J. W. CARRIKER.

LOADING AND UNLOADING APPARATUS.

APPLICATION FILED DEC. 1, 1911.

1,023,006. **Patented Apr. 9, 1912.**

3 SHEETS—SHEET 1.

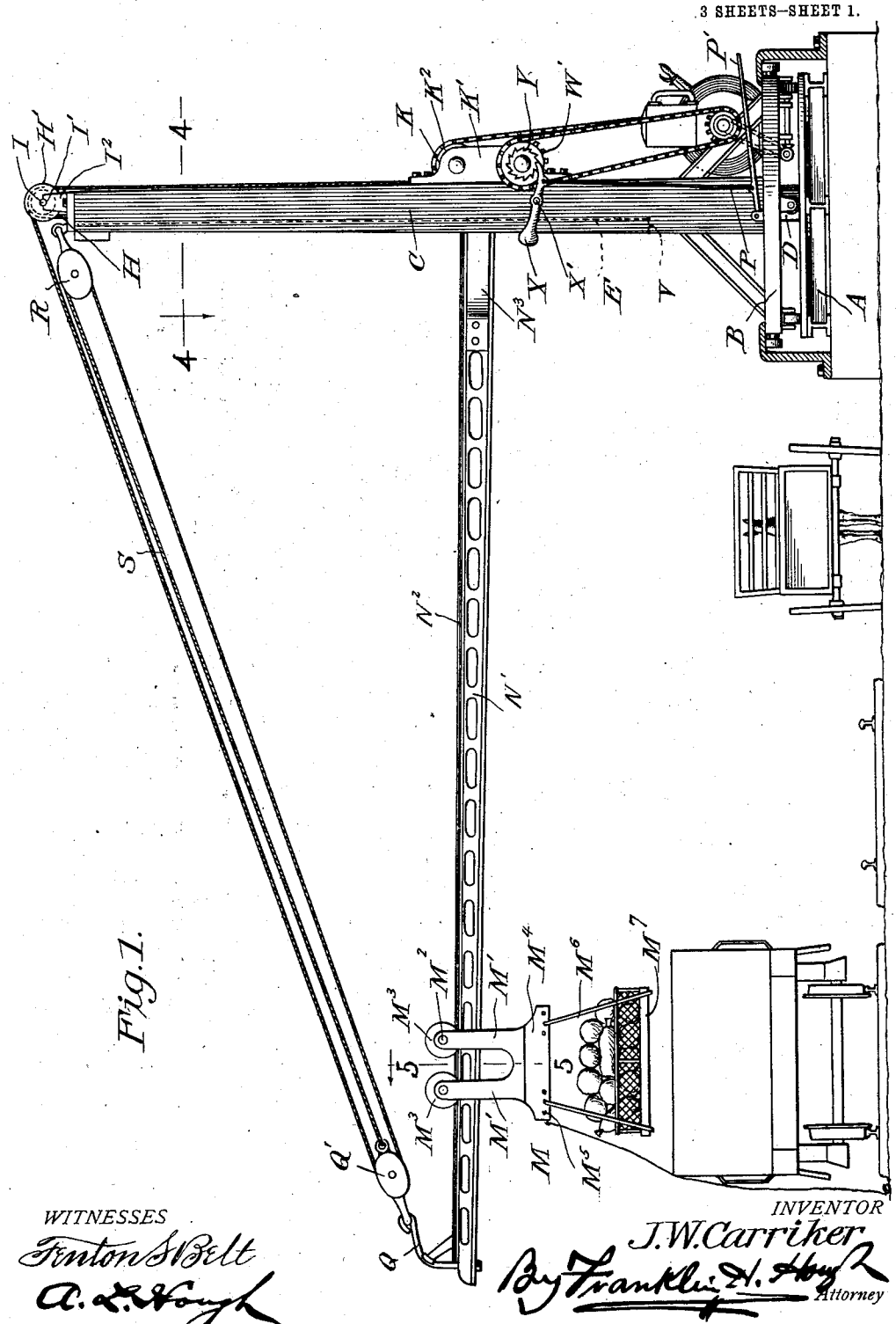

Fig. 1.

