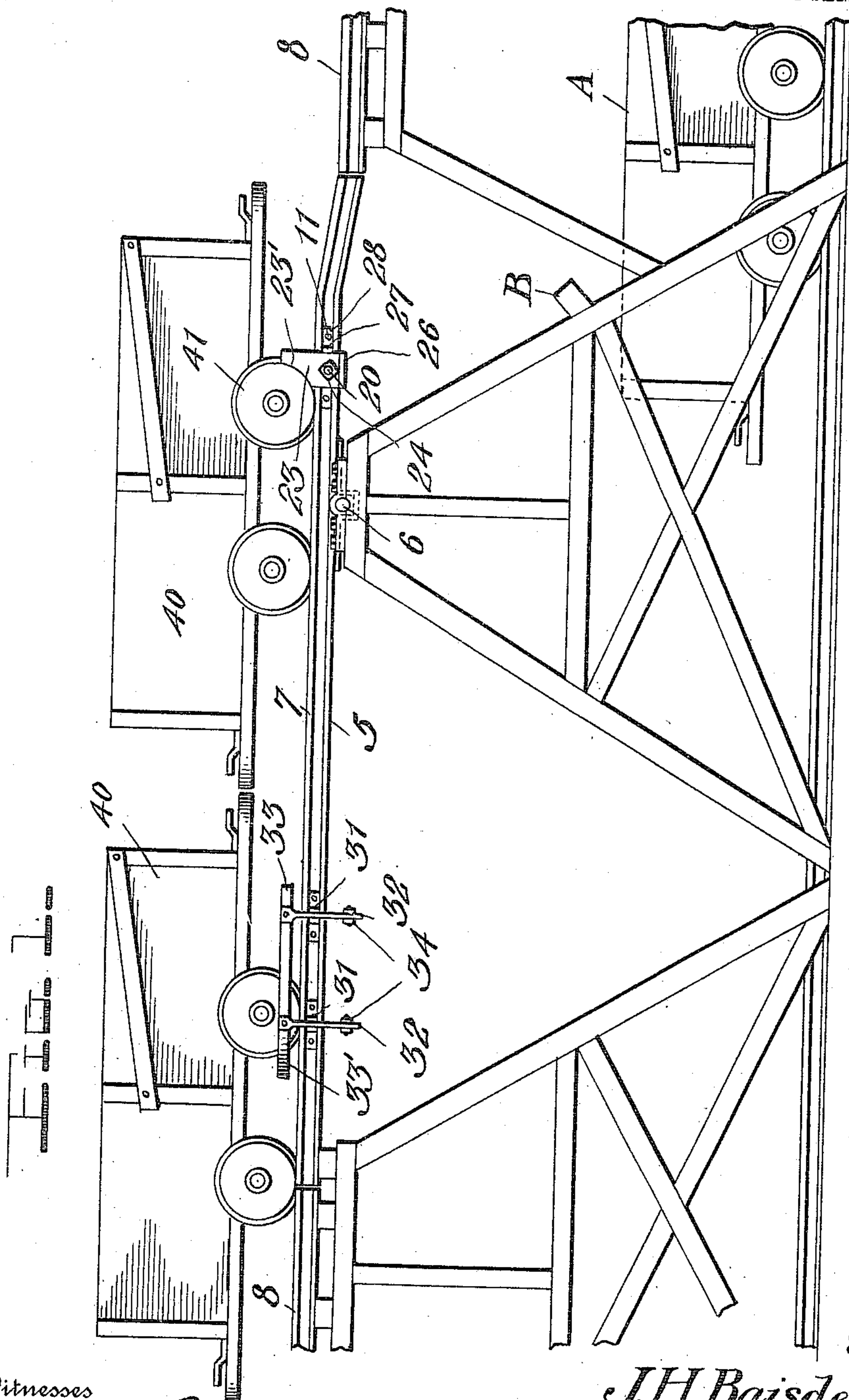


983,110.

J. H. BAISDEN, JR.
CAR DUMPING MECHANISM.
APPLICATION FILED FEB. 12, 1910.

Patented Jan. 31, 1911.

