(No Model.) 2 Sheets—Sheet 1.

C. W. HUNTER.

HOISTING MECHANISM.

No. 435,839. Patented Sept. 2, 1890.

FIG. I.

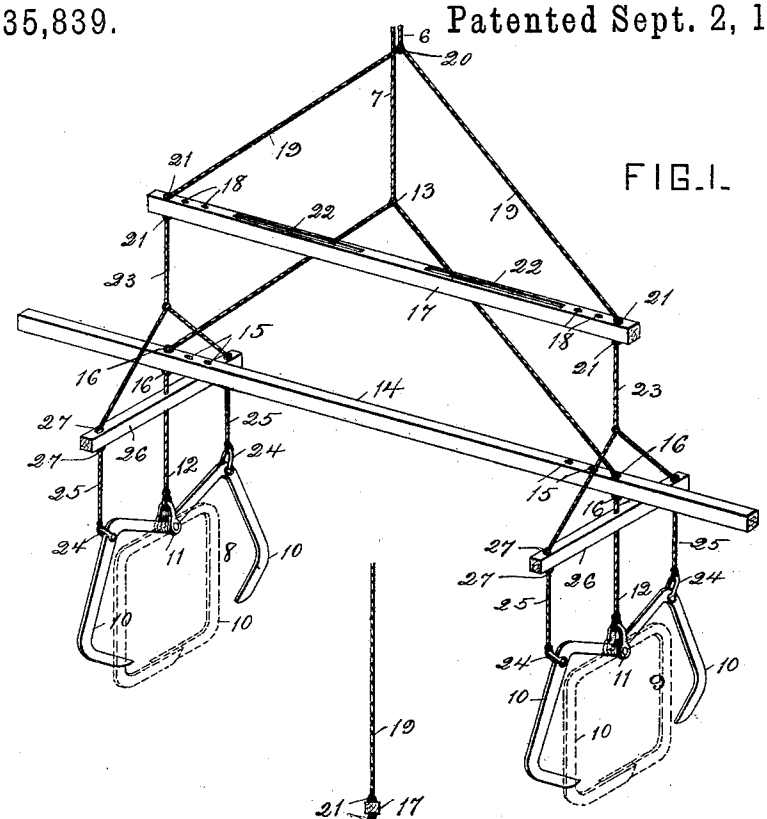
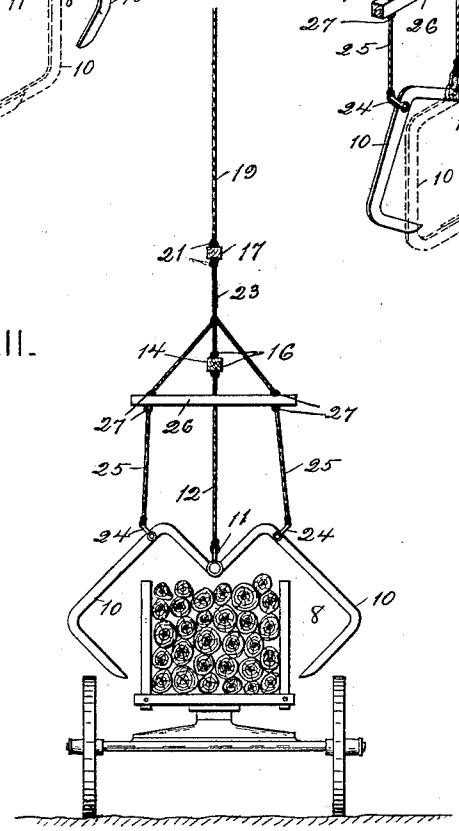


FIG. II.



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(No Model.) 2 Sheets—Sheet 2.

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FIG. III.

