

(Model.)

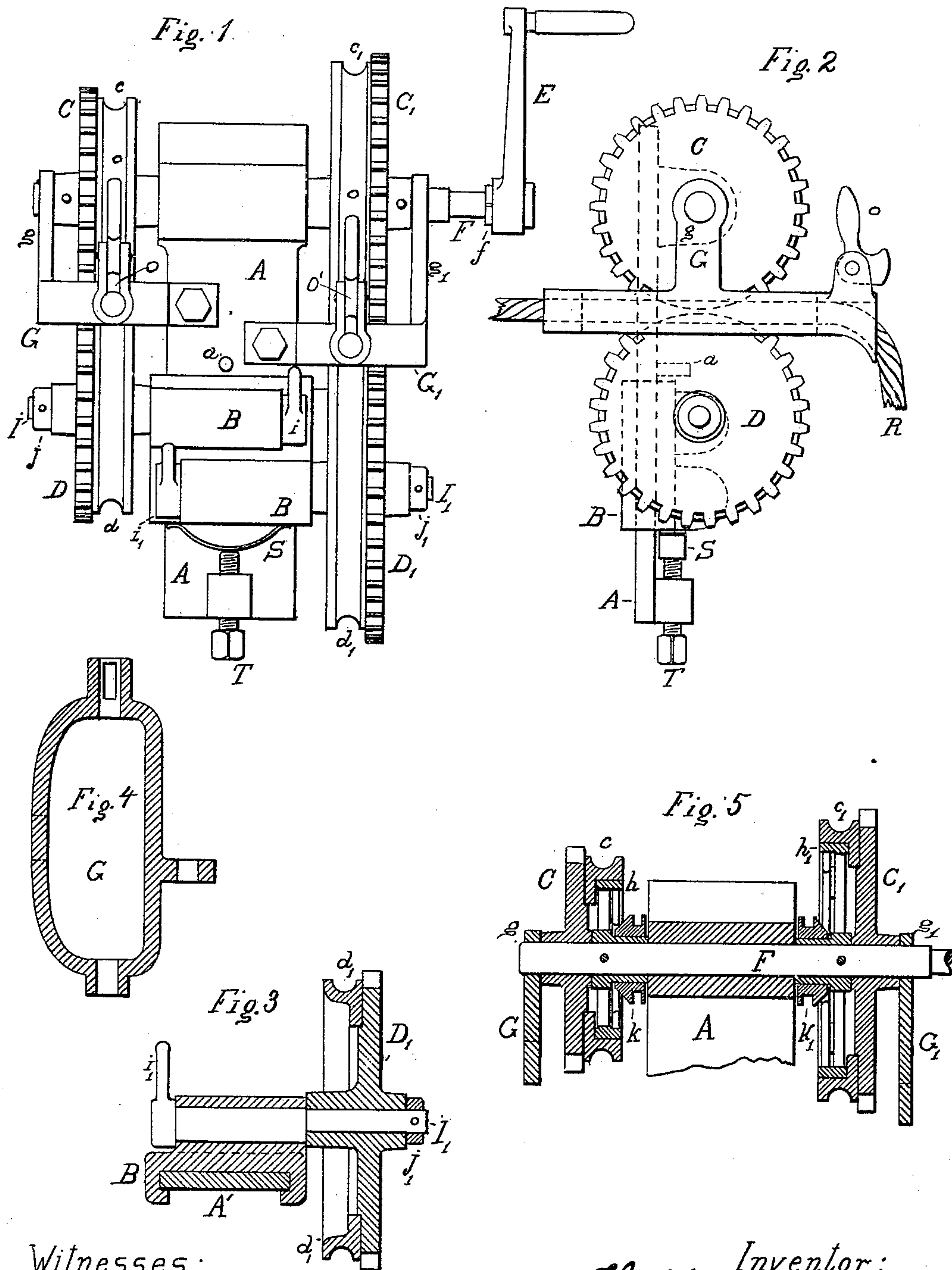
2 Sheets—Sheet 1.

