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G. W. MENEFEE.

HOISTER AND CONVEYER.

(Application filed Apr. 16, 1902.)

(No Model.)

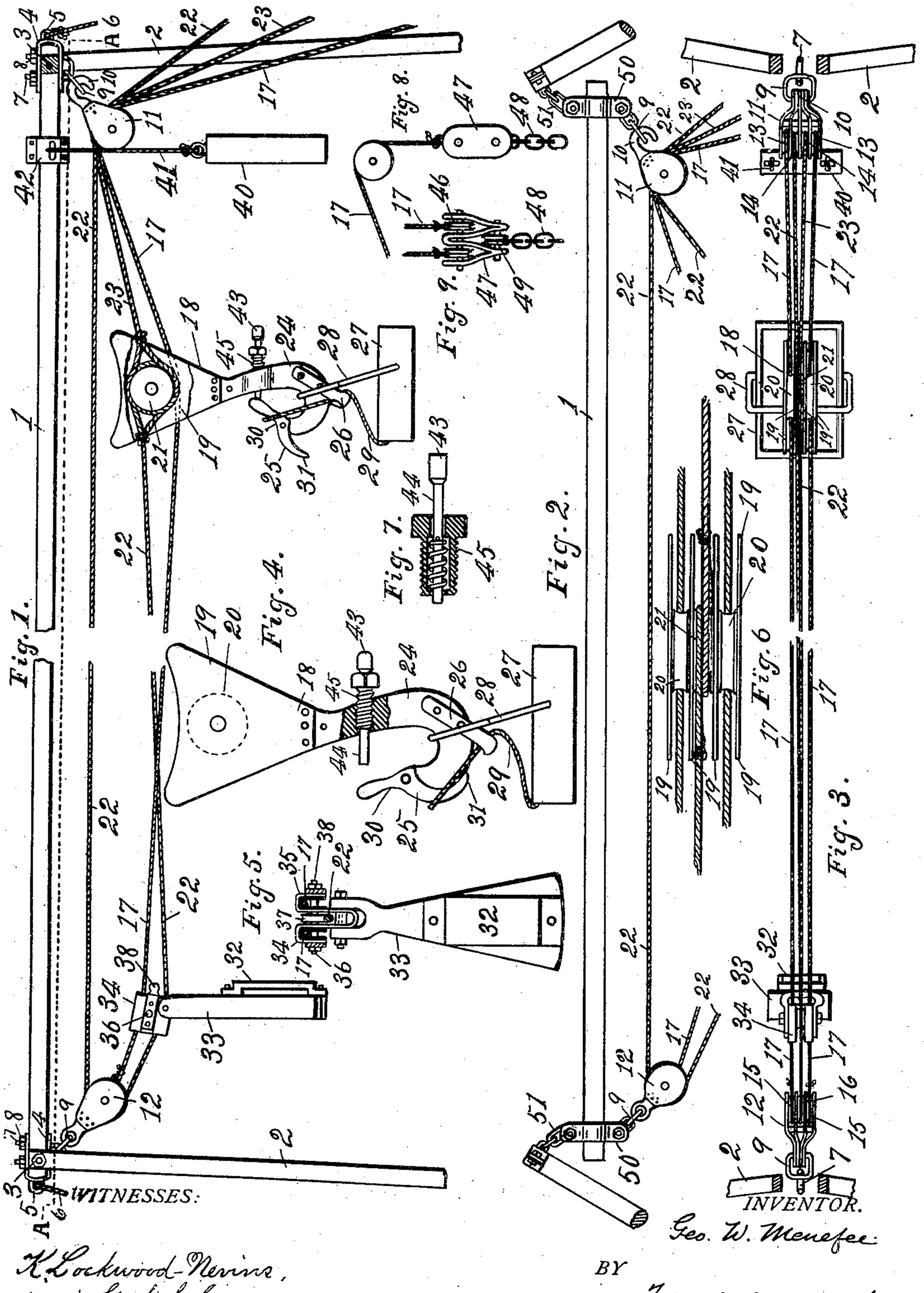

Fig. 1.

Fig. 4.

Fig. 5.

Fig. 7.

Fig. 8.

Fig. 9.

Fig. 2.

Fig. 6

Fig. 3.

WITNESSES:

K. Lockwood-Nevins,

Bessie Gofunkel.

INVENTOR.

Geo. W. Menefee.

BY

Francis M. Wright.

ATTORNEY.

UNITED STATES PATENT OFFICE.

GEORGE W. MENEFEE, OF BERKELEY, CALIFORNIA.

HOISTER AND CONVEYER.

SPECIFICATION forming part of Letters Patent No. 709,547, dated September 23, 1902.

