

No. 721,067.

PATENTED FEB. 17, 1903.

W. L. McCABE.
HOIST.

APPLICATION FILED MAR. 1, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

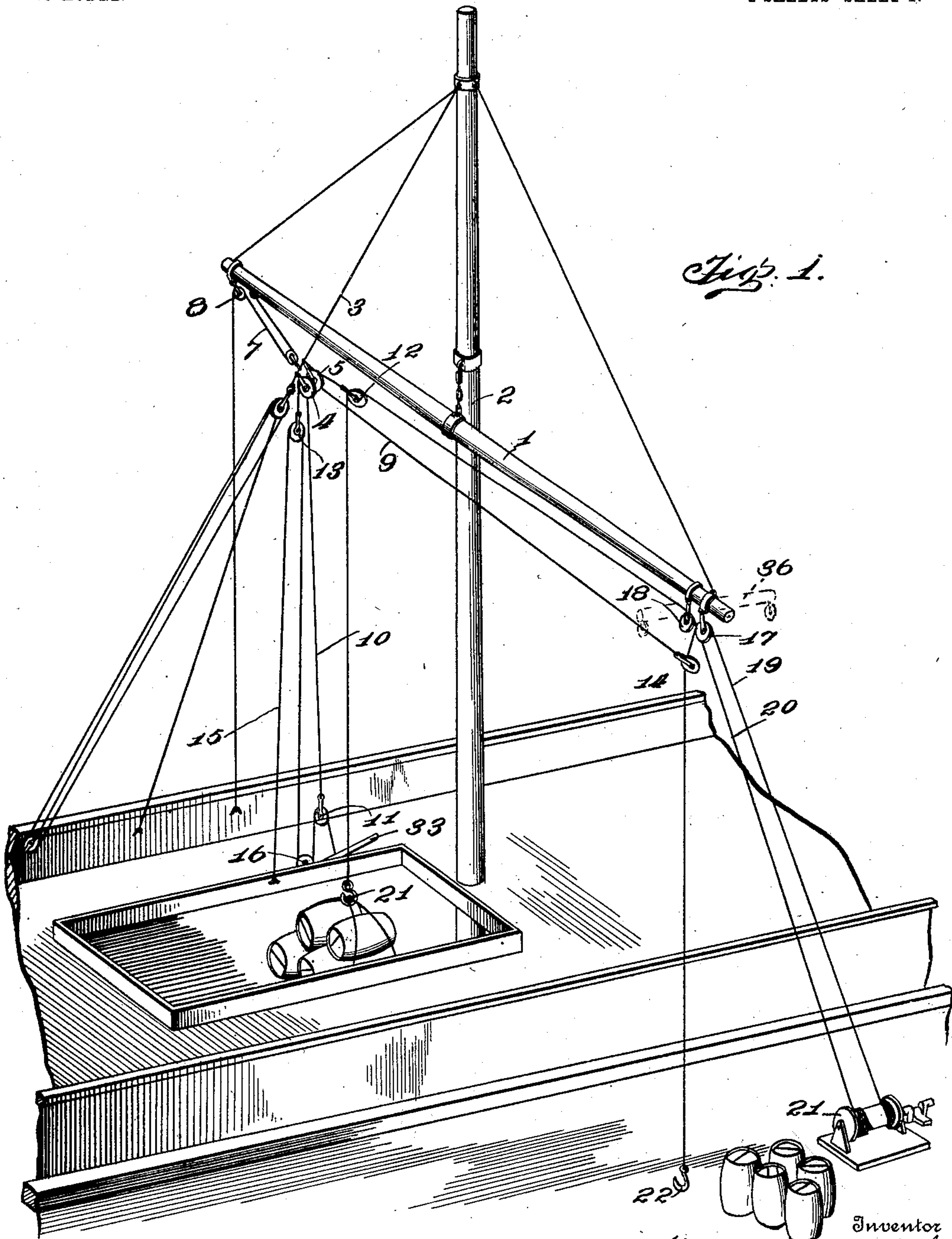


Fig. 1.