T. CHAMBERS.

HOISTING DEVICE FOR SAIL BOATS.

No. 344,306.

Patented June 22, 1886.



Witnesses:
Geo. T. Keffer
Wm H. Gilbert

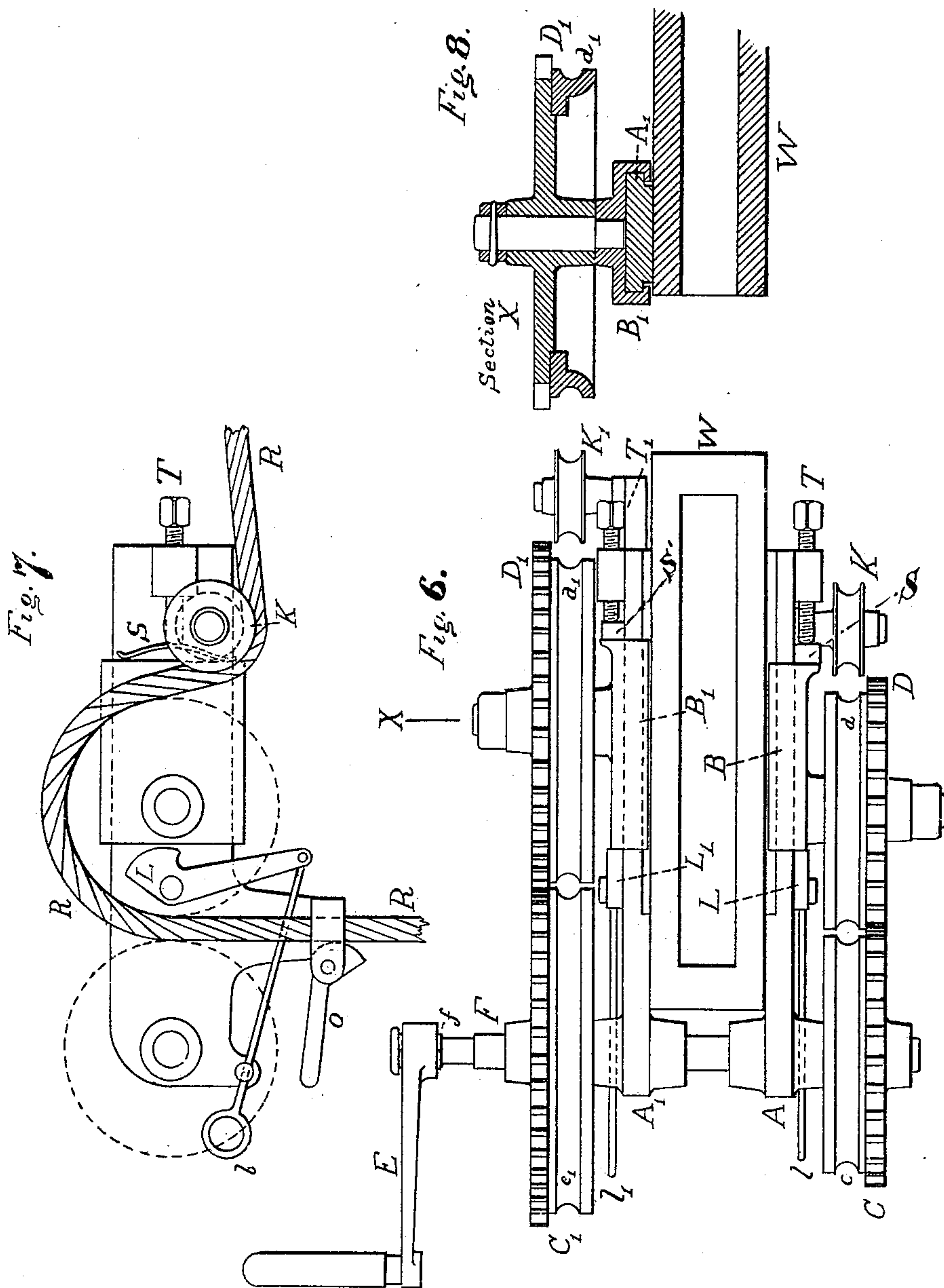
Inventor:
Thaddeus Chambers
per Frederick S. Jahn
Attorney.

