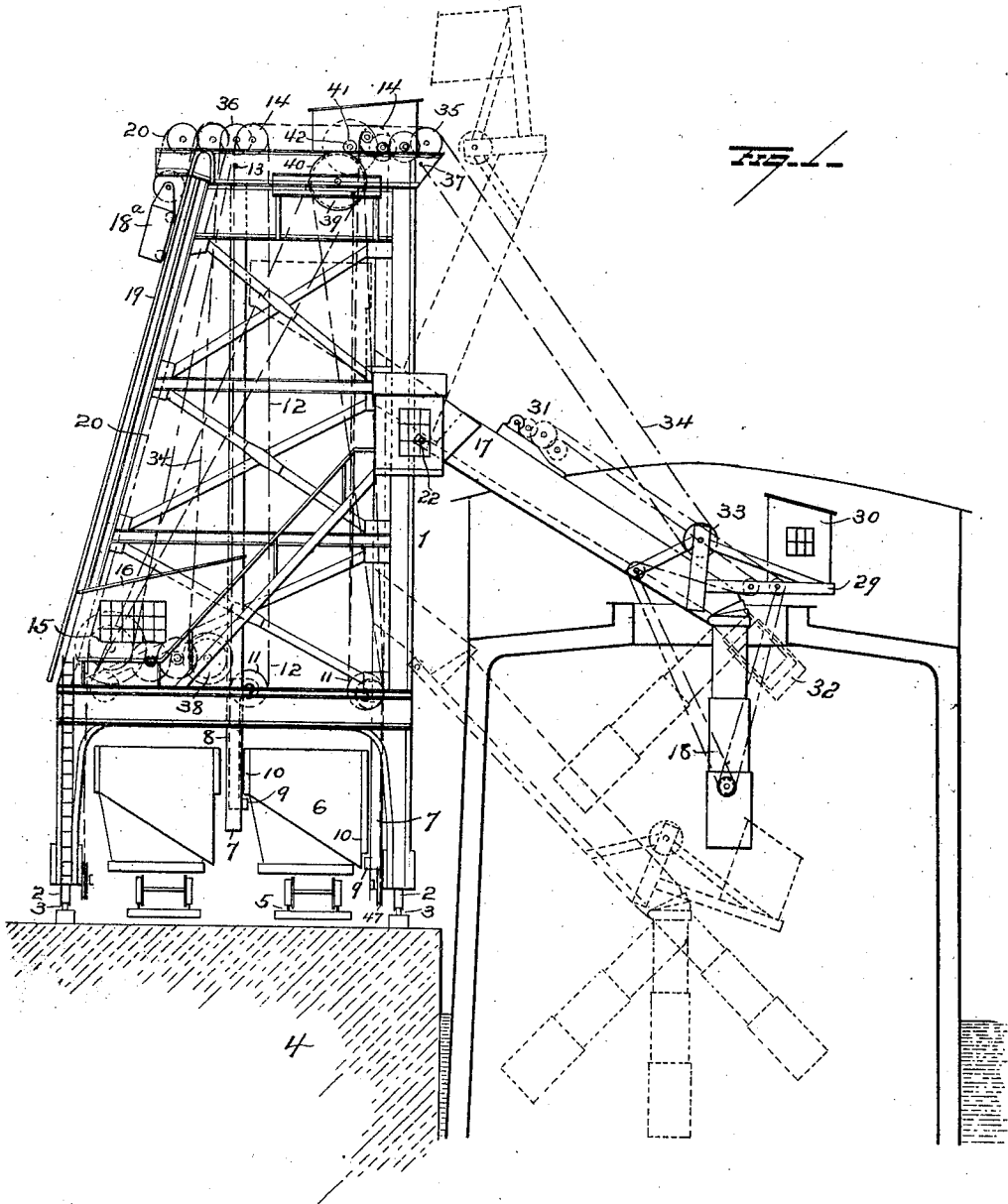


G. H. HULETT.
LOADING MACHINERY.
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2 SHEETS—SHEET 1.



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LOADING MACHINERY.

1,010,766.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GEORGE H. HULETT, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Loading Machinery; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in loading machines, the object of the invention being to construct a traveling frame or tower with means for elevating a loaded car and discharging the contents thereof into a boat.

A further object is to so construct a machine of the character specified that the discharging pan or apron and chute can be readily adjusted vertically to accommodate boats of different heights.

With these and other objects in view the invention consists in certain novel features of construction and combinations of parts as hereinafter set forth and pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation illustrating a machine embodying my improvements. Fig. 2 is a plan view of the same, and Fig. 3 is a front elevation.

1 represents a frame or tower provided at its bottom with wheels 2 to run upon tracks 3 located near the edge of a dock 4. Tracks 5 are also located on the dock in such position that cars 6 may be run under the tower or so that the tower may be moved so as to become disposed over said cars.

Located within the tower 1, are vertically disposed guides 7 for the accommodation of vertically movable bars 8 which are provided at their lower ends with hooks 9 to engage ribs or flanges 10 on the car 6. The bars 8 are carried by the frames of sheaves 11. Cables 12 (secured at 13 to the upper portion of the tower) pass over the sheaves 11 and over sheaves 14 at the top of the tower,—said cables then passing downwardly and wound upon a drum 15 located within a machinery house 16, in which latter

suitable driving mechanism is also located. It is apparent that when the hooks 9 are in engagement with the flanges of a car and the drum 15 is rotated in one direction, the car will be elevated and when it shall have reached a predetermined height, the material therein will be discharged therefrom (the car being constructed of the side dump type) onto a pan or apron 17 and from the latter to a chute 18. In order to assist in the raising of a car, a weight 18^a is provided. This weight is mounted to move on an inclined way 19 afforded by the back of the tower and is connected by means of suitable cables 20 with the drum 15, on which latter it is wound in a direction opposite to the winding of the lifting cables 12. The weight 18 may be made to approximately counter-balance the weight of an empty car so that the latter may be readily lowered by causing the drum 15 to rotate in a direction opposite to that necessary for raising the car.

