(No Model.) 4 Sheets—Sheet 1.

E. C. CLARKSON.

CAR DUMPING MACHINERY.

No. 556,458. Patented Mar. 17, 1896.

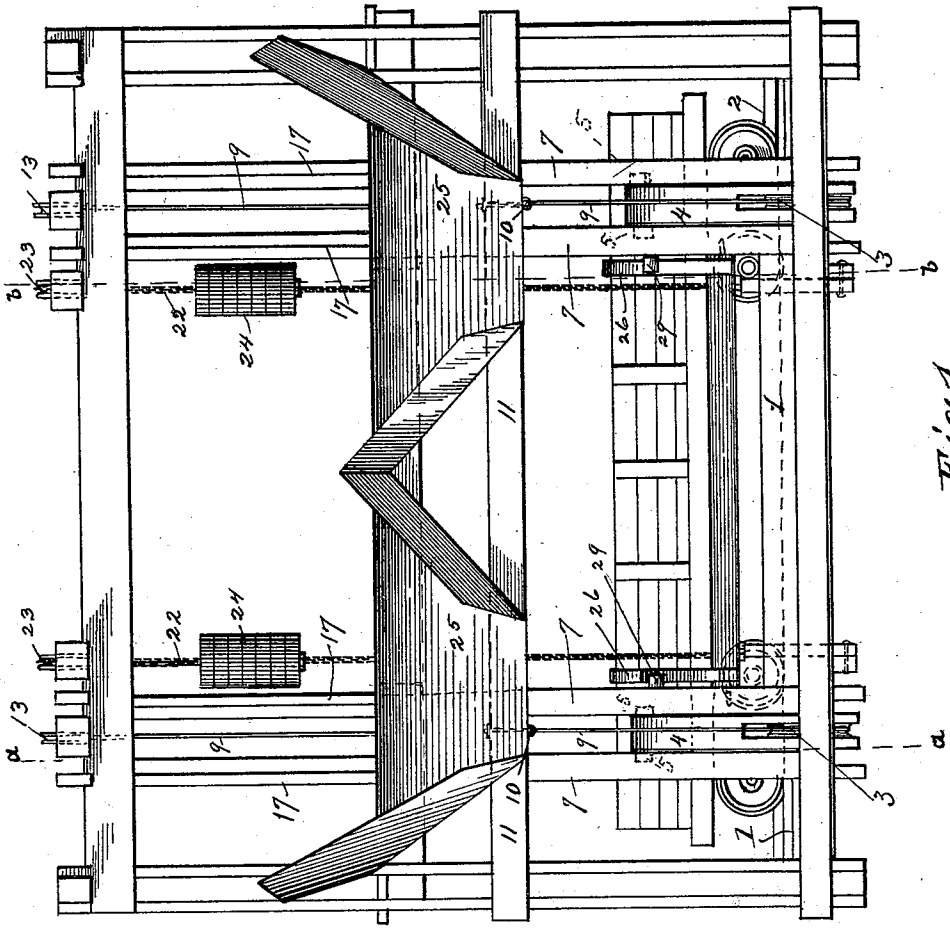

Fig 1.

