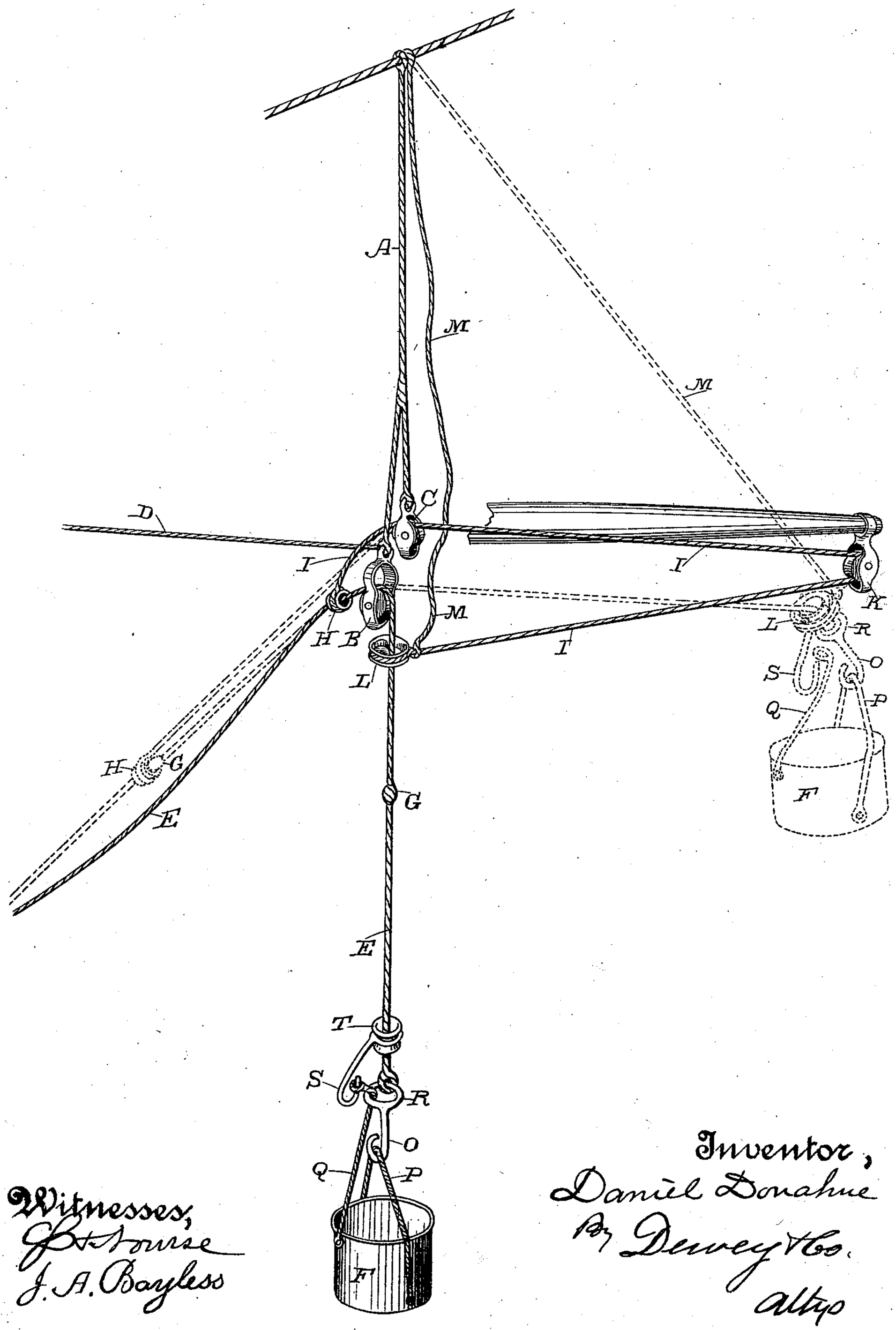
(No Model.)

D. DONAHUE.

HOISTING AND CONVEYING APPARATUS.

No. 504,522. Patented Sept. 5, 1893.



Witnesses,
B. F. Louise
J. A. Bayless

Inventor,
Daniel Donahue
By Dewey & Co.
Attys

UNITED STATES PATENT OFFICE.

DANIEL DONAHUE, OF SAN FRANCISCO, CALIFORNIA.

HOISTING AND CONVEYING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 504,522, dated September 5, 1893.

Application filed December 16, 1892. Serial No. 455,372. (No model.)

To all whom it may concern:

Be it known that I, DANIEL DONAHUE, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Hoisting and Conveying Apparatus; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to a device which I call a hoisting and conveying apparatus.

It consists in the combination of ropes and pulleys, with suitable attachments, and in certain details of construction which will be more fully explained by reference to the accompanying drawings, in which the figure is a perspective view of a hoisting and conveying apparatus embodying my invention.

The object of my invention is to provide a device in which by the use of a single hoisting rope, goods of any description may be raised from the hold of a vessel, or other point, and then transferred laterally to any required distance where they can be deposited.

In carrying out my invention, I employ first a suspending rope A which, in the present case, I have shown attached to one of the stays which extend between the masts of a vessel, and in line vertically above the hatchway through which the goods are to be hoisted. To the lower end of this rope A are attached two pulleys B and C. The pulley B is retained in position above the hatchway, and is prevented from being drawn to one side when the load is transferred from its vertical line of hoisting by means of a rope D which is attached at any suitable point on the opposite side from that to which the goods are to be transferred.

