H. B. FIRTH.

OPERATING DEVICE FOR DAVITS.

APPLICATION FILED JULY 25, 1907.

905,065. **Patented Nov. 24, 1908.**

2 SHEETS—SHEET 1.

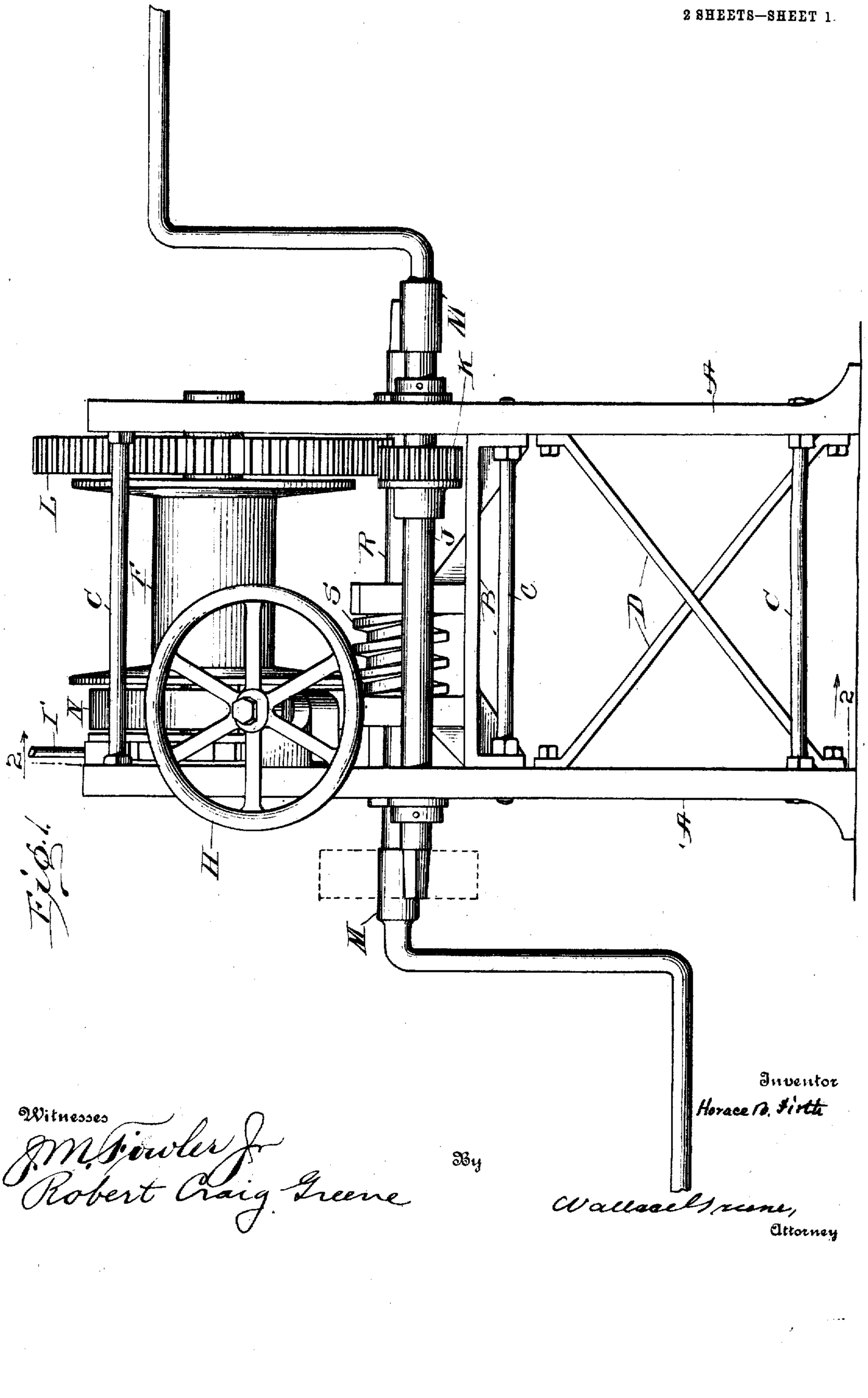

Fig. 1.

Witnesses

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Fig. 3.