4 SHEETS—SHEET 1.



Witnesses

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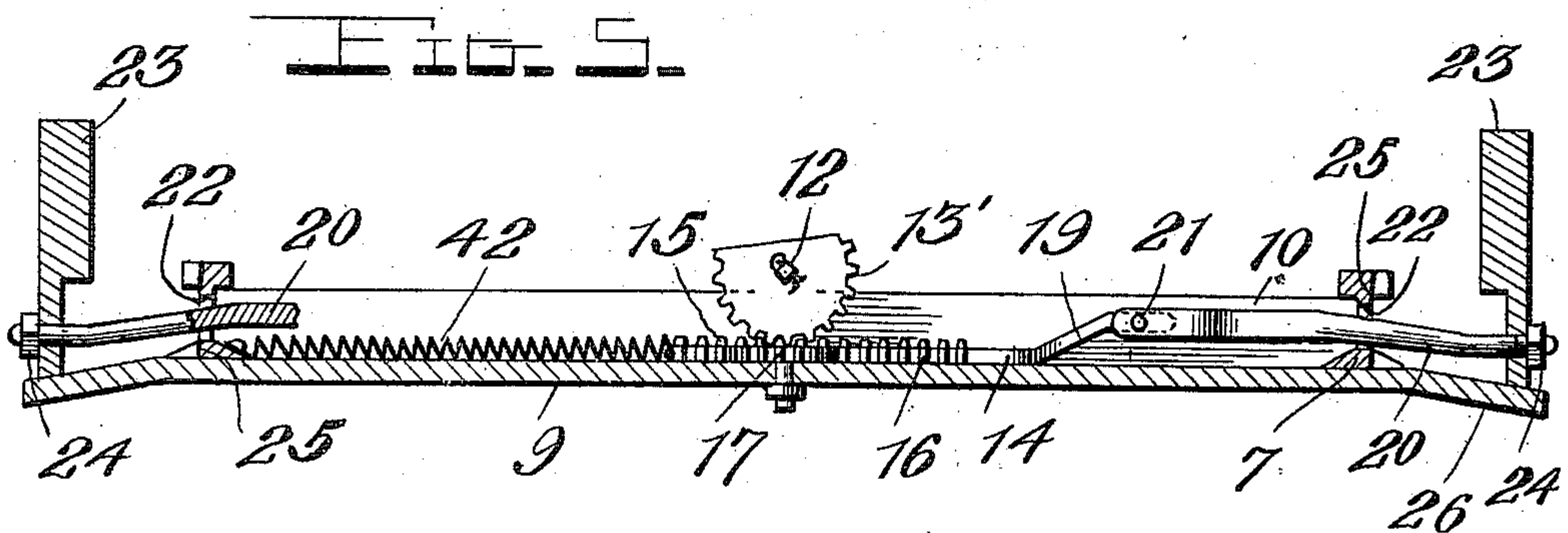
