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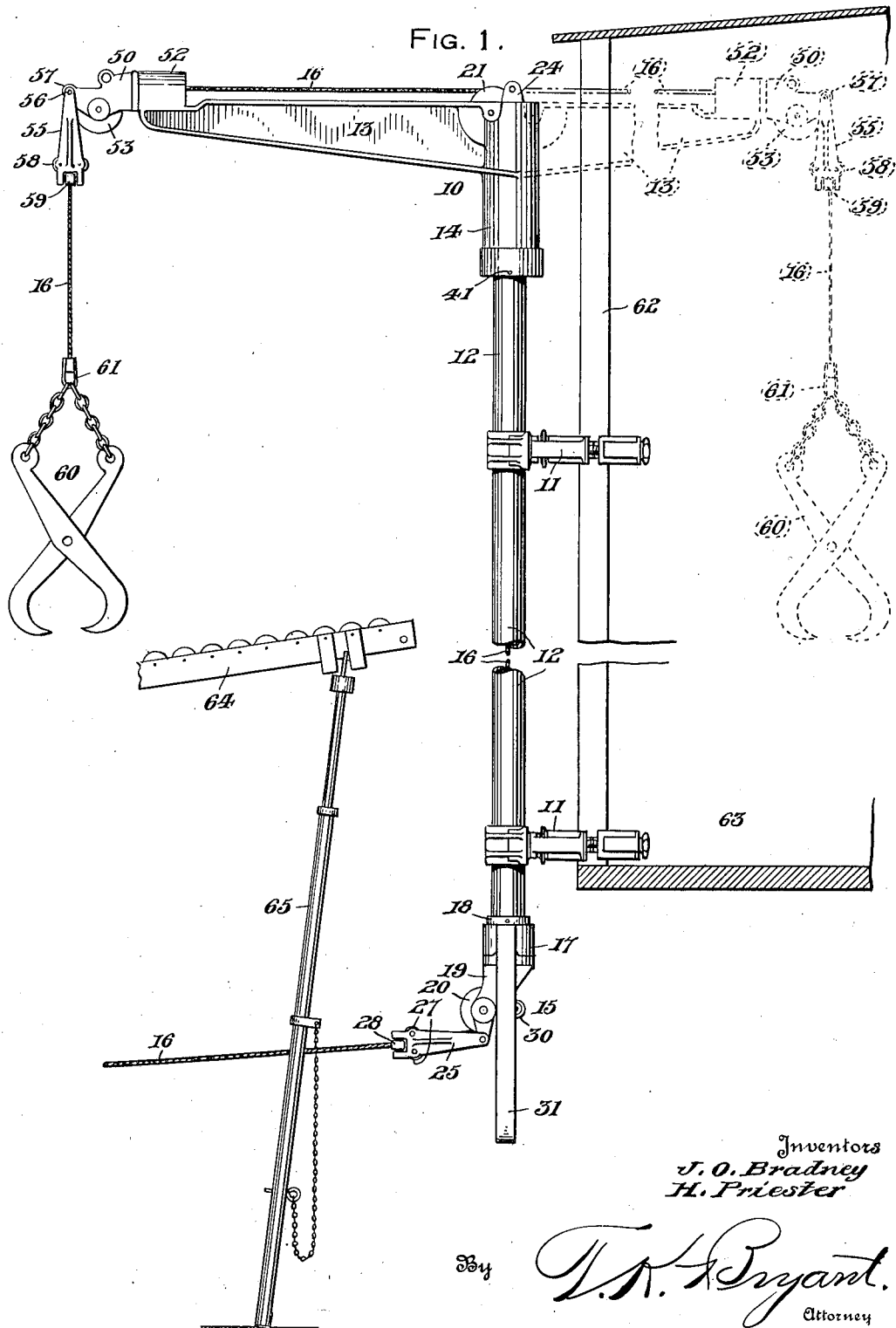
DAVIT,

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1,291,746.

Patented Jan. 21, 1919.

2 SHEETS—SHEET 1.



DAVIT.

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2 SHEETS--SHEET 2.

FIG. 1.

FIG. 2.

FIG. 3.

FIG. 4.

FIG. 5.

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DAVIT.

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To all whom it may concern:

Be it known that we, JAMES O. BRADNEY and HENRY PRIESTER, citizens of the United States of America, residing at Middletown, in the county of Orange and State of New York, have invented certain new and useful Improvements in Davits, of which the following is a specification.

The present invention relates to certain new and useful improvements in davits.

The primary object of the invention is the provision of a means for easily and quickly handling heavy objects such as railway ties in elevating, transferring and depositing the same as found desirable during the loading and unloading operation.