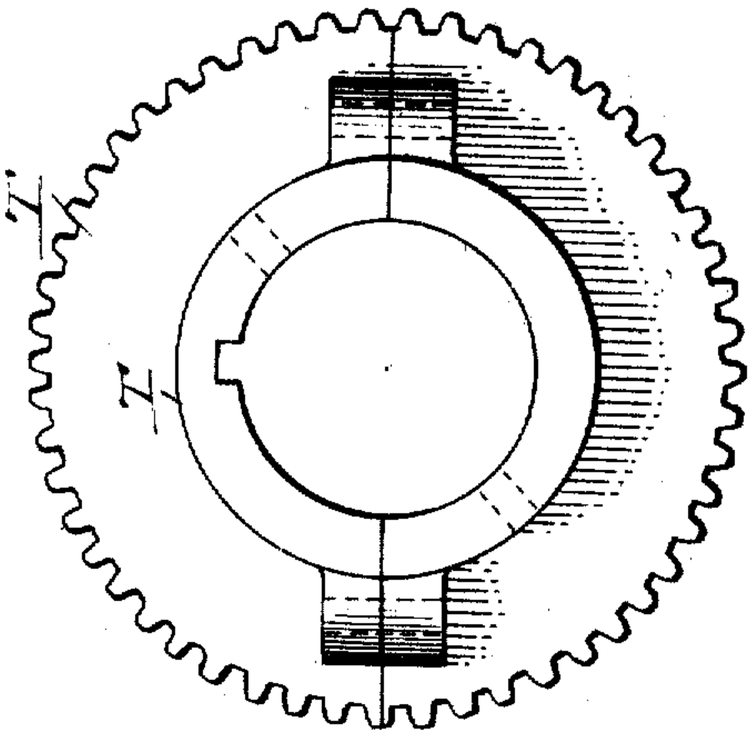


Fig. 4.