WITNESSES

Fenton S. Belt

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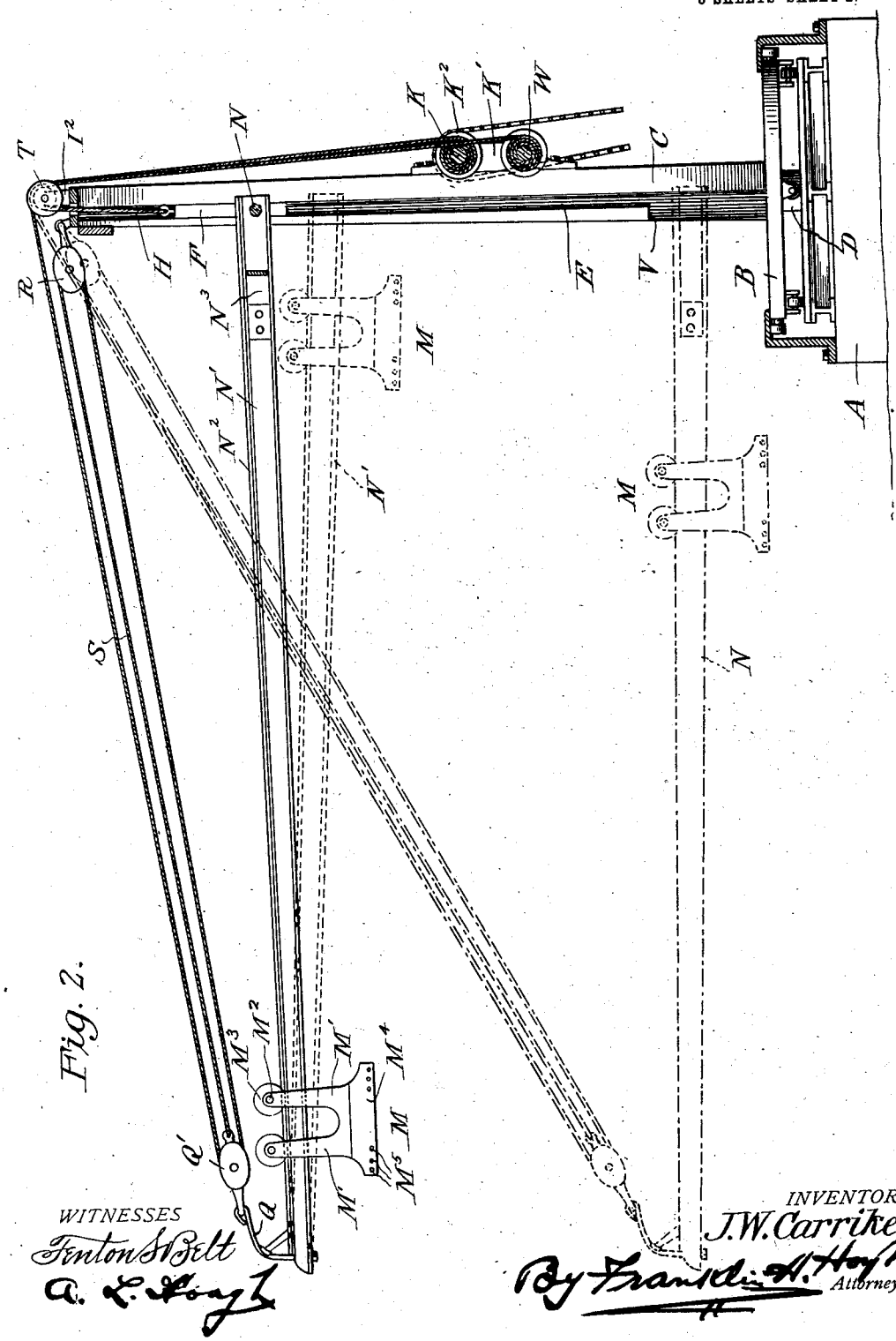

Fig. 2.

WITNESSES

Fenton S. Belt

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3 SHEETS—SHEET 3.

Fig. 4.

