

C. R. LEIHY.
HOISTING AND LOWERING DEVICE FOR LIFE BOATS.
APPLICATION FILED JUNE 10, 1912.

1,060,103.

Patented Apr. 29, 1913.

2 SHEETS—SHEET 1.

Fig. 1.

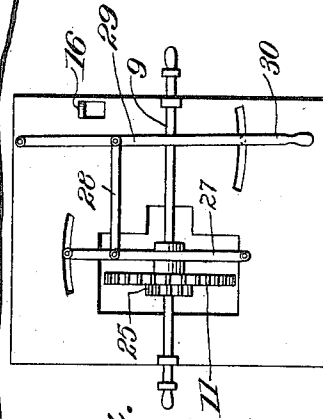
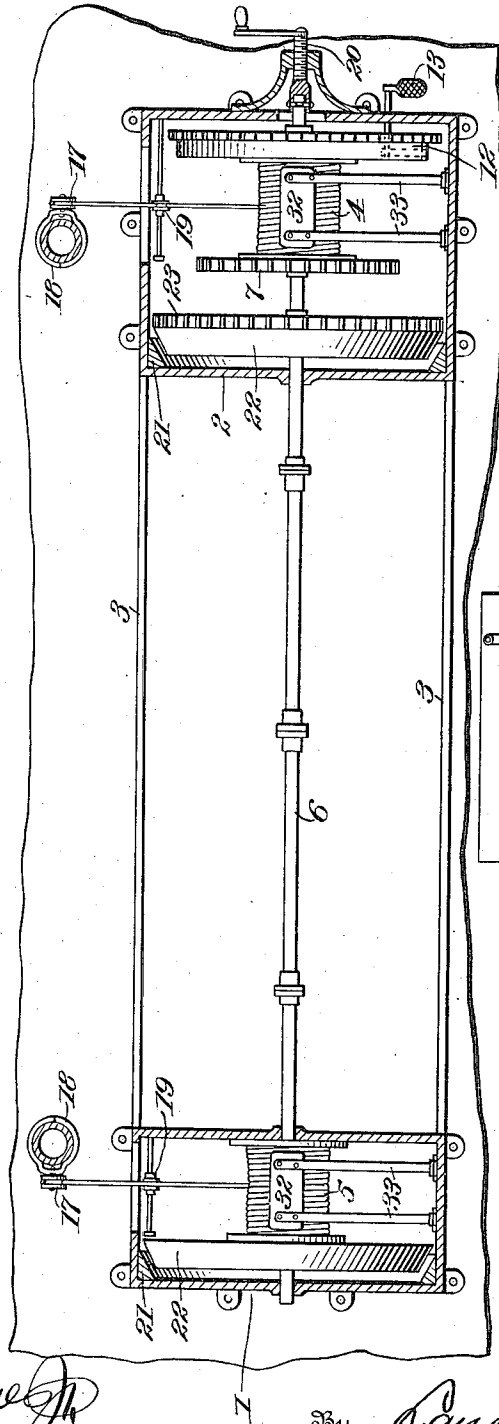


Fig. 4.

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2 SHEETS-SHEET 2.

Fig. 3.

