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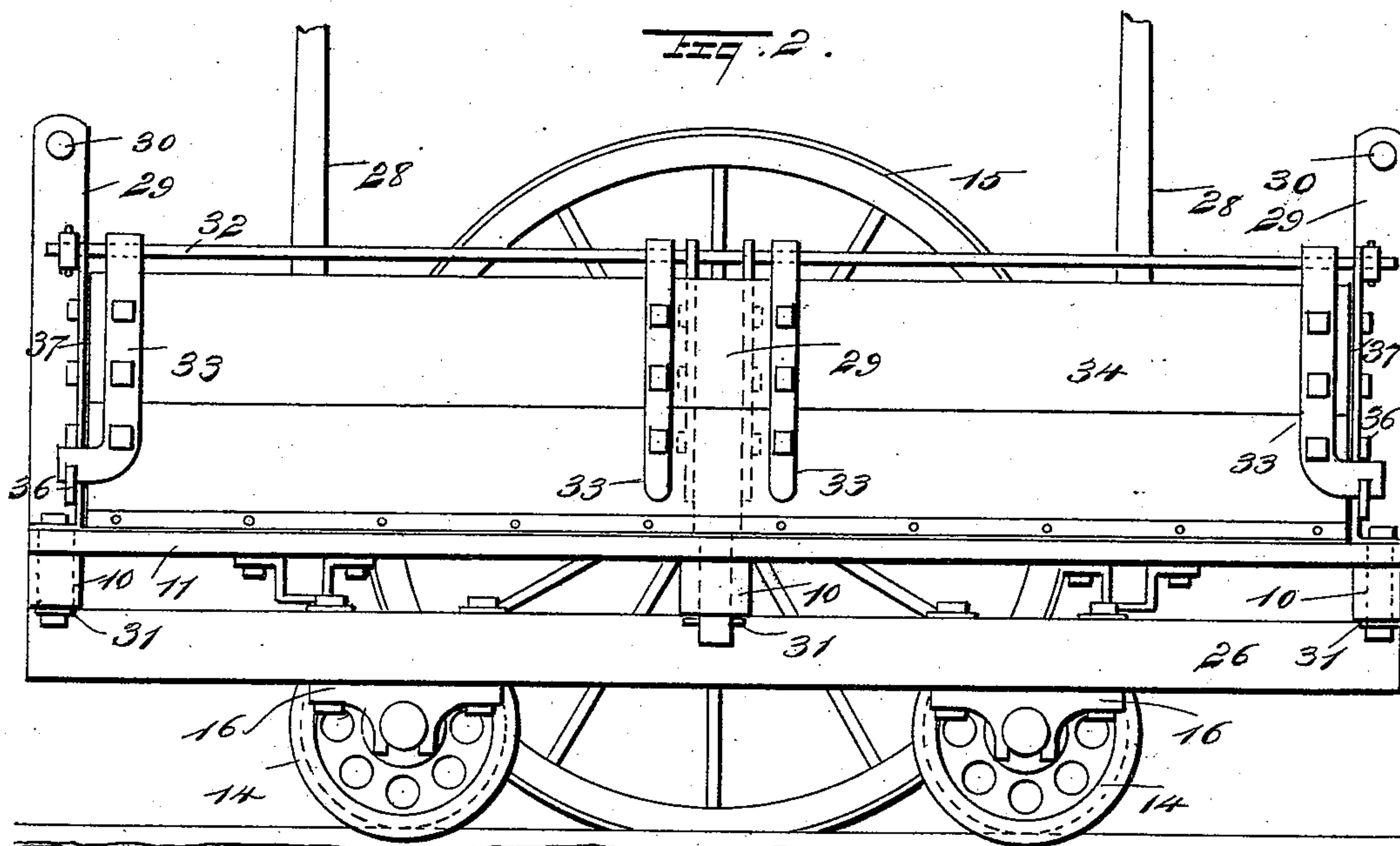