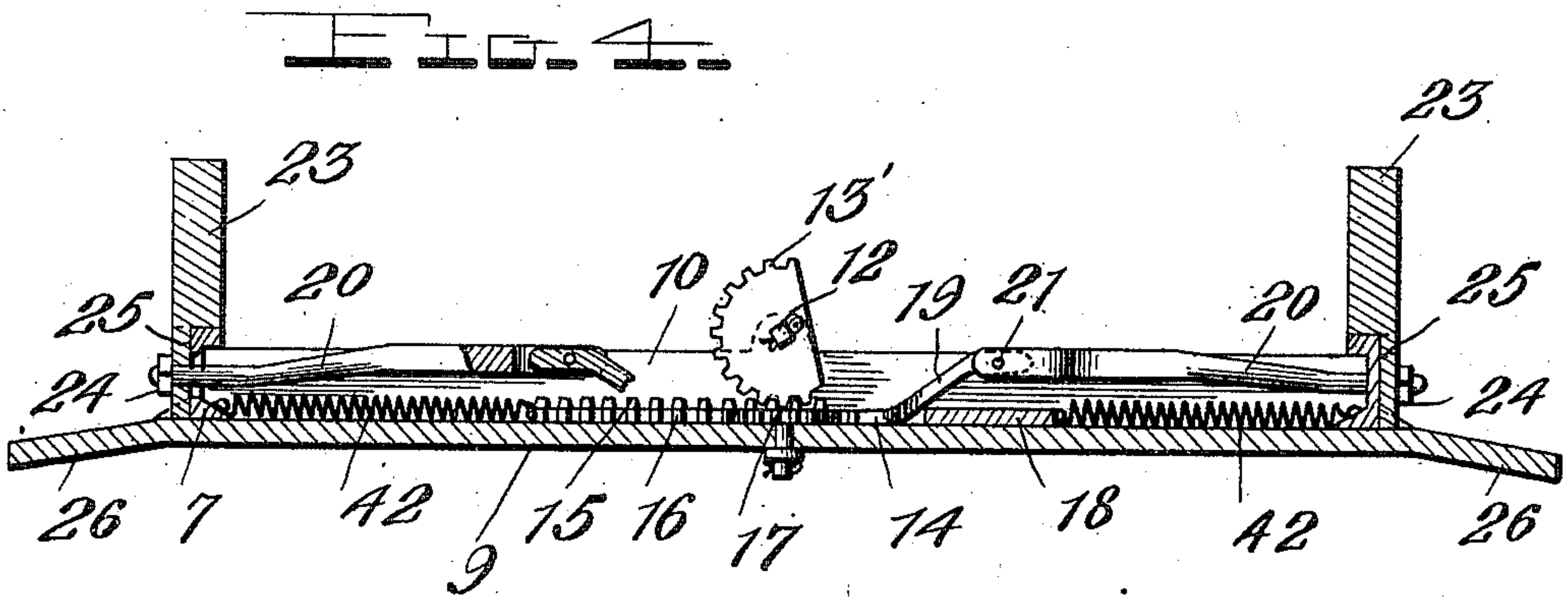
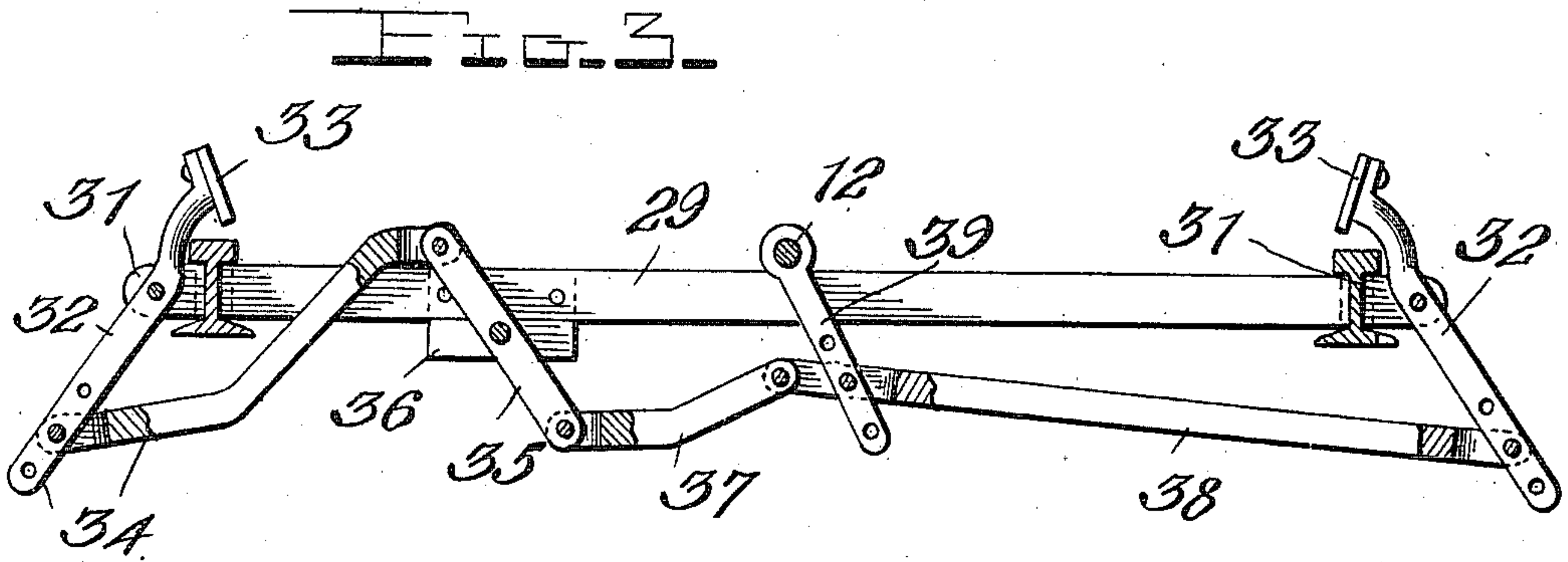
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UNITED STATES PATENT OFFICE.

