

(No Model.)

4 Sheets—Sheet 1.

T. LONG.
CAR UNLOADING APPARATUS.

No. 568,860.

Patented Oct. 6, 1896.

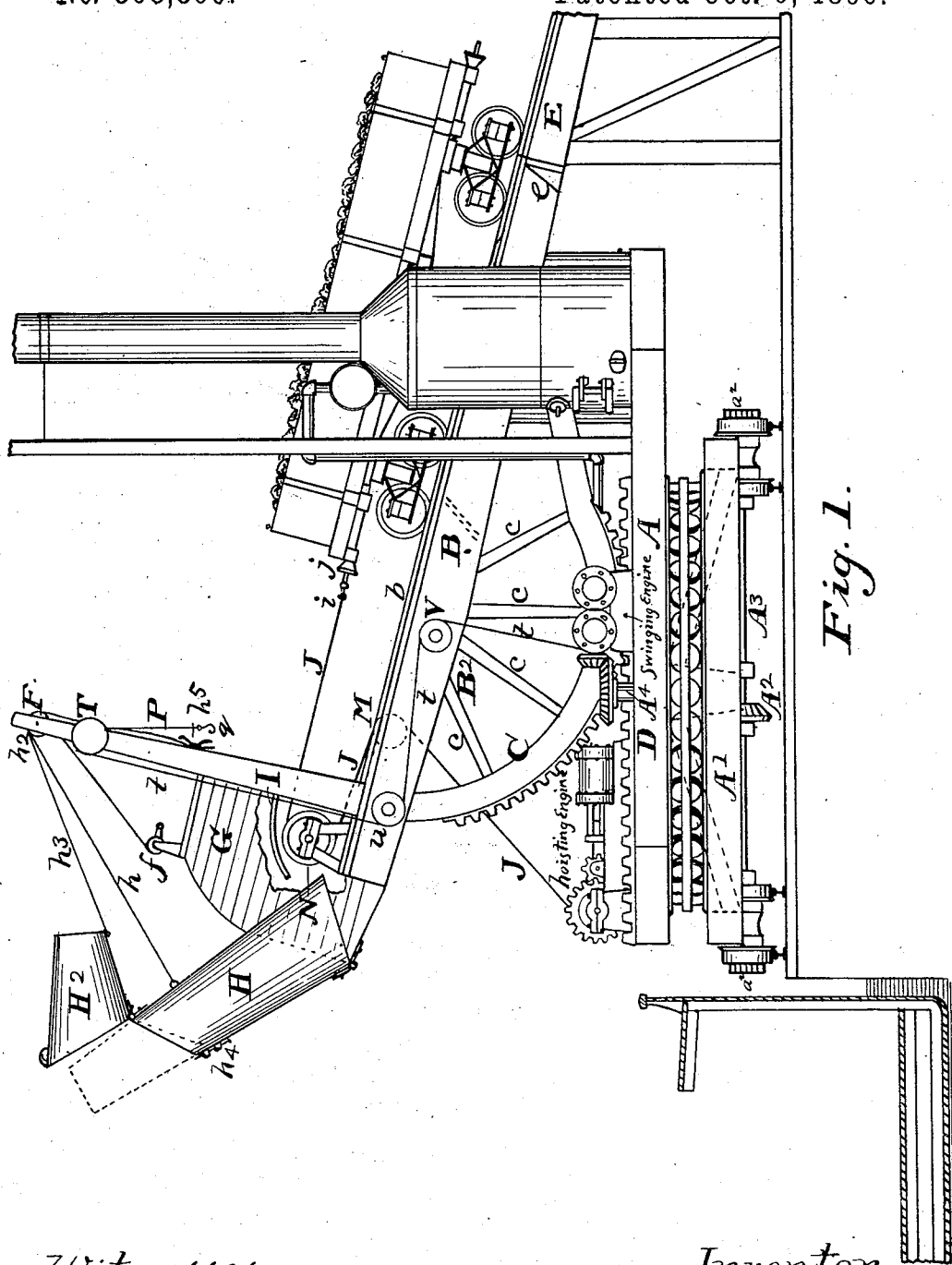


Fig. 1.