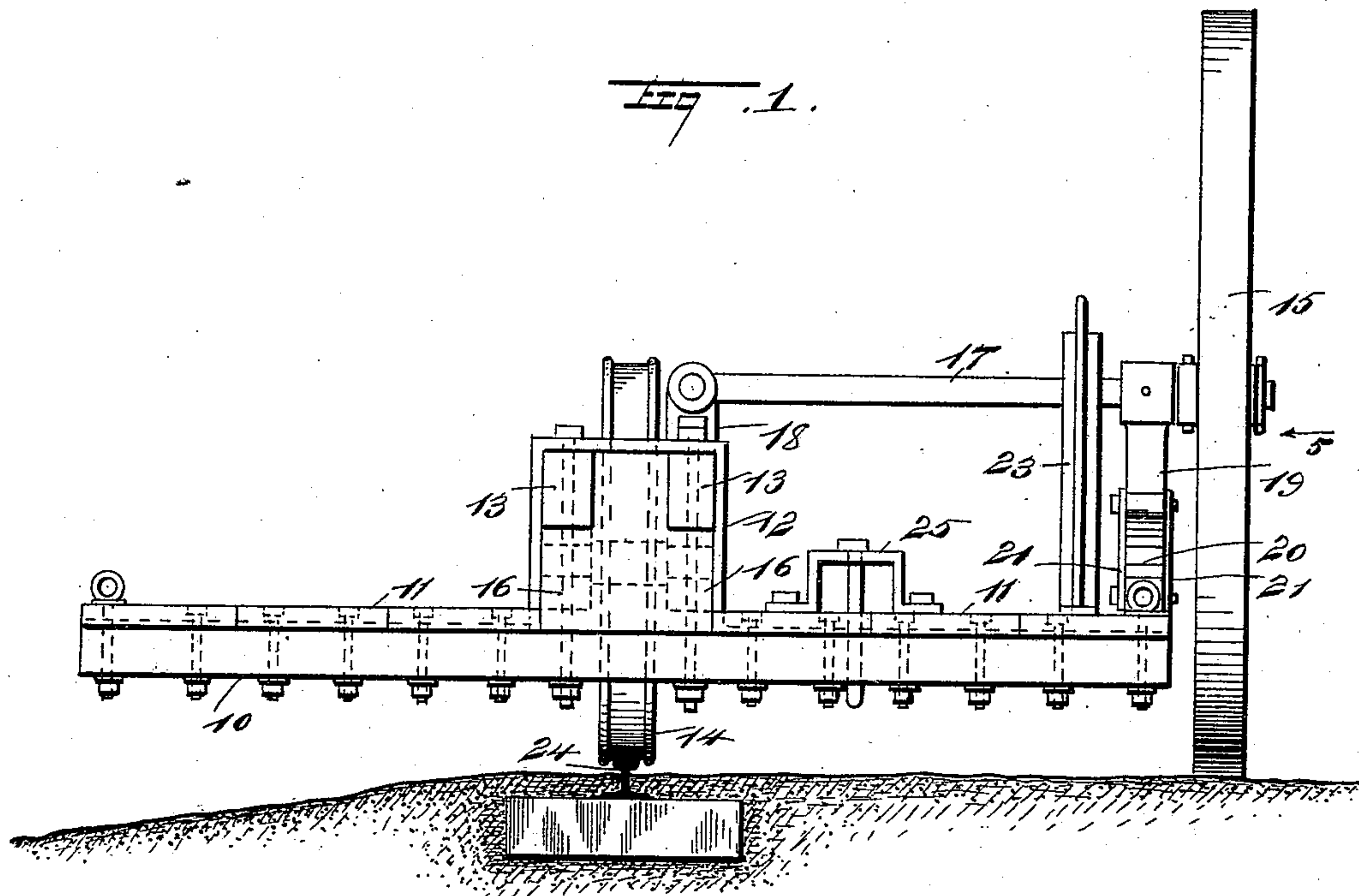
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C. EWING.

