

(No Model.)

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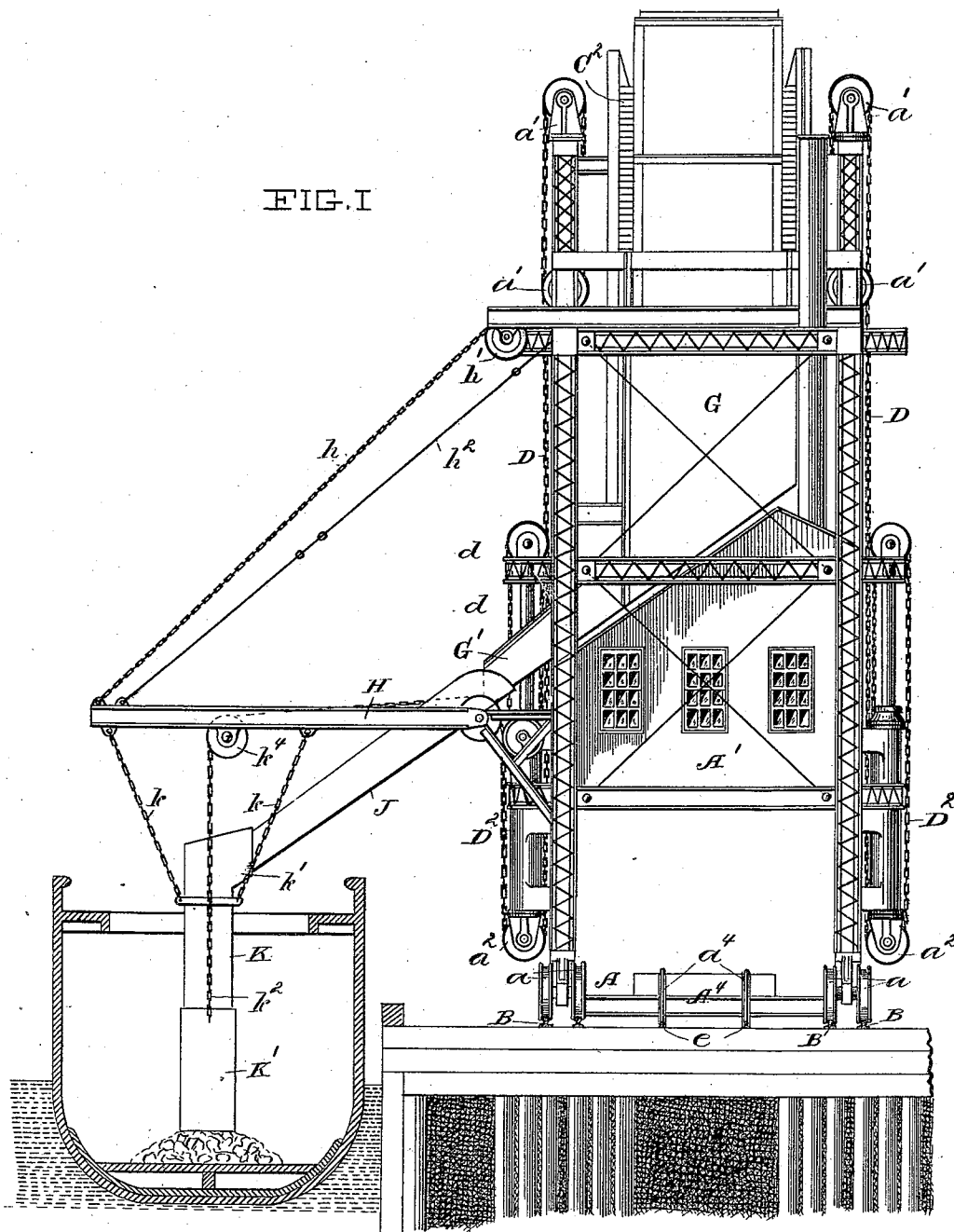
P. RASCH.

APPARATUS FOR HOISTING AND UNLOADING RAILWAY CARS.

No. 556,371.

Patented Mar. 17, 1896.

FIG. I



WITNESSES,

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Jr^r Sec^r

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(No Model.)