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CAR-DUMPING MECHANISM.

983,110.

Specification of Letters Patent. Patented Jan. 31, 1911.

Application filed February 12, 1910. Serial No. 543,567.

To all whom it may concern:

Be it known that I, JOHN H. BAISDEN, JR., a citizen of the United States, residing at Chattaroy, in the county of Mingo and State of West Virginia, have invented certain new and useful Improvements in Car-Dumping Mechanisms, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to certain new and useful improvements in automatically operated car dumping mechanism and has for its object to provide a comparatively simple mechanism of the above character which is adapted to be actuated by the cars to automatically release and remove an empty car from the rails of the track section by the movement of a loaded car thereon.

Another object resides in the arrangement of the car supporting means between the rails of the track section, said means comprising transversely movable shoes adapted to be positioned against the front truck wheels of the car to support the same in position to be dumped, said shoes being coöperatively connected with pivotally mounted longitudinally disposed bars adapted to be engaged by the truck wheels of a loaded car to release the empty car after the same has been dumped.

With these and other objects in view, the invention consists of the novel construction, combination and arrangement of parts hereinafter fully described and claimed, and illustrated in the accompanying drawing, in which—

Figure 1 is a side elevation showing the pivotally mounted track section and an empty and loaded car positioned thereon; Fig. 2 is a top plan view of the track section showing the operating mechanism; Fig. 3 is a section taken on the line 3—3 of Fig. 2; Fig. 4 is a section taken on the line 4—4 of Fig. 2; Fig. 5 is a view similar to Fig. 4 showing the car holding shoes in open position; Fig. 6 is a section similar to Fig. 3 showing the position of the parts when the shoes are open; Fig. 7 is a detail perspective view of one of the movable shoes and the reciprocatory rack bar connected thereto. Fig. 8 is a section taken on the line 8—8 of Fig. 2; Fig. 9 is a detail perspective view of one of the releasing plates.

Referring more particularly to the draw-

ings 5 indicates a track section which may be supported upon any suitable frame structure and is mounted at one side of its longitudinal center upon a transversely positioned axle 6. The track rails 7 form a continuation of an ordinary car track 8 when the section 5 is in its normal position as shown in Fig. 1. The forward end of the pivotally supported track section 5 extends outwardly over the car. Built against one side of the frame immediately beneath the track section is a framework B which is adapted to limit the downward movement of the forward end of the track section when the car is disposed in dumping position upon the rails. This inclination of the track sections is approximately 45° at which inclination the entire contents of the car will be emptied into the dumping pit or conveying cars upon which the coal or other material is being loaded. The device is well adapted for the latter purpose as it obviates the necessity of frequent handling of the coal, the same being conveyed directly from the mine upon the tilting track section and there dumped into the cars in a manner which will now be set forth in detail.

Extending transversely between the rails 7 there is a channel bar 9. This channel bar is formed upon its ends with the laterally extending flange 10' by means of which the same is rigidly secured to the webs of the rails as by the bolts 11 clearly shown in Fig. 2 of the drawing. One end of a longitudinally extending rock shaft 12 is journaled in a bearing 13 centrally secured upon the upper edge of one of the parallel longitudinal flanges 10 of the channel bar 9. This rock shaft extends rearwardly between the rails of the track sections and is actuated by suitable releasing means to be hereinafter described. Upon the forward end of the shaft 12 a segmental gear 13' is secured. This gear engages with the teeth 15 formed upon the surface of a reciprocatory rack bar 14. This rack bar also has the teeth 16 formed upon its inner edge which mesh with the teeth of the pinion 17 pivotally arranged centrally upon the base of the channel bar 10. A second rack bar 18 which is likewise adapted to have reciprocatory movement between the flanges of the channel bar is also provided with teeth 18' upon its inner edge for meshing engagement with the teeth of

