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Patented Dec. 13, 1898.

J. D. ADAMS.  
LOADING OR UNLOADING APPARATUS.

(Application filed Nov. 30, 1897.)

(No Model.)

2 Sheets—Sheet 1.

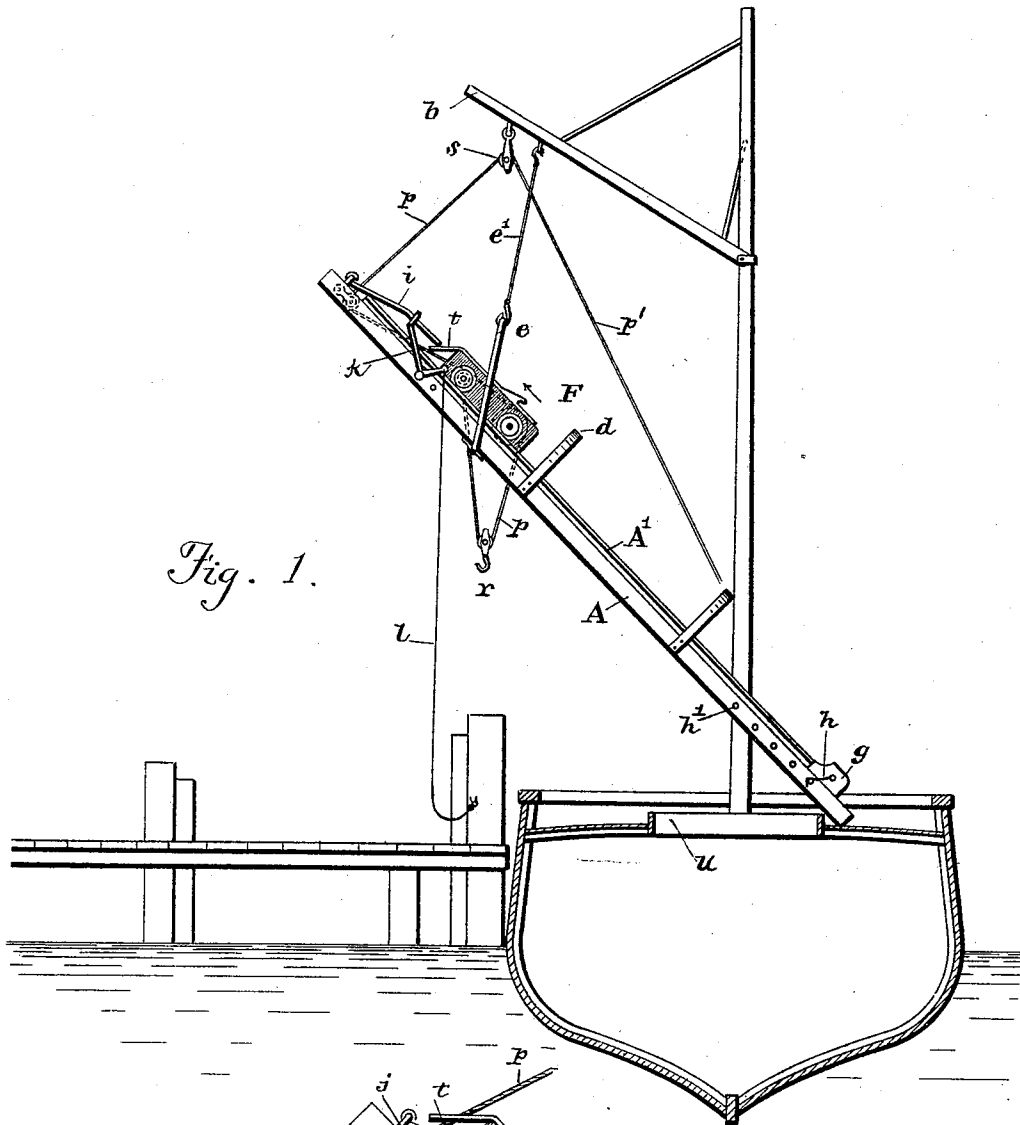


Fig. 1.

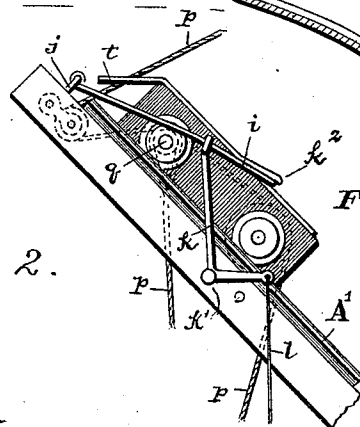


Fig. 2.

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2 Sheets—Sheet 2.

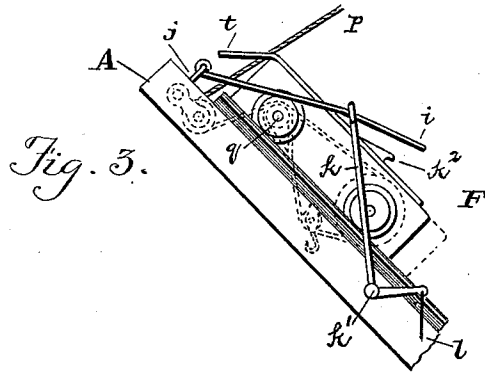


Fig. 3.