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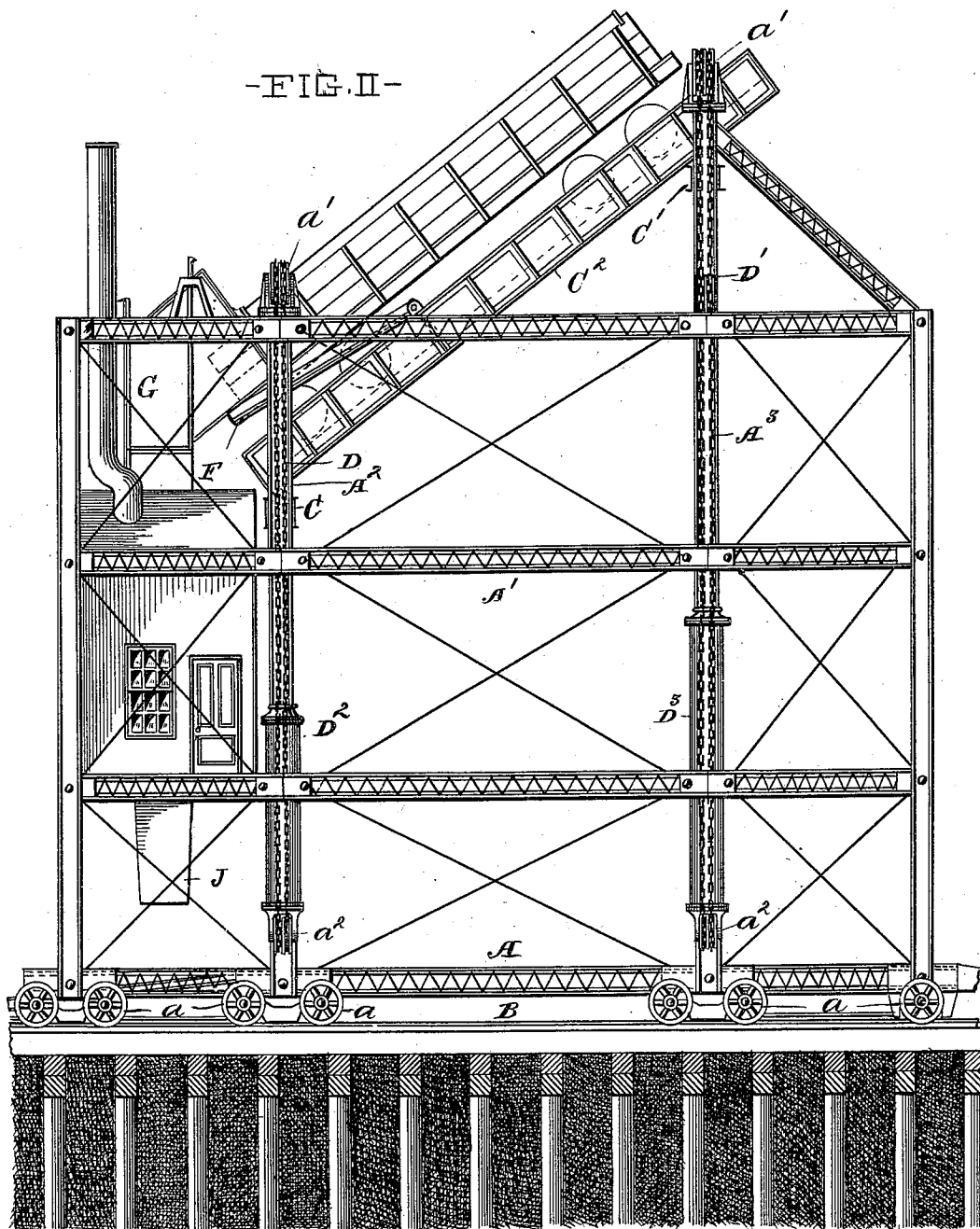
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-FIG. II-



