

(No Model.)

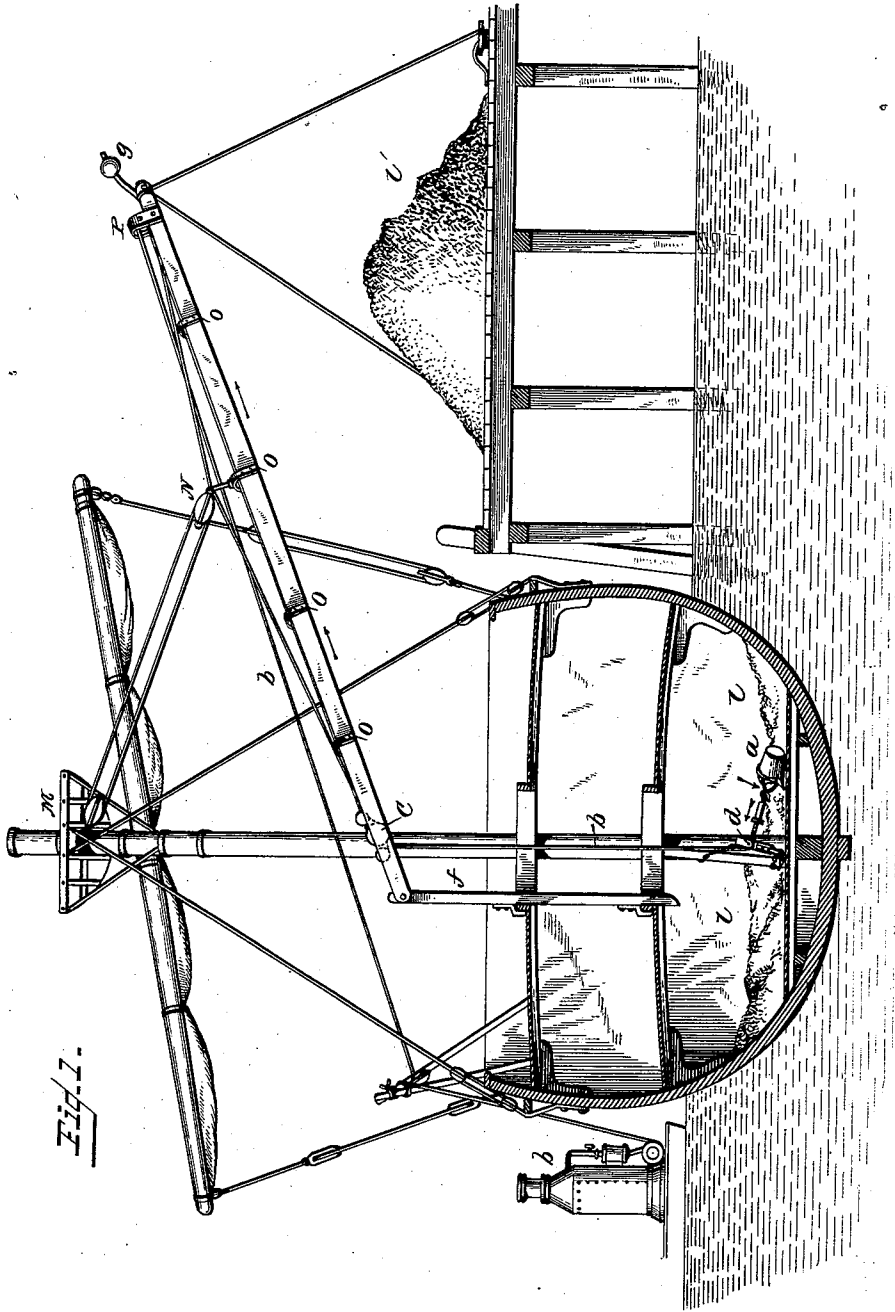
2 Sheets—Sheet 1.

J. REID.

MEANS FOR DISCHARGING CARGOES.

No. 353,083.

Patented Nov. 23, 1886.



Witnesses
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James Reid
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(No Model.)