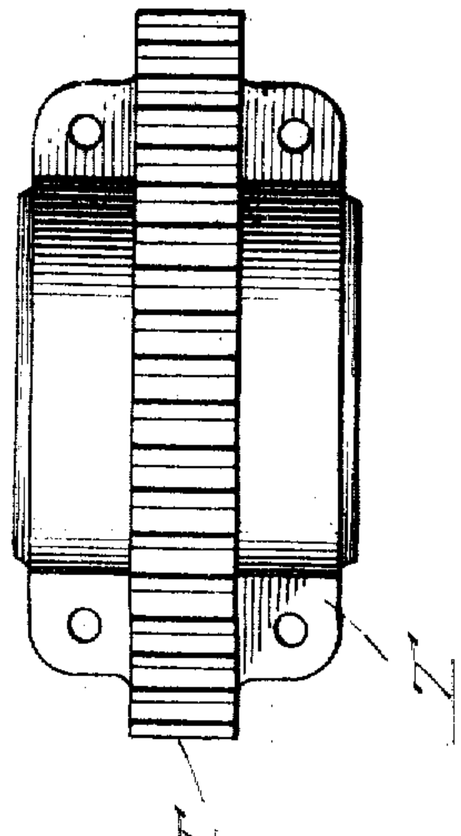
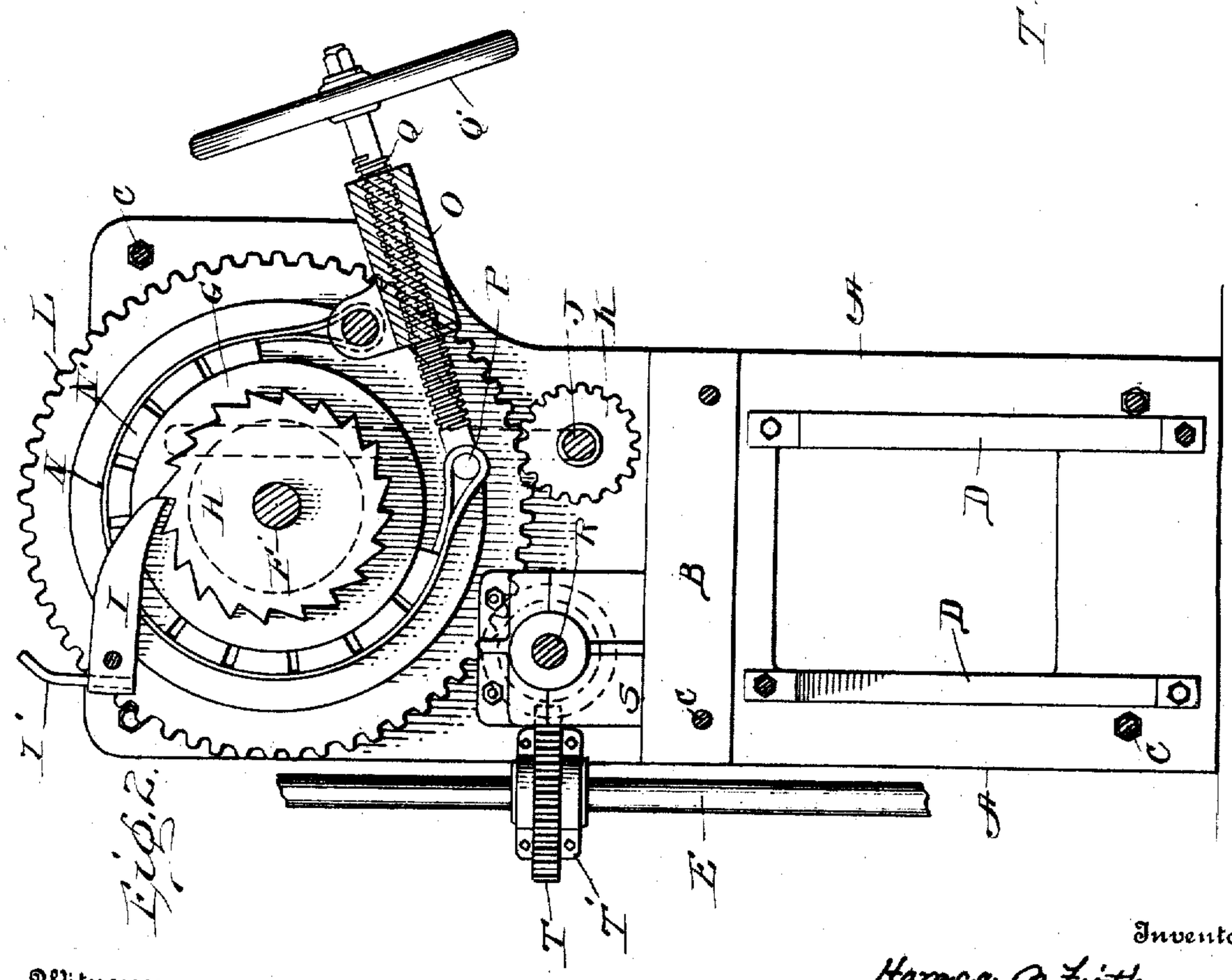


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

HORACE B. FIRTH, OF WARREN, OHIO, ASSIGNOR TO J. P. CORROTHERS, OF PORT CLINTON, OHIO.

OPERATING DEVICE FOR DAVITS.

No. 905,065. Specification of Letters Patent. Patented Nov. 24, 1908.

Application filed July 25, 1907. Serial No. 385,522.

To all whom it may concern:

Be it known that I, HORACE B. FIRTH, citizen of the United States, residing at Warren, in the county of Trumbull and State of Ohio, have invented certain new and useful Improvements in Operating Devices for Davits, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to davits, and particularly to means for swinging ordinary davits and for raising and lowering boats carried thereby.

An object of the invention is to provide a davit swinging and boat raising and lowering device that may be mounted alongside ordinary davits by merely fixing it to the deck of the vessel.

Another object is, to provide a device of this class having no springs and consisting of few and strong parts capable of standing the roughest usage and unlikely to get out of order.

Another object is to provide independent means for swinging the davits, thereby avoiding the use of clutches and the like.

A further object is to provide for perfect control of the speed at which the heaviest boat is lowered and this without the exertion of great muscular force, or any probability of throwing overboard the operator, no matter how rough the sea.

The novel apparatus is shown in the accompanying drawings in which,

Figure 1 is a front elevation of the apparatus. Fig. 2 is a section on the line 2—2, Fig. 1. Figs. 3, 4 are side and edge views, respectively, of a certain davit-turning gear.

Duplicate devices are mounted alongside each davit, and but one is shown and described.