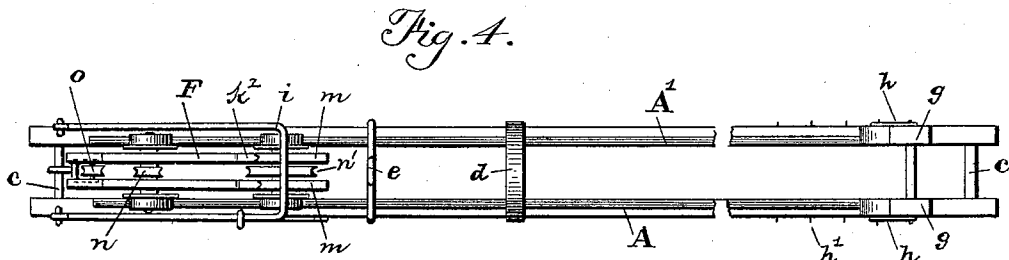


Fig. 4.

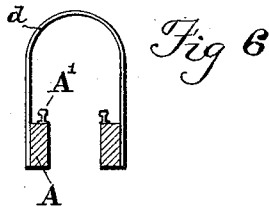


Fig. 6.

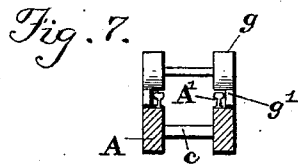


Fig. 7.

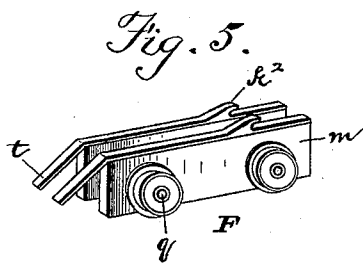


Fig. 5.

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# UNITED STATES PATENT OFFICE.

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## LOADING OR UNLOADING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 615,947, dated December 13, 1898.

Application filed November 30, 1897. Serial No. 660,190. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN D. ADAMS, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Loading or Unloading Apparatus, of which the following is a specification.

This invention relates to a loading and unloading apparatus adapted for such use as loading and discharging vessels and cars.

The invention will be first described in connection with the accompanying drawings and then pointed out in the claims.

In the drawings, Figure 1 shows the improved apparatus in use for loading or discharging a vessel. Fig. 2 is a side view of the carriage in the locked position on the inclined trackway ready for raising or lowering the load. Fig. 3 is also a side view of the carriage on the trackway, showing the several parts in the necessary position for unlocking the carriage to permit it to travel downward. Fig. 4 is a top view of the trackway and the carriage on it. Fig. 5 is a perspective view of the carriage. Fig. 6 is a cross-section of the trackway, showing arched bands. Fig. 7 is a cross-section showing the stop device.

The trackway is portable and comprises two parallel bars A, which may be wood or metal. I prefer to have wood beams with metal track-rails A' on top of them.

The trackway, it is to be understood, may be employed wherever desired—on vessels, on wharves, in yards, warehouses, or elsewhere in any desired degree of inclination.

In the present instance the trackway is slung from the gaff *b* on the mast of a vessel. The two beams of the trackway are united at each end by a cross-bar *c*, but the longitudinal space between the two beams is open from one cross-bar to the other in order that a rope may hang pendent from the carriage F in this open space and may traverse said space as the carriage moves along the trackway. One or more upward-curved iron bands *d* are attached to the two beams and form an arch from one beam to the other. These bands serve to keep the two beams in proper relation to each other, and the carriage F travels along below the arched bands. A suitable bail or hanger *e* is attached to the two beams and projects upward, and a rope *e'*, fastened

to the bail, serves to sling the trackway from the gaff *b*. The carriage will pass through the bail *e*. At the lower end the track has an adjustable stop device *g*, which comprises two blocks, each one resting on one of the beams A and is movable thereon by sliding; and each block has a rabbet *g'*, that takes over the top of the track-rail A and projects above said rail. Each block is provided on its outer side with a hook *h*, which engages either one of a number of pins *h'*, projecting laterally from the sides of the beams. By sliding the blocks *g* along the beams they may be secured by means of the hooks *h*, and thereby set the stop device on the trackway wherever desired. The stop device serves to limit the down movement of the carriage, and thereby cause the carriage when at the lower end of the trackway to stop at the exact point desired for the particular work that is being done.

The upper end of the trackway is provided with a pivoted carriage-holding device. The construction of this device, as here shown, is in the form of a yoke or bail *i*, whose two ends are jointed or pivoted to suitable eyes *j*, attached to the beams A. The free end of the carriage-holding yoke *i* points down the inclined trackway, and said free end is vertically movable.