ROLLING STOCK FOR SINGLE RAIL TRAMWAYS.

No. 541,732.

Patented June 25, 1895.



WITNESSES:

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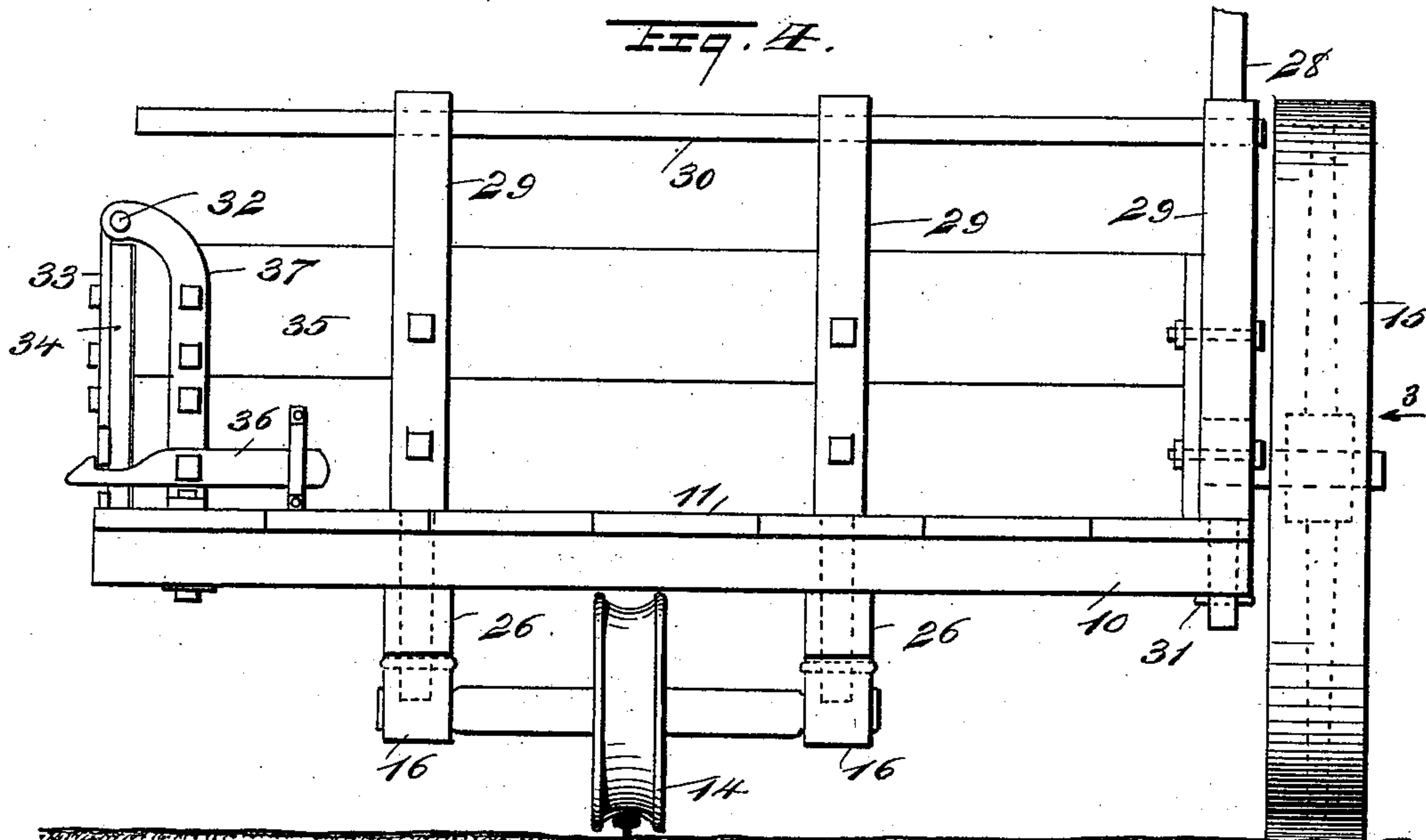
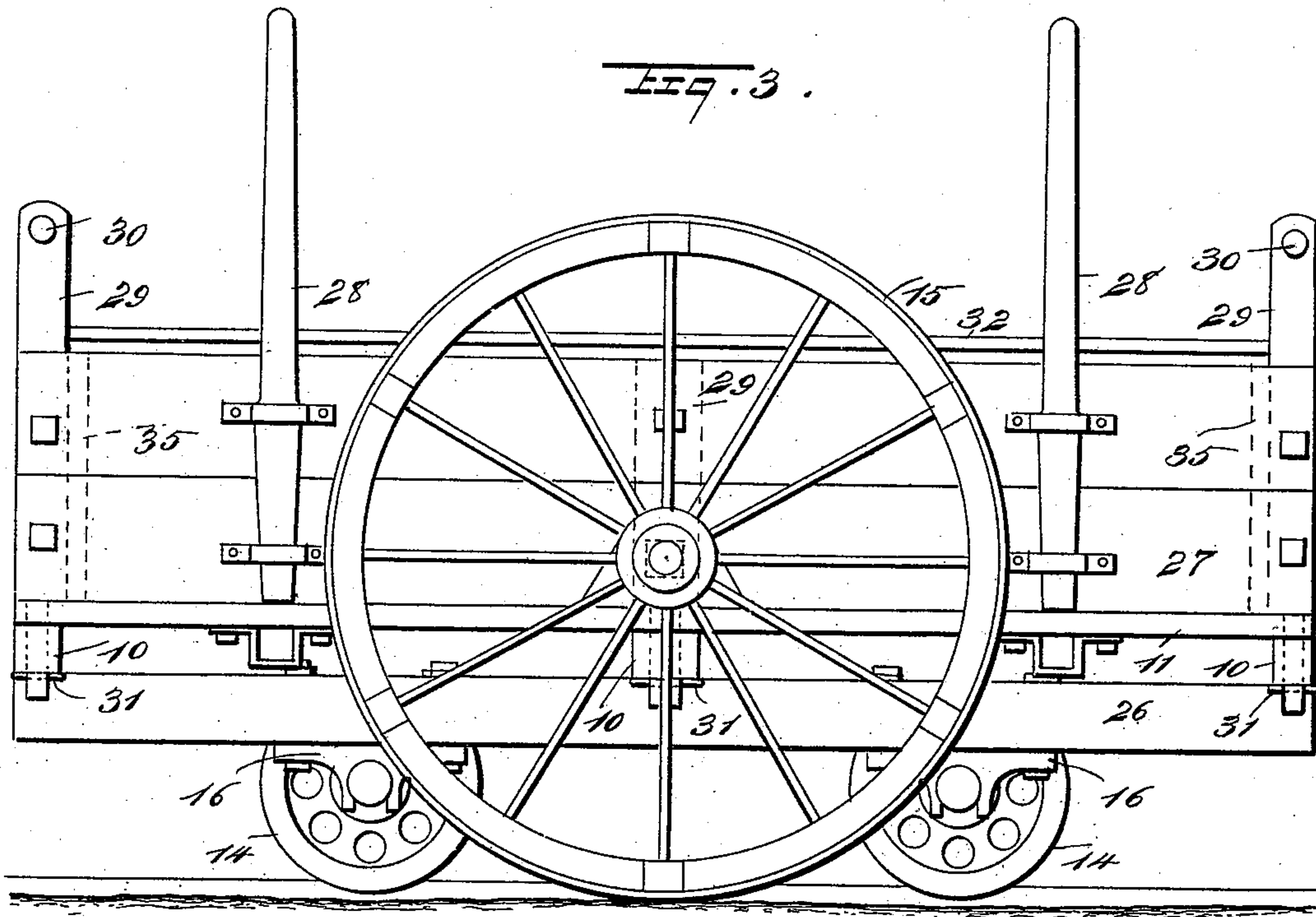
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