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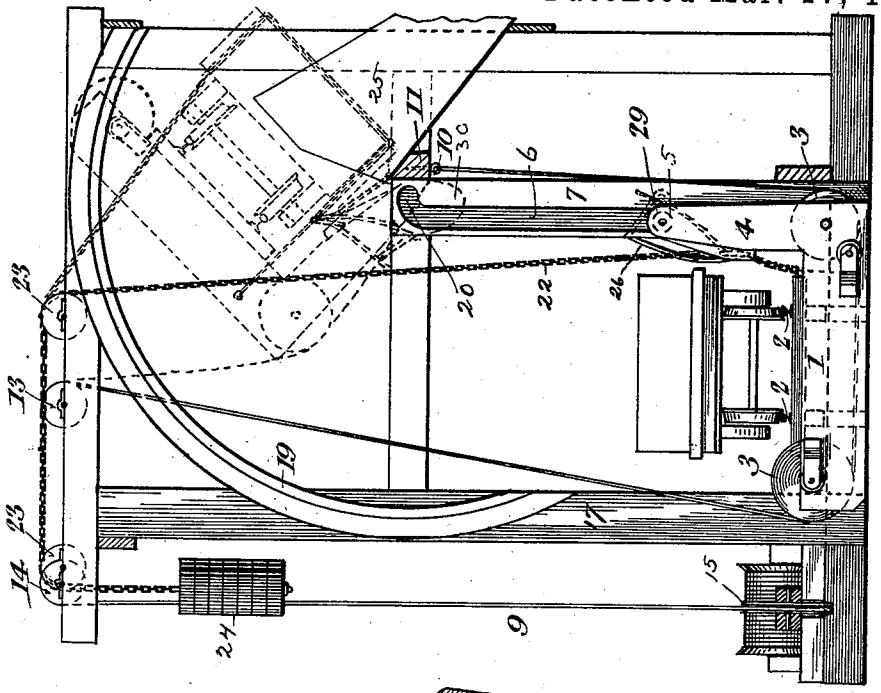