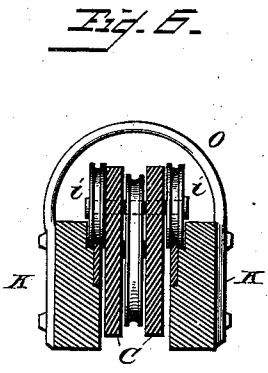
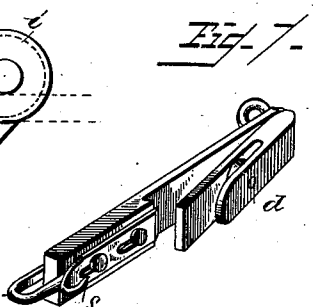
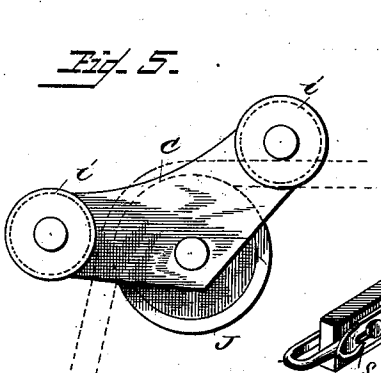
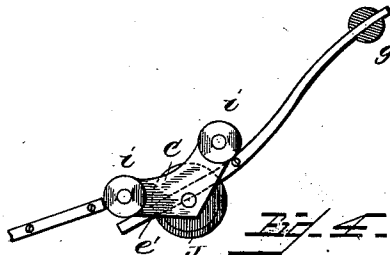
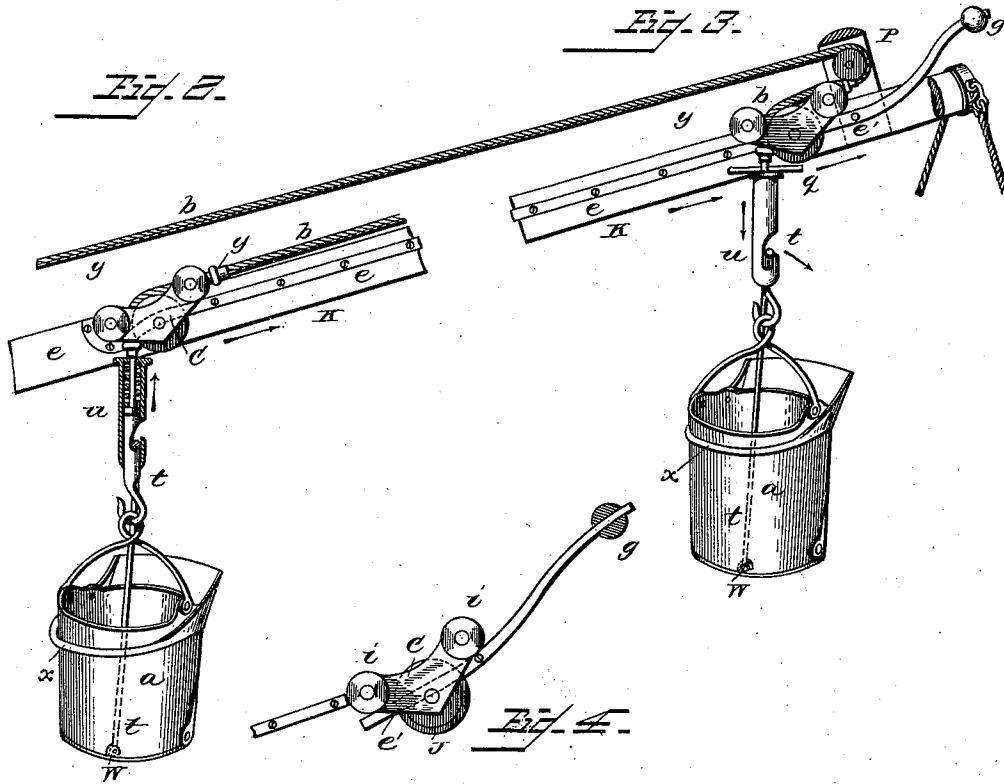
2 Sheets—Sheet 2.

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MEANS FOR DISCHARGING CARGOES.

No. 353,083.

Patented Nov. 23, 1886.



Witnesses
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UNITED STATES PATENT OFFICE.

JAMES REID, OF PORTLAND, OREGON.