In these drawings, A, A represent two similar parallel plates or standards of metal which are connected by a broad plate B, rods C and braces D, the whole forming a very strong rigid frame which is rigidly secured to the deck of the vessel alongside a davit E of ordinary form. In this frame is revolubly mounted a drum F upon a shaft F^1, and with this drum rotate a narrow friction brake drum G and a ratchet wheel H with which engages at proper times a pawl I mounted upon the frame and provided, for convenience, with a handle I^1 for throwing it out of engagement. The drum is rotated by means of a shaft J mounted on the frame, a pinion K and a gear L rigidly connected with the drum. The shaft J is fitted to receive at each end a detachable hand crank M, or if desired a power driven gear or pulley may be mounted upon one end, as indicated in dotted lines in Fig. 1. Around the brake drum passes a band N bearing upon its inner face friction blocks N^1, to engage the periphery of this drum. One end of this band is secured to a rigid block O projecting from the frame and the other is attached to a block P mounted upon the end of a heavy screw Q working in the block O and rotated by a hand wheel Q^1, or the like. By rotating this screw the ends of the band are caused to approach or recede and the band is thus compelled to grip or to release its drum. If necessary, the operator can rotate the screw and set the brake so firmly as to hold the heaviest boat, and should movement of the vessel or other cause momentarily prevent his holding the wheel no harm results, since no force exerted through or upon the drum can turn the screw. Obviously, the speed of the boat's descent may be fully and easily controlled by the brake. The davit is rotated by means of a second shaft R parallel to the first and like it rotated by detachable cranks which may be the same cranks used for raising and lowering. This shaft carries a heavy worm S which engages a heavy gear T which is made in two parts and clamped upon the davit E at the proper height, as shown by means of bolts T^1. From the construction it is evident that the davits are always locked by the worm against undesired rotation, while they may at any time be rotated through any desired angle by means of the cranks.

In operation, the pawl being in engagement and holding the drum against rotation by the weight of the boat hung from the davits, the davit is rotated by means of a crank applied to the worm shaft until the boat is carried out-board. The brake is then set, the pawl is disengaged and the rotation of the drum being controlled by the brake, the boat descends as rapidly or as slowly as may be desired, the speed being instantly varied by a slight turning of the brake wheel. When a boat is to be raised, the pawl is thrown into engaging position, the brake is loosened barely enough to free the drum, and

the winding drum is rotated by the cranks (or power connection) applied to the shaft J and acting through the pinion K and gear L. When the boat reaches the proper height the winding is stopped and the davits are swung to in-board position by means of the crank, shaft R, worm S and gear T.

The parts are few, all are very strong, there are no springs, clutches, nor sliding shafts, and if the pawl be in action during raising, the attendants may at any time let go of any or all parts and no harm results.

What I claim is:

1. In apparatus of the class described, the combination with a rigid frame adapted to be bolted to a deck alongside an ordinary davit, of a cable operating device mounted in the frame, a horizontal shaft mounted in the frame near that side which is to be next the davit, a worm fixed upon said shaft, and a divided worm gear adapted to be clamped upon an ordinary davit and to be engaged by said worm while thus clamped.

2. In apparatus of the class described, the combination with a rigid frame consisting of two parallel plates rigidly connected by transverse members and adapted to be bolted to a deck with the planes of the plates upon opposite sides of an adjacent davit, of a cable drum, gearing for operating the cable drum, and a brake drum, all lying between said plates, a horizontal shaft mounted in the frame near the side adjacent to the davit, a worm fixed to said shaft between the plates, and a divided worm gear adapted to be clamped to the davit and to engage the worm while so clamped.

3. The combination with two parallel vertical plates rigidly connected by a medial horizontal plate and adapted to be bolted to a deck alongside a davit with the vertical plates perpendicular to the deck's margin, of a drum shaft mounted transversely in the upper part of the vertical plates, a gear, rope-drum, brake drum, and a circular ratchet, all fixed to said shaft between the vertical plates, a screw-actuated band brake encircling the brake drum, a pawl to engage said ratchet, two shafts mounted alongside each other below said drum and parallel thereto, a pinion upon one of the shafts engaging said gear, a worm upon the other of the two shafts and between the vertical plates, and a divided worm gear adapted to be clamped upon an ordinary davit and to engage said worm while so clamped.

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

HORACE B. FIRTH.

Witnesses:

DAVID R. GILBERT,

M. J. SLOAN.