

(No Model.)

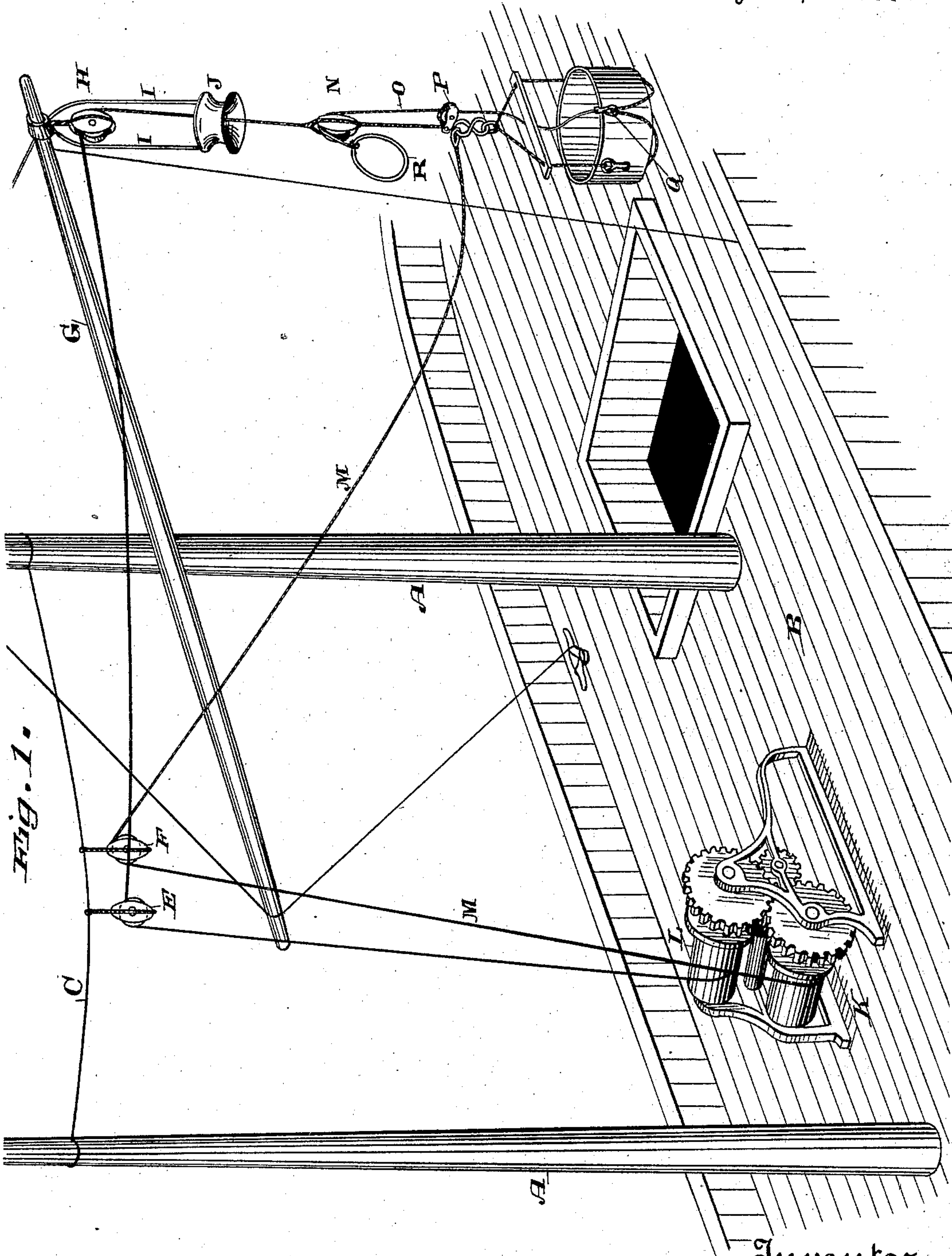
2 Sheets—Sheet 1.

S. MURRAY.

CARGO DISCHARGING APPARATUS.

No. 366,343.

Patented July 12, 1887.



Witnesses,
J. H. House
H. C. Lee.