Our device is especially serviceable in connection with the piling or stacking of railway ties, when the ties are unloaded from a car and transferred by means of this invention to the piler mechanism. Ties and similar articles may be so transferred from either a box car, gondola or other vehicle easily and quickly to an adjacent point for piling or hauling.

A further object of the invention is the provision of a davit quickly attached for being supported upon a car for unloading articles therefrom by means of a distantly positioned power, the davit including means for permitting the transmission of power in any desired direction whereby articles may be elevated and lowered at points on different sides of the device.

A further object of the invention is to provide a universal davit arranged for the automatic accommodation of power means located in any direction from the davit and also accommodating the hoisting operations at any point surrounding the device and within the radius of its limitations, the structure being quickly set up for use as well as transferred from place to place when found desirable.

With these general objects in view and others that will appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated in the accompanying drawings, and then claimed.

In the drawings forming a part of this application and in which like reference characters refer to corresponding parts throughout the several views,

Figure 1 is a side elevation of the device partially broken away illustrated in its operative arrangement as employed in connection with the transfer of articles from a car to gravity rolls, dotted lines being employed for illustrating portions of the device in their adjusted positions,

Fig. 2 is a similar view of the device detached and with parts broken away illustrated upon a slightly enlarged scale,

Fig. 3 is a top plan view thereof,

Fig. 4 is a rear elevation of the lower portion of the device, and

Fig. 5 is a central sectional detail view of the upper portion of the device showing the journaled connection between the boom and the mast.

It will be understood at the outset that the invention broadly consists of a davit 10 having an attaching clamp 11, all of which is serviceable in quickly mounting the device for transferring any desired objects short distances and at different elevations if the occasion requires. The device is serviceable in connection with the piling of lumber and ties and is advantageously employed in connection with our motor operated adjustable conveyer set forth in application Serial No. 200,120, filed November 3, 1917. The device may also be employed upon shipboard in connection with life boats, as well as a war appliance in transferring ammunition, and many other uses of a similar nature.

The davit 10 includes a tubular mast 12 having a full universal rope leading and guiding device comprising an arm or boom 13 carried by a head 14 journaled upon the upper end of the mast 12 and projecting at right angles therefrom while an intake lead or guide member 15 for the hoisting rope or cable indicated at 16 is swivelly mounted upon the bottom of the said mast.

The intake member 15 provides a sleeve 17 journaled to freely revolve upon the lower end of the mast 12 between stop collars 18 secured to the mast. A heel 19 depends from the sleeve 17 with a pulley 20 journaled therein and over which the rope 16 passes for axially extending through the mast 12 and the head 14 to a similar pulley 21 journaled at the upper end of the head 14 at the inner end of the boom 13.

The boom 13 is of tapered I-beam formation having a socket 22 in its upper side for

accommodating the pulley 21 while a roller 23 is journaled in lugs 24 centrally arranged upon the top of the head 14 for guiding the rope 16 over the pulley 21 and maintaining the same in position thereon.

A pendant 25 is hingedly suspended from a pivot pin 26 carried by the lower end of the heel 19 for guidingly receiving the rope 16 between diametrically opposite pairs of rollers 27 and 28 journaled adjacent the free end of the pendant 25, the said rope passing between the members of each pair of said rollers 27 and 28 and thence over the lower pulley 20. A guide roller 29 is journaled upon the pin 26 while a similar roller 30 is journaled at the rear of the heel 19 both of which rollers 29 and 30 are arranged in close proximity to the pulley 20 for maintaining the rope 16 operatively arranged upon the said pulley. A U-shaped leg or support 31 is carried by the sleeve 17 and depends below the heel 19 affording protection for the mechanism 15 including the pendant 25 when the latter is in its lowered position.

The boom 13 is antifrictionally mounted upon the upper end of the mast 12 by means of the head 14 heretofore referred to, upper and lower ball bearings 32 and 33 respectively being operatively arranged between the mast 12 and the head 14. A bushing 34 is secured within the upper open end of the mast 12 having an annular cage 35 for the ball bearing 32 resting upon an annular shoulder 36 of the said bushing, while a similar cage 37 for the balls 32 is adapted for supporting the head 14 by the seating of an inner shoulder 38 of the head upon the said cage 37.