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Attorney.

UNITED STATES PATENT OFFICE.

THADDEUS CHAMBERS, OF PHILADELPHIA, PENNSYLVANIA.

HOISTING DEVICE FOR SAIL-BOATS.

SPECIFICATION forming part of Letters Patent No. 344,306, dated June 22, 1886.

Application filed January 26, 1886. Serial No. 189,782. (Model.)

To all whom it may concern:

Be it known that I, THADDEUS CHAMBERS, a citizen of the United States, residing in the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Device for Assisting in the Hoisting of the Sails on Sail-Boats, of which the following is a specification.

The device, which is particularly suitable for smaller vessels or boats, is to be attached preferably to the end of the center-board well. Its object is to provide a means for pulling or hauling in the halyards, and thereby raise the sail, by working a crank, instead of pulling the halyards direct by hand. By it one man is enabled to conveniently work the boat.

It consists, in effect, of a double windlass or hoisting device of peculiar construction, having two speeds and worked by one crank-shaft. By certain devices either speed alone or both together may be thrown into action. Means are also provided for securing or holding the halyards at any point.

In the accompanying drawings, Figure 1 represents a plan view of the device. Fig. 2 shows one side of the device, and Figs. 3 and 4 are transverse sections of details of the apparatus. Fig. 5 is a transverse section showing a modification of the construction. Fig. 6 shows a modification, being a top view, Fig. 7 a side elevation, and Fig. 8 a detail cross-section, thereof.

The bed-plate A, which also forms the bearing for the crank-shaft F, is to be attached by bolts or other means to the after end of the center-board well, or other suitable support, (in a vertical position.) On it slides the double bearing B, as shown in section in Fig. 3. This piece B is pressed upward toward a stop, *a*, by a spring, S, the tension of which can be adjusted by the screw T. On each side of the bearing B' are fastened the gears C and C', respectively. To these gear-wheels are attached the annular drums *c* and *c'*, having in their faces a round (or V-shaped) groove corresponding in width with the diameter of the halyard. The block or bearing B carries two similar gears, D and D', (with the respective flanges or drums *d* and *d'*), which gear, respectively, into the gears C and C'. The wheels C' D' are larger in diameter than the

pair C D, for the purpose of acting with greater speed. In other respects both sides are perfectly similar.

The rope is pinched or gripped in the grooves between the drums *c* and *d* (*c'* and *d'*) by the spring S pushing up the block B, the outer diameters of the said drums (the diameters of the high parts on each side of the groove) being made sufficiently small so as not to touch when the rope is gripped. The halyards being thus gripped between the drums, they will be pulled when the crank E is turned. In order to enable the stopping of the action of either side or pair without affecting the other, the studs I and I', which are carried by the block B, and upon which the wheels D and D' work, respectively, are made with the part in the wheel eccentric with that working in the block or bearing B, and are provided with handles *i* and *i'*, respectively. On imparting, by means of said handles, a partial turn to these studs the corresponding wheels will be moved back sufficiently to no longer pinch the rope, which will then of course be no longer acted on, even though the turning of the crank-shaft be continued. The stop *a* is for the purpose of preventing the spring S from pushing the block B, and with it the wheels D *d*, having grooves D' *d'*, up too far when both wheels are thrown back. Naturally the slight separation that is required to remove the grip on the rope is not sufficient to throw the corresponding gear-wheels out of gear.