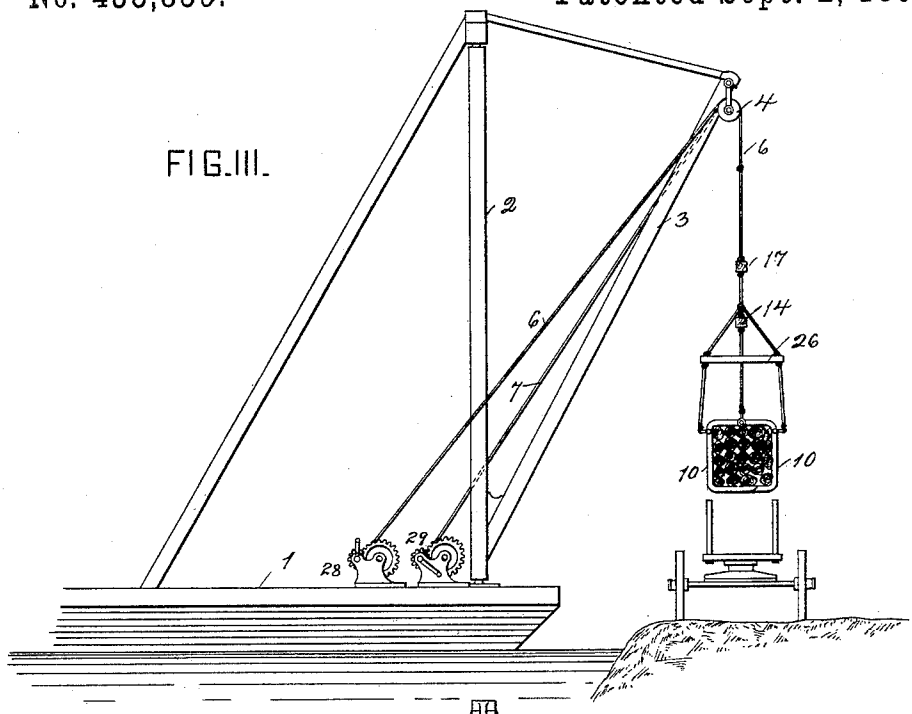
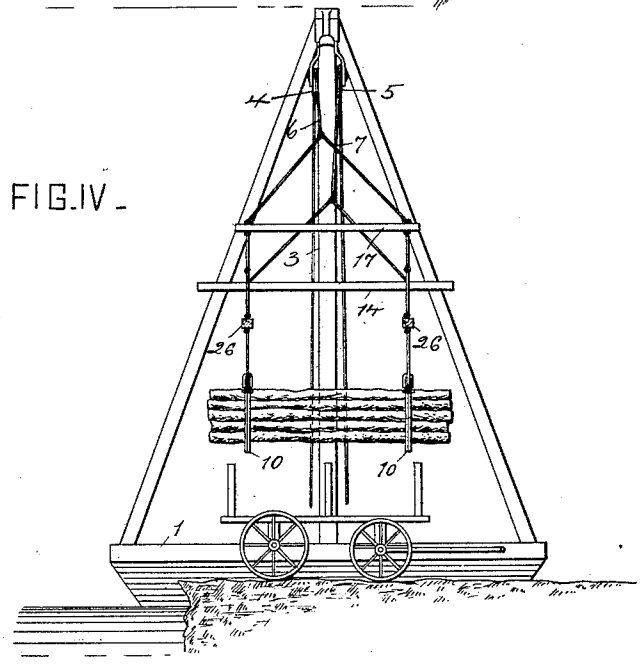


FIG. IV.



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UNITED STATES PATENT OFFICE.

CHARLES W. HUNTER, OF MEMPHIS, TENNESSEE.

HOISTING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 435,839, dated September 2, 1890.

Application filed May 3, 1890. Serial No. 350,489. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. HUNTER, a citizen of the United States, residing at Memphis, in the county of Shelby and State of Tennessee, have invented certain new and useful Improvements in Hoisting Mechanism, of which the following is a full, clear, and exact specification.

The object of my invention is to provide a device capable of lifting bodily and in a horizontal or substantially horizontal position very long logs or other long objects; and the invention consists in certain features of novelty hereinafter described in connection with the accompanying drawings, and more particularly pointed out in the claims.

In the said drawings, Figure I is a perspective view of my invention, the derrick-float, posts, &c., being omitted. Fig. II is a side view showing the tongs about to grapple with a wagon or truck load of long logs. Fig. III is a side view showing the derrick mounted on a float and the tongs in the act of hoisting a load of logs from the wagon or truck, and Fig. IV is an end view of the same.

This apparatus is designed more particularly for use in making river or harbor improvements, where it is necessary to convey the logs, &c., used in such improvements from the trucks or wagons on shore and deposit them in the river or on rafts or barges, or vice versa, and hence it is very evident that the float may, if desired, be done away with and the derrick suitably mounted on the shore.

Referring now to the drawings, 1 represents the float, upon which the central post or mast 2 of the derrick is suitably planted and stayed and provided with the ordinary swinging boom 3. At the upper end of the boom are suspended in any usual and suitable manner two pulleys or blocks 4 5, one on each side of the boom. Passing over these two blocks are two lines or cables 6 7, respectively, the former of which being the operating or tripping line or cable and the latter the hoisting-cable.

8 9 are two pairs of grappling-tongs, whose jaws 10 are preferably rectangular, as shown, so that when they come together they will automatically fit around a whole load of poles, brush, or logs, which are usually piled in a rectangular form on the truck; but any other form of grappling-tongs might of course be used without departing from the spirit of my invention. At the upper ends of these jaws, where they are hinged or pivoted together, they are provided with a clevis or link 11, to each of which is secured a continuation 12 of the hoisting-cable 7. These continuations 12 may of course be composed of a single rope secured at its mid-length to the hoisting-cable 7 by a knot or other suitable device 13, or they may be two ropes secured together.

In order that the tongs may be held sufficiently far apart to engage near the ends of long logs for insuring the latter being raised bodily in a horizontal position, I employ a long spreading bar or beam 14, provided at each end with a series of vertical perforations 15, through any one of which at each end of the bar 14 the ropes 12 pass, and the bar is secured in place by means of large knots or other suitable devices 16 just above and below the bar. Located above the bar 14 is a second spreading bar or beam 17, which likewise is provided at both extremities with a series of holes 18, through one of which at each end of the beam passes one end of a rope 19, forming continuations of the tripping or operating line 6, to which it is secured at its mid-length by a knot 20 or other suitable means. The ends of the rope 19 are securely attached to the bar 17 in any suitable manner, preferably by tying large firm knots 21 in the rope immediately above and below the bar. The extra holes in the upper and lower spreading-bars, it will be understood, are for the purpose of adapting the device to longer or shorter logs.