Through the pulley B passes the hoisting rope E, to one end of which is attached the bucket or package of any description F which is to be hoisted. The other end of the rope leads off to a winding engine of any description, or any means by which it can be drawn upon so as to raise the suspended weight. Upon this hoisting rope is fixed an enlargement G which is sufficiently small to pass freely through the block, and over the pulley at B, but which is large enough to engage the dead-eye H which is fastened into the end of the rope I, and through which eye the hoisting rope E passes. From this eye the rope I passes over the pulley at C, which is suspended slightly above the pulley B, as shown, thence passes out at approximately right angles and around the pulley K, thence returning it is attached to a dead-eye L, the opening in which is of sufficient size to allow that portion of the hoisting rope which extends from the pulley B to the weight to be raised to pass freely through it. The opening in the dead-eye is also large enough to allow the enlargement or knot G, previously described, to pass freely through it. A rope M is attached to this rope I at or near the dead-eye, so as to prevent the latter from dropping down when the strain upon the rope I is relieved.

The operation will then be as follows:—When the parts are in their normal positions, the suspending rope will hang approximately vertical with the blocks B and C at its lower end. The hoisting rope E passing through the block B extends approximately vertical down to the load to be raised, and the dead-eye L surrounding this rope is in position beneath the block B, the rope I passing from the dead-eye around through the direction block K, thence over the pulley and the block C, to the dead-eye or sleeve H which surrounds the hoisting rope. This dead-eye is drawn up close to the pulley B but cannot pass through the opening in the block. The hoisting rope, consequently, may be let down as far as necessary, the knot or enlargement passing through the dead-eye K, if necessary, and to any distance below it. This dead-eye has preferably an anti-friction roller in it, or, if preferred, a suitable single pulley-block may be employed at that point so that the hoisting rope runs freely through it.

The hoisting rope being lowered and attached to the weight to be raised, the operation will then be as follows:—Power is applied to the hoisting rope and the weight is raised thereby until the knot or enlargement in the hoisting rope has passed through the pulley-block B when it strikes the dead-eye H, and as the power is further applied to pull the hoisting rope, the enlargement G in that rope carries the dead-eye H along with it, and this pulls the rope I through its pulley C, and through the direction pulley K over which it passes. The action of this rope is

to draw the dead-eye or pulley L toward the direction pulley K and it thus pulls the hoisting rope correspondingly out to one side until it occupies the position as shown in dotted lines, very near to the direction pulley K. The weight is thus carried off to one side as far as may be desired, and at this point may be delivered upon the wharves or at any other suitable point. If it be a coal bucket, it is suspended by means of a hook O fixed to the lower end of the hoisting rope and two chains or ropes fixed to the bucket. One of these, P, has its two ends fixed to the lower part of the bucket at one side of the center and the bight of it passes over the hook. The other rope or chain Q has one end attached to the other side of the bucket, and the other end passes loosely through an eye R in the shank of the hook O, and is attached to a hook S which projects downward from a ring T sliding loosely upon the main hoisting rope. This attachment is shown in the full lines. When the bucket has been transferred to the point of discharge, as shown in dotted lines, the ring T and its hook S, are forced downward by contact with the ring L, and this disengages the loop of the rope Q, and allows it to slide through the eye R. The rope or chain P suspending the bucket from one side then causes it to upset and discharge its contents. In this manner but a single rope and a single attendant are necessary to hoist and transport goods to a considerable distance from the point from which they were originally taken.

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

1. A hoisting and transporting apparatus consisting of a suspending rope, pulleys B and C attached to the lower end of said rope and retained in position against the side pull, a hoisting rope passing through one of said pulleys from the source of power and down to the weight to be transferred, said rope having an enlargement attached to it, a second rope I passing through the second pulley having an eye through which the hoisting rope passes, a direction pulley K over which the rope I passes, and an eye or pulley L to which the opposite end of the rope is attached and through which that portion of the hoisting rope passes which lies between the pulley and the weight to be raised, substantially as herein described.

2. A hoisting and transporting apparatus consisting of a vertically acting hoisting rope and a laterally acting conveying rope, a fixed pulley through which the hoisting rope passes, a second fixed pulley through which the lateral rope passes, said lateral rope having eyes at the ends through which the hoisting rope passes and a direction pulley at the distant point over which it passes, a knot or enlargement in the hoisting rope which passes freely through the lowermost eye, but engages the upper one, whereby a continuous pull upon the hoisting rope will act upon the lateral rope and draw its lower end and that part of the hoisting rope which is engaged by it, to one side, substantially as herein described.

3. In a hoisting apparatus, the automatically discharging device consisting of a bucket with a rope P by which one side of the bucket is permanently connected with the hoisting rope, a rope Q attached to the opposite side of the bucket, and passing up through a guide ring upon the lower end of the hoisting rope, a ring sliding upon the hoisting rope, and having a hook to which the upper end of the rope Q is attached, and from which it is automatically disengaged, substantially as herein described.

In witness whereof I have hereunto set my hand.

DANIEL DONAHUE.

Witnesses:
FREDERICK STAIGER,
GEO. H. STRONG.