MEANS FOR DISCHARGING CARGOES.

SPECIFICATION forming part of Letters Patent No. 353,083, dated November 23, 1886.

Application filed May 8, 1886. Serial No. 201,620. (No model.)

To all whom it may concern:

Be it known that I, JAMES REID, of the city of Portland, in the county of Multnomah, in the State of Oregon, have invented Means for Discharging Cargoes and Ballast from Ships, of which the following is a full and exact description and specification.

My invention relates to means for discharging cargo and ballast, whereby the same is expedited and simplified, and reference is here made to the drawings.

Figure 1 is a general view in the midship-section of a vessel; Fig. 2, the lower end of the hoisting boom over the hatchway; Fig. 3, the upper end of the same, showing the bucket ready to discharge over the dump. Fig. 4 shows the "cargo-latch," (used for cargo only.) Fig. 5 is a side view of the traveling carrier, and Fig. 6 an end view of same and cross-section of hoisting-boom. Fig. 7 is a perspective of the snatch-block especially arranged for this ballast or cargo hoist.

In the general view, Fig. 1, the bucket *a* is shown in the lower deck or hold loaded with ballast *l*, and is being drawn to the main hatchway through the leading or "snatch block" *d*. As soon as it arrives in the middle of the hatchway the block is opened or unhung, as shown in Fig. 7, and is so opened by pulling the bolt *s*, whereby the block is released and allowed to open and turn half-way round on the hinge near its back part or rear—as when the strain is free the block opens and the engine, instead of hauling the bucket horizontally, immediately commences to hoist the bucket up through the hatches and continues to do so until the lower stop, *y'*, strikes the lower end of the traveling carrier *c*, which causes it to rise out of the curved rest in the lower ends of the iron tracks *e*—and as it continues its course, rises to the upper or outward end of the boom *k* at *p*, where the spring-hook *u* strikes the shipper *q*. This allows the rod *t* (which also may be a cord or chain) to become disengaged from the hook when the bottom *w* opens and the contents of the bucket are discharged into the dump *l*.

The above being the general movement, a description is here made of the several parts conducting thereto. First, we reach the snatch-block *d*, situated in the lower hold. This

block is made in the manner shown, Fig. 7, and is somewhat different from a regular snatch-block, owing to its hinge in the back part being attached to a long beam of wood. It is provided with eyebolts at its upper and lower ends for suspending and attaching it to the stanchion or other support between decks. This beam is provided with a push-and-pull bolt, *s*, which is operated by an attendant each time the bucket is hoisted or lowered into the hold. When the bucket is hoisted, he pulls it, releasing the block, which now opens and allows the hoist-rope to fall off the pulley, and the hoisting to the boom above now continues without stoppage. Arrived at the boom, a stop, *y'*, on the hoist-rope raises the lower end of the traveling carrier *c* out of its rest, when the bucket *a* and carrier *c* continue their journey to the upper end of the boom.

The traveling carrier *c* is a peculiar contrivance. When in its seat in the lower ends of the ways or track-bars *e*—here bent or curved for the purpose—it acts as a fixed pulley. It is provided with four wheels, *i*, fixed on axles like a car-axle, (or they may be loose,) a pair moving freely in each end of side or bearing pieces of the block, and in the center and below the line of the axles of the wheels *i* the sheave *j* is placed, over which the hoist-rope passes. When the stop *y'* has raised the pulley *c* out of its seat, it passes upward freely along the iron ways *e*, which are secured to the inner upper edges of the boom-timbers, so arranged as to make a long slot between them for the passage of the pulley and hoist-rope, and when the whole has arrived at the outer end the shipper *q* strikes the upper end of the spring-hook *u*, and thereby depresses it upon the shank of the bucket-carrying hook, so that the loop of the rod *t* is ejected from the hook *u* by the enlargement on the shank of the carrying-rod, and thus releases the bottom of the bucket to permit the latter to discharge its contents. This spring *u* is constructed on the following plan: The carrying-hook which holds the bucket is firmly attached to the hoist-rope *b* at its upper end. In the middle it is enlarged, so as to form a bearing for the spring *r* at its lower end. Below this is another enlargement which slopes from the middle outwardly and toward the hook when in its ordi-

nary place with the spring expanded. In this position it forms a hook, retaining the bottom of the bucket and rod *t* in place. When the outer case containing the spring and forming the hook is compressed, the hook portion is forced below the lower enlargement on the main or bucket hook. This allows the suspending-rod *t*, having a hook or loop in the upper end, to slip off, thereby opening the bottom of the bucket and permitting its load to fall out.