Witnesses.

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Max P. Goodman

Inventor,

Timothy Long,
per Geo. W. Tibbitts, Attorney.

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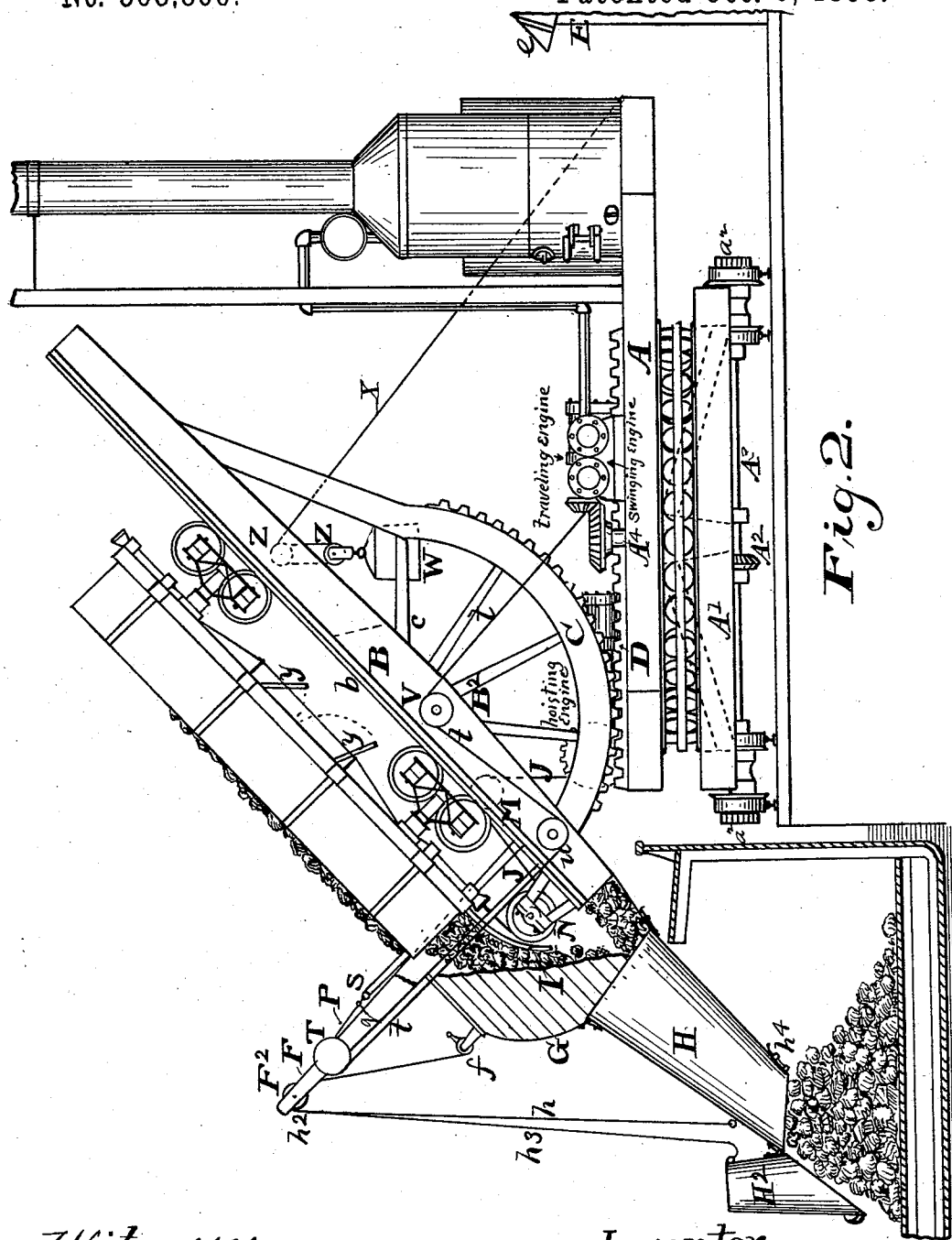


Fig. 2.

