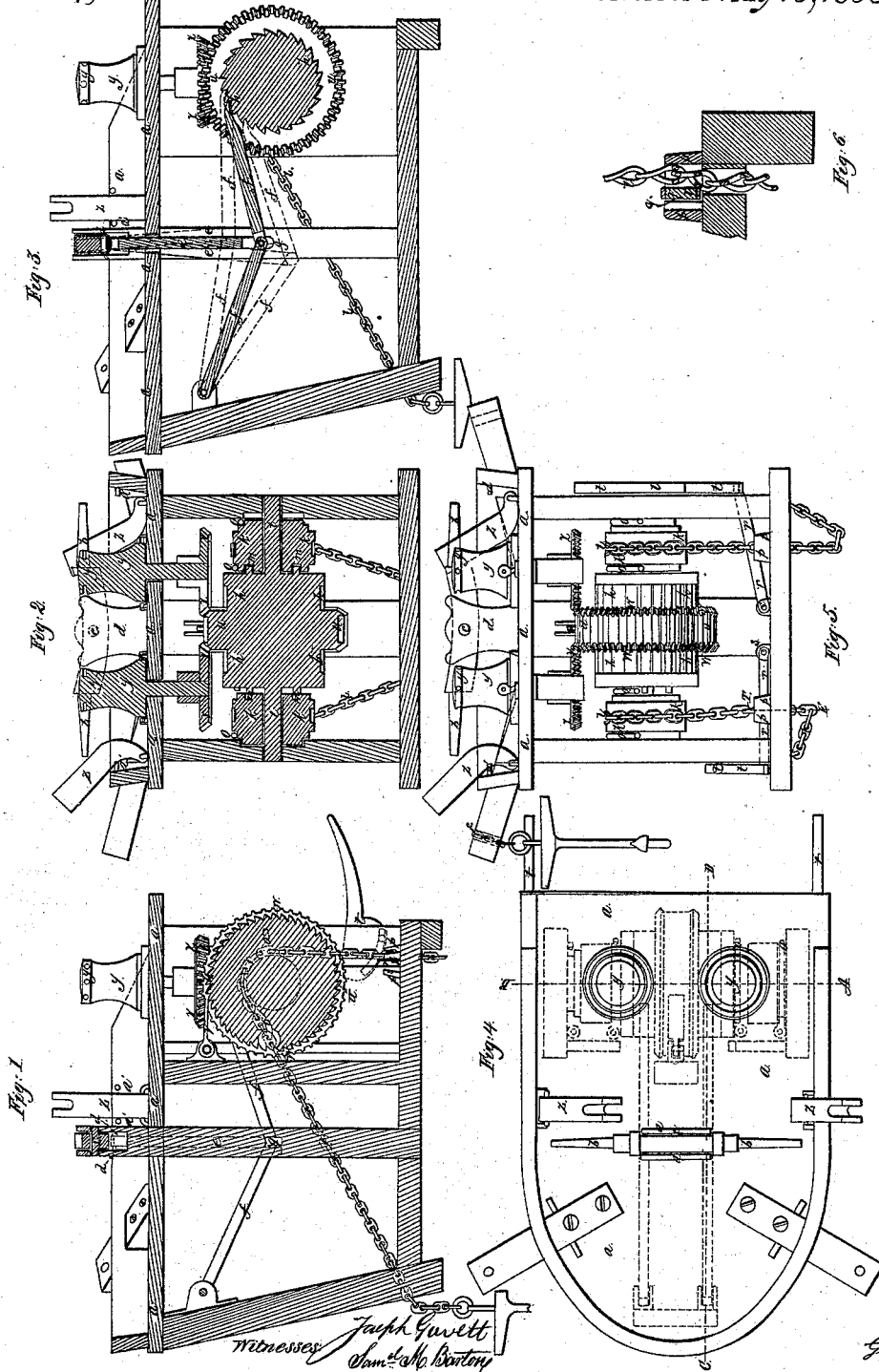


G. Coffin,

Windlass.

N^o 54,682

Patented May 15, 1866.



UNITED STATES PATENT OFFICE.

GEORGE COFFIN, OF BOSTON, MASSACHUSETTS.

IMPROVED DEVICE FOR OPERATING SHIPS' WINDLASSES.

Specification forming part of Letters Patent No. 54,688, dated May 15, 1866.

To all whom it may concern:

Be it known that I, GEORGE COFFIN, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in the Mode of Operating Ships' Windlasses; and I do hereby declare that the following description, taken in connection with the accompanying drawings, hereinafter referred to, forms a full and exact specification of the same, wherein I have set forth the nature and principles of my said improvements, by which my invention may be distinguished from all others of a similar class, together with such parts as I claim and desire to have secured to me by Letters Patent.