Application filed April 16, 1902. Serial No. 103,233. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. MENEFEE, a citizen of the United States, residing at Berkeley, in the county of Alameda and State of California, have invented certain new and useful Improvements in Hoisters and Conveyers, of which the following is a specification.

My invention relates to improvements in hoisters and conveyers, the object of my invention being to provide a convenient apparatus by means of which a load may be hoisted from a pile of material and conveyed to a distant point and automatically discharged thereat.

My invention is particularly adapted for use in discharging material, as coal, from one vessel into another. It can also be used, however, for conveying material through considerable distances, as in the handling of coal from mines, also for conveying rocks from quarries, or gravel from river-beds, or earth in making excavations, and for loading wagons, cars, barges, or ships, and for distributing the loads on wharves or levees or in reclaiming low lands, and for the rapid handling of general freight about wharves or warehouses.

In the accompanying drawings, Figure 1 is a side elevation of my improved apparatus. Fig. 2 shows a modified support for the strainer-beam thereof. Fig. 3 is a section of the apparatus on the line A A of Fig. 1. Fig. 4 is an enlarged side view of the carrier, partly broken away. Fig. 5 is a front view of the hanger. Fig. 6 is an enlarged plan view of the carrier. Fig. 7 is an enlarged detail of the trip-pin. Fig. 8 is a side view of the union. Fig. 9 is a front view thereof.

Referring to the drawings, 1 represents a strainer-beam of any suitable size and of the length of the cableway supported on posts 2 by means of pivot-bolts 3. Upon the ends of said strainer-beams are the U-plates 4, having secured at their centers the eyes 5, to which are attached the guy-ropes 6. Through said U-plates and also through the ends of the strainer-beam are passed vertical staples 7, secured by nuts 8 at their upper ends, to which staples are attached links 9, from which are suspended, by means of hooks 10, the pulley-blocks 11 and 12. The pulley-block 11 at the loading end has mounted therein two outer pulleys 13 and two inner pulleys 14, while the block 12 at the discharge end has mounted therein two outer pulleys 15 and one center pulley 16. Around the outer pulleys at the discharge end are secured the track-cables 17, said cables passing over the outer pulleys at the loading end and thence to any suitable means for drawing the same in or letting out, as desired. This apparatus is well adapted for discharging cargoes of ships, in which case the cables will be carried to the windlasses on the ships. By this means the cables can be wound or unwound, as desired. Upon said cables 17 runs the carrier 18, comprising four plates 19, between the outer of which plates 19 are pivoted rollers 20, which run upon the track-cables. Between the two inner plates is secured a pulley 21, around which is attached a rope 22, which passes to the lower edge of the central pulley 16 at the discharge end of the track, then over the same, and then over one of the central pulleys 14 at the loading end. Another rope 23, attached to said pulley 21, passes over the other central pulley 14 at said loading end. Both ropes 22 23 pass down to any suitable means for winding or unwinding the same, except that when power is available at both ends of the cableway the rope 22 may pass over the pulley 16 and down to some adjacent device for taking up or letting out the same. Said carrier has depending therefrom a hook 24, having pivotally mounted on the end thereof a trip 25 and having also fixedly secured in the lower portion thereof a loop-strap or rope-guide 26.

27 represents a suitable bucket having a bail 28, which is passed over said hook, said bail being secured to the said bucket on the rear side of the center, and to the advancing end of said bucket is attached a tripper-sling 29, which is passed through the guide 26 and then over a recess or bend 30 in the trip. Said trip has at its lower end a nose 31, which when the carrier arrives at a predetermined point in its path strikes a plate 32, removably secured upon a hanger 33, pivotally suspended from a frame 34, secured upon the track-cables. Said frame is bent into a U shape, the middle portion passing between the forked upper end of the hanger, and the ends of said U are bent back, as shown at 35, to pass over the track-

cables. A bolt 36 passes through said ends beneath said cables, and upon said bolt is a pulley 37, underneath which pulley runs the rope 22, by means of which the carrier is drawn forward. In front of said U-frame 34 is secured a protector-guard 38, which consists of a piece of pipe flattened at the ends, said ends being secured to the bolt 36, upon which the pulley revolves, while the middle portion extends laterally. After the trip 25 strikes the plate 32, so that the rope slips off, the upper advancing corners of the plates 19 impinge against the protector 38. In Fig. 4 is shown said tripper-sling in the act of slipping off. It may be desirable to carry a load in each direction, in which case I provide at the end, which has heretofore been called the "loading" end, a hanger 40, suspended by ropes 41 from a clamp 42 on the strainer-beam, and against said hanger impinges the head 43 of a spring-actuated stem 44, moving in a guide 45, screwed into the carrier-hook. By screwing said guide in or out the end of said stem against which the trip rests may be adjusted so that said trip will rest at a more or less inclined position, as may be desired.