Witnesses.

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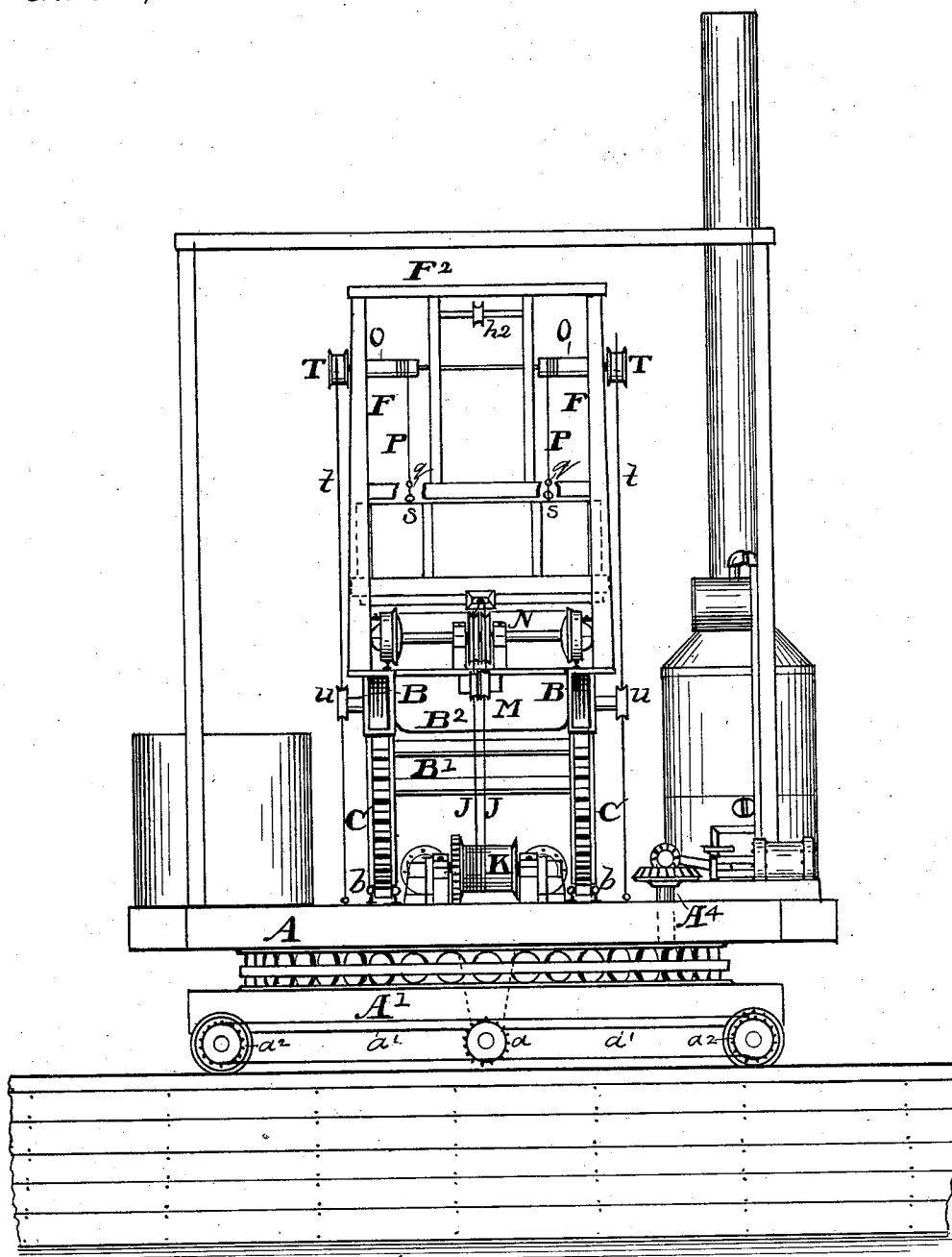
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Fig. 3.