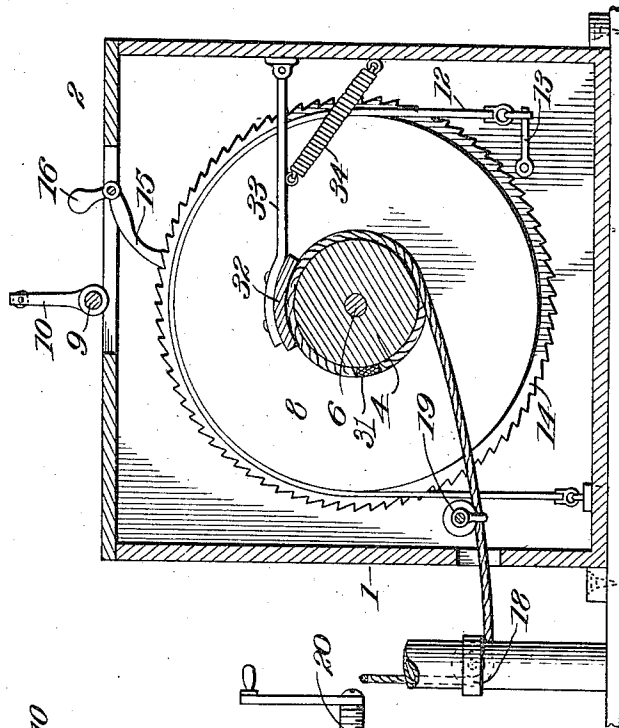
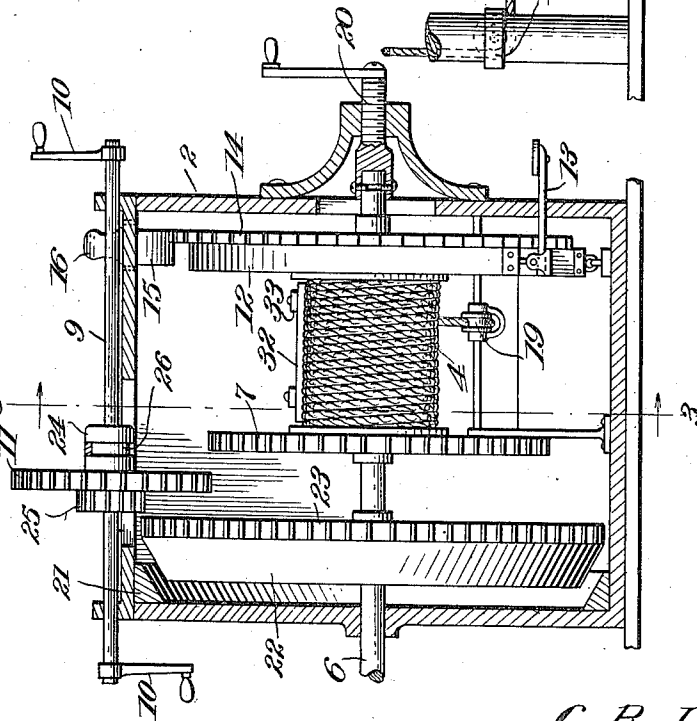


Fig. 2.



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UNITED STATES PATENT OFFICE.

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HOISTING AND LOWERING DEVICE FOR LIFE-BOATS.

1,060,103.

Specification of Letters Patent.

Patented Apr. 29, 1913.

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To all whom it may concern:

Be it known that I, CHARLES R. LEIHY, a citizen of the United States, residing at Bayfield, in the county of Bayfield and State of Wisconsin, have invented new and useful Improvements in Hoisting and Lowering Devices for Life-Boats, of which the following is a specification.

This invention relates to improvements in life saving apparatus, and more particularly to an improved means for hoisting and lowering life boats.

It is the object of this invention to provide a means which will hoist or lower both ends of a life boat equally, so that the boat will always be on an even keel and thereby overcome the danger of lowering one end faster than the other and spilling the passengers during the excitement accompanying an accident when the boat is put over the side.

It is also an object of this invention to provide a means for positively regulating the speed in lowering away, so that a loaded boat will not be dropped before reaching the water.

Another object is to provide a means for causing the fall of the tackle to lay evenly upon the winding drum in hoisting, so that it will play out evenly each fall in lowering.

While the preferred forms of this invention are illustrated upon the accompanying sheets of drawing, yet it is to be understood that minor detail changes may be made without departing from the scope thereof.

Figure 1 is a top plan view of this invention with parts shown in section. Fig. 2 is a view in longitudinal vertical section through one of the drums and drum mechanism. Fig. 3 is a view in transverse vertical section taken on the lines 3—3 of Fig. 2 looking in the direction of the arrows. Fig. 4 is a top plan view of the gear shifting device for the drums.

The hoisting and lowering device as contemplated in this invention comprises a casing secured to the deck at the foot of each davit within which is mounted a winding drum. The fall of the boat tackle on each davit leads to the winding drum at the foot of each respective davit. The casings 1 and 2 are preferably braced by rods or bars 3 secured to the top and bottom of the respective casings. The winding drums 4 and 5 are keyed on an operating shaft 6 rotatably mounted in bearings carried in the side walls of the respective casings. One casing 2 is

provided with an operating mechanism and brake for the shaft 6 comprising a gear wheel 7 on one end of the winding drum 4 and a friction disk 8 on the opposite end of the winding drum. A power shaft 9 is mounted upon the top of this casing with manual crank handles 10 at each end thereof extending on each side of the casing. A gear 11 mounted on the power shaft 9 is adapted to mesh with the gear 7 on the operating shaft 6 for operating both drums 4 and 5 simultaneously in hoisting. The friction disk 8 is provided with a band brake 12 pivotally secured at one end to the casing 2 and pivotally secured at the other end to a foot treadle 13 mounted at the bottom of the casing 2 and constructed with the treadle actuating parts extending exteriorly of the casing at one side. A ratchet wheel 14 is provided preferably next to, or forming a part of, the friction disk 8 and a pawl 15 with a weighted handle 16 is pivotally mounted in the top of the casing, which will in one position ride over the teeth of the ratchet during the winding of the drum and prevent rotation thereof in the opposite direction, and will be held in the inoperative position by the weighted handle when thrown over.