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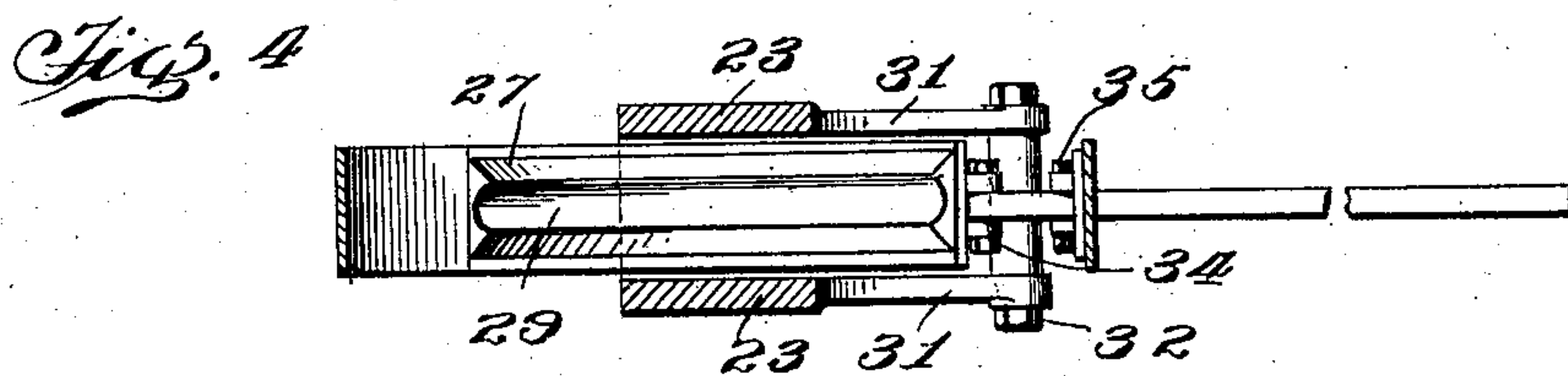
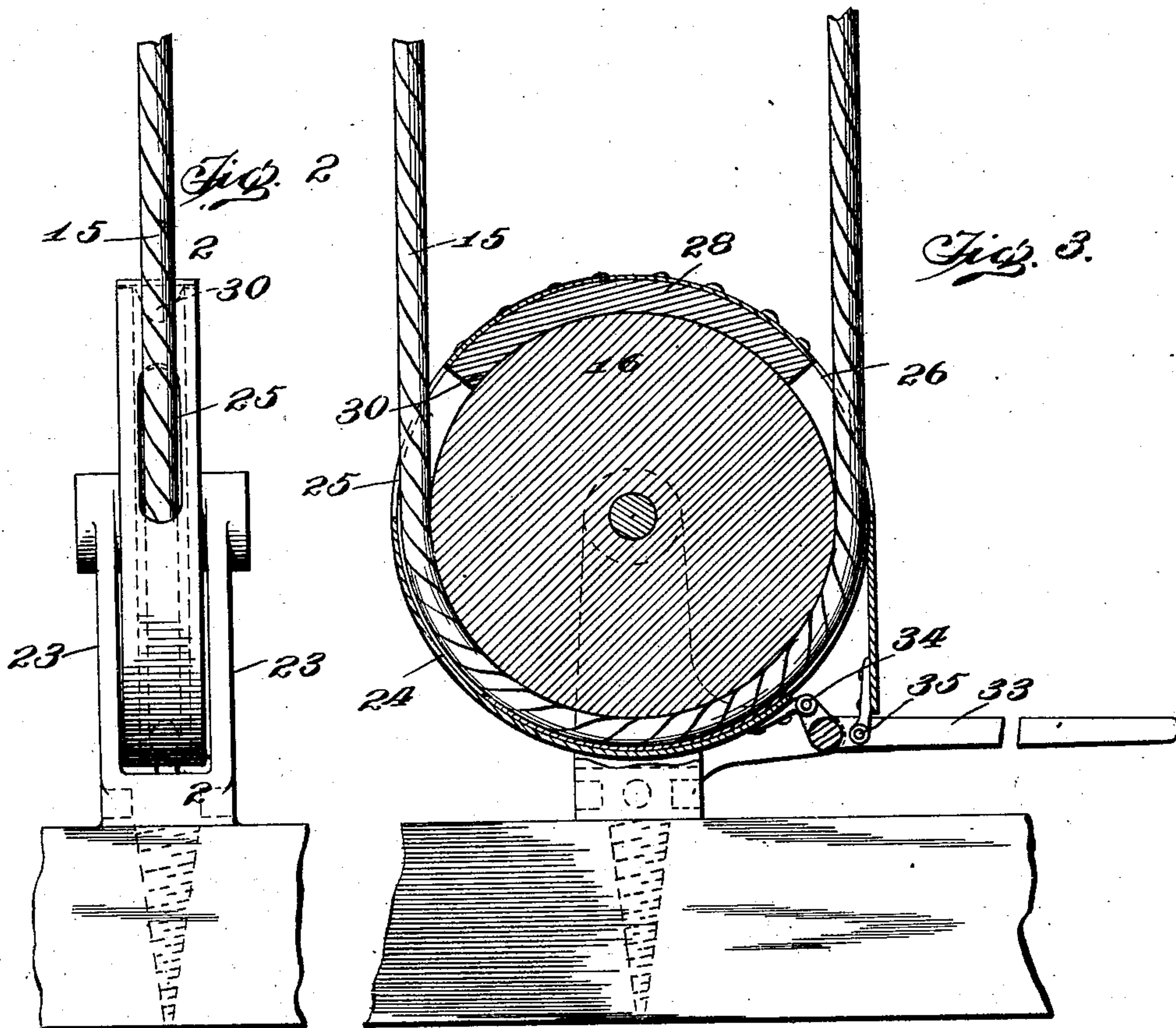
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2 SHEETS—SHEET 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM L. McCABE, OF SEATTLE, WASHINGTON.