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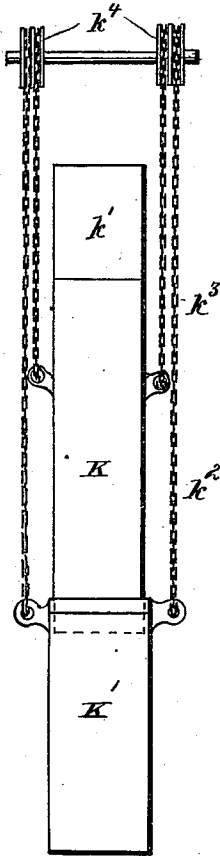
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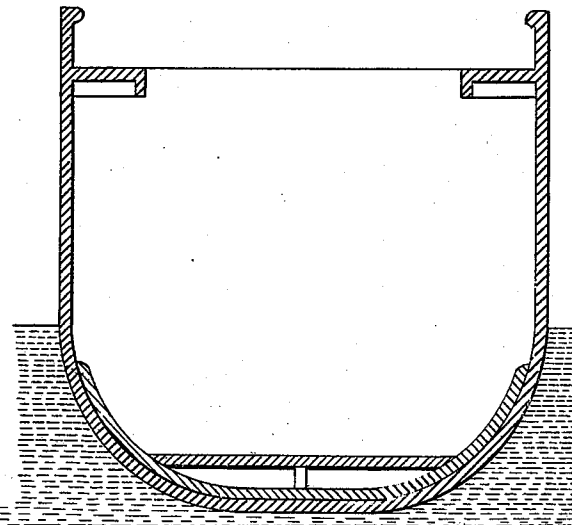
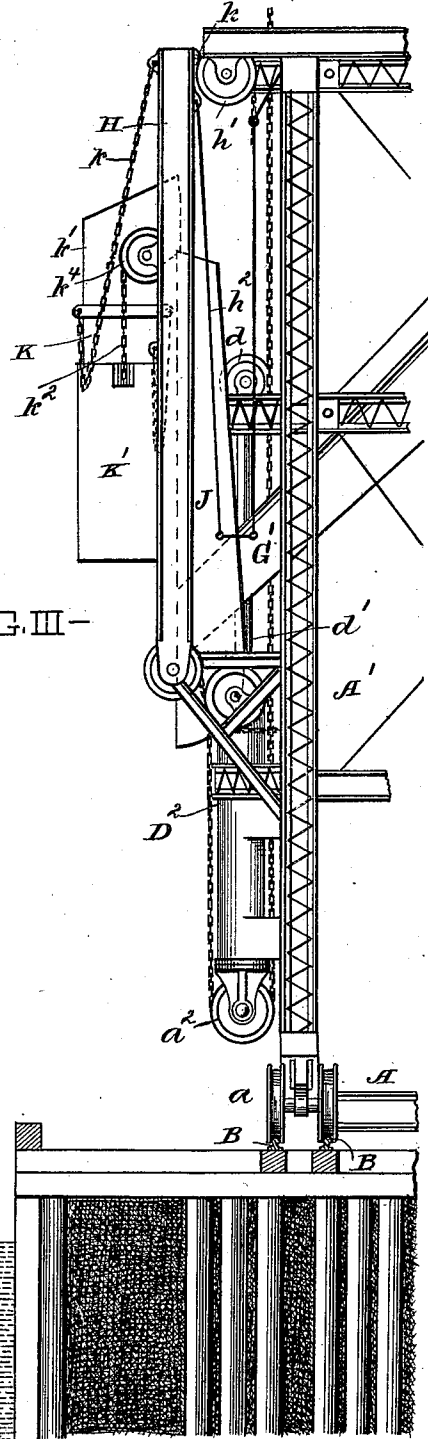
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- FIG. IV -



- FIG. III -



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APPARATUS FOR HOISTING AND UNLOADING RAILWAY CARS.

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FIG. X.

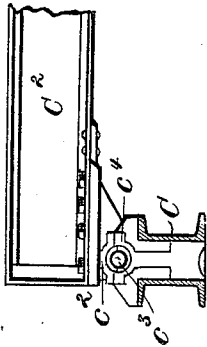
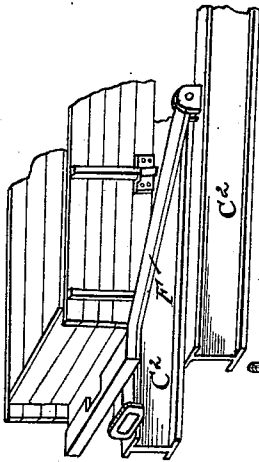