It is preferable that the fall of the boat tackle on each davit be led over a guide pulley 17 mounted upon a rotatable stand 18 surrounding each respective davit near its foot and then through an opening in the end of the casing and over fair leader 19 mounted within the casing to its respective winding drum. By operating each winding drum simultaneously in the hoisting or lowering, the boat suspended from the tackle on each davit will always be on an even keel.

The operating shaft 6 is mounted to slide longitudinally in its bearings and the outer side of the power actuating casing 2 is provided with a jack 20, or other means, engaging the adjacent end of the operating shaft 6 for positively applying a sliding movement to it. Upon the interior of the inner side of this casing 2 and the outer side of the other casing 1 a frictional member 21 is rigidly secured, which is adapted to engage and co-act with a peripherally beveled friction disk 22 rigidly mounted upon the operating shaft adjacent thereto. Under normal conditions the friction clutch thus formed for the operating shaft is out of connection, so that the boat may be hoisted and lowered by the means previously de-

scribed in which the band brake 12 is of sufficient strength to regulate the speed of lowering an empty boat. A loaded boat is much more difficult to lower properly and
 5 hardly enough power can be applied to a band brake to regulate the speed and prevent its dropping unexpectedly into the water, especially during the excitement of an accident. By applying power to the jack 20,
 10 the friction clutch of the operating shaft is actuated, which will positively regulate the speed of lowering and overcome the danger of dropping the boat, because the friction clutch is manually operated and will be
 15 maintained when once supplied, whereas the band brake requires the operator to constantly apply weight upon the treadle, and should his services be demanded elsewhere the boat would drop immediately as soon as
 20 his foot is removed.

It is preferable to provide the friction disk 22 in the power actuating casing 2 with a peripheral gear 23 of greater diameter than the gear 7 of the winding drum 4. The
 25 gear 11 adapted to mesh with this latter gear 7 is preferably carried on a sleeve 24 keyed to slide upon the power shaft 9 and this sleeve 24 is provided with a smaller gear 25 adapted to mesh with gear 23 when gear
 30 11 is free from gear 7, so that different degrees of power may be applied to the operating shaft, as less power is required in hoisting an empty boat it may be hoisted much more rapidly this way. The sleeve 24 is
 35 preferably operated to either engage one gear or the other or free both gears by providing a circumferential groove 26 at one end engaging a lever arm 27 pivoted at one end to the top of the casing and its free
 40 end connected by a link 28 to an operating lever 29 pivoted at one end to the out-board edge of the casing and having a handle 30 extending over the in-board end of the top of the casing.

45 Each winding drum is preferably provided with a spiral groove 31 about the winding surface, so that the fall will lay evenly thereon and to cause each successive lay of the fall thereabout to be correspondingly

even a guide plate 32 is provided to co-act 50 with the fair leader. This guide plate 32 is preferably supported over the upper side of each drum by arms 33 pivoted to the ends of the respective casings, and is held in positive contact with the drum or lays of 55 the fall thereon by springs 34 attached to the supporting arms 33, so that when the fall is first attached to the drum and power applied it will be positively caused to follow the spiral groove and having reached 60 the end of the drum the lay in the opposite direction will be even as it will be positively guided to its proper place by the guide plate. As the lays are even in hoisting, the falls will play out evenly in the same manner in 65 lowering.

What I claim is:

1. In a hoisting and lowering device for life boats, a separate winding drum for each boat fall, a single operating shaft mounting 70 both drums movable longitudinally in its bearings, means for applying power to the shaft comprising a power shaft having a gear thereon and a gear upon the operating shaft meshing therewith, a clutch member 75 rotating with the shaft, a stationary clutch member, means to release the operating shaft by sliding the power shaft gear out of mesh, and means to slide the operating shaft to engage the clutch members. 80

2. In a hoisting and lowering device for life boats, a separate winding drum for each boat fall, a single operating shaft mounting both drums movable longitudinally in its bearings, means for applying power to 85 the shaft comprising a power shaft having a gear thereon and a gear upon the operating shaft meshing therewith, a clutch member rotating with each drum, a stationary clutch member adjacent thereto, means to 90 release the operating shaft by sliding the power shaft gear out of mesh, and means to slide the operating shaft to engage the clutch members.

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Witnesses:

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