T. CARLSON.

HOISTING DEVICE.

APPLICATION FILED JULY 5, 1921.

1,434,478.

Patented Nov. 7, 1922.

FIG. 1

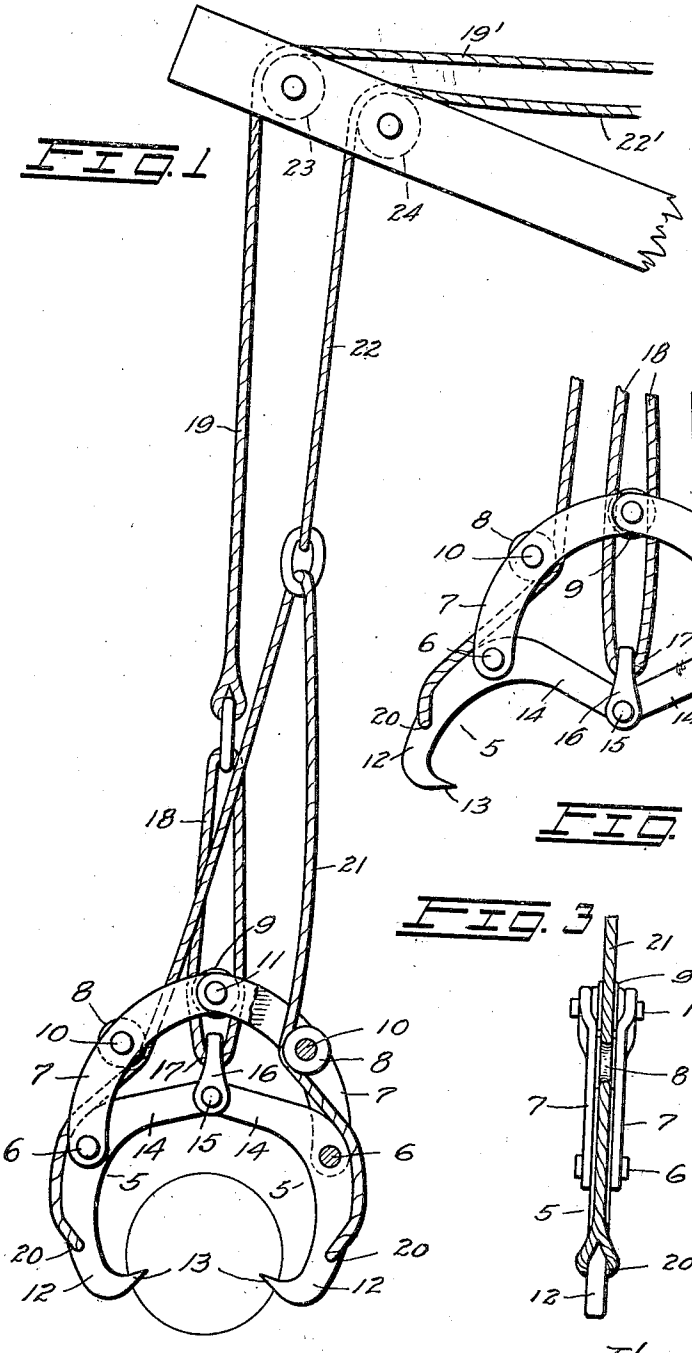


FIG. 2

FIG. 3

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Patented Nov. 7, 1922. 1,434,478

UNITED STATES PATENT OFFICE.

THEODORE CARLSON, OF STILLWATER, WASHINGTON.

HOISTING DEVICE.

Application filed July 5, 1921. Serial No. 482,353.

To all whom it may concern:

Be it known that I, THEODORE CARLSON, a citizen of the United States, residing at Stillwater, in the county of King and State of Washington, have invented certain new and useful Improvements in Hoisting Devices, of which the following is a specification.

This invention relates to hoisting devices and, more especially, to an improvement in the apparatus shown and described in United States Patent No. 1,369,963 issued to me March 1, 1921; and the object of this invention is to simplify and lessen the cost of construction and generally to render the device more convenient and efficient in operation.