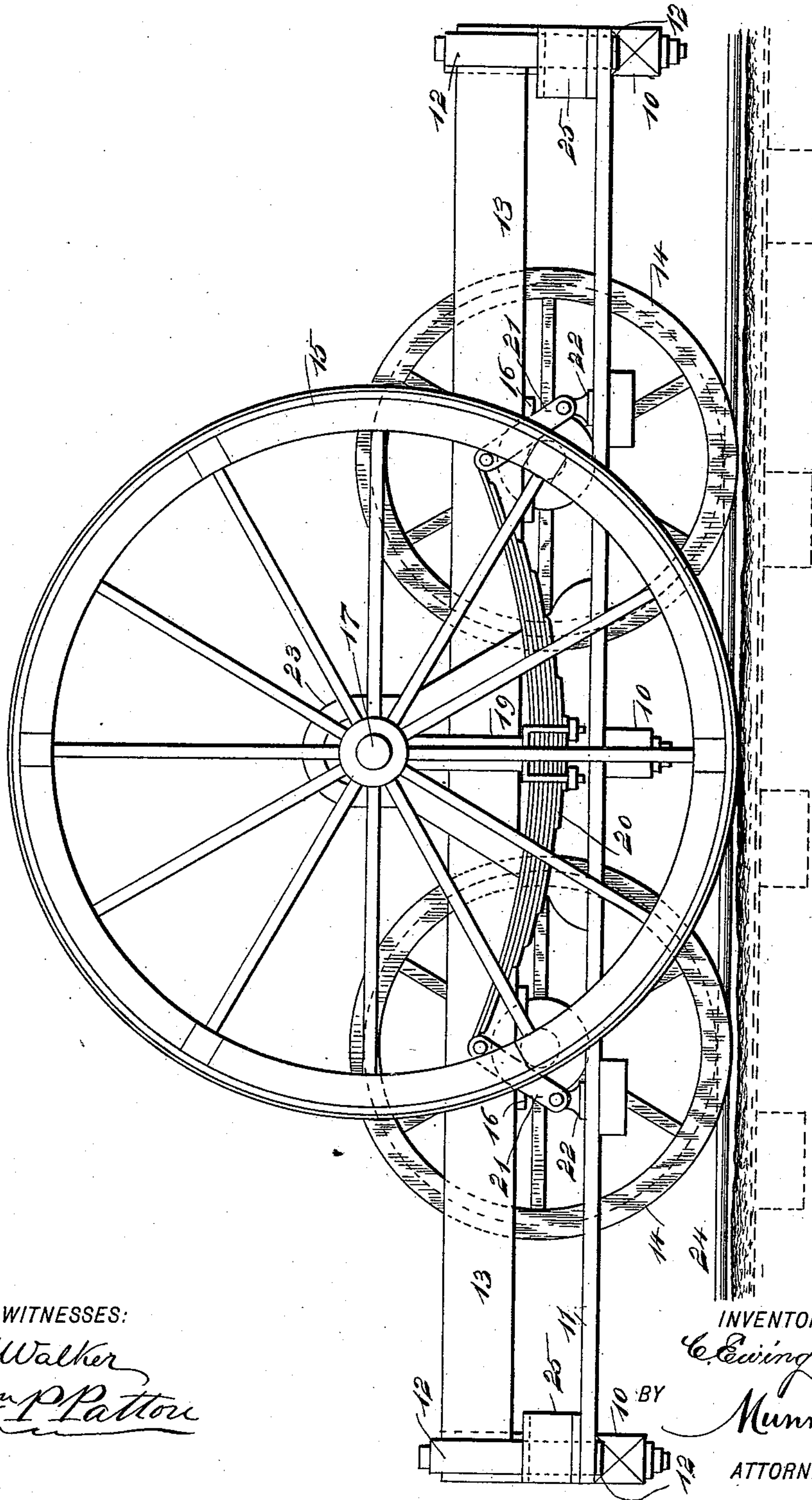
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Fig. 5.