Inventor,
Sam^l Murray
By Dewey & Co
attys

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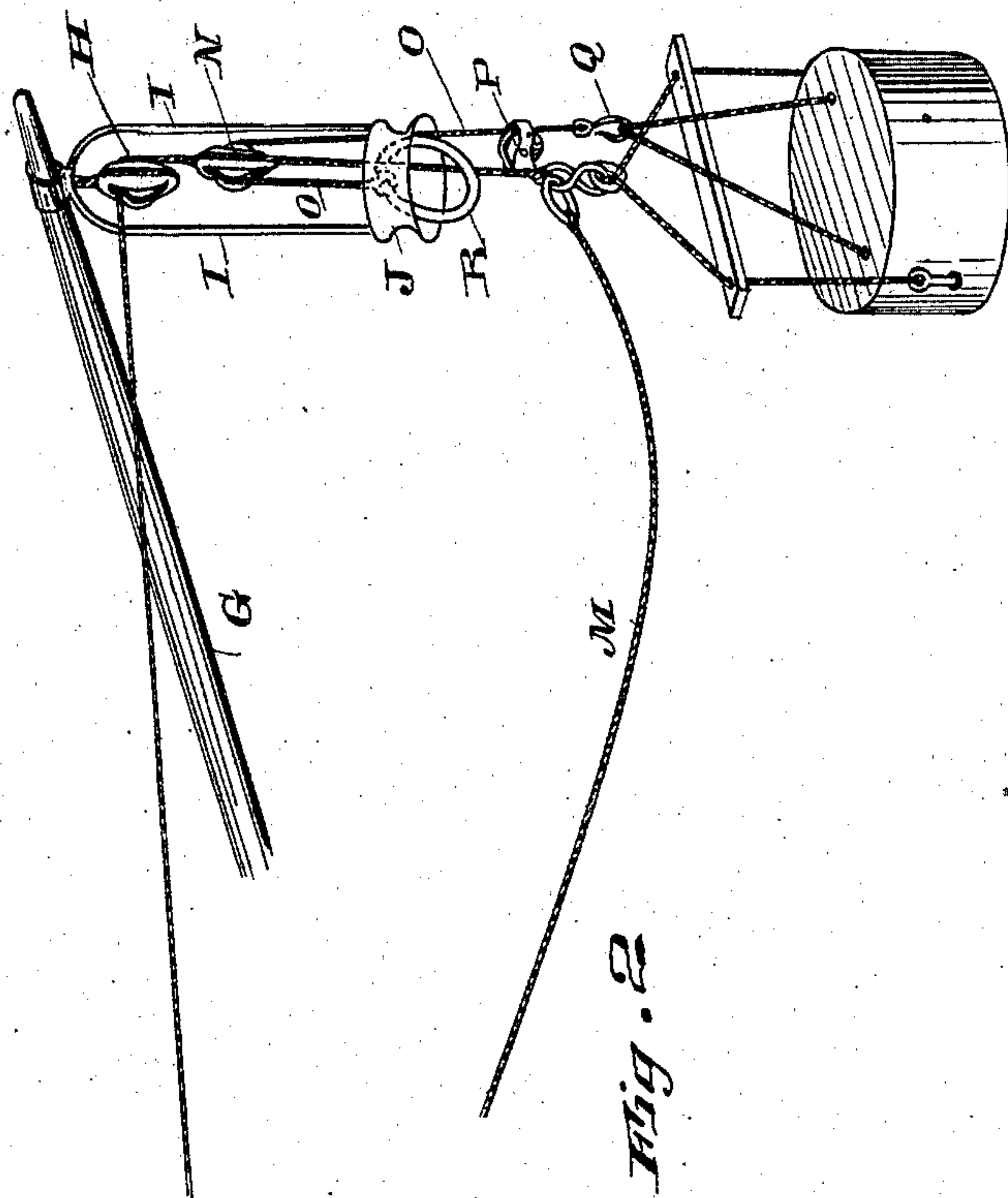


Fig. 2

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UNITED STATES PATENT OFFICE.

SAMUEL MURRAY, OF SAN FRANCISCO, CALIFORNIA.

CARGO-DISCHARGING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 366,343, dated July 12, 1887.

Application filed April 16, 1887. Serial No. 235,121. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL MURRAY, of the city and county of San Francisco, State of California, have invented an Improvement in Cargo-Discharging Apparatus; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to an apparatus for discharging cargo or ballast from vessels and for other similar purposes; and it consists of an attachment to the hoisting-bucket, and in connection therewith of a device fixed to the end of a boom or at any other suitable point in the rigging, with connecting ropes and tackle, whereby the bucket may be automatically discharged and righted, all of which will be more fully described by reference to the accompanying drawings, in which—

Figure 1 is a view of my device, showing the bucket suspended. Fig. 2 shows the tub or bucket reversed.

