J. DROVER.

BOAT HOISTING AND LOWERING DEVICE.

APPLICATION FILED JULY 11, 1913.

1,085,803.

Patented Feb. 3, 1914.

2 SHEETS—SHEET 1.

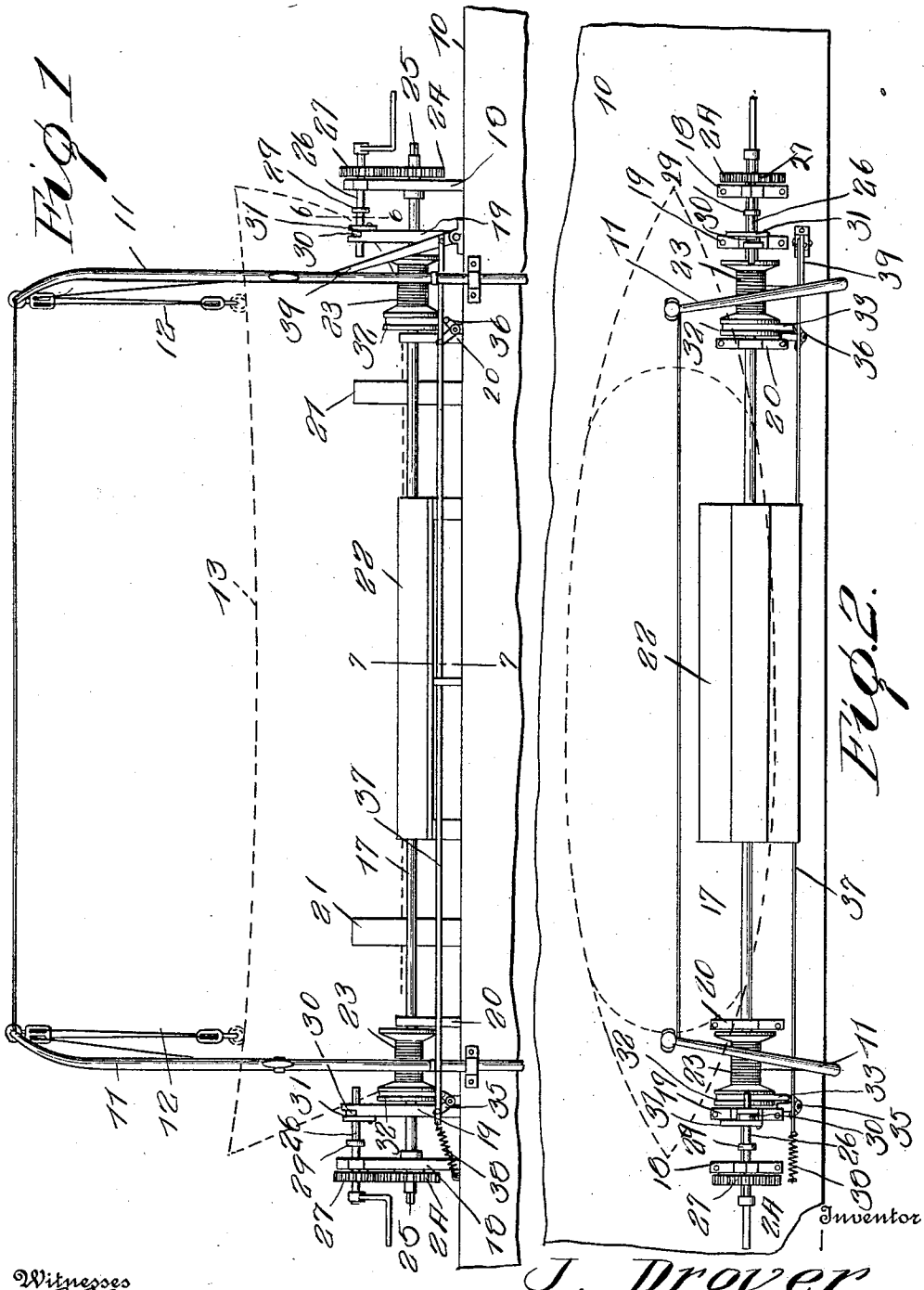


Fig. 1

Fig. 2.

Witnesses

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2 SHEETS—SHEET 2.

Fig. 4.