Fig. 3

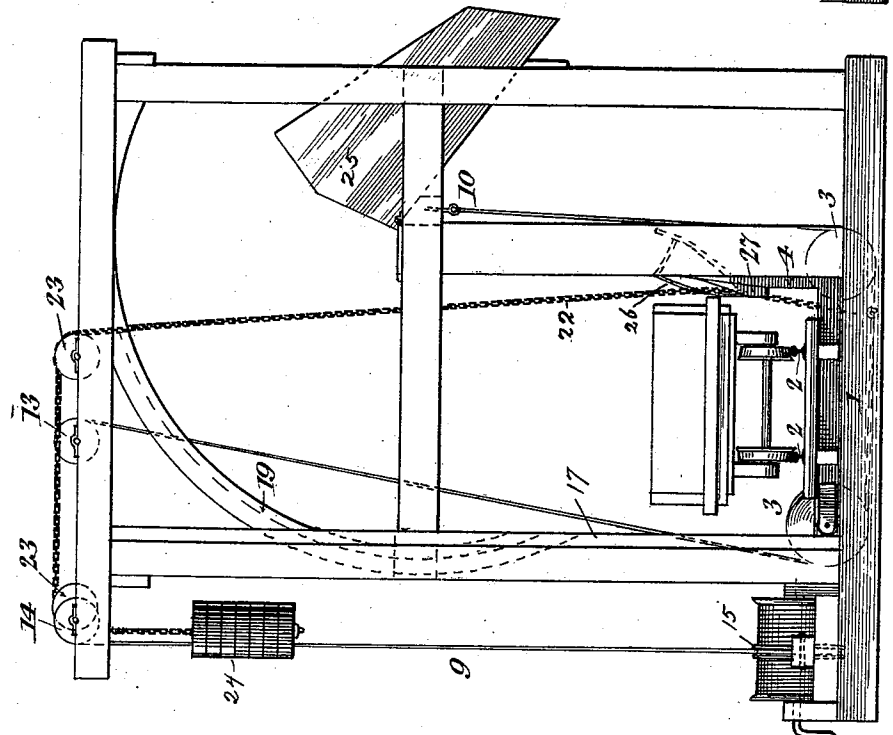

Fig. 2

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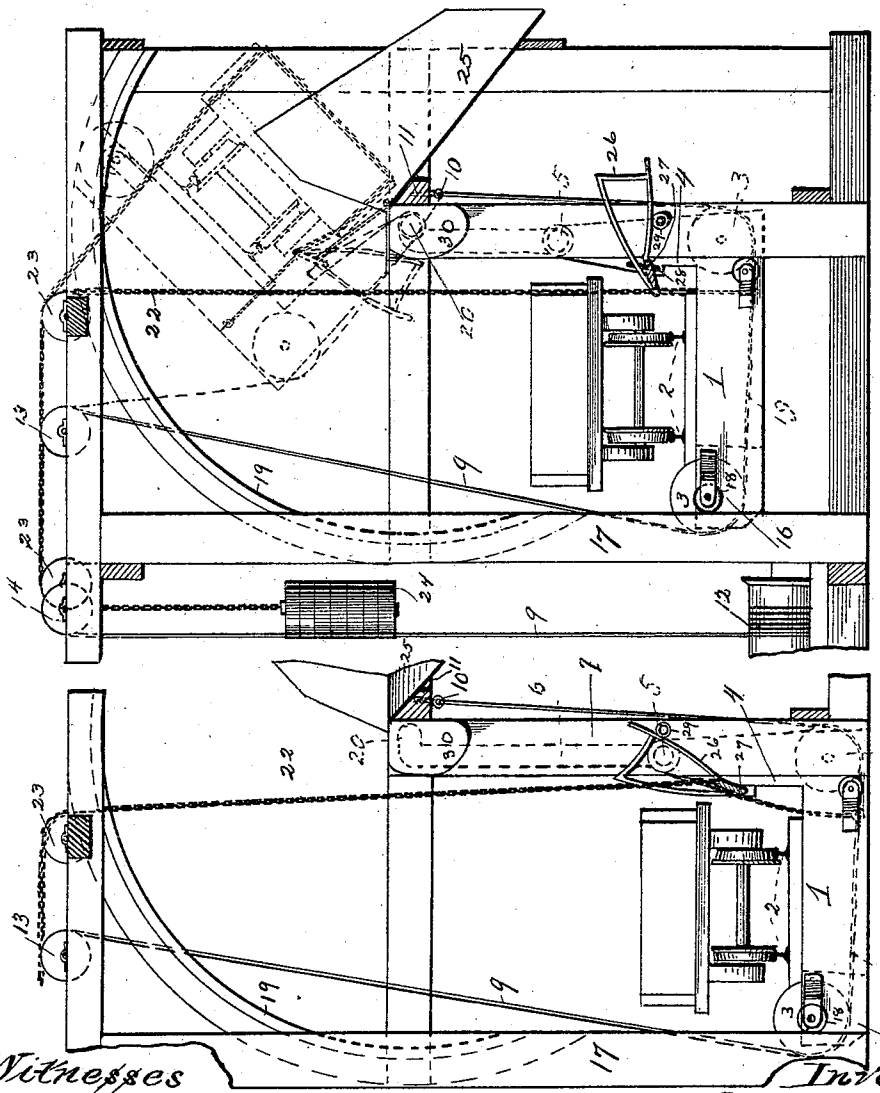

Fig. 5.

Fig. 4.

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Fig. 7.