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UNITED STATES PATENT OFFICE.

CHARLES EWING, OF BARRACKPOOR, INDIA.

ROLLING-STOCK FOR SINGLE-RAIL TRAMWAYS.

SPECIFICATION forming part of Letters Patent No. 541,732, dated June 25, 1895.

Application filed March 26, 1894. Serial No. 505,140. (No model.)

To all whom it may concern:

Be it known that I, CHARLES EWING, of Barrackpoor, in the Province of Bengal, India, have invented a new and useful Improvement in Rolling-Stock for Single-Rail Tramways or Railways, of which the following is a full, clear, and exact description.

My invention relates to improvements in freight or passenger cars for single rail railways, and has for its objects, to provide such rolling stock with novel, simple features of improvement, which will render them convenient for the loading and unloading of different kinds of material, which will adapt them for safe transit and retention of a full load over a badly graded road, and render transportation measurably easy over a slightly yielding road bed.

To these ends, my invention consists in the construction and combination of parts, as is hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views shown.

Figure 1 is an end view of one form of the improved car which affords an open platform for the reception of goods and that has but a slight elevation from the road-bed. Fig. 2 is a side view of a car having the improvements, and which is provided with sides and end walls for the retention of freight, one side being adapted to swing open for the convenient discharge of the load. Fig. 3 is a side of the improved car represented in Fig. 2, seen opposite the arrow 3 in Fig. 4. Fig. 4 is an end view of the car shown in Figs. 2 and 3; and Fig. 5 is a side view of the improved car represented in Fig. 1, taken opposite the arrow 5 in said figure.

The style of freight car indicated in Figs. 1 and 5 is specially designed for the transportation of boxed goods, or passengers if desired, and comprises a rectangular frame that for lightness and strength is constructed of three transverse sills 10, which are joined together by the longitudinally extending plank stringers 11, the latter forming a floor for the reception of freight, or the accommodation of passengers to be seated on benches or chairs that are omitted from the drawings. Two of the pieces 10, are firmly bolted to the end portions of the stringers 11, on their lower sur-

face, the side edges of the latter being closely jointed together, as shown in Fig. 1, and the remaining sill 10, is similarly secured at the longitudinal center of the stringers. See Fig. 5. At the transverse center of the car platform formed by the planking mentioned, two similar bracket frames 12, are erected over the end sills 10. Said frames each comprise a rectangular looped structure having two parallel upright members that are joined together above by a transverse bar, the lower parts of these frame members being oppositely extended in the same horizontal plane, and passing below the car platform are seated within a recess formed for their reception in the top face of one of the end sills 10, as clearly represented in Fig. 5, the bolts that secure the plank stringers of the platform to the sills being utilized to affix the bracket frames in place.

The frames 12, are provided to sustain in position at a proper distance above the car platform the longitudinal carrier beams 13, the latter being firmly bolted to the lower sides of the top parts of the frames, engaging the angular corners of the latter as shown in Fig. 1.

The described parts receive support and are adapted for progressive movement by the pair of center wheels 14, and the side traction wheel 15. The similar wheels 14, are each furnished with a short transverse central axle that is journaled at each projecting end, these journals being engaged with similar boxes 16, that are oppositely affixed in pairs on the carrier beams 13, at an equal and proper distance from the end sills 10.

The wheels 14, are each preferably constructed with two flanges that project from side edges of the tread or periphery of the wheel, so as to adapt these wheels to traverse a single rail, they being arranged in sequence for such a purpose.

It is contemplated to adapt the wheels 14, for an engagement with a centrally grooved railway rail, if this is desired, in which case there will be a single circumferential center flange formed on the periphery of each wheel to enter a grooved railway rail. This obvious construction which is not a feature of the invention, is omitted from the drawings.

The larger wheel 15, shown in Figs. 1 and 5, is furnished with a broad faced rim and

tire, to adapt it for traversing an earthen road-bed, and it is so proportioned in diameter, that its perforated center hub will have a loose engagement with the outer end portion of the shaft 17, that has its inner end pivotally secured upon a bracket block 18, that is affixed upon one of the carrier beams 13 which is nearest to the traction wheel.