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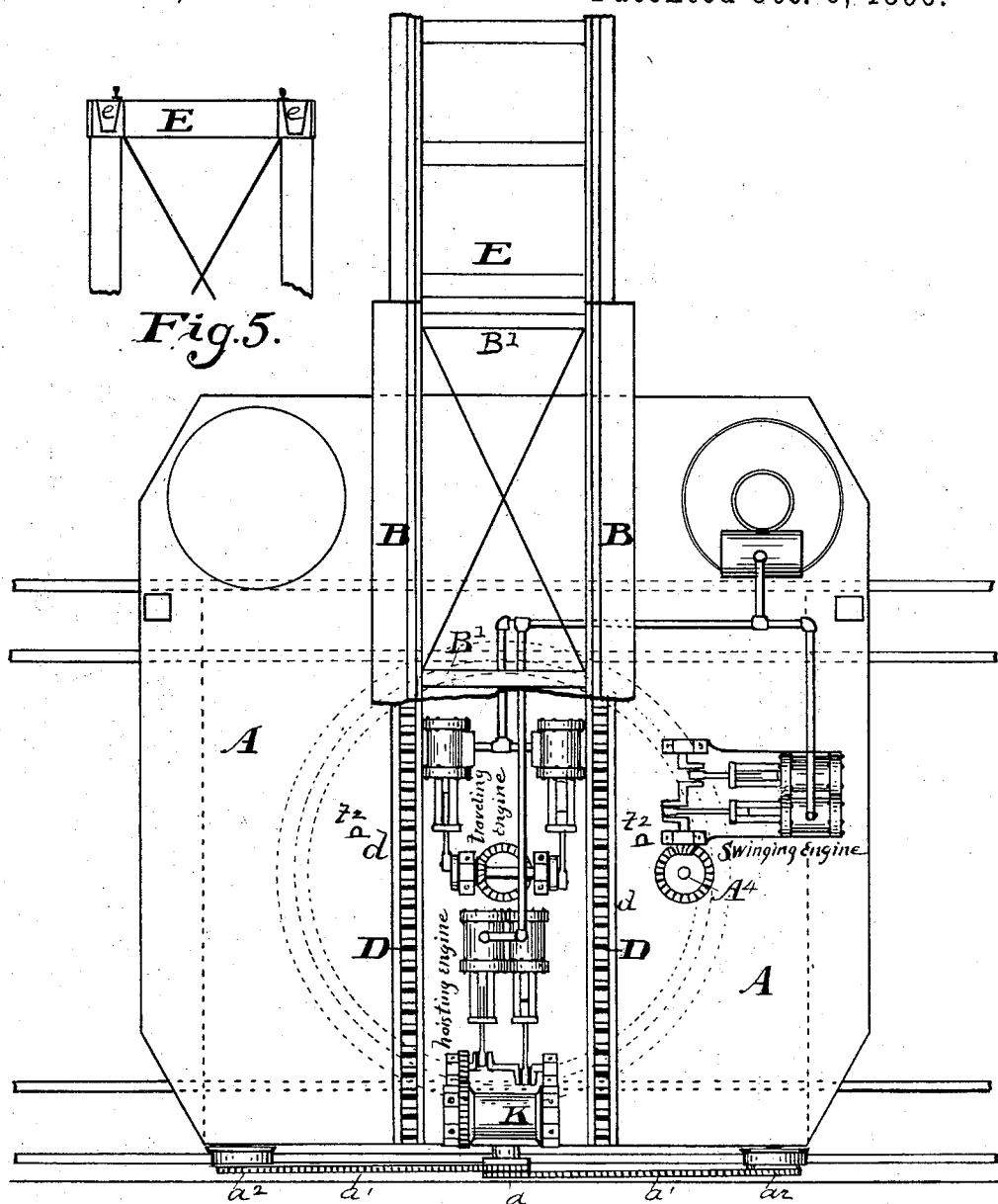


Fig. 5.

