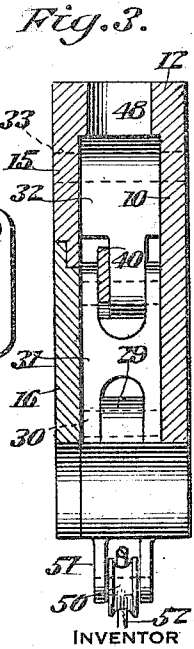
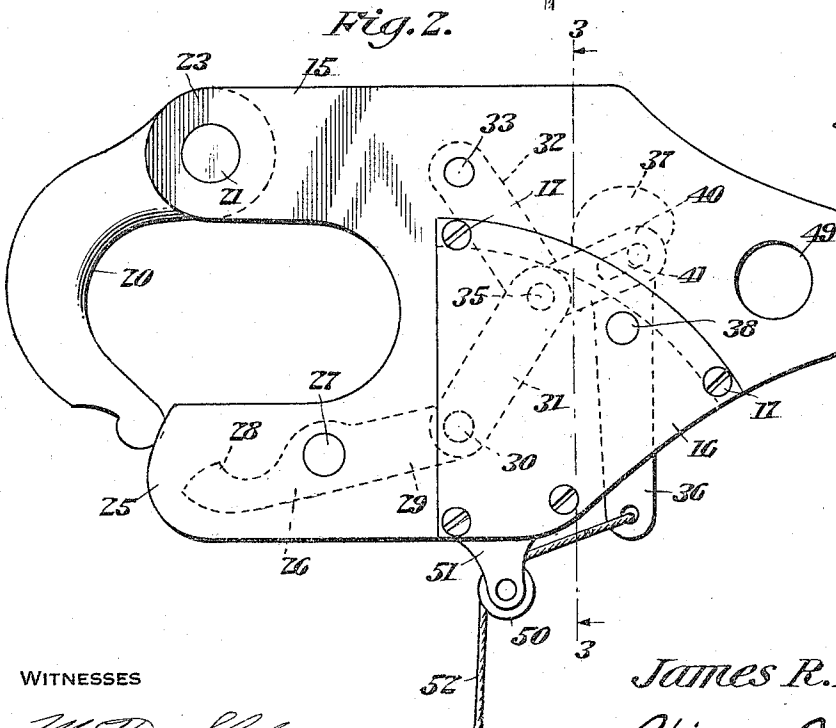
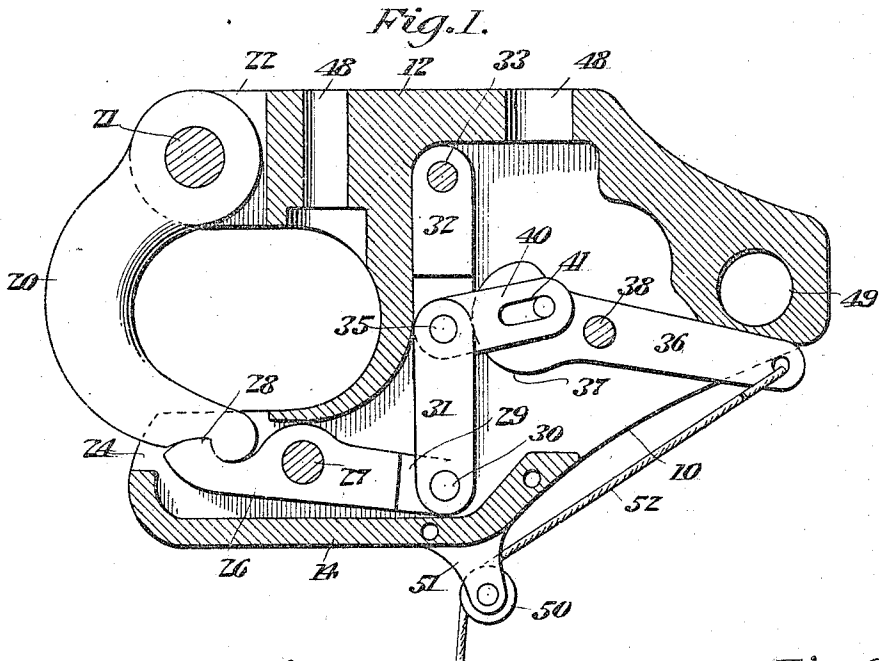


J. R. IRWIN.
 LOCKING AND RELEASING DEVICE.
 APPLICATION FILED FEB. 20, 1917.

1,242,809.

Patented Oct. 9, 1917.



WITNESSES

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JAMES R. IRWIN, OF SAN FRANCISCO, CALIFORNIA.

LOCKING AND RELEASING DEVICE.

1,242,809.

Specification of Letters Patent.

Patented Oct. 9, 1917.

Application filed February 20, 1917. Serial No. 149,822.

To all whom it may concern:

Be it known that I, JAMES R. IRWIN, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented new and useful Improvements in Locking and Releasing Devices, of which the following is a specification.

This invention relates to improvements in locking and releasing devices for cables, and one of the objects is to provide in connection with a hook to be used for tow lines and other purposes, a positive locking device which will also effect the positive release of the locking member when the operating member is thrown to release position.

A further object is to provide in connection with a hook and the pivoted locking member, engaging the hook, certain means operated by a lever for forcing the locking member to engaging position, and means for positively releasing these elements when the lever is thrown to unlocking position.

In the accompanying drawings, forming part of this application;—

Figure 1 is a view in elevation, with parts of the casing broken away to show the interior construction.

Fig. 2 shows the device in unlocked position, as indicated by dotted lines.