For efficient service the larger wheel 15, is located with its transverse shaft 17, at the longitudinal center of the car platform and is further secured thereto by providing a post 19, that is furnished with a suitable bearing at its upper end to loosely receive the journaled body of the shaft 17, at a point near the inner side of the traction wheel.

The bearing post 19, is seated upon and secured to the elliptic plate spring 20, which is jointed at its ends on the upper ends of the links 21, that are laterally pivoted at their lower ends on the pedestal blocks 22, which are seated upon and secured to the car platform in a plane parallel with the side edge of the latter, these links being so inclined that the resilience of the spring will be permitted to freely co-act with other parts of the device, for the elastic support of the shaft and the wheel journaled thereon.

On the car platform near the post 19, a yoke frame 23 is secured, this part consisting of a looped piece having two divergent limbs which are bolted on the platform, they being arranged in parallel with the side edge of the platform, and the looped portion of said frame so supported above the shaft 17, that it with the wheel 15, will be checked from too great an upward vibration should accident or other abnormal conditions tend to induce such a movement.

The peculiar construction of the car that has been described, together with that illustrated in Figs. 2, 3 and 4, which will presently be explained, is provided to suit the topography and peculiar environment of a country through which the single track railway may be extended, as such railways are mainly designed to afford transit facilities over tracts of country that it will not pay to expend a large amount for grading and filling, as is usual where double track railroads are projected and constructed.

It will be seen, that if the single track railroad indicated by the rail 24 in Figs. 1 and 5 is located along an ordinary wagon road at one side of the same, the traction wheel 15 will be permitted to traverse the solid portion of the road-bed and maintain the platform of the car in a nearly level condition, one half of the car that extends beyond the rail outside of the road-bed proper, being free to move over declivities or any irregularity of the ground surface, without affecting the proper progressive movement of the car, which may be produced by any suitable power.

In case oxen or horses are employed to draw the car shown in Fig. 1, over the single track railroad, there is a tongue or draft pole or

other traction device secured in either of the bracket frames 25, that are attached on the car platform at its ends between the track wheels 14 and traction wheel 15, as indicated in Fig. 1, so that the animals may travel over the road-bed and draft force be applied to the car to move it in a proper direction as occasion may require.

In Figs. 2 and 3 the opposite sides of a car embodying essential features of the improvement are shown, and in Fig. 4 an end view of the same structure is represented. It will be noticed that in this form of the improved car, which is especially arranged to haul loose material in bulk, timber or iron beams, the track wheels 14, and their short axles, are engaged with boxes 16, that are affixed on the lower side of longitudinally extended sills 26. The parallel sills 26 are attached upon the lower surface of the sills 10 and suitably spaced apart, being somewhat nearer the side of the platform most remote from the traction wheel 15, so as to adapt the level surface of the car platform to receive a preponderance of the load and its weight between the paired wheels 14 and traction wheel 15, as indicated in Fig. 4.

As it is not necessary for freight purposes that the car platform be spring-supported as is effected in the car shown in Figs. 1 and 5, the traction wheel 15 is revolvably secured upon a short stub axle, and the latter is affixed by its inner end on the side of the car that is nearest the wheel 15, said side wall 27 being vertically erected upon the edge of the platform and provided with removable standards 28 to permit the piling of materials above the side wall mentioned, this being of service in the loading of wood, timber, boards or other bulky and comparatively light material that is to be transported on the car.

Substantial stanchions 29 are erected on the platform 11 at the end corners nearest the fixed side wall 27, and also at suitable intervals along the ends of the platform, these being stayed by the transverse brace rods 30, which are inserted and secured in aligned perforations produced in the upper portions of each row of the stanchions.

As it is advantageous that the stanchions that support the sides of the car be adapted for removal from the car platform they are provided with tenons on their lower ends that are fitted into mortises in the platform and timbers at the corners, and also where the stanchions are erected at the ends of the car, these tenons being projected through and below the longitudinal sills 26 and secured in place by transverse keys, as shown at 31, in Figs. 2, 3 and 4.