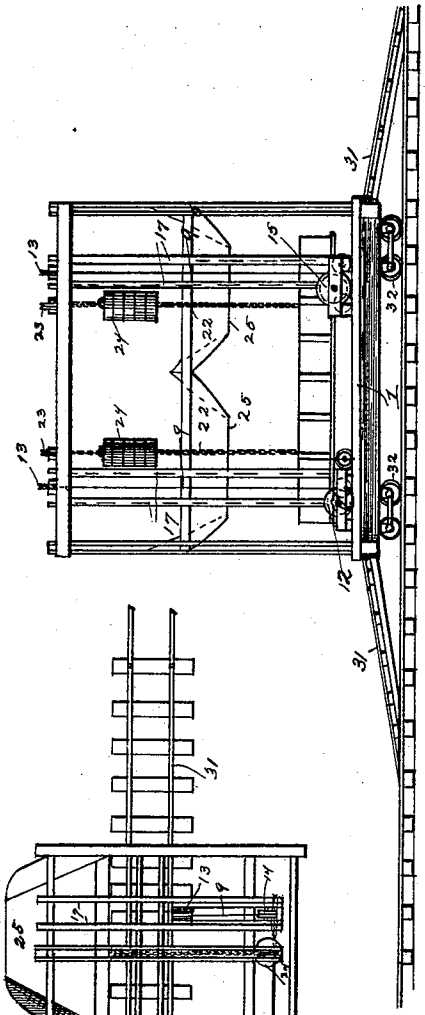
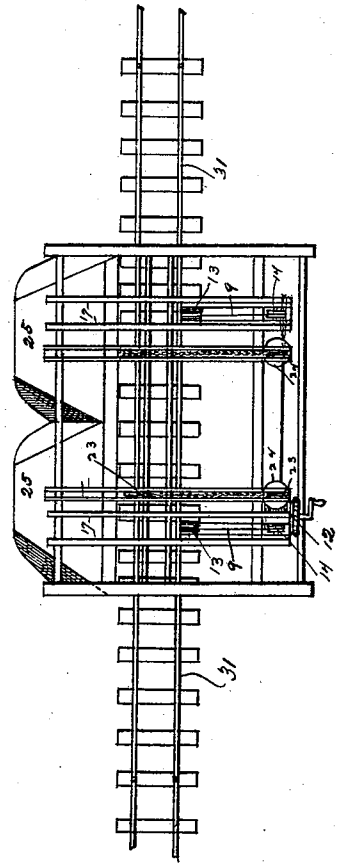


Fig. 6.



Witnesses
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A. B. Knowlson

Inventor
Eugene C. Clarkson
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UNITED STATES PATENT OFFICE.

EUGENE C. CLARKSON, OF CLEVELAND, OHIO.

CAR-DUMPING MACHINERY.

SPECIFICATION forming part of Letters Patent No. 556,458, dated March 17, 1896.

Application filed May 2, 1895. Serial No. 547,824. (No model.)

To all whom it may concern:

Be it known that I, EUGENE C. CLARKSON, a citizen of the United States, and a resident of Cleveland, county of Cuyahoga, State of Ohio, have invented certain new and useful Improvements in Car-Dumping Machinery, of which I hereby declare the following to be a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in railway-car-dumping machinery and is adapted to any style of open or flat car.

The objects of the invention are to provide a simple and efficient device for this purpose with as little accessory mechanism as is compatible with good results.

My invention consists in a supporting-frame and movable section of track, with the elevating and tipping mechanism and arrangement of the various parts and construction of details, as hereinafter described, shown in the accompanying drawings, and more specifically pointed out in the claims.

In the accompanying drawings, Figure 1 is a rear elevation showing cams. Fig. 2 is an end elevation. Fig. 3 is a vertical transverse section on line *a a*, Fig. 1. Fig. 4 is a detail view of binding-chain and cam and is a vertical section on line *b b*, Fig. 1. Fig. 5 is a similar section showing different positions of cams. Figs. 6 and 7 are plan and front elevations, respectively, of frame and inclines.

In the views, 1 is the car-platform, provided with car-track 2 and with lifting-sheaves 3 at each end. Vertical posts 4 are secured to the inner sides of the platform, and rollers 5 are pivoted at their upper extremities to work in slot 6 between vertical posts 7 of the frame, which is strong enough to support the car and load, but leaves a free opening for the entrance and exit of the car at each end.

The hoisting-ropes 9 pass under the sheaves 3 on the platform and are secured at 10 to a cross-bar 11 of the frame and at their other extremities pass over the hoisting-drum 12 at one end of the frame. This necessitates the use of intermediate sheaves 13 and 14 at the top of the frame and an additional pulley 15 at one end of the frame to convey the extremity of one rope to the drum.

Forked projections 16, carrying sheaves 3 on the opposite side of the platform to the posts 7, project between vertical guiding-posts 17. Rollers 18 on the platform engage the edges of the posts 17, and in the upper part of the machine the vertical guide edges are transformed into arcs of circles 19 having their center of revolution at the highest vertical point of the roller-guides 6 at 20, so that when the rollers 5 have arrived at this point the entire platform and car can be rotated upon them, while the rollers 18 follow the curve of the guides 19 and secure a positive and exact movement to the platform. The pivotal extensions 20 of the vertical guides 6 are somewhat recessed to form bearings for the rollers while dumping the car.