In discharging coal, ballast, or other cargo, for which tubs or buckets are used, the usual appliances require a system of ropes and tackle for upsetting, which are operated by hand, and a number of men to operate these devices.

My invention is designed to furnish an automatically-working mechanism which is easily operated by the engineer alone, and which may be carried from one vessel to the other and easily attached or rigged to the spars of the vessel.

In the present case I have shown two masts, A A, rising from a deck, B, of a vessel, and a stay, C, extending between them, to which the pulley-blocks E and F are attached.

G is a yard extending across from one of the masts, and which may be cock-billed and made fast at any desired angle, so as to raise the end sufficiently to bring the bucket to the proper height before being discharged. To this end of the yard-arm is attached a pulley-block, H, having the arms or rods I extending down upon either side and terminating in the tubular ring J, which is made with a flaring mouth at either end, to prevent the moving parts from becoming entangled.

K and L are the winding-drums of a double windlass, which is operated by the ordinary donkey-engine usually employed upon wharves, and which is not here shown. From

the drum K a rope, M, passes up over a pulley, F, and down to the bucket which is suspended from it, as shown. From the drum L another rope passes up over the pulley-block E, thence through the pulley H upon the end of the yard-arm D, and thence down through the ring J, and is attached to the suspending-link of the bucket near the point where the other rope, M, is attached. A short distance from this point of attachment a pulley block, N, is fixed in or upon the rope, and through this pulley-block a rope or line, O, passes through a guide-sheave, P, above the bucket, and thence down to the hook or link Q, which connects it with the rope passing beneath the bucket, by which the latter is upset, the bucket being hung by ears upon the sides, so that it may swivel or turn around them when it is to be upset. At the opposite end of the rope O is a ring, R, of larger size than the diameter of the tubular ring J.

The operation will then be as follows: The tub or bucket is first lowered into the hold and temporarily detached from the suspending-line and also from the upsetting-line Q, so that it may be run forward or aft in the hold to be loaded, after which it is brought back and these lines again attached to it. The hoisting-drum K is first set in motion, and the tub is raised high enough to clear the rail of the vessel, after which the drum K is stopped and the drum L is set in motion, and by means of the rope passing through the guide of the suspending-pulley and the outhaul-pulley H on the end of the yard-arm, and thence back to the bucket, the latter is drawn upward and outward toward the end of the yard-arm until the ring R at the end of the short upsetting-line O strikes the tubular ring or stop J of the pulley H at the outer end of the yard-arm, when the continued movement of the hoisting-drum causes the line O to pull the bottom of the bucket upward until it is upset and its contents discharged. As soon as the drum L is allowed to run backward and the bucket to descend, it rights itself by reason of the ring R and the rope Q being relieved, and when it reaches its position above the hatch it may be again lowered, ready for another load. It is not necessary to have any one with upsetting-lines to be worked by hand

or any other device, the engineer being able to operate the whole device from his position at the engine, which may be either on the deck of the vessel or on the wharf, as is most
5 convenient.

The whole work is rapidly and accurately done. The only device necessary in addition to the blocks and tackle, usually found upon vessels, and the bucket is the pulley H with
10 the tubular ring J, which are attached to the end of the yard, and the intermediate pulley, N, with the short upsetting-rope O and its ring or stop R, and these, weighing inside of fifty pounds, can be put in a wagon and carried to
15 any vessel which needs them, and the expense and trouble of putting them up is very little.

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

20 1. The hoisting-drums, with their ropes and pulleys, as shown, in combination with the tubular ring connected with the outhaul-pulley at the end of the yard-arm, the intermediate pulley attached to this rope near
25 the point of suspension of the bucket, and the

supplemental rope passing through this pulley and attached to or connected with the bottom of the bucket, said rope being provided with a ring or stop which engages the tubular ring of the upsetting device, substantially as
30 herein described.

2. The outhaul pulley or block attached to the end of the yard-arm, having a tubular ring connected with it by rods or arms, a second pulley attached to the outhaul-rope near its
35 point of attachment to the bucket-suspending link, in combination with the rope or cord connected with the bottom of the bucket, passing through a guide ring or pulley, thence over the secondary pulley, and having a ring
40 or stop piece attached to its outer end, so as to be engaged and arrested by the upsetting-ring of the outhaul-pulley, substantially as herein described.

In witness whereof I have hereunto set my
45 hand.

SAMUEL MURRAY.

Witnesses:

S. H. NOURSE,
H. C. LEE.