The pieces G and G' are provided for the purpose of guiding the rope between the wheels. They are bolted to the plate A, and pass over the wheels, forming at the same time a guard for the gearing, and also, by means of the projecting side pieces, *g* and *g'*, which embrace the shaft F, add to the general strength.

In order to fasten or secure the halyards when desired, a pawl O, and O', is provided which is pivoted to side lugs on the guide G, and will, when turned over, wedge on the rope and thus secure it.

In order to put the crank E out of the way when not in use, as well as to enable it to be kept from flying around when the halyards are running down rapidly, the shaft F is turned smaller next to the square part at *f*, (to which the crank is freely fitted,) and thus the

crank, when pushed back off the square portion, will be free and can hang down out of the way. Instead of this, a ratchet-wheel secured to the end of the shaft F, together with a pawl 5 on the crank, might be used. If found necessary, as perhaps on larger vessels, another crank may be put on the other end of the shaft F.

The device may be modified in various ways. 10 For instance, the wheels C and C', instead of being firmly fastened to the shaft F, may be connected thereto by clutches, as shown in Fig. 5. Almost any kind of friction-clutch may be used. The handles for working these clutches 15 are put in any convenient position. The studs carrying the wheels D and D' would then be rigid in the block B, and action on either side is stopped by disconnecting the corresponding clutch. Another way would be to 20 have the wheels C C' fast to the shaft, as before. Instead, however, of having one block like B, each of the wheels D and D' would work on a stud carried by a separate slide or carriage. Each of these two slides would be pushed up 25 by a separate spring against an eccentric or cam on the plate A, which, when turned one way, would permit the respective slide or block to be pushed up and pinch the rope, and when turned the other way would push back 30 the slide and free the corresponding rope.

In the modification which is shown by Figs. 6, 7, and 8, instead of having one bed-plate, as before, each side has an independent bed-plate and is fastened (preferably bolted) to 35 the side of the center-board well near the top instead of on the end of the well. Fig. 6 represents a plan view, looking down on the top of the well. Fig. 7 represents a side elevation of one side of the device, and Fig. 8 a 40 vertical cross-section on the line X.

In Fig. 7 the gear-wheels are not shown, in order to avoid obscuring the drawings. The pitch-line of the gears is represented by the

dotted circles. C D and C' D' are the two pairs of wheels; A and A', the two bed-plates; 45 B and B', the two sliding bearings, which carry the wheels D and D', respectively; S S', the springs, and T T' the adjusting screws therefor; L and L', the releasing-cams; R, the rope; W, the center-board well; F and E, the crank- 50 shaft and crank, respectively, and O the rope-clamp. K and K' are idler-pulleys, which are required on account of the changed direction of the rope when the device is placed horizontal, instead of vertical, as before. The direc- 55 tion of the rope is shown in Fig. 2.

The cam L (L') is moved by a rod and handle, l (l'). Of course other arrangements for pushing back the slides may be used. For instance, in place of a cam, the slide may be 60 pushed back by means of a lever or bell-crank, one arm of which is secured to the slide and the other to a rod, which, in order to keep the slide back, may have a notch engaging with a tooth or projection on the bed- 65 plate.

I claim—

1. A sail-hoisting device consisting of the bed-plate and bearing A, sliding bearing B 70 with eccentric studs I and I', spring S, screw T, wheels C D and C' D', having the grooves *c d* and *c' d'*, the crank-shaft F, crank E, and the guides G G', provided with the fastening-pawls O and O'.

2. A sail-hoisting device consisting of the 75 two bed-plates A and A', sliding bearings B and B', springs S and S', adjusting-screws T and T', cam L, rod l, crank-shaft F, crank E, rope clamps or pawls O and O', the wheels C D and C' D', having the grooves *c d* and *c' d'*, and 80 idler-pulleys K, all substantially as and for the purpose herein specified.

THADDEUS CHAMBERS.

Witnesses:

EZRA LUKENS,
H. C. WOELPPER.