FIG. VII

FIG. VI

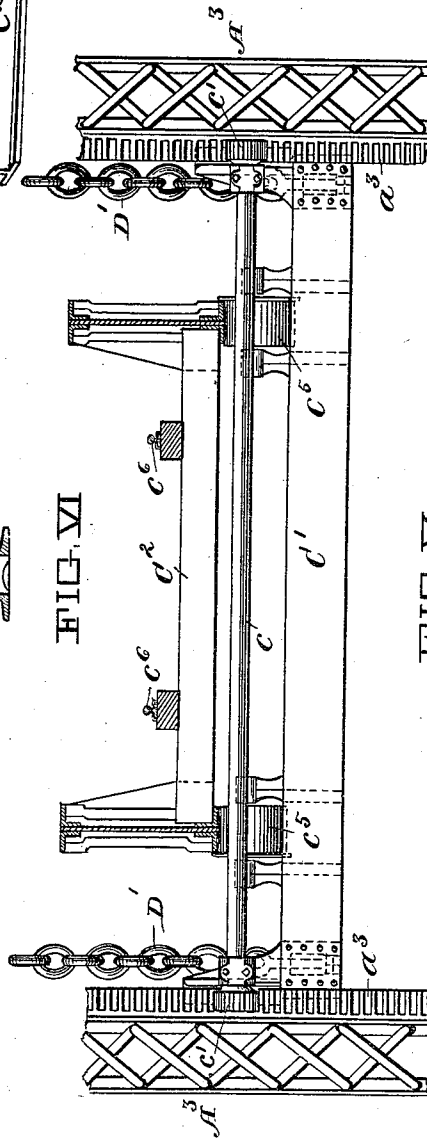
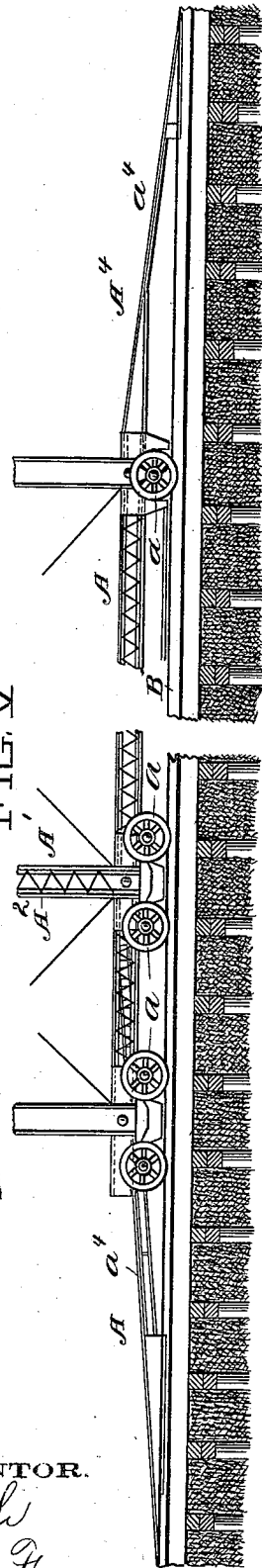


FIG. V



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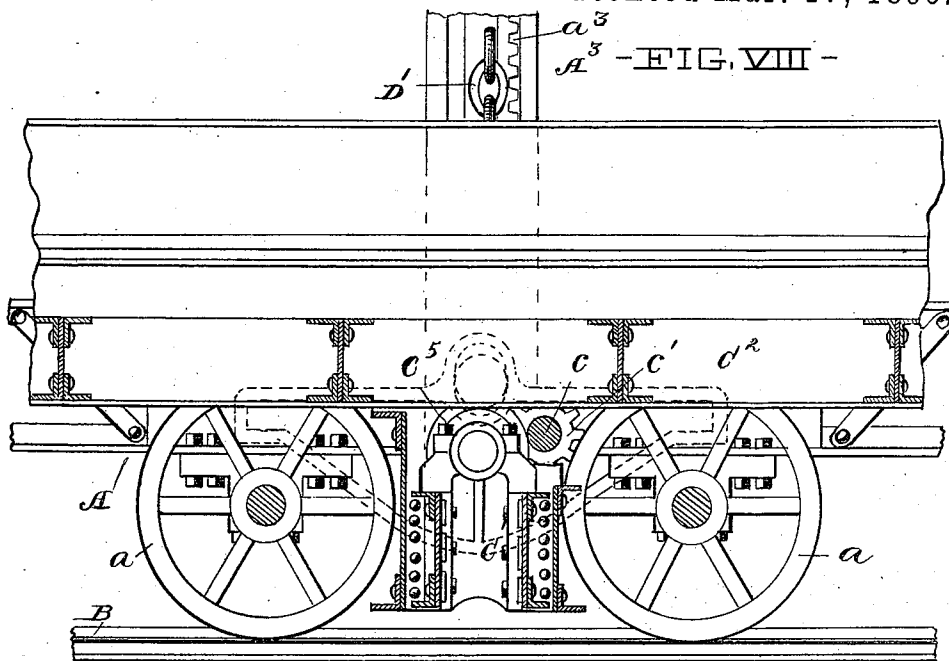
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P. RASCH.