The present invention consists in a new arrangement of devices for operating windlasses, capstans, &c., on shipboard, and has for its principal objects the effecting of a short, quick, and repeated action, combined with great power and simplicity of construction.

By my improvements the windlass is operated by toggle-jointed levers worked by brakes or by a winch and crank on the top-gallant forecastle.

My second improvement consists in so constructing and arranging the chain-pipe through which the anchor-cable passes, and a suitable lever, that the veering of the cable can be checked and regulated at pleasure.

My third improvement consists in a new arrangement of fish-davits, by which I am enabled to cat and fish the anchor without cat-block and fall and without fish-pendant and tackle, and dispensing with the cumbersome piece of timber now used for a fish-davit.

My improvements are represented in the accompanying plate of drawings, of which—

Figure 1 is a central longitudinal vertical section through the forecastle and spar-deck of a vessel. Fig. 2 is a transverse vertical section of the same, taken in the plane of the line A B. Fig. 3 is a longitudinal vertical section of the same, taken in the plane of the line C D. Fig. 4 is a top view of a portion of the bow of a vessel. Fig. 5 is an end view of the same, and Fig. 6 is an enlarged detail section through the plane of the line E F, Fig. 5.

a a a in the drawings represent the forecastle of a vessel, upon which is a double brake, *b b*, turning upon a central pivot at *c* in the standard *d*. Connecting with the brakes *b b* are vertical arms *e e*, that extend down through the upper

deck and are hinged or pivoted to two levers, *f f*, at *g*, these latter being hinged at one end to the bowsprit-bitts, the other ends fitting into ratchet-wheels *h h* on the windlass, thus forming toggle-jointed levers operated by the movement of the brake *b b*. The windlass turns upon a shaft, *i i*, and has upon it, in addition to the ratchet-wheels *h h*, two chain-drums, *k k*, into which fit and with which engage the two cables *l l*, attached to the anchors. These chain-drums can turn with the shaft *i i* or remain loose upon the same, being arranged with slots *m m*, that engage with studs in the side faces of the ratchet-wheels *h h*. Thus by moving the chain-drums *k k* laterally upon the shaft *i i* the slots can be engaged with or disengaged from the studs in the ratchet-wheels *h h*. *o o* are brakes for effecting these lateral movements of the chain-drums.

From the foregoing description it will be seen that when the chain-drums are engaged with the ratchet-wheels *h h* they will be rotated through the medium of the toggle-jointed levers *f f*, arms *e e*, and double brakes *b b*, thus drawing the cables *l l*, and consequently the anchors, with a quick and powerful motion.

To check and prevent the veering of the cable when lowering the anchor, I construct the chain-pipe *p p* with a slot or groove, *q*, Fig. 1, into which fits and plays a lever, *r r*, turning upon a pivot at *s* and operated by a cam-lever, *t*, so as to bind the cable in the chain-pipe at pleasure, as will readily be understood by inspection of the drawings.

In the center of the windlass is a ratchet-wheel, *u*, into which fits a pawl, *v*, to prevent a retrograde movement of the windlass. Forming part of the ratchet-wheel *u* are two bevel-gears, *w w*, that engage with two other bevel-gears, *x x*, so that when the windlass is revolved it will communicate motion to the capstans *y y*, to the vertical shafts of which the said gears *x x* are attached. When the capstans alone are to be used—that is, without the chain-drums *k k*—the latter can remain stationary upon the shaft *i i* by being disengaged from the ratchet-wheels *h h*, as hereinbefore explained.

To cat and fish the anchor without the cumbersome piece of timber heretofore employed for drawing the anchor aboard, I employ a fish-davit, *Z*, hinged or pivoted to the upper deck. This fish-davit, while the anchor is being drawn

up, (by means of a chain wound around one of the capstans, operated as above described, and passing over the end of the fish-davit,) is securely lashed to the bolts *a' a'* in the bulwarks. When the anchor is elevated the required distance the lashings are removed from the bolts *a' a'*, and the fish-davit so turned upon its pivot or hinge inboard, Fig. 2, as to bring the anchor to the required position upon the side of the vessel.

Having thus described my improvements, I shall state my claim as follows:

1. The combination and arrangement of the windlass and its chain-drums, operated by the

toggle-jointed levers, substantially as described.

2. Regulating and checking the veerings of the cable by means of a lever working in the top of the chain-pipes, in the manner as described.

3. The arrangement and construction, substantially as described, of the chain-drums and brakes, by which they can be made to turn with or be disengaged from the windlass.

GEO. COFFIN.

Witnesses:

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