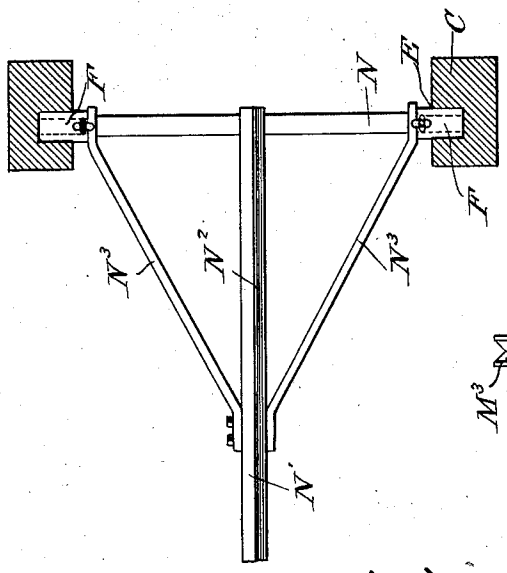
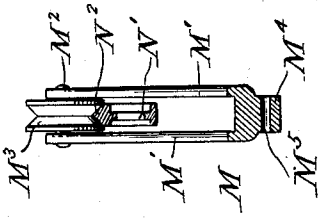


Fig. 5.



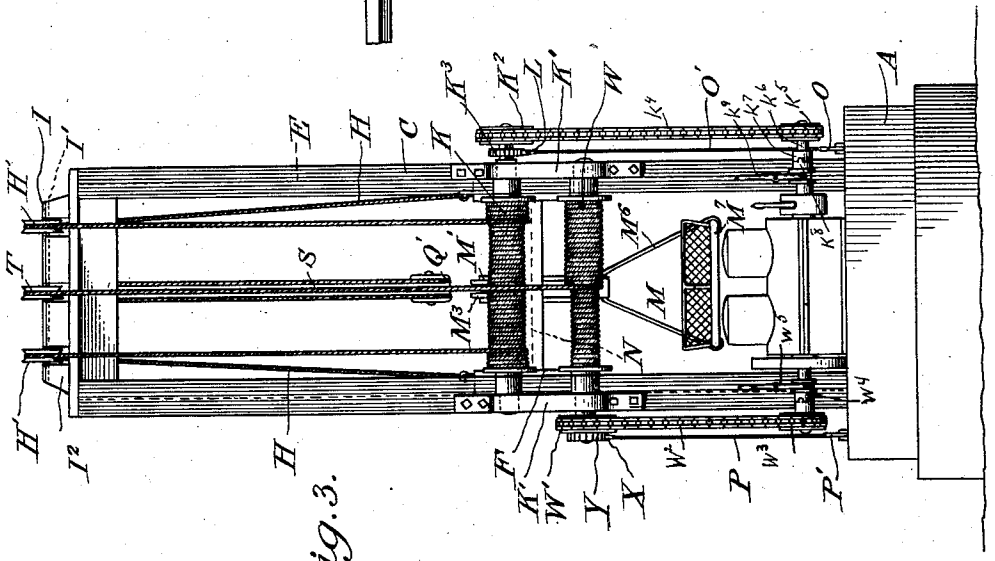


Fig. 3.

WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN W. CARRIKER, OF HARRISBURG, NORTH CAROLINA.

LOADING AND UNLOADING APPARATUS.

1,023,006. Specification of Letters Patent. Patented Apr. 9, 1912.

Application filed December 1, 1911. Serial No. 663,304.

To all whom it may concern:

Be it known that I, JOHN W. CARRIKER, a citizen of the United States, residing at Harrisburg, in the county of Cabarrus and State of North Carolina, have invented certain new and useful Improvements in Loading and Unloading Apparatus; 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in swinging cranes adapted for loading and unloading ships, hoisting and transferring commodities from place to place.

The invention comprises essentially a derrick or crane adapted to hoist the article which is moved by gravity upon a swinging boom, the inclination of the latter being regulated by means of a windlass and cable.

The invention comprises various details of construction and combinations and arrangements of parts which will be hereinafter fully described and then specifically defined in the appended claim.

I illustrate my invention in the accompanying drawings, in which:—

Figure 1 is a side elevation of my improved loading and unloading apparatus. Fig. 2 is a vertical sectional view. Fig. 3 is a rear elevation and Fig. 4 is a section on line 4—4 of Fig. 1. Fig. 5 is a section on line 5—5 of Fig. 1.