the pinion 17. The opposite ends of rack bars 14 and 18 are angularly extended inwardly from the opposed flanges of the channel bar as shown at 19 and have their extremities arranged in the bifurcated inner ends of the rods 20. The ends of the rack bars are loosely connected to the ends of the rods 20 by means of the bolts 21. The outer ends of the bolts 21 are disposed through a rectangular opening 22 formed in each of the rails 7 of the track section. Upon the ends of the rods 20 the shoes 23 are secured, the ends of said rods being threaded to receive the nuts 24 to secure the shoes thereon. The head and outer flange of each of the rails is cut away or recessed as shown at 25 to receive the shoe 23, said shoe being adapted to fit closely upon the rail when engaged with the truck wheels as shown in Fig. 1. The inner ends of each of the rack bars have one end of a retractile spring 42 connected thereto, the other end of each of said springs being secured in any suitable manner to the web of the rail. These springs are adapted to retain the shoes normally in engagement upon the track rails. The base of the channel bar 9 is extended beyond the rails to form a support 26 for the shoes when they are moved outwardly from the rails to release the car. A guide flange 27 is formed upon one edge of the supporting plate and has its inner edge laterally extended as shown at 28 and is secured upon the outer face of the rail web by means of one of the attaching bolts 11. It will be noted from reference to Fig. 4 that the outer ends of the rack bars 14 and 18 are inclined upwardly as well as inwardly. In order to extend the outer ends of the rods 20 through the rails it is therefore necessary to bend the same as shown at 20'. Thus as the rack bars are reciprocated in opposite directions and the shoes 23 moved outwardly and downwardly upon the supporting plates 26, the rods 20 will move freely through the rectangular openings 22 in the rails without danger of binding against the edges thereof.

The rear ends of the rails 7 of the track section are connected and braced apart by the parallel bars 29. A bearing plate 30 is centrally secured to one of the bars of each of said braces to receive the rear end of the central longitudinally extending rock shaft 12. Spaced pairs of L-shaped bracket plates 31 are secured to each of the rails 7 and project outwardly therefrom. Between these plates the link bars 32 are pivotally disposed and have secured to their upper ends the releasing plates 33. These plates are longitudinally positioned in parallel relation to the track rails and as shown in Fig. 2 have their rear ends outwardly curved as at 33' for the engagement of the truck wheels thereagainst in the operation of the releasing mechanism. The major portions of the link

bars 32 depend below the track rails upon one side of the movable track section and are adjustably connected to the bifurcated outer ends of the substantially Z-shaped link rods or bars 34. The upper inner ends of these bars extend between the transversely arranged brace bars 29 and have their extremities bifurcated to receive the ends of the connecting links 35. These links are pivotally mounted between the depending plates 36 secured to the brace bars 30 and have their lower ends connected to similar links 37. The lower ends of the bars 32 mounted upon the other of the track rails have connected thereto one end of the inwardly extending bars 38 the inner ends of which are pivotally connected to the links 37. The rock shaft 12 is adapted to be actuated through the medium of the connecting links 39, the upper ends of which are rigidly secured to said shaft and have their lower ends adjustably connected to the inner ends of the bars 38.

In the operation of the device, the loaded car 40 moves upon the tilting track section and the forward truck wheels 41 thereof are engaged by the upper curved surfaces 23' of the shoes 23. When in this position the greater portion of the weight of the car will be disposed forwardly of the supporting axle 6, and the entire track section and the car will be tilted to an angle of substantially 45° over the dump or transporting car into which the coal is to be deposited. The ordinary coal car as used in the mines is of comparatively light construction, and after the coal has been released therefrom the weight of said car will be overbalanced by the distribution of the weight of the track rails, the rearwardly extending portion of the rails returning the car to its normal position. The car is now supported upon the rails of the movable section and prevented from forward movement by the shoes 23. This car is released and projected forwardly upon the stationary track by the next loaded car which enters the tilting or dumping track section. Upon the entrance of this second car on the dumping rails, the forward truck wheels will engage with the outwardly curved end portions of the releasing plates and move or spread the same apart, said plates being normally disposed with their lower edges above the inner edge of the rail heads. Thus when these plates are engaged with the truck wheels there will be considerable outward movement of the same, which movement through the link connections between the bars 32 and the depending bars 39 rigidly connected to the rock shaft 12, will reciprocate the rack bars 14 and 18 in opposite directions and move the holding shoes 23 outwardly or away from the rails 7. Thus the truck wheels of the forward

