

(No Model.)

T. L. ARNOLD.
AUTOMATIC DOUBLE TOPPING LIFT.

No. 445,530.

Patented Feb. 3, 1891.

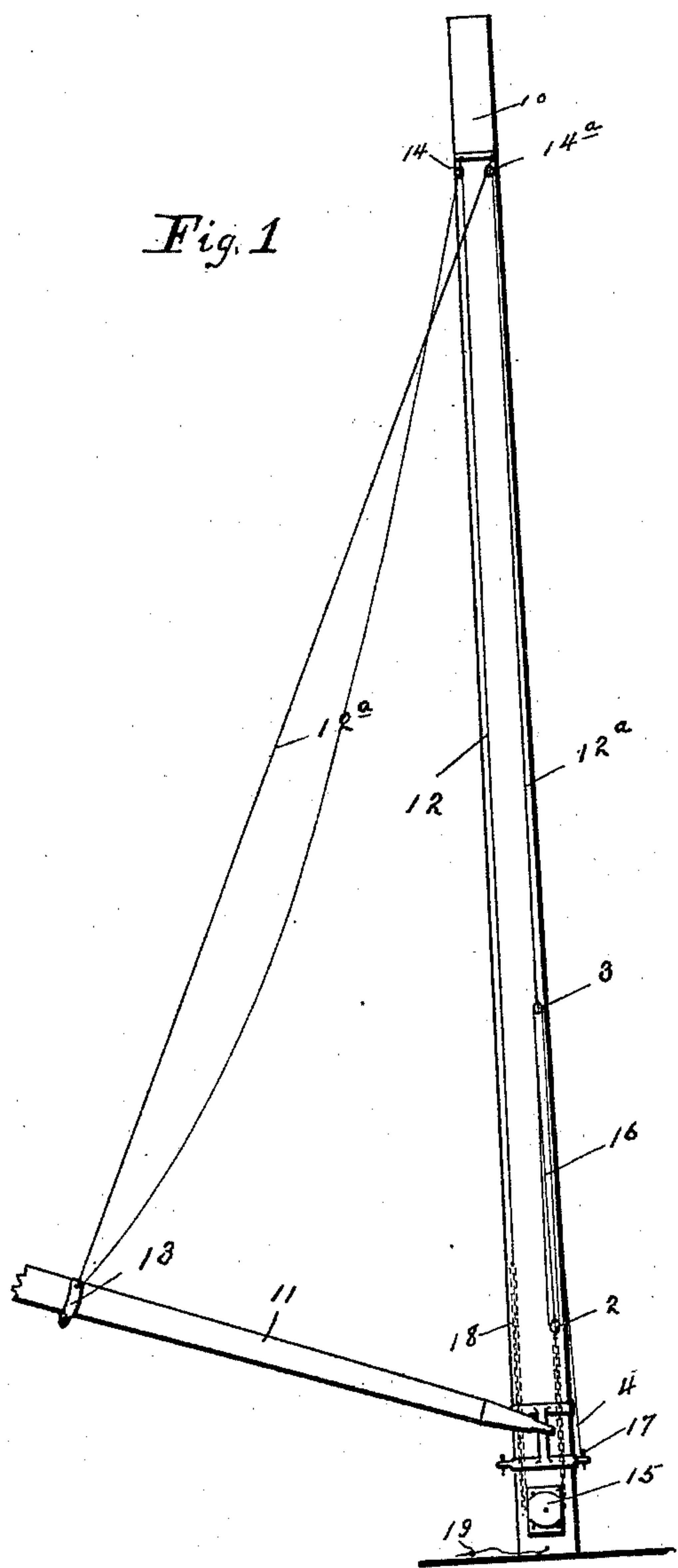


Fig. 1

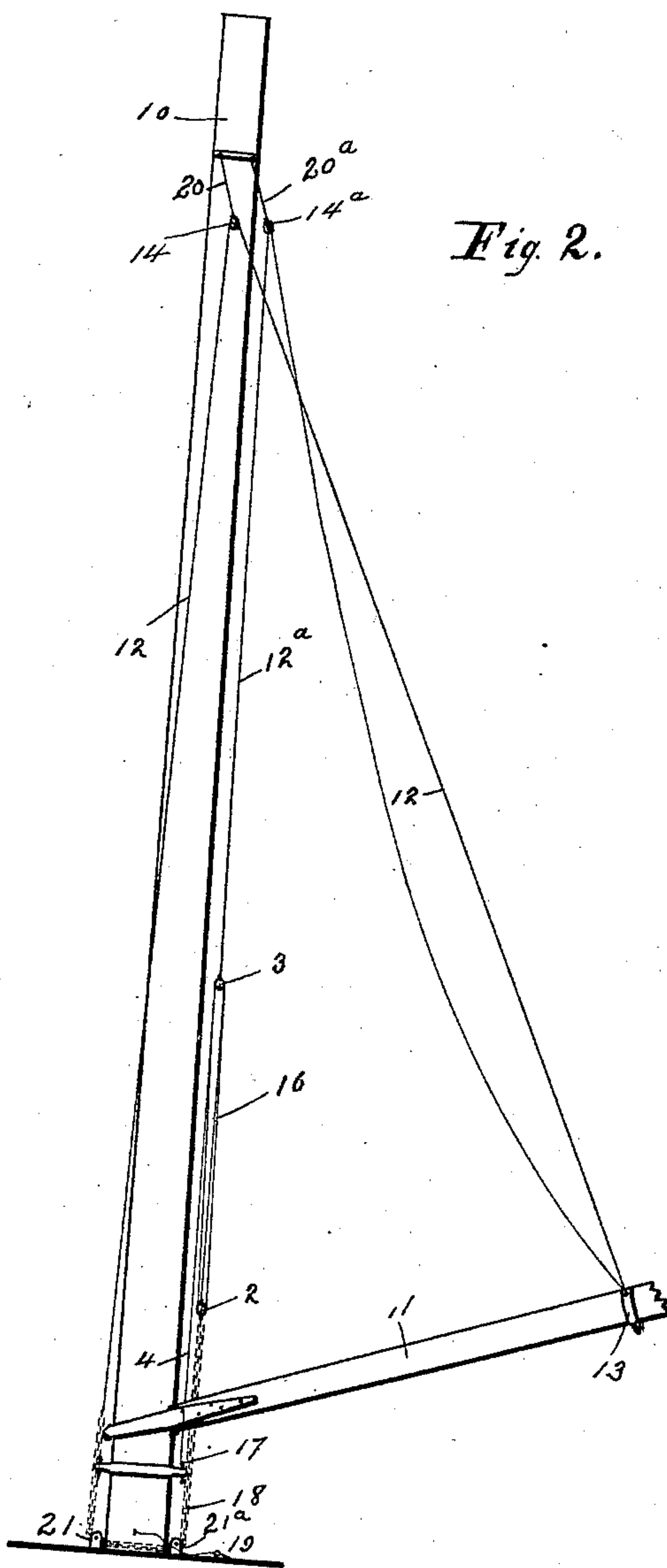


Fig. 2.