Fig. 4.

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UNITED STATES PATENT OFFICE.

TIMOTHY LONG, OF CLEVELAND, OHIO, ASSIGNOR TO THE McMYLER CAR DUMPING MACHINE COMPANY, OF CUYAHOGA COUNTY, OHIO.

CAR-UNLOADING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 568,860, dated October 6, 1896.

Application filed December 19, 1894. Serial No. 532,364. (No model.)

To all whom it may concern:

Be it known that I, TIMOTHY LONG, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Apparatus for Unloading Cars, of which the following is a specification.

This invention relates to machinery for unloading railroad-cars; and it consists in the new constructions and combinations of machinery for the purpose, substantially as hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1, Sheet 1, is a side elevation of my apparatus for unloading cars, showing a car being hoisted or hauled up preparatory to being dumped. Fig. 2, Sheet 2, is a similar side elevation of the apparatus, showing a car in the act of discharging its contents into the hold of a vessel. Fig. 3, Sheet 3, is an end elevation of the apparatus with the discharge-spout removed to show the construction and relative positions of the working mechanisms. Fig. 4, Sheet 4, is a plan view of the revolving platform upon which the machinery is supported. Fig. 5 is an end view of the inclined trestle, showing the pockets in which ends of the girders of the rocking platform rest when said platform is down, as seen in Fig. 1; and Fig. 6 is an end view of the trestle.

A represents a rotatable platform supported on rollers on a traveling truck capable of being traversed back and forth on a dock by the side of vessels moored to the dock. Upon this platform are provided three separate double reversing-engines, designated as "hoisting-engine," "traversing-engine," and "swinging-engine," suitably located for performing their functions as motors for the several movements of the apparatus. A boiler and water-tank are also supported on this platform.

The traveling engine is located at the central part of the platform A and operates a central vertical shaft through the medium bevel-gear on upper end of said shaft, the lower end also having bevel-pinion meshing with a bevel-gear A² on a horizontal shaft A³, fixed to the under side of the traveling truck A', having its bearings in the side rails of the

truck. *a a* are sprocket-wheels on the ends of said shaft A³, and *a' a'* are endless-chain belts connecting said sprocket-wheels *a* with sprocket-wheels *a² a²* on the truck-wheels. This engine is used only when the apparatus is to be traversed along the dock or wharf.

The swinging-engine is located at one side of the platform A and is for operating a vertical shaft A⁴ through the medium of bevel-gear, the lower end of said shaft A⁴ having a pinion meshing with a gear-ring (not shown) in the circular track on the truck A', and this engine is used only when desired for swinging or turning the platform A. The mechanism thus described forms no part of my invention, and is introduced to show my apparatus in complete working order.

B is a rocking platform consisting of two iron box-girders joined together by trough-shaped bottom B² at the forward portion back to a point beyond the middle of the car. Back of this the girders are suitably joined by cross bars or girders B' B'. On the platform are secured the track-rails *b b*.

C C are rockers attached to the under sides of the side girders B B of the platform, preferably nearer the discharging end thereof, and braced by spoke-beams *c c*. The peripheries of the rockers are provided with gear-teeth, and these mesh with the teeth of rack-bars D D, attached to the floor of platform A, at the middle forward part, as seen in Fig. 4. The rear end of the rocking platform B separately joins an inclined trestle E, the ends of the girders resting in taper-sided pockets *e e*, attached to the trestle, as seen at *e* in Figs. 1 and 5, which insures the accurate meeting of the track-rails on both the trestle and platform. The rack-bars D are placed between guide-rails *d*, which serve to keep the rockers on the rack-bars.