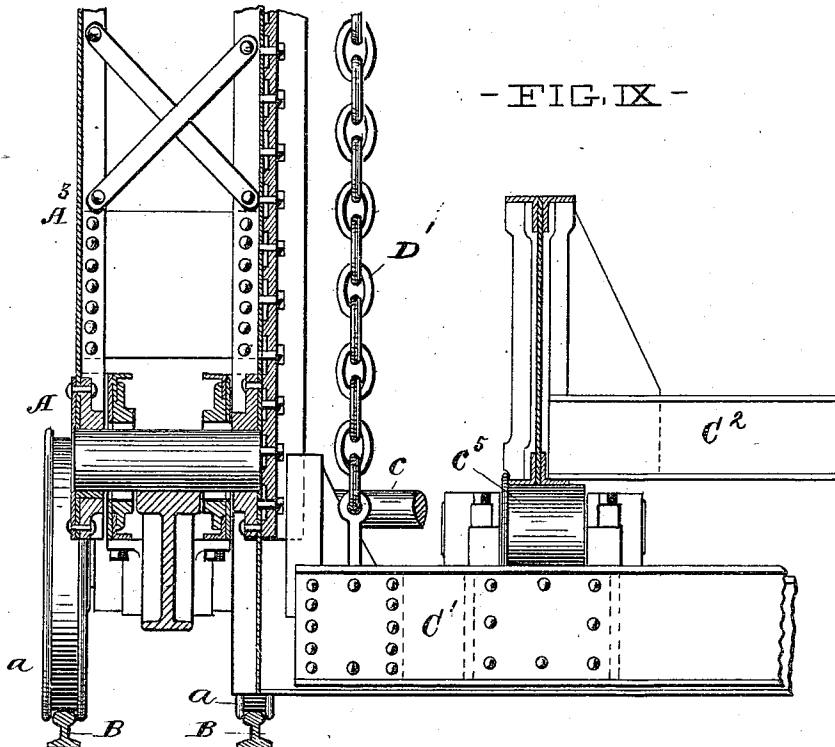
APPARATUS FOR HOISTING AND UNLOADING RAILWAY CARS.

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- FIG. IX -



WITNESSES.

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UNITED STATES PATENT OFFICE.

PETER RASCH, OF CLEVELAND, OHIO.

APPARATUS FOR HOISTING AND UNLOADING RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 556,371, dated March 17, 1896.

Application filed February 8, 1895. Serial No. 537,696. (No model.)

To all whom it may concern:

Be it known that I, PETER RASCH, a subject of the King of Denmark, and a resident of Cleveland, county of Cuyahoga, and State of Ohio, have invented certain new and useful Improvements in Apparatus for Hoisting and Unloading Railway-Cars, of which the following is a specification, the principle of the invention being herein explained, and the best mode in which I have contemplated applying that principle so as to distinguish it from other inventions.

The annexed drawings and the following description set forth in detail one mechanical form embodying the invention, such detail construction being but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawings, Figure I represents an end elevation of my improved apparatus for hoisting and unloading railway-cars, showing the apparatus in position at the edge of a wharf with a vessel loading at the wharf; Fig. II, a side elevation of the apparatus; Fig. III, an end elevation of as much of the apparatus as will illustrate the raised position of the chute and its jib; Fig. IV, a front view of the telescoping tubular portion of the chute; Fig. V, a side elevation of so much of the wheeled base of the apparatus as will illustrate the inclined approaches; Fig. VI, a detail view of the mechanism for guiding each end of the elevator-platform and of the mechanism for permitting longitudinal movement at one end of such platform; Fig. VII, a detail view of the hinge-support for the other end of the platform; Fig. VIII, an enlarged detail view of a portion of the platform, its rolling support, and of one transverse beam; Fig. IX, a transverse section of the same parts, said two latter figures showing the platform in its lowermost position; and Fig. X, a perspective view of the end of a car, illustrating the application of a hinged stop for the same.