A ring 39 is secured within the lower enlarged end 40 of the head 14 by means of screws 41 while a similar ring 42 is secured to the mast 12 by means of screws 48, at a point spaced thereabove. A ball cage or housing 43 is arranged between the ring 39 and an inner annular shoulder 44 of the head end 40 having guide pins 45 extending therethrough and freely positioned within an annular groove 46 arranged in the periphery of a companion ball housing 47 arranged upon the mast 12 for the balls 33. It will be seen that in this manner, the weight of the boom 13 as well as the load carried thereby is antifrictionally supported upon the mast 12, so that the mast and load are free to swing rotarily around the mast at the top thereof in the same manner that the leading means 15 for the power rope 16 swings for universal movement around the bottom of the mast. The heel 19 is offset from the sleeve 17 adapting the pendant 25 for use only at one side of the leg 31 and although the pendant may be swung through the said leg, an employment of the device with the pendant in this position

would not be advisable as the rope 16 would be required to travel around another angle and pass over the roller 29 as a pulley. A universal guide member 49 is arranged at the free end of the boom 13 in the nature of a bracket 50 having an axle 51 journaled in a hub 52 upon the top of the boom and arranged with a pulley 53 adapted to receive the rope 16 thereover after passing through the axle 51 and bracket 50. A guide roller 54 is carried by the bracket 50 above the pulley 53 while a pendant 55 identical in construction to the aforementioned pendant 25 is pivoted by means of a pin 56 upon the free end of the bracket 50. A guide roller 57 is carried by the pin 56 adjacent the roller 53 while the pendant 55 has diametrically oppositely arranged pairs of rollers 58 and 59 adjacent its free end for receiving the rope 16 therebetween, after the rope leaves the pulley 53.

Any form of attaching means may be arranged at the free outer end of the rope 16 such as a pair of tongs 60 suspended from a loop 61 attached to the said rope. The mast 12 is readily attached in an upright position to the side 62 of a car 63 by means of a plurality of said clamps 11 as illustrated in Fig. 1 of the drawings and the boom 13 may be readily rotated upon the mast 12 for bringing the tongs 60 within the car 63 for engaging any articles to be hoisted, such as railway ties.

Any desired form of power may be arranged for pulling the rope 16, such power being positioned at a suitable distance from the device and capable of complete control for pulling upon the rope and stopping at any time required as well as releasing the rope for permitting the rope to descend by reason of its own weight. The movement of the sleeve 17 and pendant 25 being universal, the power means may be arranged at any desired side of the mast 12 and the rope 16 will be immediately centered for passing through the mast and over the upper pulley 21. For purposes of illustration, we have shown a portion of a conveyer 64 arranged adjacent the car 63 and in the nature of gravity rollers suitably supported by means of a strut 65, it being understood that the article within the car 63 may be engaged by the tongs 60 and the boom 13 revolved for depositing such article upon the gravity rolls of the conveyer 64.

By means of this device, a number of ties may be easily and quickly removed from the car and transferred to an adjacent point to be conveyed away or otherwise operated upon.

While the form of the invention herein set forth is believed to be preferable it will be understood that minor changes may be made therein without departing from the scope of the invention as claimed.

What we claim as new is:—

1. A davit comprising an upright adapted for rigid mounting, a support capable of universal movement supported from the top thereof, a guide swiveled upon the bottom of said upright, and means adapted for antifrictionally supporting a draft member extended through the said guide, upright and support.

2. A davit comprising an upright adapted for rigid mounting, a support capable of universal movement supported from the top thereof, a guide swiveled upon the bottom of said upright, pendants pivoted to the free ends of said support and guide, a hoisting rope arranged through the said pendants, guide, upright and support and means adapted for antifrictionally supporting the rope in the said guide, pendants and support.

3. A davit comprising a mast, a boom antifrictionally journaled upon the top thereof, a guide swiveled upon the bottom of the mast, a bracket swiveled upon the free end of the boom and similar centering pendants pivoted to the said guide and bracket.

4. A davit comprising a mast, a boom antifrictionally journaled upon the top thereof, a guide swiveled upon the bottom of the mast, a bracket swiveled upon the free end of the boom, similar centering pendants pivoted to the said guide and bracket, antifriction members carried by said pendants, guide, boom and bracket adapted for maintaining a draft rope out of contact with the pendants, guide, mast, support and bracket during the relative movements of said members when the device is operated.

5. A davit comprising a mast, a boom antifrictionally journaled upon the top thereof, a guide swiveled upon the bottom of the mast, a bracket swiveled upon the free end of the boom, similar centering pendants pivoted to the said guide and bracket, antifriction members carried by said pendants, guide, boom and bracket, a draft rope upon the said antifriction members and extending through the said guide, mast, support and bracket without touching said mast.

6. A davit comprising a tubular mast, a laterally projecting boom arranged with a hollow head antifrictionally journaled upon the upper end of the mast, a sleeve upon the upper side of the free end of the boom, a bracket having a tubular axle journaled in the said sleeve and a rope guide swiveled upon the lower end of the mast.