HOIST.

SPECIFICATION forming part of Letters Patent No. 721,067, dated February 17, 1903.

Application filed March 1, 1902. Serial No. 96,338. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM L. McCABE, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Hoists; 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.

This invention relates to improvements in hoists, and more particularly to those designed for loading and unloading purposes.

The object in view is the provision of means for lifting an article to be moved to a given horizontal plane, moving the same in said plane a given distance, and lowering the said article into the position desired.

With this and other objects in view the invention consists in certain novel constructions, combinations, and arrangements of parts, as will be hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a perspective view illustrating one embodiment of the present invention applied to a ship. Fig. 2 represents an enlarged detail edge view of the locking-pulley. Fig. 3 represents a vertical section taken on the plane of line 2 2 through the same. Fig. 4 represents an enlarged detail fragmentary view of a portion of the brake and its operating-lever.

Referring to the drawings by numerals, 1 indicates any suitable support, in the particular embodiment at present disclosed being the yard of a suitable mast 2, to which it is attached in any suitable and well-known manner, said mast being carried by a suitable support, as a ship. A suitable stay, as 3, is attached to mast 2 and secured at its lower end by any preferred means. Carried by the stay 3 on a horizontal plane, approximately the same as that of yard 1, are blocks, as 4 and 5, which in operation bear the weight of the article operated upon, and in order to prevent lateral sagging of said stays 3 a block, as 6, is attached thereto, and an "off-shore" line 7, secured at one end to yard 1, is passed about the pulley 6, then about the pulley of a block 8, attached to yard 1, and finally made fast at its free end in any suitable manner to the gunwale of a vessel. About the

pulleys of blocks 4 and 5, which serve as supports, pass the cables 9 and 10, respectively, cable 9 carrying a block 13 at one end and a similar block 14 at the other, and cable 10 carrying similar blocks 11 and 12 at its ends. A cable, as 15, has its ends secured against movement and is designed to travel over the pulleys of blocks 11 and 13 and also over fixed pulley 16, whereby a movement of either of blocks 11 or 13 away from pulley 16 will cause the other to move toward the same.