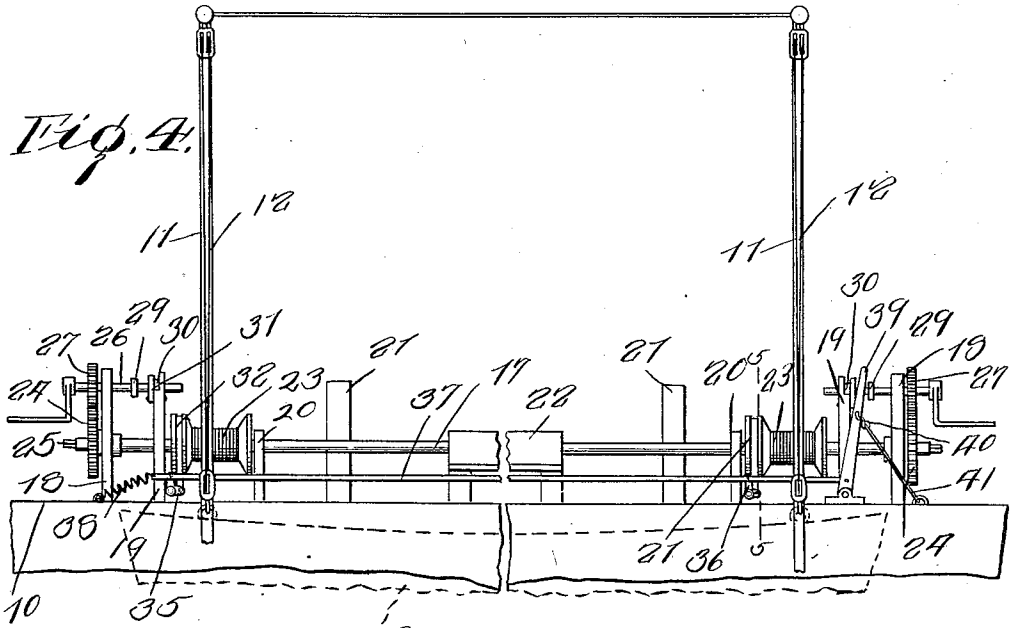


Fig. 5.

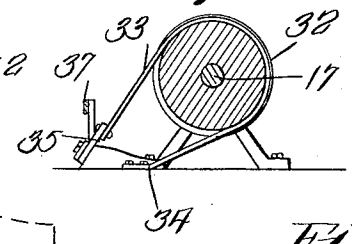
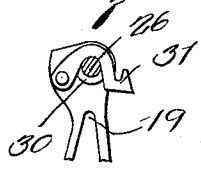


Fig. 6.



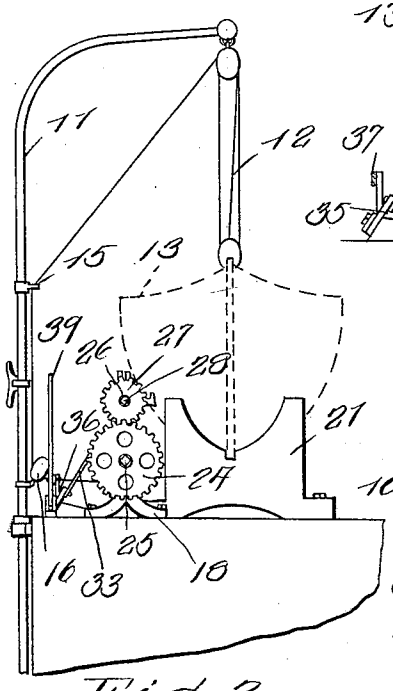


Fig. 3.

Fig. 7.

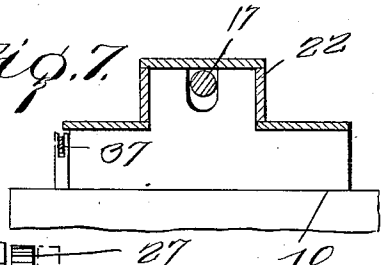
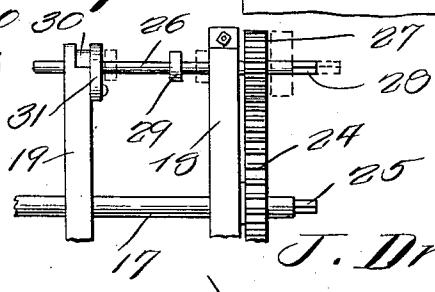


Fig. 8.



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN DROVER, OF CHELSEA, MASSACHUSETTS.

BOAT HOISTING AND LOWERING DEVICE.

1,085,803. Specification of Letters Patent. Patented Feb. 3, 1914.

Application filed July 11, 1913. Serial No. 778,543.

To all whom it may concern:

Be it known that I, JOHN DROVER, a citizen of the United States, residing at Chelsea, in the county of Suffolk, State of Massachusetts, have invented certain new and useful Improvements in Boat Hoisting and Lowering Devices; 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 apparatus for raising and lowering life boats, and has for an object to provide a device of this character by means of which the life boat can be lowered in case of disaster in a fraction of the time now necessary.

A further object is to provide apparatus of this character which will dispense with the usual coiling of rope, that will further employ a smaller number of men than usual to operate it, and further that will lower both ends of the life boat to the water evenly.

With the above objects in view the invention consists of certain novel details of construction and combination of parts hereinafter fully described and claimed, it being understood that various modifications may be made in the minor details of construction within the scope of the appended claim.