car are released and at the same time the rear of said car is struck by the loaded car with sufficient force to move the empty car the required distance to dispose the same upon the stationary track before the truck wheels of the loaded car have passed from between the releasing plates 33. When the empty car has thus been released the retractile spring 42 will return the holding shoes 23 to their normal position to engage with the truck wheels of the loaded car to hold the same while it is being dumped as previously described. Thus it will be seen that the cars may be automatically dumped, eliminating the necessity of the frequent rehandling of the coal in its removal from the mine to the transporting cars. No manual labor is required beyond the initial loading of the coal cars, the expense incident to the handling of the coal in the manner at present in vogue being entirely overcome.

From the foregoing it is believed that the operation and many advantages to be attained by the use of my improved dumping mechanism will be readily apparent without requiring a more extended description.

The device is comparatively simple, has no delicate parts involved in its construction and is very positive in its operation.

The cost of installing the mechanism is comparatively small and it is also highly efficient and very durable in operation.

While I have shown and described what I believe to be the preferred embodiment of my invention it will be understood that the same is susceptible of numerous minor modifications without materially departing from the essential features or sacrificing any of the advantages thereof.

Having thus described the invention, what is claimed is:

1. In a dumping mechanism of the character described, a tilting track section, transversely movable shoes carried by said track section normally positioned above the rails thereof and adapted to support a car in position to be dumped, means actuated by the entrance of a car upon said track section adapted to move said shoes outwardly and release the car held thereby, and means for returning said shoes to their normal positions.

2. In a dumping mechanism of the character described, a track section carrying transversely movable shoes normally positioned above the rails thereof and adapted to support a car upon the rails of said section in position to be dumped, means adapted to be engaged by the wheels of the car entering said track section to move said shoes outwardly to release the car held thereby, said car being moved from the rails of the track section by the contacting of the last named car therewith, and means for re-

turning said shoes to their normal positions above the track rails after the car has passed beyond the same.

3. In a dumping mechanism of the character described, a track section pivotally mounted adjacent to one end for tilting movement, transversely movable shoes carried by said track section adapted to engage with the wheels of a car to support the same thereon in position to be dumped, means supported above the track rails for transverse movement coöperatively associated with said shoes and adapted to be engaged by the wheels of a second car entering the track section to move said shoes outwardly and release the first named car, said second car engaging with and moving the first named car from the track section.

4. In a mechanism of the character described, a track section journaled upon a transversely positioned axle for tilting movement, transversely movable shoes carried by said track section and normally positioned above the rails thereof, said shoes being adapted to engage the wheels of a car and support the same upon the rails when the track section is tilted, means normally holding the shoes in engagement with the truck wheels, and means adapted to be actuated by the entrance of a car upon said track section for moving said shoes outwardly away from the rails to release the empty car, said car being moved from said track section by the engagement of the latter car therewith.

5. In a mechanism of the character described, a track section supported adjacent to one end upon a transversely positioned axle for pivotal movement, a transverse channel bar arranged between the rails of said section, shoes carried by said track section normally positioned above the rails, supports for said shoes, a longitudinally extending rock shaft centrally mounted between the rails, connections between one end of said rock shaft and the shoes to move said shoes outwardly from the rails, means for returning the shoes to their normal positions, said shoes being adapted to engage with the truck wheels of the car to support the same upon said rails at an angle of approximately 45°, and means adapted to be actuated by the entrance of the second car upon the track section to rock said shaft and release said wheel engaging shoes.

6. In a mechanism of the character described, a tilting track section pivotally supported adjacent to one of its ends upon a transverse axle, transversely movable shoes carried by said section normally positioned above the rails thereof for engagement with the truck wheels of a car to support the same in dumping position, a longitudinally disposed rock shaft centrally mounted between the track rails, movable connections between

said shoes and one end of the shaft, a support between the rails for said section, means for returning the shoes to their normal positions, and means adapted to be actuated by the entrance of the second car upon said track sections to move said shoes outwardly and release the car held thereby.