At the inner or shore end of yard 1 are carried blocks 17 and 18, designed to have cables 19 and 20, respectively, passed about the pulleys thereof. The inner end of each of cables 19 and 20 is attached to a suitable winding-drum, as 21', of the single or double type, as desired, and of well-known construction, the particular drum shown being of the single type, with the cables attached in such a way as to be wound in in opposite directions, so that rotation of said drum in either direction will wind one of said cables and pay out the other. Any suitable carrying means, as a hook 21, is secured to the free end of cable 20, and similar carrying means, as 22, is secured to the free end of cable 19. It will be observed that either cable 20 or cable 19 may be operated alone when desired without the employment of the other cable, and in such a case I prefer to secure but one end of cable 15 and pass the other end through pulley 16, the slack of cable 15 being preferably taken up by hand when the load-carrying cable is being paid out by drum 21', and when said load-carrying cable is being drawn in by drum 21' the cable 15 may be controlled by pulley 16, as above described.

In the operation of the present device it is desirable at times to lock the cable 15 against movement, and in order to accomplish such result the pulley 16 is journaled in any suitable frame 23, anchored to any form of base in any preferred and well-known manner. The pulley 16 is of course formed with a circumferential groove for guiding the cable 15. Encircling the pulley 16 is a strap 24, formed with slots 25 and 26 for the passage of cable 15 and carrying brake-shoes 27 and 28, the shoe 27 being formed with a longitudinal groove 29, designed to fit snugly about the cable 15, and the shoe 28 being formed with

a longitudinal bead 30, concentric with and lying within the circumferential groove of pulley 16. The frame 23 is formed with laterally-projecting arms 31 31, being connected at their free ends by any suitable shaft 32. Pivottally connected to shaft 32 is any preferred form of lever, as 33. One end of strap 24 is pivottally attached, as at 34, to the inner end of lever 33, which extends beyond the pivotal point of said lever, and the opposite end of said strap 24 is pivottally attached, as at 35, to lever 33 outside of its pivot-point. It will be apparent from the foregoing description that downward movement of the outer end of lever 33 will have a tendency to lap the ends of the strap 24, whereby the bead 30 of the shoe 28 will be caused to frictionally engage pulley 16, while the shoe 27 will be pressed upwardly to close contact with the cable 15, whereby the movement of said cable and pulley may be decreased or stopped altogether, as desired.

The operation of the present device may be set forth as follows: Assuming the parts to be in the respective relations disclosed in Fig. 1 of the drawings, the drum 21' is caused to rotate in a direction for winding in of cable 20, the pulley 16 being locked against movement. The article supported by hook 21 will be caused to move in a vertical plane as long as cable 15 and pulley 16 remain stationary; but as soon as the hook 21 reaches the desired horizontal plane the said pulley 16 and cable 15 are released, permitting block 11 to rise and pulling block 13 downwardly, thereby moving block 14 in the direction of the mast 2 and swinging hook 22 in position to receive an article to be conveyed. The weight of the article supported by hook 21 being relatively greater than that of hook 22 will cause the said movement of the parts, said article when in a given horizontal plane moving with block 12 inshore on the said horizontal plane for compensating for the intake of cable 20. When the hook 20 has arrived at the desired vertical plane, the cable 16 and pulley 15 are again locked, and the drum 21' is caused to rotate in an opposite direction for paying out cable 20 and permitting the hook 21 to descend in a vertical plane. The operation with respect to hook 22 and its cable 19 will be precisely the same as described with reference to hook 21 and cable 20.