Near the forward end of the girders of the platform B are attached posts F F, joined at their top by a cross cap-piece F², forming a frame against which the front end of the car-body rests and forms a close joint between the end of the car and the entrance to the chamber, hereinafter described, that will insure the passing of all the load into said chamber as the platform B is rocked over for emptying the car.

Forward of the posts the platform is inclosed by sides and a curved-front receiving-chamber G, into which the contents of the car are discharged and from which they are conveyed by an adjustable spout H.

I is a curved horizontal plate which receives the load from the end of the car. The trough B² is designed for receiving that part of the load that is discharged through the trap-doors or hopper in the bottom of the car, and this part of the contents is conveyed into the chamber G, together with that from the end of the car, and the whole is emptied through the spout into the hold of the vessel, as seen in Fig. 2.

The spout H is hinged at its lower side, as in Fig. 1, or at its upper side, as in Fig. 2, and is elevated or depressed by means of a guy-rope h, running over a pulley h² at the top of the frame F and connected with a windlass f on the front of chamber G. The outer end of the spout is divided into two parts, the division being on a diagonal line. The part H² is hinged to the part H and is weighted, so that when free it will assume the position seen in Fig. 2 and allow the load to fall in the middle of the boat. When the spout is hinged at its upper side, the spout may be raised so that the load may fall directly out of the chamber G into the boat nearest the dock side. A latch or button h⁴ is attached to the under side of the spout for the purpose of fastening the part H² when the full length of the spout is wanted. A rope h³ is also attached to the end of part H² and passes over a pulley at the top of the frame and may be held by a belaying-bracket h⁵ on the frame. With this rope the part H² can be pulled over, as seen in Fig. 1, so that the whole apparatus can be traversed along the dock without interfering with the rigging of a vessel lying at the dock.

The means for hauling up a car and rocking the platform for unloading is described as follows: A hoisting-engine is placed on the front part of the platform A, between the track-rails of the rocking platform, and is provided, preferably, with two cables J J, attached to the hoisting-drum K and passing over a double sheave M, fixed near the front end of the rocking platform, and from thence under and over a double sheave N on the front end of the rocking platform under the curved plate I. A hook i on the end of the cables J engages with the coupler-link j of the car.

An automatic means for lifting the end-board of the car is provided, consisting of a roller-shaft O, journaled in the upper part of the posts F F, to which are attached ropes P P, having hooks for engaging with loops or staples s s on the top edge of the end-board. On the ends of shaft O, outside of the posts F F, are fixed pulleys T T, to which are attached ropes t t, wound in the opposite direction to the ropes P P and extending down by the side of the posts and passed around sheaves u u on the sides of the rocking plat-

form near the front end, thence back to and over sheaves V V at the center of the rockers. Thence the ropes are carried down to and are fastened to the platform to hooks or staples t². (See Fig. 4.) The purpose of these ropes is that as the platform is rolled over to the position seen in Fig. 2 it will pull the ropes and rotate the roller O and thereby wind up the ropes P P and raise the end-board to allow the load to discharge into the chamber G. The intermediate upright bars q q in the end frame prevent the end-board swinging forward when raised, and they serve as guides to the return of the end-board when the platform and car roll back again. The trap-doors y y in the middle bottom of the case are to be opened by hand to facilitate the unloading of the car, that part of the load falling into the trough B² of the rocking platform, and is also discharged into the chamber G, underneath the sheave N.

X is a stop-cable attached to the back end of the platform A and to the under side of the platform B, and is provided with sheaves Z Z and a weight W, the purpose of which is to take up the slack of the cable when the platform is down and not leave the slacked cable loose and liable to interfere with other parts of the machinery.