The base A of an upright structure A' is provided with wheels *a*, which travel upon tracks B, preferably laid parallel with the edge of the wharf. The upright frame structure has vertical guides A² and A³, by means of which the car elevating and tilting support is guided. Said support consists of two trans-

verse beams C and C' and a platform C², supported upon said beams. Chains D and D' are secured to the beams, pass over pulleys *a'* at the upper ends of the vertical guides, the pulleys upon the guides A³ being above the pulleys upon guides A², under pulleys *a''* at the lower ends of said guides, over pulleys *d* upon the piston-rods *d'* of hydrostatic cylinders D² and D³, and are then secured to the frame structure. The cylinders are preferably secured to the outer sides of the vertical guides.

For the purpose of insuring absolute evenness in the upward or downward motion of each beam a shaft *c* is journaled upon the beam and parallel with the same, and said shaft has pinions *c'* upon its ends, which engage racks *a''* upon the vertical guides. The platform of the elevating and tilting support is hinged to one beam C by means of ears *c''*, through which passes a shaft *c''*, which rocks in bearings *c''* upon the beam. The other end of the platform rests upon rollers *c''*, which are journaled upon the top of the other beam C', so that the platform may have a longitudinally-movable support when the beam is raised, while the beam under the other end remains stationary.

Inclined approaches A⁴ are provided at each end of the frame structure and have rails *a''*, which meet both ends of rails *c''* upon the platform. The lower ends of the inclined rails are so constructed that they may bear upon the tops of the rails *e* of the railroad track or siding, upon which the cars to be elevated and dumped run. A hinged stop F upon the platform serves to prevent longitudinal movement of the car when the latter and the platform are tilted, the stop engaging the draw-head and bumpers at the end of the car.

A rigid hopper G is constructed at one end of the frame structure and has its bottom inclined toward the front of the wharf, where it extends into an inclined chute G'. A jib H is pivoted to the frame structure at the lower end of the chute, and a chute J is hinged to the lower end of the rigid chute, so as to form a continuation for said latter chute. A cylindrical spout K is supported by means of chains *k* from the jib and has an elbow *k'* at its upper end, into which the lower end

of the hinged chute projects. A cylindrical spout K' telescopes upon the upper spout, and said spouts have chains k^2 and k^3 secured to them and carried over pulleys k^4 upon the jib to the structure, so that the spout-sections may be raised or lowered by said chains. One or more chains h is secured to the jib and passes over a pulley or pulleys h' at the top of the frame structure, so that the jib may be raised to swing the hinged chute and the telescoping spout-sections up against the side of the structure and out of the way of vessels in front of the wharf. The jib is supported in its lowered position by a linked guy-rod h^2 .

In practice the wheeled frame structure is moved upon its track until it arrives opposite the place where the discharge of the contents of the cars to be unloaded is to be made. In the illustrated case the structure is opposite the hatchway of a vessel lying alongside of the wharf. The car to be unloaded is drawn up at one of the inclined approaches onto the elevator-platform. When the car has been drawn onto the platform, the actuating fluid—steam, air or water under pressure—is admitted into the hydrostatic cylinders, and the elevating-support, with the car upon it, is raised along its vertical guides. When the support arrives at the point which brings one end of the car above the hopper of the frame structure, the hoisting apparatus for that end of the support is stopped, while the other end of the support continues to rise. The car has been secured by means of the end stop, and the end-gate of the car has been opened or removed, so that the contents of the car will be emptied into the hopper, chutes, and spout. The hinged end of the platform remains stationary during the endwise tilting of the car, while the rollers upon the beam which continues to rise move under the platform and allow that end of the latter to be raised.