A lever *k* in the form of a bell-crank is pivoted at *k'* on the trackway. Its upward-projecting arm engages the carriage-holding yoke *i*, and its lower lateral arm has a cord *l* attached, which extends down to the position where the attendant or operator may easily grasp it. By pulling on the cord *l* the lever *k* will lift the free end of the carriage-holding yoke *i* and hold it where it will not engage the hooks *k<sup>2</sup>* on the carriage.

The carriage F has two parallel beams *m*, two axles, and four wheels that travel on the tracks. On each axle, between the two beams, is a grooved roller. On the uppermost axle this is designated *n* and on the lower *n'*, and on the upper end of the trackway is another roller *o*. (Shown by broken lines in Figs. 2 and 3 and seen in Fig. 4.) The rope *p*, which carries the load, has one end attached to the front axle *q* and therefrom hangs downward and forms a sag or loop on which the hook *r* is placed and then extends upward and passes

over the lowermost roller *n'* on the rear axle, then forward to the roller *n* on the front axle, then under the roller *o* on the upper end of the trackway, then upward to the pulley *s* on the gaff, and, finally, the downward-extending stretch *p'* of this rope connects with a donkey-engine. (Not shown.) The hooks *k*<sup>2</sup> on the carriage have already been referred to. These hooks are on top of the parallel beams *m*, and their hook-prongs project toward the rear end or down end of the carriage.

The carriage has on its front end one or more downward-inclined prongs *t*, the function of which is to raise the free end of the carriage-holding device *i* when the carriage is ascending the trackway. The relative position of these parts is shown in Fig. 1. The free end of the said holding device or bail *i* is down as the carriage ascends, and the inclined device *t* at the front end of the carriage takes under the free end of the holding-bail *i* and raises it high enough to allow the carriage to pass under. As the carriage continues to ascend the hooks *k*<sup>2</sup> on the carriage will pass under the said bail or yoke *i*, and the latter will then engage the hooks and hold the carriage and the depending hook *r* while the load on said hook is being either raised or lowered, as the case may be.

The operation, briefly, is as follows: If unloading from a vessel, the apparatus would be rigged as shown in Fig. 1. The rear wheels of the carriage would rest against the adjustable stop device *g* on the lower end of the trackway, the hook *r* on the loop would be lowered through the open hatchway *u*, and the load attached to said hook. The engine would then start and draw on the stretch *p'*. The first effect would be to lift the loop, hook *r*, and load out of the vessel, and then the carriage *F* and load would begin to ascend the trackway and would pass up until the inclined prong *t* on the front end of the carriage raises the free end of the carriage-holding device *i*, and finally the latter engages the hooks *k*<sup>2</sup> on the carriage, and thereby holds it. The engine would then be reversed and the rope-loop carrying the hook *r* would lengthen and lower the said hook and load to the wharf or to any place desired. Now after the hook *r* has been disengaged from the load the engine starts up a little in order to draw the carriage forward far enough to take the hooks *k*<sup>2</sup> away from the bail or yoke *i*. Then the attendant or operator will pull on the cord *l* to cause the lever *k* to lift the free end of the bail or yoke and hold it high enough to permit the carriage to pass down the trackway.

It is to be understood that the lower end of the trackway will be suitably attached to the

vessel or other place where it may be used and that the uppermost end of the trackway will be stayed by lateral guy-ropes. It has not been deemed necessary to illustrate these parts.

Having thus described my invention, what I claim is—

1. In a portable loading and unloading apparatus, the combination of a trackway provided with a pivoted yoke or bail one end of which is free to raise and lower; a carriage which travels on said trackway provided at its front end with downward-inclined prongs, which latter automatically raise the said yoke or bail; hooks on the carriage which automatically engage the free end of the yoke or bail; grooved rollers on the said carriage; and a rope which draws the carriage and also extends down between two of said rollers and forms a sag whereon is placed the roller-hook from which the load is suspended, substantially as described.

2. In a portable loading and unloading apparatus, the combination of a trackway comprising two beams provided with arched bands which serve to keep the track-beams in the proper relation to each other; a carriage-holding device pivoted to the track-beams and free to raise and lower; a carriage which travels on said trackway below the arched bands; inclined prongs projecting from the carriage which automatically raise the free end of the carriage-holding device; hooks on the carriage which automatically engage the said carriage-holding device to hold the carriage in the elevated position; and a load-suspending rope pendent from the carriage, said rope moving between the track-beams when the carriage moves.

3. In a portable loading and unloading apparatus, the combination of two track-beams united at each end by a cross-bar and having an open longitudinal space from end to end between the two cross-bars; a carriage-holding device pivoted to the track-beams and having one end free to raise and lower; a carriage which travels on the track-rails and has means for carrying its load pendent below the carriage and track; and a bell-crank lever pivoted on the side of the track-beams, one arm of which serves to disengage the carriage-holding device and the other arm of which carries an operating-cord.

In testimony whereof I affix my signature in the presence of two witnesses.

JOHN D. ADAMS.

Witnesses:

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CHAPIN A. FERGUSON.