The manner of working this apparatus is, first, to overhaul the cable down the platform, if this has not been done before by the back movement of a car. Then the cable-hook is attached to the coupler of a loaded car by a man accompanying the car. Now the hoisting-engine is set in motion and the car is hauled up the incline, as seen in Fig. 1. When the car reaches the top of the incline, the ends of the side-boards of the car-body rest against the posts F. Then the man attaches the hooks of ropes P to the staples s s on the end-board of the car. The man then steps onto the top of the curved chamber G. Now by further winding of the cables on the drum K the platform and the car are rocked over into the position seen in Fig. 2, and, as will hereinafter be explained, the end-board will be pulled out and the contents of the car discharged into the chamber G, from whence it will be conveyed by the spout into the hold of the boat. It will be noticed that in this rocking movement of the platform the center of gravity has been changed forward, and the forward ends of the platform and the car are carried over and advanced beyond the line of the dock. When the car is emptied, the weight of the car and platform will rock them back again when the cables are slacked away, and the car will also run down the incline, dragging the cables with it. Then another loaded car may be attached and the operations repeated.

What I claim is—

1. In a car-unloading apparatus, a rocking platform composed of side girders, cross-girders B', B', joining said side girders, track-rails b b on said platform, rockers on which

said platform is mounted and having gear-teeth, the rack-toothed rails with which said gear-teeth mesh, and the rotatable platform and means for rocking the car-platform, substantially as described.

2. In a car-unloading apparatus, a rocking platform composed of side girders, cross-girders uniting said side girders in their rear portion, a trough bottom in its forward portion, rockers on which said platform is mounted, having gear-teeth, rack-toothed rails, with which said gear-teeth mesh, and a rotatable platform, the arrangement being such that as the platform is rocked forward, the forward end of the platform and car shall be advanced beyond the end of the platform, substantially as and for the purpose set forth.

3. In a car-unloading apparatus, the combination, with a rocking platform of the character described, of the posts and frame F, F², mounted on the forward end of said platform, a curved top chamber, curved plate attached to and forward of said posts F, and an adjustable spout hinged to forward part of said chamber, as described.

4. In a car-unloading apparatus, the combination with a rocking platform of the character described, of the posts and frame F F², the divided chamber attached to and forward of said posts, and adjustable delivery-spout, having a hinged nozzle, ropes attached to said spout, and pulleys at the top of the frame over which said ropes pass, and adapted for adjusting said nozzle, substantially as and for the purpose set forth.

5. In a car-unloading apparatus, the combination of a rocking platform, rockers, and toothed rails, sheaves attached to the forward end of said platform; sheaves, back of said first-mentioned sheaves, cables running over said sheaves, drum mounted on the forward

end of the platform and with which the cables are connected, and the hoisting-engine, for discharging the contents of the car substantially as described.

6. In a car-unloading apparatus, a normally-inclined platform and rockers to which said platform is secured, the said platform being unobstructed at one end for the passage of a car thereon, and provided with a discharge-spout at its other end.

7. In a car-unloading apparatus, the combination with a truck and a rotary platform thereon of a platform having rockers, the latter resting on the rotary platform, the said rocking platform being unobstructed at one end for the passage of a car thereon and provided at its other end with a discharge-spout.

8. In a car-unloading apparatus the combination with a truck and a rotary platform thereon, of a platform having rockers, the latter being located nearer the discharge end of said platform, the end of the platform farthest from the rockers being unobstructed for the passage of a car thereon, while the other end thereof is provided with a discharge-spout.

9. In an apparatus for unloading cars, the combination with a rocking platform the rockers being located nearer one end, the longer end of the platform being unobstructed for the passage of a car over same, while the shorter end or the end nearer the rockers is provided with a stop or abutment, of means for drawing a car onto the platform over the unobstructed end thereof, and for tilting the platform.

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Witnesses:

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