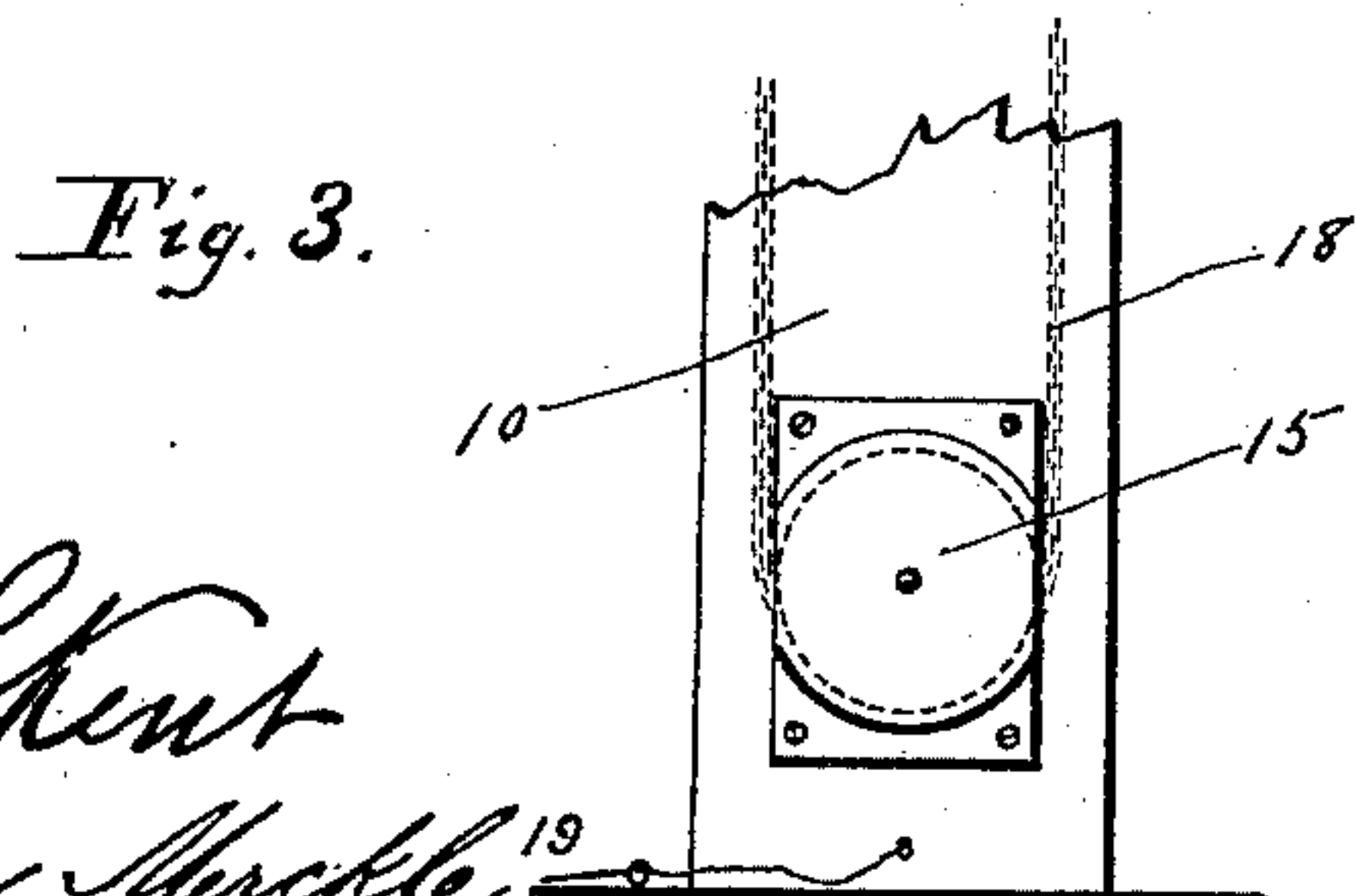


Fig. 3.

WITNESSES:

WITNESSES:
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THOMAS L. ARNOLD, OF BROOKLYN, NEW YORK.

AUTOMATIC DOUBLE TOPPING-LIFT.

SPECIFICATION forming part of Letters Patent No. 445,530, dated February 3, 1891.

Application filed August 22, 1890. Serial No. 362,744. (No model.)

To all whom it may concern:

Be it known that I, THOMAS L. ARNOLD, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented an Automatic Double Topping-Lift, of which the following is a specification.

Prior to my invention the main lines or halyards of double topping-lifts have been led from the boom up to and about sheaves held at the hounds and then down to tackles that are adjacent to the shrouds; but such arrangement is not only expensive and disadvantageous, but under certain circumstances it is positively dangerous. The chief disadvantage above referred to is that every time the boat is brought about the lee lift has to be slackened, as otherwise the sail would bear against said lift and would wrinkle, while the chief danger referred to is that in case of a sudden squall it becomes necessary to lower the mainsail the vessel is apt to be heeled over to such an extent that the tackle of the lee lift would be under water and out of reach. Consequently the said lift cannot be slackened, and the sail will therefore bear hard against the lift and will not run down freely. With my improved double lift, however, the tackle can always be reached in case of a squall, and when the vessel comes about the shifting of the strain to the weather line or halyard is brought about automatically, the arrangement being such that the tackle (and but one tackle is employed) is adjacent to the mast, and the two main lines or halyards of the double lift, which, as in the old form, are secured to the boom and pass up to and about sheaves that are held to the hounds, are connected to the blocks of said tackle, one of said main lines passing about the sheave of a block that is held to place near the foot of the mast, all as will be hereinafter more fully described, and specifically pointed out in the claims.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar reference-figures indicate corresponding parts in all the views.