When freight or cargo is discharged instead of ballast, a modification is made in the upper end of the hoist-boom in the following manner: The initial movement in the hold of the hatchway and up and out over the boom is as before, only in place of the bucket a strap or "sling" or a square-shaped platform of plank suspended by its corners is used. The load having arrived at the upper end, the tracks *e* are continued by a centrally-pivoted counter-weighted or balanced portion, which we will call "*e'*," Fig. 4. As soon as the load reaches the place, being heavier than the counter-weight *g*, the ways *e'*, which normally form continuations of the ways *e*, are depressed, and the lower pair of wheels in the traveling pulley *c* fall into the opening. As the load is now safe from running down the boom when the hoist is reversed, it is now lowered; and as soon as it is released the counter-weight *g* raises the track *e'* into its place again, which allows the traveling pulley to return along the ways *e* down the boom, the pulley being heavy enough to raise the hoist-rope end and return with it to the hold as soon as the hoist is reversed. In the latter arrangement there is no need for the spring-hook *u*, as a common hook answers the requirements.

The hoisting-boom *k* is made of two long sticks of timber some forty or fifty feet in length. At the lower end they have a filler-block placed between these, as thick or slightly thicker than the traveling carrier *c*, and the same in the upper end, where it is rounded outside, and a band driven over having eyes for guys. The lower end is rounded in a socket-joint contained between two jaws, which are bolted to the side of the support *f*, and held in place by a strong bolt in center. Instead, the lower end may have a boom "goose-neck" and eyebolt, when it may be made to move laterally at the discharge or outer end by means of the guys, if required. The boom is kept from spreading by means of the arch-bars *o*, which are bolted to the outsides of the timber. One of these bars has a suspension-post, to which the supporting-block *n* is attached and also to the mast *m*. Over this post is also placed a tension-rod,

which is carried each way to the ends of the boom for the purpose of strengthening and stiffening.

The bucket *a* is made of iron or wood, and may be a box or tub shaped receptacle provided with a movable bottom or door, *w*, opening downward or outward, as before described, or in a similar manner. It is also provided with a movable scoop or nose, *x*, pivoted to the sides, as shown in Figs. 2 and 3, and which can be elevated or depressed by seizing the bail on the outside, whereby it may be filled with loosesand, earth, or stones, somewhat like ordinary earth scoops or scrapers, and may be made to rise by throwing the bail backward, or take more load by pushing it forward, as may desired, when hauled along or over the ballast and toward the hatchway.

I claim—

1. The combination of the boom provided with a way having a depression, a carrier adapted to travel on said way, and having supporting-wheels, one of which is designed to enter said depression and prevent the movement of the carrier, and a rope guided by said carrier, and having a stop, *y'*, to contact with said carrier and elevate the wheel thereof out of the depression, substantially as set forth.

2. The combination of the boom, carrier adapted to travel thereon, rope guided by said carrier, hook *u*, dumping devices connected therewith, and means, substantially as described, for disengaging the bucket-dumping devices from the hook, substantially as set forth.

3. The combination of the boom, carrier adapted to travel thereon, rope guided by said carrier, a bucket-suspending hook connected to said rope, a hook, *u*, having a spring-play relative to said bucket-hook, a bucket having a pivoted bottom, and a rod, *t*, connecting said bottom and hook *u*, an enlargement and spring, and a shipper for depressing the hook *u*, to release the rod *t*, substantially as set forth.

4. The combination, with the boom and carrier adapted to travel thereon, of a rope guided by said carrier, and a snatch-block having a hinged section carrying a pulley, and a bolt, *s*, for securing said section, substantially as set forth.

5. The combination of the bucket provided with the hinged bottom, the pivoted rod *t*, the spring-hook *u*, the rope, the carrier, the ways, and the shipper, substantially as described.

JAMES REID.

Attest:

A. C. TALBOT,
CHAS. B. TALBOT.