As the contents of the car fall into the hopper, chutes and spouts the latter will become filled, as the lower end of the lowermost spout-section rests upon the bottom of the vessel or upon the top of the cargo already in the hold. When now the lower spout-section is raised by its chains, the contents of said section may slowly escape under the edge of the section. The upper section may be similarly raised to allow its contents to escape if the pile in the hold of the vessel reaches a height above the lower edge of the upper spout-section. By this telescoping-spout arrangement the contents of the car may gently slide into the hold of the vessel, which is a matter of great importance in the use of an apparatus of this character for unloading coal from cars, as, if the coal has a free slide from the car down to the bottom of the vessel, the coal will be so much broken as to contain too much slack and dust and to deteriorate in value far beyond the saving attained by the rapid unloading of the car. This feature of breakage has been largely instrumental in preventing the employment of otherwise practical car-un-

loading apparatus for unloading coal, which is the article for which these devices are most desired and the handling of which forms the greatest item of cost.

As the hoisting mechanism of my apparatus is arranged above and at the sides of the bottom of the frame structure, the car-supporting platform may be lowered to a short distance above the surface of the ground or wharf upon which the frame structure stands, whereby the necessity for drawing the car up a steep incline is avoided.

The structure has preferably two inclined approaches, one at each end, so that after a car has been raised, dumped, and again lowered one car may be drawn upon one incline onto the platform, while the preceding car may run down the other incline off from the platform.

By mounting the apparatus upon wheels the apparatus may be moved to be exactly opposite the point where the discharge of the car-load is to be delivered.

When the apparatus is not in use, the jib, chutes and spout may be raised out of the way of vessels passing along the front of the wharf.

Other modes of applying the principle of my invention may be employed for the mode herein explained. Change may therefore be made as regards the mechanism thus disclosed, provided the principles of construction set forth respectively in the following claims are employed.

I therefore particularly point out and distinctly claim as my invention—

1. In apparatus for hoisting and unloading railway-cars, the combination of a platform upon which a railway-car may be supported, a support to which one end of the platform is hinged, means for raising and lowering said support, another support upon which the other end of the platform is supported and may move longitudinally, and means for raising and lowering said latter support—said two sets of raising and lowering means acting separately and independently of each other, substantially as set forth.

2. In apparatus for hoisting and unloading railway-cars, the combination of a platform upon which a railway-car may be supported, a support to which one end of the platform is hinged, means for raising and lowering said support, another support having a roller upon which the other end of the platform may move longitudinally, and means for raising and lowering said latter support, said two sets of raising and lowering means acting separately and independently of each other, substantially as set forth.

3. In apparatus for hoisting and unloading railway-cars, the combination of an upright frame structure having vertical guides, a beam transverse to said structure and guided by one set of the guides, a transverse beam guided by another set of guides, means for separately raising and lowering each of said

beams, and a platform upon which a railway-car may be supported and having one end hinged to one beam and having rolling support for its other end upon the other beam, substantially as set forth.

4. In apparatus for hoisting and unloading railway-cars, the combination of an upright structure having pairs of vertical guides, a transverse beam guided by one pair of guides, another transverse beam guided by another pair of guides and having a roller upon its upper side, means for separately raising and lowering each of said beams, and a platform upon which a railway-car may be supported and having one end hinged to the first-mentioned beam and having its other end resting upon the roller on the second beam, substantially as set forth.

5. In apparatus for hoisting and unloading railway-cars, the combination of an upright structure having two pairs of vertical guides and inclined approaches at its ends, a transverse beam guided by one pair of guides, another transverse beam guided by the other pair of guides and having a roller upon its upper side, a platform hinged at one end to the first beam and having its other end resting upon the roller of the other beam and having its end registering with the elevated

ends of the approaches when the beams are in their lowered positions, hoisting-chains attached to the ends of the beams and carried over guide-pulleys at the upper ends of the vertical guides, and hydrostatic cylinders having their piston-rods connected to operate said chains, substantially as set forth.

6. In apparatus for hoisting and unloading railway-cars, the combination of a base-frame mounted on wheels, two pairs of vertical guides extending from said base-frame, inclined approaches at the ends of the base-frame, transverse beams having their ends guided in the guides, a platform supported by said beams, hoisting-chains attached to said beams and guided over the upper ends of the vertical guides, and hydrostatic cylinders secured upon the outer sides of the vertical guides and having their piston-rods connected to operate the hoisting-chains, substantially as set forth.

In testimony that I claim the foregoing to be my invention I have hereunto set my hand this 5th day of February, A. D. 1895.

PETER RASCH.

Witnesses:

WM. SECHER,
DAVID T. DAVIES.