Figure 1 is a view of my automatic double topping-lift as it appears when viewed from the stern of the vessel, the hull, mast, and

boom being represented diagrammatically in the positions they assume when the vessel is on the starboard tack. Fig. 2 is a similar view of a modified arrangement, the parts, however, being represented as they appear when the vessel is on the port tack; and Fig. 3 is a detail view illustrating the arrangement of the lower guiding-sheave.

In the drawings, 10 represents the mast, and 11 the boom. The main lines or halyards 12 and 12^a are connected to the boom at any proper point, but preferably to the traveler-band 13, said lines or halyards leading upward from the boom to and about sheaves that are carried by blocks 14 and 14^a, said blocks being secured to the hounds. The line or halyard 12 passes downward and about a sheave carried by a block 15, that is arranged near the foot of the mast, and the line or halyard is carried upward from the block 15 to the lower block 2 of a tackle 16, the upper block 3 of said tackle being connected to the end of the line or halyard 12^a. The fall 4 of the tackle 16 is carried down and made fast to a belaying-pin 17, located about as shown.

Although not positively necessary, I greatly prefer to connect a chain 18 to the tackle end of the line 12, as by so doing I provide for the locking of either lift in a position such as will prevent the accidental shifting of the strain from the weather to the lee lift, the locking being brought about by inserting a pin 19 in one of the chain-links close up to the block and on that side of the block on which the slack lift is required.

I have hereinbefore described the specific arrangement which I prefer to employ in connection with booms that are supported at the mast by what is termed the "goose-neck" step or swivel.

In Fig. 2 I illustrate an arrangement particularly adapted for use in connection with booms having the old Y-crotch. In this case I provide two blocks 21 and 21^a, instead of the single block 15, such blocks being secured to the deck at either side of and to the rear of the mast.

If desired, the blocks 14 and 14^a may be connected to the hounds by "pennants" 20 and 20^a, and by so connecting the blocks to

the mast and at the same time using the two blocks 21 and 21^a I provide for the holding of the tackle-blocks at some distance from the mast, and consequently prevent all pound-
 5 ing of the blocks against the mast.

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

1. A double topping-lift wherein the main
 10 lines or halyards are connected to the blocks of a single tackle and arranged to pass downward upon opposite sides of the sail, substantially as described.

2. The combination, with a pair of guiding-
 15 sheaves arranged for connection with the hounds, of lines or halyards adapted to pass about said sheaves and arranged to pass downward upon opposite sides of the sail and for connection with a boom, a tackle to the blocks of
 20 which the lines or halyards are connected, and a sheave arranged for connection with the lower part of the mast and about which one of the lines or halyards passes, substantially as described.

25 3. The combination, with a pair of sheaves arranged for connection with the hounds, of

lines or halyards adapted to pass about said sheaves and arranged for connection with a boom, a tackle, to the upper block of which
 30 tackle one of said lines is connected, a chain connected to the lower tackle-block and to the other line, a sheave arranged for connection to the lower part of the mast and about which the chain passes, and a locking-pin,
 35 substantially as described.

4. The combination, with a pair of sheave-
 carrying blocks that are provided with pen-
 nants arranged for connection with the
 hounds, of lines or halyards arranged to pass
 40 downward upon opposite sides of the sail for connection with a boom and adapted to pass about the block-sheaves, a tackle to the
 blocks of which the lines or halyards are connected, and a pair of guiding-sheaves arranged
 45 for connection with the deck to the rear and at either side of the mast, one of the lines or halyards being arranged to pass about said sheaves, substantially as described.

THOMAS L. ARNOLD.

Witnesses:

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