In the accompanying drawings,—

Figure 1 is a front elevation, with a portion broken away, of devices embodying the present invention shown applied. Fig. 2 is a front elevation of the devices with the parts thereof in different relative positions than in which they are shown in Fig. 1. Fig. 3 is a side elevation of the device.

The improved hoisting devices consist of a grapple consisting of two lever members 5 which are respectively fulcrumed at about the midlengths thereof by pins 6 to the lower ends of links 7. As shown, these links are each comprised of a pair of bars spaced apart to accommodate therebetween one of said lever members and guide pulleys 8 and 9. The pulleys 8, one for each pair of link bars, are rotatable upon pins 10 secured to the associated links at about the midlengths of the latter. The other pulley 9 is rotatable upon a pin 11 which serves to hingedly connect the upper ends of the links together.

The hook-arms 12 of the grappling levers 5 below the fulcrum points thereof constitute jaws and terminate in opposed bills 13. The other lever arms 14 are pivotally connected together by means of a pin 15 which serves to couple a clevis 16 to the levers. Said clevis is engaged in the bight 17 of an endless rope 18, or an equivalent, which passes upwardly through ways or openings between the complementary link bars at diametrically opposite sides of the pulley 9 and is suspended by a main hoisting cable 19.

Each of the grapple jaws is connected at 20 to an end of a flexible sling 21 which extends through the openings or ways in the adjacent link above and below the guide pulleys 8, as shown, and is suspended by a supplementary, or releasing cable 22.

The sling 21 constitutes, in effect, bifurcations or branches of the cable 22 and may, if desired, be made a part thereof.

The cables 19 and 22 respectively pass over sheaves 23 and 24 and thence extend as leads 19^1 and 22^1 to suitable cable winding drums, not shown.

With the main cable 19 slack and utilizing the supplementary cable 22 the jaws of the device are brought, as shown in Fig. 2, into their relatively open positions to receive a load.

By then rendering the main cable 19 operative, the grapple arms are caused to engage the load (Fig. 1) which may thereupon be elevated through the medium of the hoisting cable acting alone or by both cables acting cooperatively according to the desire of the operator or the weight of a load.

What I claim, is,—

1. In apparatus of the character described, a grappling device consisting of two links pivotally connected together at the upper ends thereof, a pair of levers fulcrumed intermediate their lengths to the lower ends of said links and affording hook shaped arms depending from the respective links and arms located between said links, a hoisting cable, means operatively connecting said cable to the last named arms and extending through ways provided in said links, a releasing cable, and link guided connections between the releasing cable and said arms.

2. In apparatus of the character described, a pair of links each comprising two spaced bars, a pin pivotally connecting the upper ends of the bars of both links together, a guide rope-pulley rotatable in the space between the complementary bars of each link and at about the midlength thereof, a pair of grappling levers extending through the spaces between the bars of the respective links and fulcrumed thereto at substantially the lower ends of the links, each of said levers having an arm depending from the adjacent link and a second arm located between the links, a pin pivotally connecting the second named arms of both levers together, a hoisting cable, a connection between the hoisting cable and the second named arms, said connection being guided in said links, a releasing cable having connec-

tions secured to the first named arms of said levers and guided by said pulleys and the respective links.

3. In hoisting apparatus, a grappling device consisting of two links pivotally connected at one end of each, and a tongs member fulcrumed at about its midlength to the free end of each of said links and pivotally connected with each other between the links, a hoisting cable, a releasing cable, and flexible connections extending through ways provided in the links and connecting the respective cables with said tongs members at opposite sides of the fulcrums thereof whereby the tongs members are caused to be swung into and from their operative positions respectively by employing the hoisting cable and the releasing cable.

Signed at Seattle, Washington, this 24th day of June, 1921.

THEODORE CARLSON.

Witnesses:

PIERRE BARNES,

MARGARET G. SUPPLE.