In Figs. 8 and 9 I have shown a union for the two track-cables. In this union said track-cables are carried around thimbles 46 and then secured, said thimbles being secured in the upper portion of a W-shaped frame 47, which in its turn is secured to a chain or rope 48, protected by a thimble 49 in the lower portion of the frame 47, said chain 48 passing to any suitable means, as a windlass, for taking up or letting out the chain and cables.

In Fig. 2 I have shown a modified form of the supports for the strainer-beam, particularly adapted for suspending the same from objects at a distance without supporting said beam directly upon the ground. Said supports comprise clamps 50, clamped around the ends of the beam and having upper links 51, by which they may be suspended from any suitable supports, having also lower links to which the hooks of the blocks may be attached.

To operate the hoist, the ropes 22 23 and cables 17 are slackened to permit the hook to be attached to the load. Then the proper rope is drawn tight and the cables are also drawn back, raising the load sufficiently. The cables are then held fast while the rope 22 is drawn in and the rope 23 is slackened until the load reaches the place to be dropped automatically, or at the discharge end the load may be lowered steadily by slackening the rope 23 and the cables 17. The load may be raised or lowered or dumped automatically at either end of the cableway by the ropes 22 or 23 and by using the striker-plate 32 or 40 to let off the tripper-sling 29.

The apparatus may also be operated to scoop up coal or other substance and feed a suitable feed-hopper. For this purpose the cables and the hauling-ropes are let out until the scoop touches the bottom, when it is dragged along until full and then raised by taking up the cables. It is then hauled to the discharge end, where the scoop may be let down into the upper end of an inclining chute and dumped. The operation may then be repeated.

The cableway may also be strengthened by providing additional pulleys in the blocks 11 and 12 and in the carrier 18 and by providing one or more additional cables on either side of the cables 17. The cableway may also be operated with cables very slack and also with either of the blocks 11 12 considerably higher than the other. In some cases either or both of the ropes 22 and 23 may be omitted without any change in the operation of the cable. In suitable cases the strainer-beam may be omitted.

I claim—

1. In an apparatus of the character described, the combination of pulley-blocks, means for securing the same at a distance from each other, two cables attached to one of said blocks and running over pulleys in the other block, a carrier having rollers running on said cables, a rope attached to said carrier, a pulley on the block to which the cables are attached and between said cables around which passes the rope attached to the carrier, and two pulleys between the pulleys of the other block around which pass the aforesaid rope and a second rope also attached to said carrier, substantially as described.

2. In an apparatus of the character described, the combination of two pulley-blocks, means for securing said blocks at a distance from each other, two track-cables attached to one of said blocks and passing over pulleys in the other block, a carrier having rollers running upon said cables, ropes for drawing said carrier, a trip for said hook, a hanger, and a frame for said hanger attached to the cables and having a pulley about which passes one of said ropes, said hanger being in the path of the trip to release the device carried by the hook, substantially as described.

3. In an apparatus of the character described, a carrier having a hook, a trip pivoted on said hook and having a forwardly-projecting lower end and a recess in its upper edge, a guideway for a rope loop, in combination with the bucket having a bail around said hook, and a rope loop passing through said guideway and engaging said trip in said recess, substantially as described.

4. In an apparatus of the character described, a carrier having a hook, a trip pivoted on said hook, a guide-passage through said hook, a spring-actuated stem passing through said passage, the end of said stem engaging said trip, whereby on contact of the head of said stem with an obstacle, said trip is sprung to release the device carried by the hook, substantially as described.

5. In an apparatus of the character de-

scribed, the combination with two track-cables and a carrier thereon having a trip, of a V-shaped hanger-frame, the ends of said V being bent back on themselves to secure the same around the cables, a roller pivotally secured in said V, and a hanger supported by said frame, and in the path of the carrier-trip, substantially as described.

6. In an apparatus of the character described, the combination with two track-cables and a carrier thereon having dividing-plates and a trip, of a hanger suspended from said cables, having a plate against which the trip abuts, said hanger having also a protector at its upper portion against which the corners of the plates of the carrier impinge, substantially as described.

7. The union comprising the W-shaped frame having two thimbles in its upper portion and cable ends secured in said thimbles, and a single thimble in its lower central portion and a chain or rope secured in said lower thimble, substantially as described.

8. In an apparatus of the character described, the combination of a strainer-beam, a pulley-block supported thereby, cables passing said block, a carrier on said cables having a hook, a striker-plate suspended from said strainer-beam, and a tripping device carried by said hook arranged to impinge against said striker-plate to release the load, substantially as described.

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

GEORGE W. MENEFEE.

Witnesses:
FRANCIS M. WRIGHT,
K. LOCKWOOD NEVINS.