7. A davit comprising a tubular mast, a laterally projecting boom arranged with a hollow head, antifrictionally journaled upon the upper end of the mast, a sleeve upon the upper side of the free end of the boom, a bracket having a tubular axle journaled in the said sleeve, a rope guide swiveled upon the lower end of the mast, antifriction mem-

bers carried by said guide, boom and bracket and a hoisting rope mounted upon said antifriction members arranged for longitudinal movement through the said guide, mast, boom and bracket.

8. A davit comprising a tubular mast, a laterally projecting boom arranged with a hollow head, antifrictionally journaled upon the upper end of the mast, a sleeve upon the upper side of the free end of the boom, a bracket having a tubular axle journaled in the said sleeve, a rope guide swiveled upon the lower end of the mast, antifriction members carried by said guide, boom and bracket, pendants swingingly mounted adjacent the opposite ends of the device upon the said guide and bracket, antifrictional centering members adjacent the free ends of said pendants and a draft rope mounted upon the said antifriction members adapted for longitudinal movement through the said pendants, guide, mast, boom and bracket.

9. A davit comprising a tubular mast, spaced collars secured to the bottom of the mast, a guide having a sleeve journaled upon the mast, between the said collars and arranged with a depending heel, a U-shaped leg depending from said sleeve out of alinement with the said heel and a boom journaled upon the upper end of the mast laterally projecting therefrom.

10. A davit comprising a tubular mast, spaced collars secured to the bottom of the mast, a guide having a sleeve journaled upon the mast, between the said collars and arranged with a depending heel, a U-shaped leg depending from said sleeve out of alinement with the said heel, a pulley journaled in said heel, a guide roller journaled in the heel adjacent the pulley, a pendant hinged to the free end of the heel having pairs of guide members journaled therein, a guide roller journaled at the connection of said heel and pendant adjacent the said pulley and a supporting boom journaled to the upper end of the mast.

11. A davit comprising a tubular mast, spaced collars secured to the bottom of the mast, a guide having a sleeve journaled upon the mast, between the said collars and arranged with a depending heel, a U-shaped leg depending from said sleeve out of alinement with the said heel, a pulley journaled in said heel, a guide roller journaled in the heel adjacent the pulley, a pendant hinged to the free end of the heel having pairs of guide members journaled therein, a guide roller journaled at the connection of said heel and pendant adjacent the said pulley, a hollow head antifrictionally journaled upon the upper end of the mast, a laterally projecting boom carried by the head, a pulley journaled at the point of connection between the said head and boom, a guide roller journaled in the upper end of the head adjacent the last

named pulley and a draft rope adapted for longitudinal movement arranged upon the said pulleys adjacent the said rollers and extending through the said pendant, bracket, mast, head and boom.

12. A davit comprising a tubular mast, spaced collars secured to the bottom of the mast, a guide having a sleeve journaled upon the mast, between the said collars and arranged with a depending heel, a U-shaped leg depending from said sleeve out of alignment with the said heel, a pulley journaled in said heel, a guide roller journaled in the heel adjacent the pulley, a pendant hinged to the free end of the heel having pairs of guide members journaled therein, a guide roller journaled at the connection of said heel and pendant adjacent the said pulley, a hollow head antifrictionally journaled upon the upper end of the mast, a laterally projecting boom carried by the head, a pulley journaled at the point of connection between the said head and boom, a guide roller journaled in the upper end of the head adjacent the last named pulley, a hub upon the outer end of the boom, a bracket having a tubular axle journaled in the said hub, a pulley and a guide roller journaled in the said bracket, a pendant pivoted to the outer free end of the bracket, guide rollers journaled adjacent the opposite ends of the said bracket carried pendant and a hoisting rope arranged upon the said pulleys guidingly positioned for

longitudinal movements through the said pendants, guide, mast, head, boom and bracket during the different relative positions of the said parts within the limits of the movement thereof.

13. A davit comprising a mast, a boom and a guide journaled for rotation adjacent the opposite ends of the mast, a bracket journaled adjacent the free end of the boom, a pulley journaled at the adjacent ends of the boom and mast, and similar pulleys journaled upon the said guide and bracket adjacent the opposite ends of the device, said pulleys being adapted for operatively mounting a draft rope thereon.

14. A davit comprising a mast, a boom and a guide journaled for rotation adjacent the opposite ends of the mast, a bracket journaled adjacent the free end of the boom, a pulley journaled at the adjacent ends of the boom and mast, similar pulleys journaled upon the said guide and bracket adjacent the opposite ends of the device, guide rollers journaled in said guide, boom and bracket adjacent the said pulleys, and a hoisting rope arranged upon the said pulleys adjacent the said rollers longitudinally arranged through the said guide, mast, boom and bracket out of contact therewith.

In testimony whereof we affix our signatures.

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