Reference now being had to the details of the drawings by letter, A designates a platform upon which the base B of the upright standard or frame C of the apparatus is swiveled by means of a bolt D. Said frame or standard has guideways E formed opposite each other in the inner faces of the sides of the standard in which the blocks F are guided. Each of said blocks has connected thereon one end of a cable H which passes over a pulley H′ journaled upon the shaft I which is fastened in a transverse groove I′ formed in the extension bracket I^2 fastened to the top of the standard or framework. Said cables are fastened to and adapted to wind about the shaft K journaled in the bracket extensions K′ of the standard. A suitable sprocket wheel K^2 is fastened to said shaft K and is driven by means of a sprocket chain K^4 passing about said sprocket wheel K^2 and a sprocket wheel K^5 which is mounted loosely upon the motor shaft K^6, said sprocket wheel K^5 being connected to a clutch member K^7 which is adapted to be engaged by the splined clutch collar K^8 to which a swiveled operating lever K^9 is connected. A suitable ratchet wheel K^3 is fixed to the shaft of the wheel and designed to be engaged by the pawl L fastened to one of the standards. A foot-operated pedal, designated by letter O, is pivotally mounted upon the standard and a wire or cable O′ connects one end of the pedal with the inner engaging end of the dog L, which serves as means for releasing the same when it is desired to allow the cable to unreel and allow the blocks F to descend by gravity. Journaled in suitable bearings in said blocks F is a shaft N which passes through the butt end of the swinging beam N′, the upper surface of which is beveled, as at N^2, and suitable brace arms N^3 project from the opposite sides of the beam N′ and through which the shaft N passes, thus affording means for further reinforcing and bracing the beam N′. A carriage M has arms M′ in which the shafts M^2 are mounted and upon which the pulleys M^3 are journaled, which pulleys are grooved and adapted to travel upon the upper beveled edge of the beam N′ and allowing the carriage to move by gravity when the beam is tilted at a sufficient inclination. A block M^4 forms a part of the carriage and is provided with apertures M^5 therein through which the rods M^6 pass and which support the platform M^7. A rod Q is fastened to the outer end of the beam N′ and which is adapted to engage the eye of the pulley block Q′, having a plurality of pulleys mounted therein. A similar pulley block, designated by letter R, is fastened to the upper portion of the standard and has grooved pulleys over which and the pulleys of the block Q′ a cable S is adapted to pass and which also passes over a grooved pulley T journaled upon the shaft I and thence passes to and about the reel or windlass W which is journaled in the bracket extensions K′ upon the standard and to which a suitable driving sprocket W′ is fastened. The sprocket wheel W′ is driven by means of a chain W^2 passing about a sprocket wheel W^3 upon the driving shaft which is adapted to

be thrown into and out of mesh with the splined clutch collar W^4 through the medium of the handle W^5 in which the said clutch collar W^4 is swiveled. A gravity pawl X is journaled upon the pivot X′ upon one side of the standard and is adapted to engage the ratchet teeth Y formed upon the reel shaft W. A cable or wire P is fastened at one end to the inner end of the dog X and its other end to a foot pedal P′ and affords means whereby the ratchet or dog X may be released from engagement with the ratchet teeth to allow the reel W to rotate for the purpose of allowing the cable to unwind.

Upon reference to the drawings, it will be noted that one side of each guideway is cut away as at V, a sufficient length to allow the blocks F, when at their lowest limit, to be removed from the grooved ways in the event of it being desired to remove the beam N′ and replace the same with a beam of different length, if desired, by simply causing the shaft at the inner end of the beam to be inserted in the blocks and the latter replaced in the guideways.

The operation of my apparatus will be readily understood and is as follows:—By the rotary movement of the windlass W, the outer end of the beam may be hoisted with the commodity to be loaded or unloaded and, by rotating the reel or windlass K, the inner end of the beam may be raised or lowered to give any desired inclination to the latter, whereby the carriage may be caused to travel by gravity toward the standard or in the opposite direction. By the swivel connections, the standard may be moved so that the beam will project in any direction desired. In the event of it being desired to release either one or the other of the ratchets in order to allow the reels to rotate to unwind their cables, it may be done by the operator pressing upon one or the other of the pedals.

What I claim to be new is:—

A loading and unloading apparatus comprising a standard having vertical guideways in the opposite sides thereof, blocks movable within said guideways, said guideways having one of the walls thereof cut away adjacent to their lower ends to allow said blocks to be withdrawn from the guideways, a beam, a shaft passing through the beam and having bearings in said blocks, a carriage movable upon said beam, a rod fastened to the outer end of the beam, a pulley block fastened to said rod and pulley blocks upon the standard, a cable passing about the pulley blocks and affording means for raising the outer end of the beam, and a second cable and pulley blocks about which the same passes and adapted to be connected to said guide blocks for raising and lowering the inner end of the frame, as set forth.

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

JOHN W. CARRIKER.

Witnesses:
D. M. Clay,
R. K. Brady.