7. In a dumping mechanism of the character described, a tilting track section, transversely movable shoes carried thereby normally positioned above the rails of said section, supports carried by the rails for said shoes, transversely positioned braces between the rails, a centrally positioned longitudinally extending rock shaft mounted on said braces, movable connections between one end of said rock shaft and said shoes, a support for said connections, said shoes being adapted to engage with the truck wheels of a car to support the same in dumping position, and means connected to said rock shaft at its other end to move said shoes outwardly away from the rails upon the entrance of a second car upon said track section, said first named car being engaged by the second car and moved from said track sections beyond the holding shoes.

8. In a dumping mechanism of the character described, a tilting track section, transversely movable shoes carried thereby disposed above the rails of said section for engagement with the tread of the truck wheels of a car, an outwardly and downwardly inclined supporting plate carried by each of the rails to support said shoes, a centrally arranged longitudinally extending rock shaft mounted between the track rails, oscillatory members carried by each of the track rails adapted to be engaged by the wheels of a car entering said track section to rock the shaft, movable connections between the forward end of said shaft and said shoes to move said shoes outwardly from the rails to release the car held thereby, said said movable track section by the entrance car being propelled forwardly off of the first named car.

9. In a dumping mechanism of the character described, a pivotally mounted track section, a transversely extending channel bar secured to the rails of said section adjacent to its forward end, the base of said bar extending beyond the rails at each end, transversely movable shoes supported upon the extending portions of said bar normally positioned above the track rails for engagement with the wheels of a car, parallel transverse brace bars between said rails adjacent the other end of said section, a centrally arranged longitudinally positioned rock shaft journaled in said channel bar and brace bars, removable connections between the forward ends of said rock shaft and said shoes for moving said shoes outwardly from the rails, means for returning the shoes to their

normal positions, means mounted upon the rear ends of the rails of said track section for transverse oscillatory movement adapted to be engaged by the wheels of a car entering the track section, connections between said oscillatory members and the rock shaft to rock the same and move said shoes outwardly from the truck wheels, the car held thereby being forcibly engaged by the end of the first named car and moved from said track section.

10. In a dumping mechanism of the character described, a tilting track section, transversely movable shoes carried by said track section normally positioned above the rails thereof, a channel bar arranged between said rails and secured thereto, the base of said bar being extended beyond the rails at each end, said extending base portion being downwardly inclined and forming a support for said shoes, spaced parallel transverse brace bars connecting the rails at their rear ends, a longitudinally extending rock shaft mounted in said brace bars and channel bar, reciprocary rack bars connected at their outer ends to said shoes, a gear on the end of said rock shaft engaging one of said bars to move the same, a pinion between said bars adapted to move the other of said bars in an opposite direction, transverse oscillatory members pivoted upon the track rails adjacent their rear ends, means connecting said members with said rock shaft to actuate the same, said oscillatory members being actuated by the entrance of a car upon said track section whereby said shoes are moved outwardly from the rails to release the car held thereby, and means for returning said shoes to their normal positions.

11. In a dumping mechanism of the character described, a tilting track section, transversely movable shoes carried by said track section normally positioned above the rails thereof to support a car on said rails in position to be dumped, an outwardly extending downwardly inclined supporting plate for said shoes carried by each of the rails, one edge of said plate being flanged to form a guide, transverse braces between said rails adjacent their ends, a central longitudinally extending rock shaft mounted in said braces, reciprocary rack bars connected to said shoes, means connecting said bars and rock shaft to reciprocate the bars in opposite directions and move said shoes outwardly from the rails to release the car held thereby, plates disposed in longitudinal parallel relation above said rails adjacent to their rear ends, depending bars pivotally mounted on the sides of the rails connected at their upper ends to said plate, means connecting said bars to said rock shaft to actuate the same, said plates being engaged by the truck wheels of a car entering the track section to move the same outwardly from

the rails whereby said shoes are released from engagement with the wheels of the first named car, and means for returning said shoes to their normal positions.

5 12. In a dumping mechanism of the character described, a tilting track section, transversely movable shoes carried thereby normally disposed above the rails of the track section for engagement with the front wheels
10 of a car, a channeled brace bar between the rails, outwardly extending downwardly inclined supporting plates for said shoes, parallel brace bars between the rails at their rear ends, a rock shaft journaled on said
15 brace bars and channel bar, reciprocatory rack bars movable between the flanges of the channel bar in opposite directions, a segmental gear secured at one end of said shaft engaging with one of said rack bars,
20 means arranged between said rack bars for moving the same in opposite directions, rods pivotally connecting said bars to the shoes, said rods being movable through rectangular openings in the rails, and means pivotally
25 mounted upon the rails and connected to said rock shaft adapted to be engaged and actuated by the wheels of a car entering the track section to move the shoes outwardly and release the first named car.

