

(No Model.)

J. N. DURKEE.
DERRICK ATTACHMENT.

No. 579,428.

Patented Mar. 23, 1897.

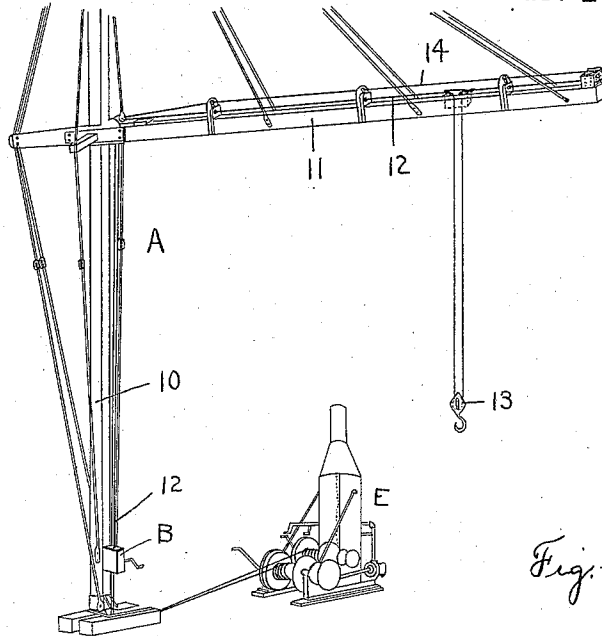


Fig. 1.

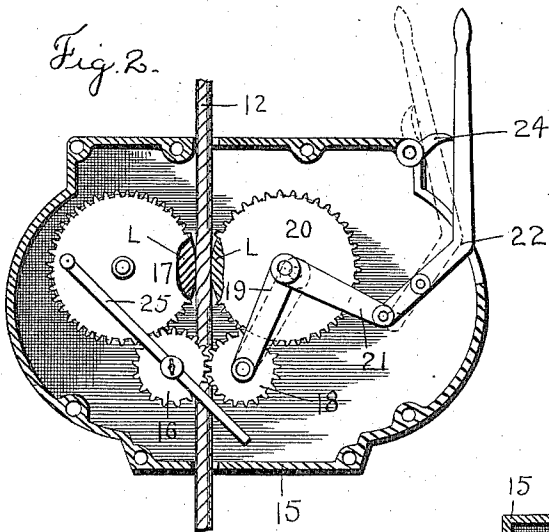


Fig. 2.

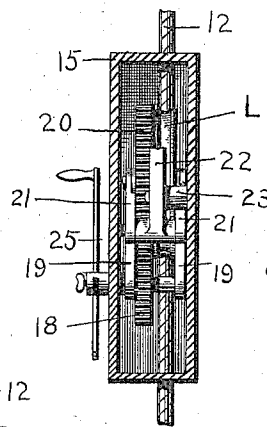


Fig. 3.

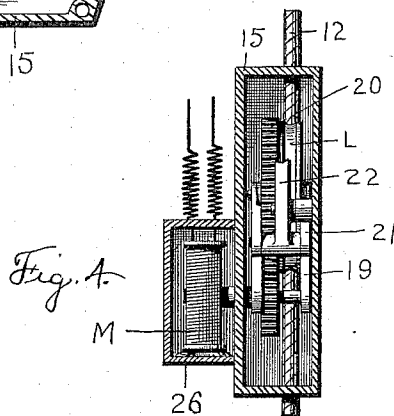


Fig. 4.

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JERRY N. DURKEE, OF PROVIDENCE, RHODE ISLAND.

DERRICK ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 579,428, dated March 23, 1897.

Application filed October 5, 1896. Serial-No. 607,865. (No model.)

To all whom it may concern:

Be it known that I, JERRY N. DURKEE, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Derrick Attachments, of which the following is a specification.

My invention relates especially to that class of derricks which are employed in the construction of buildings; and the object of my invention is to provide a strong, simple, and efficient derrick attachment for pulling the derrick-cables back from the windlasses which are employed for winding the same up.

To these ends my invention consists of the parts and combinations of parts, as herein-after described, and more particularly pointed out in the claims at the end of this specification.

In the accompanying drawings, Figure 1 is a perspective view of a derrick and its hoisting-engine, and shows the manner in which my attachment can be applied thereto. Fig. 2 is a sectional front view of a derrick attachment constructed according to my invention. Fig. 3 is a transverse sectional view of the same, and Fig. 4 is a transverse sectional view illustrating a modified form of construction.

In the use of derricks for building constructions, especially in constructing buildings of considerable height, the derricks are ordinarily rigged with comparatively long and heavy wire cables or ropes. When a load has been raised by a derrick to a considerable height and has been unfastened from the block or tackle, the tackle itself is not ordinarily heavy enough to draw back the stiff wire cable from the hoisting-engine or windlass, and in order to lower the tackle it is usually necessary to draw the hoisting-cable off from its windlass or to "backhaul" the cable, as it is called. This backhauling of the lifting-cable of a derrick has heretofore ordinarily been done by hand, which is necessarily slow and laborious. The object of my invention is therefore to provide a derrick attachment for backhauling derrick-cables or unwinding said cables from their windlasses.

In its preferred construction a derrick attachment constructed according to my inven-

tion comprises a casing, friction-rolls journaled in said casing in position to engage with a derrick-cable, and means for turning said friction-rolls to draw or pull back the cable.

Referring to the drawings and in detail, A designates a derrick of any of the ordinary or approved constructions.