In Fig. 1 of the drawings I have shown in dotted lines an arm, as 36, secured transversely of the inner end of yard 1, and I have dotted in position blocks 17 and 18 at the opposite ends of said arm, this arrangement being employed by me when desired for keeping the cables 19 and 20 sufficiently spread to prevent entangling of hooks 21 and 22 during operation. Of course this arm 36 may or may not be used, as found desirable, and although I have specifically set forth the minor details of one particular embodiment of the present improvement yet I desire it to be de-

cidedly understood that I shall feel at liberty to deviate therefrom to any degree within the spirit and scope of the present invention. 70

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

1. In a hoist, the combination with a suitable yard and a suitable stay, of a block carried by said yard, a block carried by said stay, a cable passed through the block of said stay and carrying a block at each end, a cable passed through the block of said yard and one of the blocks of said cable, means for moving said last-mentioned cable longitudinally, a cable passed through the other block of the first-mentioned cable, and means for locking the same against movement, substantially as described. 85

2. A hoist, comprising a suitable support, a block carried thereby, a cable passed about the pulley of said block, and carrying a block, a second cable passed about the said last-mentioned block, means for moving said last-mentioned cable longitudinally, and means for governing the longitudinal movement of said first-mentioned cable, substantially as described. 90

3. In a mechanism of the class described, the combination with a suitable support, of a block carried thereby, a longitudinally-movable cable passed about the pulley of said block, a second longitudinally-movable cable slidably connected with one end of said first-mentioned cable, means for moving said second-mentioned cable longitudinally, and means for governing the longitudinal movement of said first-mentioned cable, substantially as described. 95 100 105

4. In a mechanism of the class described, the combination with a suitable support, of a longitudinally-movable cable mounted thereon, a second longitudinally-movable cable slidably connected with one end of said first-mentioned cable, means for moving said last-mentioned cable longitudinally, and a cable slidably connected with the free end of said first-mentioned cable for governing the longitudinal movement thereof, substantially as described. 110 115

5. In a mechanism of the class described, the combination with a suitable support, of a longitudinally-movable cable mounted thereon, a second longitudinally-movable cable slidably connected with one end of said first-mentioned cable, means for governing the movement of said first-mentioned cable whereby the movement of said last-mentioned cable may be governed, and means for moving said second-mentioned cable longitudinally, substantially as described. 120 125

6. In a mechanism of the class described, the combination with a suitable support, of a longitudinally-movable cable mounted thereon, a longitudinally-movable cable engaging said first-mentioned cable, means for locking said last-mentioned cable against movement, whereby movement of said first-mentioned 130

cable may be prevented, a longitudinally-movable cable slidably connected with the free end of said first-mentioned cable, and means for moving said last-mentioned cable longitudinally, substantially as described.

7. In a mechanism of the class described, the combination with a suitable support, of longitudinally-movable cables mounted thereon, a cable slidably connected with each of said first-mentioned cables, means for governing the movement of said last-mentioned cable, whereby the movement of said first-mentioned cables may be governed, a longitudinally-movable cable slidably connected with each of said first-mentioned cables, and means for moving each of said last-mentioned cables longitudinally, substantially as described.

8. In a mechanism of the class described, the combination with a suitable support, of a cable having both of its ends fixed against

movement, said cable being longitudinally movable intermediate its ends, a pulley engaging said cable, means for locking said pulley and cable against movement, longitudinally-movable cables slidably connected with said first-mentioned cable upon either side of said pulley, whereby longitudinal movement of one of said last-mentioned cables in one direction will move the other in an opposite direction, longitudinally-movable cables slidably connected with the free ends of said second-mentioned cables, and means for moving said last-mentioned cable longitudinally, substantially as described.

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

WILLIAM L. McCABE.

Witnesses:

JOHN L. FLETCHER,
EDGAR M. KITCHIN.