Fig. 3 is a section on line 3—3 of Fig. 2.

In the manufacture of the device herein described I employ a casing which may be of cast metal, and which preferably consists of a major portion comprising one side member and a fraction of the opposing side member, a hook being pivotally mounted between the aforesaid members. The locking and releasing mechanism is mounted within the casing and a complementary side member is provided for covering the elements of the locking mechanism, this member being removable from the major portion of the casing. It will be understood that this casing includes flange members projecting from the integrally formed side member and constituting the edge portions of the casing.

The device as a whole is intended to be mounted in a horizontal position or used in a vertical position as circumstances require. Suitable apertures are provided in the flange portions for the accommodation of bolts for securing the casing either in a horizontal position or a vertical position.

The major portion of the casing comprises a side member 10, flange members 12 and 14

and side member 15 which extends approximately one-third of the distance from one end of the casing where the hook is pivoted toward the opposite end. Complementary member 16 completes this side of the casing and is removable by withdrawing the screws 17 extending therethrough.

The hook 20 is pivoted at 21 between ears 22 and 23 projecting from the side members and the free end of the hook is received between portions 24 and 25 at the opposite side of the casing. A pivoted locking member 26 is formed with an enlarged central portion having an aperture therein for the reception of pin 27 passing through the casing and said locking member has a hook-like engaging portion 28 positioned opposite the free end of the hook when the latter is closed. Locking member 26 is provided with a shank 29 through which a pin 30 passes.

This locking member is operated by means of a toggle joint comprising members 31 and 32, member 31 being secured to the pin 30, and member 32 being pivotally mounted in the casing by means of its connection with pin 33. Members 31 and 32 are pivotally connected with each other by a pin 35, member 31 being slotted at its ends, and member 32 being provided with a tongue entering the slots.

The toggle joint is operated by a lever 36 provided with a cam portion 37 on one end thereof and said lever is pivoted at point 38, the pin passing through the major and minor portions of the casing. The cam portion 37 has positive engagement with the connected ends of toggle members 31 and 32 and produces a positive locking device when the lever is thrown into position for that purpose. A link 40 is connected with pin 35 of the toggle joint and is slotted at 41, said slot being engaged by a headed pin or the like 42 secured to the lever on that side of the pivotal point of said lever adjacent to the cam portion.

The link last mentioned is regarded as an important feature of the device since it is employed for the purpose of effecting the positive movement of the toggle joint members to release position when the lever and cam are thrown to release position. This construction and operation permits of the immediate release of the hook due to the tension exerted on the latter by the cable or tow line.

The device may be mounted on the deck of a vessel or the like by passing bolts through apertures 48 in the casing and said device may be mounted in a vertical position when circumstances require by passing a bolt through aperture 49 in a wall of the casing located at an angle with the wall in which apertures 48 are provided.

In order to operate the lever by means of a rope or the like extending to a suitable point, I provide a pulley 50 mounted on a bracket 51 on the outside of the casing, this pulley carrying a rope 52 which is connected with the free end of lever 36 and passes over the pulley, terminating at the point desired to permit of the manipulation of the device in the most effective manner.

I claim:—

1. In a device of the class described, a pivoted hook, a pivoted locking member engaging the free end of the hook, means for positively throwing the locking member to engaging position, and a plurality of members controlling said means, one of which members has a limited movement independent of the other during the engaging movement, said members effecting the positive movement of the locking member upon the release thereof.

2. In a device of the class described, a pivoted hook, a pivoted locking member engaging the free end of the hook, a plurality of devices having pivotal connection with each other for throwing the locking member to engaging position, and a lever having a cam-shaped end portion engaging one of the pivoted devices at the point of connection with the other of said devices.

3. In a device of the class described, a pivoted hook, a pivoted locking member engaging the free end of the hook, a plurality of swinging members, one of which is pivoted to the locking member and the other of which is pivoted to a stationary member, said swinging members being pivotally connected with each other, and an operating lever engaging one of said members at its point of connection with the other member.

4. In a device of the class described, a pivoted hook, a pivoted locking member engaging the free end of the hook, a plurality of pivoted devices, means for connecting the

latter, a pivoted lever slidably engaging one of said devices at the point of connection, and a link mounted on said lever and connected with the means securing the pivoted devices to each other.

5. In a device of the class described, a pivoted hook, a pivoted locking member engaging one end of the hook, a plurality of pivoted links constituting a toggle joint, one of said links being connected to the locking member and the other being connected to a stationary member, a pivoted lever, a cam member carried thereby, said cam member engaging the toggle joint, and means mounted on the lever and connected with the toggle joint for throwing the latter and the locking member when the lever is thrown to release position.

6. In a device of the class described, a casing including a plurality of side portions, flange members connecting certain of said side portions, a hook pivoted between the side portions, a locking member engaging the free end of the hook, a plurality of members constituting a toggle joint pivoted to the casing and pivoted to the locking member, means for forcing the toggle joint into position for securing the locking member, and means connected with the forcing means and with the toggle joint for producing the positive movement of the members of said toggle joint simultaneously with the release thereof.

7. In a device of the class described, a casing including a major portion, a minor portion constituting part of one side of said major portion, a hook pivoted between oppositely located parts of the major portion, said major portion being provided with apertures in the walls extending at right angles with the longitudinal axis of the casing, a pivoted locking member engaging the hook, means for locking and releasing the locking member, and operating means pivotally connected with the means last mentioned and having sliding engagement with a portion of said means, said operating means being mounted between the major and minor portions of the casing.

In testimony whereof I affix my signature.

JAMES R. IRWIN.

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