In the accompanying drawings illustrating this invention:—Figure 1 is a side elevation showing the application of my invention. Fig. 2 is a plan view. Fig. 3 is an end elevation. Fig. 4 is a side elevation showing the life boat in position for the passengers to enter and with the brakes set. Fig. 5 is a cross sectional view on the line 5—5 Fig. 4 showing one of the band brakes. Fig. 6 is a cross sectional view on the line 6—6 Fig. 1 showing the latch for locking the actuating pinion shaft in active or released position. Fig. 7 is a cross sectional view on the line 7—7 Fig. 4 showing the steps that house the drum shaft and brake connecting link. Fig. 8 is a fragmentary plan view showing the pinion shaft in full lines in operative position and in dotted lines in released position.

Referring now to the drawings in which like characters of reference designate similar parts, 10 designates a stationary support which may be the deck of a vessel, or a dock, or other like support, the same being equipped with the usual swinging davits 11 that carry the usual boat falls 12 to which a life boat 13 is secured in the usual manner. The ropes 14 of the boat falls are each trained through a guide eye 15 on the related davit and thence through a sheave 16 on said davit from whence the rope is directed toward the raising and lowering apparatus forming the subject-matter of this invention.

A shaft 17 is disposed on the support 10 longitudinally of the boat, the shaft being supported at each end by pedestals preferably three in number as shown at 18, 19 and 20, the shaft being arranged close up to the boat chocks 21 and being housed between the chocks by steps 22 by means of which the passengers gain access to the boat when the latter is swung outboard to proper position as shown in Fig. 4.

Between the inner pedestals 19 and 20 at each end of the shaft and fixed upon the latter is a winding drum 23 to which the end of the related rope 14 is attached and the rope is wound upon the drum during raising of the boat and unwound therefrom during lowering of the boat, and since both drums are of the same diameter and are fixed to a common shaft, both ends of the boat will be uniformly raised or lowered so the boat extends horizontally at all times.

For winding the ropes upon the drums and thereby raising the boat, each outer end of the shaft 17 is equipped with a gear 24, and outside of the gear the shaft is squared as shown at 25 for the reception of the winding lever. Journaled in the pedestals 18 and 19 is a countershaft 26 that is equipped with a pinion 27, the shaft being slidably mounted in the pedestals so that at one limit of movement the pinion meshes with the gear and at the opposite limit of movement the pinion disengages from the gear. The countershaft is provided with a squared end 28 for the reception of the winding lever, which lever is ordinarily used on the countershaft for rotating the latter to actuate the main shaft 17 and wind the drums.

For locking each countershaft at either limit of its movement there is a pair of spaced collars 29 and 30 fixed to the countershaft, and pivoted on the inner side of the pedestal 19 is a hook latch 31 adapted to swing down upon and embrace the countershaft on either side of the collar 29. When disposed between the collar 29 and the pedestal the pinion is held disengaged from the gear while the mating collar 30 is disposed

against the inner face of the pedestal 18 and limits outward sliding movement of the countershaft. When the latch is disposed between both collars it will hold the collar 29 up against the pedestal 19 and thereby hold the pinion in mesh with the gear.

For controlling the lowering of the boat each winding drum is equipped in one head with a brake groove 32 and a band brake 33 is fixed at one end to the support as shown at 34, this brake being trained through the groove and connected at the free end to one leg of a bell crank lever that is journaled at the elbow on the support 10, there being a bell crank lever for each brake as shown at 35 and 36. A link 37 is connected to and connects together both bell crank levers, there being a helical spring 38 connected to one end of the lever and to the support for normally holding the link in position to hold the bell crank levers rocked on their pivots so that both band brakes are normally released, and there being at the opposite end of the link an operating lever 39 that is pivoted to the support and is pivotally connected to the end of the link.

In operation to lower the boat, two members of the crew take their places at respective ends of the apparatus and by turning the winding levers wind the ropes on the drums so that the boat is lifted out of the chocks. The brakes are now set by one of the men pulling back the brake lever 39 and fastening the same back by means of a hook 40 on the end of a cable 41 attached to the support, or otherwise. The boat is now swung out on the davits to the usual position for receiving the passengers, the latter entering the boat over the steps 22. The operator then releases the brake lever whereupon the brakes of both drums are simultaneously freed and the loaded boat sinks quickly to the water, the descent being governed by the application of the brakes by manipulating the brake lever as necessary to promote a quick and safe descent.

From the above description it will be seen that I have provided an extremely simple and inexpensive device of the character described which will lower a life boat in minimum time and with a minimum number of men at the davits, while at the same time both ends of the boat will be lowered uniformly so that the boat remains horizontal at all times, and further that the device is composed of a few simple parts that are strong and durable and will not easily get out of order.

What is claimed, is:—

The combination with life boat fall ropes, of a pair of winding drums connected to respective ropes, a common shaft for both drums, a band brake for each drum, a single link operatively connecting both of said brakes for simultaneous application and release, said link extending parallel with said shaft, an operating lever connected to said link for setting said brakes, a spring connected to said link for normally holding said brakes released, and means for locking said operating lever in active position.

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

JOHN DROVER.

Witnesses:
NATHAN SMOLKER,
ROBERT Y. JAYNES.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."