As shown, the derrick A comprises a vertical pivoted mast 10, carrying a fixed boom or arm 11. A carriage C is movably mounted on the boom 11 in the ordinary manner, and can be drawn out to the desired position by means of a shifting cable or rope 14. The lifting cable or rope 12 is trained over suitable pulleys in the carriage C and around the lifting block or tackle 13, down alongside of the derrick-mast A, to a suitable windlass or drum, which may be driven by an engine E in the ordinary manner.

My derrick attachment B may be secured to the derrick-mast A in any convenient or desired position, and, as illustrated, my attachment is arranged to act only upon the lifting-cable 12 of the derrick. If desired, however, a similar attachment may be employed for backhauling or unwinding the shifting-cable 14 of the derrick.

As illustrated, my derrick attachment comprises a casing 15, in which is journaled a driving-pinion 16. Journaled in the casing 15 in position to mesh with and be driven from the driving-pinion 16 is a gear 17, which carries a grooved friction-roller L. Also journaled in the casing and meshing with the driving-pinion 16 is an intermediate pinion 18. Two links, as 19 and 20, are pivoted concentrically with the intermediate pinion 18 and carry what I term the "movable" gear 20, which has a grooved friction-pulley L. The grooved pulleys L are preferably covered with leather or other similar material, so that they may be gripped firmly into engagement with the derrick-cable 12, which passes down between them. A clamping-lever 22 is journaled in the casing 15 and is connected to the pivoted links 19 by means of links or pieces 21, and as arranged it will be seen that the lever 22 and the connecting-links 21 form substantially a toggle-joint, by means of which the friction-pulley L, carried by the movable gear, may be brought into engage-

ment with the derrick-cable 12, so that said cable will be firmly gripped or clamped between the two grooved friction-pulleys. A pawl or catch 24 is journaled in the casing 15 in position to hold the clamping-lever 22 in its adjusted position. The shaft of the driving-pinion 16 extends through the casing in position to be actuated or driven in any desired manner.

10 As illustrated in Figs. 2 and 3, an adjustable crank 25 is mounted in the shaft of the driving-pinion. The crank 25 can be adjusted in its socket so as to have the desired amount of leverage.

15 The clamping-lever 22 may be set so that the derrick-cable 12 will be tightly clamped or gripped between the grooved friction-pulleys L, and the crank 25 may then be turned so as to unwind the hoisting-cable 12 from its windlass or drum, thus allowing the block or tackle 13 to descend.

20 In some cases instead of providing a crank for operating the friction-pulleys of my derrick attachment I contemplate driving the same by means of an electric motor or other motive power, and I have illustrated such a construction in Fig. 4. In this figure the electric motor M is illustrated as inclosed in a casing 26, secured at one side of the main casing 15 of the attachment, and where this construction is employed the attachment itself may be located at any desired position, either on the mast or boom of the derrick, it simply being necessary to extend the wires which supply current to the motor to a convenient controlling device and to provide means for shifting the clamping-lever.

25 I am aware that many changes may be made in my attachment for derricks by those who are skilled in the art, and I do not wish, therefore, to be limited to the construction which I have shown and described; but

30 What I do claim, and desire to secure by Letters Patent of the United States, is—

45 1. The combination of a derrick, a windlass for winding up the cable thereof, and means for engaging and acting upon said cable to unwind the same from its windlass, substantially as described.

50 2. In an attachment for derricks, the combination of a friction-roll arranged to engage a derrick-cable and means for turning said friction-roll to draw the cable back from its windlass, substantially as described.

55 3. In an attachment for derricks, the combination of a friction-roll, means for moving the friction-roll into engagement with a derrick-cable, and means for turning said friction-roll to draw the cable back from its windlass, substantially as described.

60 4. In a device of the class described, the combination of two grooved friction-rolls ar-

ranged to engage opposite sides of a derrick-cable and means for turning said rolls, substantially as described.

65 5. In an attachment for derricks, the combination of two grooved friction-rolls, a clamping-lever and links for holding the friction-rolls in engagement with a derrick-cable, and means for turning said friction-rolls to draw the cable back from its windlass, substantially as described.

70 6. In an attachment for derricks, the combination of a casing, a driving-pinion journaled therein, a gear meshing with the driving-pinion and carrying a grooved friction-roll, an intermediate pinion meshing with and driven from the driving-pinion, links pivoted concentrically with the intermediate pinion, a movable gear journaled in said links and carrying a curved friction-roll, a clamping-lever connected to turn the movable gear to bring its grooved friction-roll into engagement with the derrick-cable, and means for driving said gearing to draw the cable back from its windlass, substantially as described.

85 7. In an attachment for derricks, the combination of a friction-roll arranged to engage a derrick-cable, and an electric motor connected to turn said friction-roll to draw the cable back from its windlass, substantially as described.

90 8. In an attachment for derricks, the combination of a casing, a driving-pinion journaled therein, a gear meshing with the driving-pinion and carrying a grooved friction-roll, an intermediate pinion meshing with and driven from the driving-pinion, links pivoted concentrically with the intermediate pinion, a movable gear journaled in said links and carrying a second grooved friction-roll, a clamping-lever and connecting-link, said clamping-lever and connecting-links being arranged to form a toggle-joint for turning the movable gear to bring its grooved friction-roll into engagement with a derrick-cable, and means for driving said gearing, substantially as described.

95 9. In an attachment for derricks, the combination of two grooved friction-wheels, a clamping-lever arranged to move said friction-wheels into engagement with opposite sides of a derrick-cable, a pawl or catch for holding the clamping-lever in its adjusted position, and means for driving said friction-wheels, substantially as described.

100 In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JERRY N. DURKEE.

Witnesses:

J. J. CLIFFORD,
J. F. COLE.