30 13. In a dumping mechanism of the character described, a tilting track section, transversely movable shoes carried thereby, supports and guides for said shoes, a brace
35 bar between the track rails at their forward ends, spaced parallel brace bars between the rails at their rear ends, a central longitudinally extending shaft mounted on said bars, reciprocatory rack bars supported upon the
40 forward brace bar, one of said bars having teeth upon its upper surface and inner edge, the opposed edge of the other bar being provided with teeth, a pinion rotatably mounted on the brace bar engaging with
45 the opposed teeth of the rack bar, a gear segment meshing with the teeth on the upper edge of the first named rack bar, rods connecting said rack bars with said shoes, means for returning the shoes to their normal
50 positions, and means mounted upon the rear end of a track section adapted to be engaged by the entrance of a car thereon to rock said shaft and move said shoes outwardly to release the car held thereby.

55 14. In a dumping mechanism of the character described, a tilting track section, transversely movable shoes carried by said track section adjacent its forward end, said shoes being normally positioned above the
60 rails, braces between the rails of said track section, a longitudinally extending rock shaft mounted on said braces, movable connections between the forward end of said shaft and said shoes, vertically disposed
65 bars mounted upon each of the track rails, plates secured to the upper ends of said

bars disposed in parallel longitudinal relation above the rails, said plates having their rear ends outwardly curved, adjustable link connections between the lower ends of said bars and said rock shaft, said plates being
70 engaged by the wheel of a car entering said track section to move the same outwardly and rock the shaft whereby said shoes will be released from engagement with the truck wheels of the forward car, and means for
75 returning said shoes to their normal positions.

15. In a dumping mechanism of the character described, a track section pivotally mounted adjacent to one end for tilting movement, means carried by said track section for supporting a car thereon in position to be dumped, said track section being adapted to overcome the weight of the car after the same has been dumped to return
80 the section to its normal position, means movably supported above the track rails of said section adapted to be engaged by the wheels of a second car entering the same to actuate said car supporting means and re-
85 lease the first named car, said car being engaged by and moved from the track section by the second named car, and means for returning said supporting means and releasing means to their normal positions after
90 the second named car has arrived at its dumping position upon the track section.

16. In a dumping mechanism of the character described, a tilting track section, transversely movable shoes carried by said
100 section adapted to support a car thereon in position to be dumped, transversely movable plates supported above the rails of the track section, means coöperatively connecting said plates and shoes for simultaneous
105 movement, said plates being adapted to be engaged by the wheels of the second car entering the track section to move the same and said shoes outwardly to release the car supported thereby, said latter car being
110 moved from the tilting section by the second named car and means for returning the plates and shoes to their normal positions when the wheels of the second named car have passed said plates.
115

17. In a dumping mechanism of the character described, a tilting track section, transversely movable shoes carried by said track section to support a car thereon in position to be dumped, transversely movable plates longitudinally disposed above the track rails and in spaced relation to the shoes, a rock shaft centrally mounted between the rails, operating connections between said rock shaft, the supporting shoes
120 and the plates, whereby the entrance of a second car upon the track section will move the plates outwardly and rock said shaft to move the supporting shoes and release
125 the car held thereby and means for return-
130

ing said shoes and plates to their normal positions.

18. In a dumping mechanism of the character described, a tilting track section,
5 transversely movable shoes carried by said track section adapted to engage with the wheels of a car to support the same in position to be dumped, plates pivotally mounted above the track rails and disposed in longitudinal relation thereto, a rock shaft centrally mounted between the rails, levers connecting said rock shaft and plates, means
10 coöperatively connecting said rock shaft

and shoes, the entrance of a second car upon the track section being adapted to move 15 said plates and rock the shaft to disengage the movable shoes from the wheels of the car held thereby and means for returning said shoes and plates to their normal positions. 20

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

JOHN HENRY BAISDEN, JR.

Witnesses:

J. O. YOUNG,

JAMES WELLMAN.