For the purpose of avoiding friction of the ropes 12 against the upper spreading-bar 17, I provide the latter with two slots 22, which are elongated to permit of the independent movements of the bar 17 and ropes 12 without injury to the latter. Two slots are used to avoid weakening the bar in the center; but of course one long slot might be employed with almost equal facility. Each jaw of the tongs is provided at or near its upper corner with a link 24, to each of which links on both pairs of tongs is secured one end of a rope 25. The ropes 25 are respectively secured at their mid-lengths to the pendent ends 23 of

the rope 19. Secured between the ends of each of the ropes 25 is a transverse spreading-bar 26, which is preferably provided at each end with a perforation, through which the ends of the ropes 25 pass and are secured by means of knots 27, as before explained with reference to the other bars. The transverse bars 26 are located below the bar 14 and are each provided with a perforation at its mid-length for the passage of the extensions 12 of the hoisting-cable, as it is desirable that the three ropes 25 and 12 should be in line. The ends of the lower spreading-bar 14 pass through the forks formed by the ropes 25. The transverse spreading-bars 26, however, while they are desirable for preventing entanglement of the various cords, &c., and also avoiding friction of the ropes 25 against the bar 14 and limiting the downward movement of the bar 14, are nevertheless not absolutely essential and might, if desired, be omitted.

It is very obvious that in the place of the knots 13 20 suitable pulley-blocks may be employed and the cables 6 7 run through them, respectively, and back to the pulleys 4 5 on the boom in the usual and well-known manner.

The hoisting and operating cables 6 7 are passed over their respective pulleys at the end of the boom, as before explained, and are then carried down to the deck of the float, where they may be secured to any suitable winding device capable of operation by steam or other power. I preferably employ for this purpose two independent windlasses 28 29 for winding in the operating or tripping and the hoisting cables, respectively; but of course where an ordinary system of block and tackle is employed with the cables 6 7 sufficient power may be obtained without the windlasses, and in that event the cables 6 7 may be simply secured by means of any suitable device, such as a cleat secured to the float.

In operating the device it will be understood that both cables 6 7 are run out until the tongs are just above the load to be hoisted. The tripping cable or line 6 is then held, while the other 7 is allowed to go free, whereupon the hinged ends of the jaws of the tongs will continue downward for a short distance, and thus open the tongs, as shown in Figs. I and II. The jaws being open, both cables 6 7 are run out together to lower the open tongs over the load, whereupon the hoisting-rope 7 is wound in and the tripping-rope 6 is allowed a little slack, which will cause the jaws to close around and ascend with the whole load in a horizontal position. When the boom has been swung around and the load is in position, the latter is lowered by means of the hoisting-cable 7, and when it is desired to deposit the load or open the tongs the tripping-rope 6 is wound in, which will pull the outer corners of the jaws upward and cause them to release the load.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. The combination, with the two pairs of tongs and the ropes by which said tongs are suspended, of a spreading-bar arranged between said ropes for holding said tongs apart, said ropes being joined together above the spreading-bar, a hoisting-cable connected to said ropes midway between the tongs, the tripping-line having branches connected to the two pairs of tongs, respectively, and a second spreading-bar arranged parallel with the first between said branches, substantially as set forth.

2. The combination, with the hoisting and tripping ropes having the continuations 12 19, respectively, of the spreading-bars 14 17, arranged between the continuations 12 19, respectively, and being secured thereto, and a pair of tongs suspended by each of the continuations 12 and having their jaws connected with the continuations 19, whereby the tongs may be opened, substantially as set forth.

3. The combination, with the tripping and hoisting ropes 6 7, having the continuations 19 12, respectively, of the spreading-bar 17, secured to the continuations 19 and having elongated slots, through which the continuations 12 pass, the spreading-bar 14, secured to the continuations 12, and a pair of tongs secured to each of the continuations 12 and having their jaws connected with the continuations 19, substantially as set forth.

4. The combination, with the tripping and hoisting ropes 6 7, having the continuations 19 12, respectively, of the spreading-bars 17 14, arranged between said continuations, respectively, a pair of tongs secured to each of the continuations 12, the ropes 25, attached to the jaws of the tongs and to the continuations 19, and the spreading-bars 26, secured between the ends of the respective ropes 25, substantially as set forth.

5. The combination, with the hoisting-cable having the continuations 12 and the spreading-bar arranged between said continuations, of a pair of grappling-tongs having rectangular jaws pivoted together and adapted to meet or overlap at their lower ends, said tongs being connected to said continuations at the pivotal point of the jaws, substantially as and for the purposes explained.

CHAS. W. HUNTER.

Witnesses:
GEORGE RANDOLPH,
ED. RANDOLPH.