It will be seen from the figures that the hoisting-ropes 9 do not support the top of the car when it is tipped for dumping, nor in any way serve to retain the car upon the tracks. To accomplish this purpose and at the same time to balance the weight of the car and platform, so as not to require an unnecessary expenditure of power to lift them, the chains 22 are secured to the platform, passing to the rear of the car and over the sheaves 23 overhead to the front, where they are terminated by removable weights 24. These weights should be about equal to the weight of the platform. It is necessary at first that the chains should stand away from the side of the car, so that the car can be run into place on the platform; but as soon as the car rises the chains engage the side of the car closely, and as the car tips they encircle the open top and both sides, as shown in dotted lines, Fig. 5, and by means of the weights 24 keep the car upon the track, while its contents are being dumped into the chute 25.

In order to accomplish this result the flaring cams 26 are pivoted at 27 in the short slots 28 at the sides of the posts 4 and are attached at their inner extremities to the chains 22. Rollers 29 upon the vertical frames engage the outer extremities of these cams as the platform lowers and throw out their inner extremities, to which the chains are secured, away from contact with the car or its projecting guards, as shown in Figs. 3 and 4. As soon, however, as the cams rise above the rollers 29 the tension upon the chains will draw them taut along the side of the car, and as

soon as the platform begins to turn about the pivot 20 the fixed cams 30 will engage the pivoted cams 26 on their inner faces and so increase the pressure against the chains.

When the car is unloaded and the hoisting-ropes released, the weights will restore the car to the vertical position.

It will be seen that the chains 22 have only the weight of the empty car to support when tipped, since the pivot-bearing supports the platform when the load is discharging. The chains and weights serve also as a balance for the platform and lessen the power required to raise it.

The frame itself is mounted upon trucks, as shown in Figs. 6 and 7, so that it can be moved upon the railway-track from one hatchway in a vessel to another.

Inclines 31 extend from the edge of the platform 1 to the tracks, so that a car can be readily pushed up to the platform.

The advantages of this device are obvious, since the car can be raised to any height desired to deliver ore or coal and no attention to clamping the car is required.

I believe myself to be the first to utilize chains to bind the car to the platform.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In dumping machinery for railway-cars, the combination with a platform and guides, of a car mounted upon the platform, hoisting and tipping mechanism for the platform, pivotal bearings upon which the platform rotates and means for securing the car to the platform while being tipped, consisting in chains secured to one edge of the platform and passed over pulleys aloft, and provided with free weighted extremities, whereby the chains will engage the side and top of the car and clamp the same to the platform, substantially as described.

2. In dumping machinery for railway-cars, the combination with a tipping support for the car, of chains secured to said support at one extremity provided with weighted free extremities, and adapted to pass over the side and top of the car when tipped, whereby the grip of the chains will retain the car rigidly upon the support, substantially as described.

3. In car-dumping machinery for railway-cars, the combination with a support for the car, of chains secured at one extremity to the car-support and provided with weighted free extremities passing over the car, whereby the side and top of the car are encircled when tipped, and the car is rigidly clamped against its support, substantially as set forth.

4. In dumping machinery for railway-cars, the combination with a car-support of chains adapted to encircle the car when tipped secured at one extremity to the car-support, pulleys over which said chains are extended, and weights at the free extremities of the chains, with mechanism substantially as described whereby the chains are freed from contact with the car until the support is in position to rise, and are brought into immediate contact with the car when it rises, as and in the manner set forth.

In testimony whereof I hereby set my hand this 27th day of April, 1895.

EUGENE C. CLARKSON.

Witnesses:
WM. M. MONROE,
BRADLEY E. CLARKSON.