The side wall of the car that affords support to the traction wheel 15 is furnished with a longitudinally central stanchion 29, on which the stub axle of the traction wheel 15 is affixed, so as to project outwardly at a right angle therefrom.

The end walls of the car body are bolted upon the inner surface of the stanchions 29,

as indicated in Fig. 4, and the side wall 34 of the same which is farthest removed from the traction wheel 15 is hung above from the longitudinally extended pintle rod 32 by the strap hinge leaves 33, so as to permit the side 5 34 to be swung outwardly when released from a locked engagement with the end walls 35.

The preferred means for detachably securing the ends of the car side 34 against the 10 ends of the transverse walls 35 of the car body is as follows: The hinge leaves 33 near the end walls of the car body are outwardly bent at their lower ends to have a latching engagement with the similar hook bars 36, one shown 15 in Fig. 4, these bars being pivoted on the davit plates 37, which are affixed on the car end walls near the hinges 33, and afford support for the pintle rod 32, at their outcurved upper ends, as shown in Fig. 4, and the hook 20 bars being pivoted near their center of weight, are readily released when this is desired.

It will be seen that if for the purpose of loading long timbers, railroad rails, or other material that is longer than the car, it becomes necessary to remove the ends and swinging side of the car body, this can be readily effected if the stanchions 29 are released by a removal of their keys, and may subsequently be as conveniently restored to a normal position on the car platform. 30

If desired, the car having the low sides and end walls may be utilized to haul grain in bulk, or any other loose material, and is specially well adapted in construction and maintenance for way purposes, to haul gravel or other excavated material to points on the road needing filling. 35

The peculiar construction of the two styles of cars having the improvement permits their 40 manufacture at a low cost, and as they are specially designed for use on a single rail cheaply built railway, it is evident that transportation facilities of a superior nature as compared with common wagon service is afforded at a moderate cost. 45

I do not, however, limit myself to the specific constructions shown in the accompanying drawings, but desire it to be understood that the cars may be constructed in various manners without departing from the nature of my invention as set forth in the appended claims. 50 The number of traction and track wheels may be increased if desired, but it will be understood that the traction wheels will be located

only on one side of the rail, so that the car 55 frame will overhang on the other side of the rail. The equilibrium of the car is to be obtained by the weight of the traction wheel or wheels and its or their fittings, or by the leverage gained by the distance of the traction 60 wheels from the rail in excess of the width of the overhanging portion of the car, or by both of these means.

Having thus fully described my invention, I claim as new and desire to secure by Letters 65 Patent—

1. A car for single rail railways or tramways, comprising track wheels, a frame supported thereon and constructed to extend to each 70 side of the rail, and a traction wheel located upon one side of the frame, while the other half of the frame has no direct support from the ground, but overhangs on one side of the rail, substantially as described.

2. The combination of the track wheels 75 adapted to run on the rail, the frame supported on the said wheels and overhanging on one side of the rail, and a traction wheel for supporting the frame on the other side of the rail, substantially as described. 80

3. The combination of the track wheels adapted to run on the rail, the frame supported on the said wheels and overhanging on one side of the rail, a traction wheel for supporting the frame on the other side of the 85 rail, and a traction device secured to the frame between the planes of the traction wheel and the track wheels, substantially as described.

4. The combination of the track wheels adapted to run on the rail, the frame supported on the said wheels and overhanging on one side of the rail, a shaft pivoted to the frame to swing up and down relatively thereto, a supporting wheel on the said shaft at the 90 opposite side of the rail to the overhanging portion of the frame, and a spring support interposed between the frame and the shaft, substantially as described. 95

The foregoing specification of my new and improved rolling-stock for single-rail tram- 100 ways or railways signed by me this 31st day of January, 1894, in the presence of the below-subscribed witnesses.

CHAS. EWING.

Witnesses:

A. H. ABBOTT,
JOGESH CHUNDER BOSE.