The pan or apron 17 is hinged or pivotally connected with a transverse member 21, as indicated at 22. This transverse member 21 is provided with fixed threaded sleeves 23 through which vertically disposed threaded rods 24 pass,—the lower ends of said rods being suitably swiveled in the lower portion of the tower framework and to their upper ends, beveled gears 25 are secured. A shaft 26 mounted upon the tower, is provided at its respective ends with beveled gears 27 for transmitting motion to the gears 25 on the threaded shaft. A motor 28 is also located upon the tower and transmits motion through the medium of suitable gearing to the shaft 26. By these means motion is imparted to the threaded rods 24 for raising or lowering the transverse member 21 and disposing the inner end of the pan or apron 17 at any desired height on the tower so that the mechanism can be adapted to operate for discharging material into boats of different heights. A frame or bracket 29 is secured to the outer portion of the pan or apron 17 and carries an operator's cage 30, from which an operator can control mechanism at 31 for manipulating the chute 18. This chute has a universal connection at its

upper end with the discharge end of the pan or apron 17 and it is also made in telescoping sections,—the lower of said sections being connected by means of cables with the machinery at 31 and said cables being so arranged that the telescopic chute can be swung toward or away from the side of the boat next to the dock or so that said chute can have its sections collapsed as shown at 32. The particular construction and arrangement of these cables do not constitute a part of my present invention and hence a more minute description thereof is unnecessary herein.

The frame or bracket 29 supports sheaves 33 and over these sheaves, cables 34, pass, said cables also passing over sheaves 35 and 36 at the top of the tower. One end of each of said cables is secured at 37 to the upper portion of the tower and the other end of each of said cables extends downwardly from sheave 36 and is wound upon a drum 38 in the machinery house 16. By operating this drum the outer portion of the pan or apron 17 and the chute 18 connected therewith can be raised or lowered, the pan or apron then turning on its hinged or pivotal connection with the vertically movable transverse member 21.

For causing the tower to travel along the dock so that it can be easily and quickly positioned with respect to the boat or a particular hatch thereof, the mechanism now to be described will be employed: Mounted upon the top of the tower are drums 39 provided with gears 40 which receive motion from pinions 41 on a shaft 42. This shaft is provided with a gear 43 receiving motion from a pinion 44 on a shaft 45,—the latter being geared to the motor 28 and suitable clutches are located on this shaft for causing the operation of the motor to drive either the drums 39 or the shaft 26 of the pan or apron raising mechanism. Cables 46 are wound upon the drums 39, extend downwardly therefrom, having their intermediate portions passing over sheaves 47 at the bottom of the tower and the free ends of these cables extend from the tower in opposite directions and are secured to the dock at points some distance removed from the tower. In other words the cables 46 are secured at their respective ends at respective ends of the trackway on the dock upon which the tower travels.

From the construction and arrangement of apparatus above described, it will be apparent that the tower can be quickly moved and accurately positioned for discharging material into a boat located alongside the dock; that the loaded dump car can be elevated to a position to discharge its load onto the vertically adjustable pan or apron; that the latter can be adjusted at any suitable

height to accommodate it to the particular height of the boat into which the material is to be discharged, and that the outer end of the apron can be raised or lowered and also that the chute can be lengthened or shortened or moved outwardly or inwardly to insure the discharge of the material evenly in the hold of the boat.

Numerous slight changes might be made in the details of construction of my invention without departing from the spirit thereof or limiting its scope and hence I do not wish to restrict myself to the precise details herein set forth.

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

1. The combination with a traveling tower, and a chute attached thereto, of vertically movable hooked bars to engage a dump car, and means for raising said hooked bars to elevate the dump car to position to discharge into said chute.

2. The combination with a traveling tower, a chute, and a vertically adjustable pivotal support for said chute, of vertically movable hooked bars to engage a dump car, means for raising said hooked bars to elevate the dump car to position to discharge into said chute, and means for raising and lowering the vertically adjustable chute support.

3. The combination with a tower and vertical guides therein, of hooked bars movable in said guides and adapted to engage a car for elevating the same, sheaves connected with said hooked bars, sheaves mounted on the tower, cables passing over said sheaves and secured at one end to the tower, drums over which said sheaves pass, and means for operating said drums.

4. The combination with a tower and guides located therein, of hooked bars vertically movable in said guides and adapted to engage a car, a drum, means for operating said drum, cables wound on the drum and connected with said hooked guides, cables wound on the drum in the opposite direction to that in which the first mentioned cables are wound, and weighted means connected with the last mentioned cables for counterweighting a car supported by the vertically movable hook bars.

5. The combination with a tower and car elevating means therein, of a transverse member, threaded rods for moving said transverse member vertically, a pan or apron connected with said transverse member, and a chute connected with the pan or apron.

6. The combination with a tower and car elevating means therein, of a transverse member, threaded rods for moving said transverse member vertically, means for operating said threaded rods, a pan or apron

having hinged connection with the transverse member, a chute connected with the free end of the pan or apron, and means connected with the outer portion of the pan
5 or apron for moving the latter and the chute vertically.

In testimony whereof, I have signed this

specification in the presence of two subscribing witnesses.

GEORGE H. HULETT.

Witnesses:

THOMAS A. GOODRIDGE,
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