considerable distance above it. This frame forms a fixed support for a mechanism adapted to load ties 4 upon a car 3. To convey the ties 4 to the car and to deposit them as shown, I employ a fixed trackway 5 provided with a conveyer chain 6 which conveys the ties from a dock, yard or stack to a point adjacent the track 2 and the frame 1. The conveyer chain 6 runs over a suitable sprocket fixed upon a shaft 7 below which is a shaft 8^a upon which is fixed a driven pulley 8, driven by a belt 9 from any suitable source of power. Leading from the trackway 5 to the frame 1 is an inclined vertically swinging trackway 10 provided with a conveyer chain 11 which receives the ties from the chain 6 and which runs over a suitable sprocket wheel fixed upon a shaft 12 at the lower end of the trackway 10, the chain traveling over the upper end of said trackway in any desired manner. Upon the shafts 7 and 12 are also arranged suitable sprockets over which runs a drive chain 13, thus running the shaft 12 and chain 11 from the shaft 7. The shaft 7 is provided with a pulley 14 over which runs a belt 15, said belt also running over a pulley 8^b fixed upon the shaft 8^a.

A belt tightener for the belt 15 is formed by a pulley 16 mounted upon an angled shaft 17, one angled end of which carries a pulley 16 and the other end of which is connected to a link 17^a which is operated by means of a lever 18, said lever working over a rack segment 19. By throwing the said lever 18 and drawing upon the rod 17^a the shaft 17 is partially rotated and the pulley 16 thrown against the belt 15. From the pulley 14^a runs a belt 20 which runs over a pulley 21 fixed upon a shaft 22. A belt 23 runs over a pulley 23^a also fixed upon the shaft 22, and over a pulley 24 mounted upon the shaft of a drum 25, which drum is carried by the upper portion of one side of the frame 1. To this drum 25 is secured an end of a cable 26, the other end of said cable being secured between the ends of metal straps 27, the other ends of said straps being secured to opposite sides respectively of the trackway 10. The cable 26 winds upon one-half of the drum 25 and upon the other half of the drum there winds a cable 28

which passes over a pulley 29 hung in a suitable bracket at the top of the frame, and also over a side pulley 30 carried by the top of the frame and above the track 2. The cable 28 supports a vertically movable frame 31 which frame is adapted to move vertically in the frame 1, being lifted by the winding of the cable 28 and being held by the frame 1, or the necessary parts of it, against any swinging movement. The sliding frame 31 carries a cradle which receives the ties and drops them upon the car. This cradle consists of two parallel bars 32 rotatably carried by the frame 31 and extending transversely with respect to the track beneath. In order that rocking of these bars may be uniform they are provided with intermeshing segments 33. The bars are provided with downwardly extending arms 34 the lower end portions of which are angled inwardly and downwardly, and these angled portions support slats 35 which normally have their opposing edges resting together, thus forming a supporting cradle upon which the conveyer chain 11 deposits ties.

It will be obvious that as the slats 35 of the two sides of the cradle slant downwardly and inwardly, that is toward each other, the falling of a tie upon said slats would cause the two sections of the cradle to swing apart, thus opening a space between said slats and allowing the tie to at once fall between and upon the car. This, however, would result in the tie pitching head first upon the car and the object of my invention is to drop the ties only when they are in a horizontal position. It is therefore necessary that the cradle should hold the tie as it strikes until one end of the tie is moved along the cradle a sufficient distance to permit the other end of the tie to also drop from the trackway 10 upon the cradle, and to then release the tie. To accomplish this, I provide upon the slats suitable end pieces 36 and the end pieces adjacent the trackway 10 are provided on their inner faces with inwardly extending lugs 37 between which are loosely pivoted loops 38, said loops extending upwardly and normally slightly inclined toward the end pieces to which the lugs are attached. The adjacent ends of the loops are provided with downwardly extending angled arms 39. A pivoted catch 40 is carried by one of the slats 35 and is normally held in engagement with a suitable recess formed in the other slat by a spring 41 carried by the slat to which the catch is pivoted and which bears upon an end of said catch. Normally the catch would lock the two slats together, the angled loop arms 39 resting between the catch and the bottom of the slats, both arms being upon the opposite side of the pivotal point of the catch from the spring 41. The first end of the tie to strike the slats passes over the

loops, as they lie close to and slightly below the top of the end pieces 36. But the other end of the tie drops from the ends 36 and striking the loops throws them downwardly, the loops turning upon their pivotal points, and this turning of the loops causes the arms 39 to throw the catch 40 out of locking position, and the weight of the tie at once causes the slats to swing apart permitting the tie to drop between them and upon the car. The two sides of the cradle then swing together again by gravity and the catch 40 resumes its normal position and the cradle is locked and ready to receive another tie.

The frame 31 can be gradually lifted by the winding of the cable 28 upon the drum 25 as the pile of ties deposited upon the car grows in height, and the car can then be pushed along a few feet, the frame 31 lowered, and a new pile of ties started. It will be noted that the cables 26 and 28 are so secured and wound about the drum 25 that rotation of said drum in one direction will wind both of said cables, and rotation in the other direction will cause both cables to unwind, so that as the frame 31 raises or lowers the discharge end of the trackway 10 will also be lifted or lowered, in order to preserve as nearly as possible the same relative position to the cradle at all times.

To prevent rotation of the drum 25 except when necessary to change the position of the frame 31 and trackway 10, a pawl 46 engages a drum ratchet 42. By means of a cable 43 the pawl 46 may be disengaged from the ratchet, thus allowing the drum to be driven through the medium of the belt 23 and pulley 24. In order to prevent too rapid unwinding of the cable when the parts are lowered a brake 44 and brake rope 45 are provided, the said brake bearing upon the projecting end portion of the drum 25.

From the above description, it is believed that the construction and operation of all of the various parts will be clear and that the advantages of this construction will be apparent.

What I claim is:—

1. A device of the kind described, comprising a sectional, swinging, vertically movable cradle, and means for depositing ties in said cradle.
2. A device of the kind described comprising a swinging sectional cradle, means for locking said sections together, means for delivering ties to said cradle, and means operated by fall of a tie into the cradle for unlocking the sections and permitting them to swing apart.
3. In a device of the kind described, a sectional cradle, the said sections being swung away from each other by weight of a tie and closing by gravity, means for delivering ties to said cradle and means for locking the sec-

tions together during time of delivery of the tie, the said locking means being released by weight of the tie.

4. A device of the kind described comprising parallel rotatable bars, arms carried by said bars, slats carried by said arms, the slats inclining downwardly toward each other, locking means carried by the slats, means for delivering a tie to said slats, and a tripping mechanism for unlocking the ties, the said mechanism being operable by fall of one end of a tie.

5. A device of the kind described comprising a cradle divided longitudinally into two sections, said sections being movable with respect to each other, means for delivering a tie to said cradle, means for simultaneously imparting vertical movement to the cradle and to the tie-delivering means, means for locking the cradle sections together until delivery of a tie thereto, and means for automatically unlocking said sections when the delivery of a tie has been completed.

6. A device of the kind described comprising a vertical frame arranged above a railway track, a cradle suspended within said frame adapted to automatically deliver ties to a car upon the track, means for moving the cradle vertically, and a conveyer for delivering ties to said cradle, said conveyer maintaining at all times its relative position with respect to the cradle.

7. In a device of the kind described, a suspended sectional cradle, means for delivering ties endwise to said cradle, a spring pressed catch locking said sections together during movement of the tie upon the cradle,

pivoted loops carried by the cradle sections in position to be engaged by the tie as it falls into position, and angled arms carried by said loops disengaging the catch upon fall of the tie, the weight of said tie forcing the cradle sections apart to permit the tie to pass between them.

8. A tie loader comprising a vertical frame, a vertically movable frame carried by the first mentioned frame, a cradle supported by the vertically movable frame, an inclined conveyer delivering ties to said cradle, means for raising and lowering the second mentioned frame, means for raising and lowering the discharge end of the conveyer in unison with movement of the second mentioned frame, and means for automatically delivering to a car below the cradle the ties discharged from the conveyer upon the cradle.

9. A device of the kind described comprising a frame, a vertically movable, sectional cradle in said frame, a drum, a cable for lifting and lowering said cradle, the cable being secured to and winding upon said drum, an inclined conveyer delivering material to said cradle, a cable supporting the discharge end of the conveyer and also secured to said drum, both cables winding and unwinding together, means for locking the cable sections together during delivery of material, and means for automatically unlocking said sections to permit them to swing apart at a predetermined time.

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Witnesses:

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