W. M. SHAW.

HOISTING AND CONVEYING APPARATUS.

APPLICATION FILED JUNE 27, 1906.

923,899.

Patented June 8, 1909.

2 SHEETS—SHEET 1.

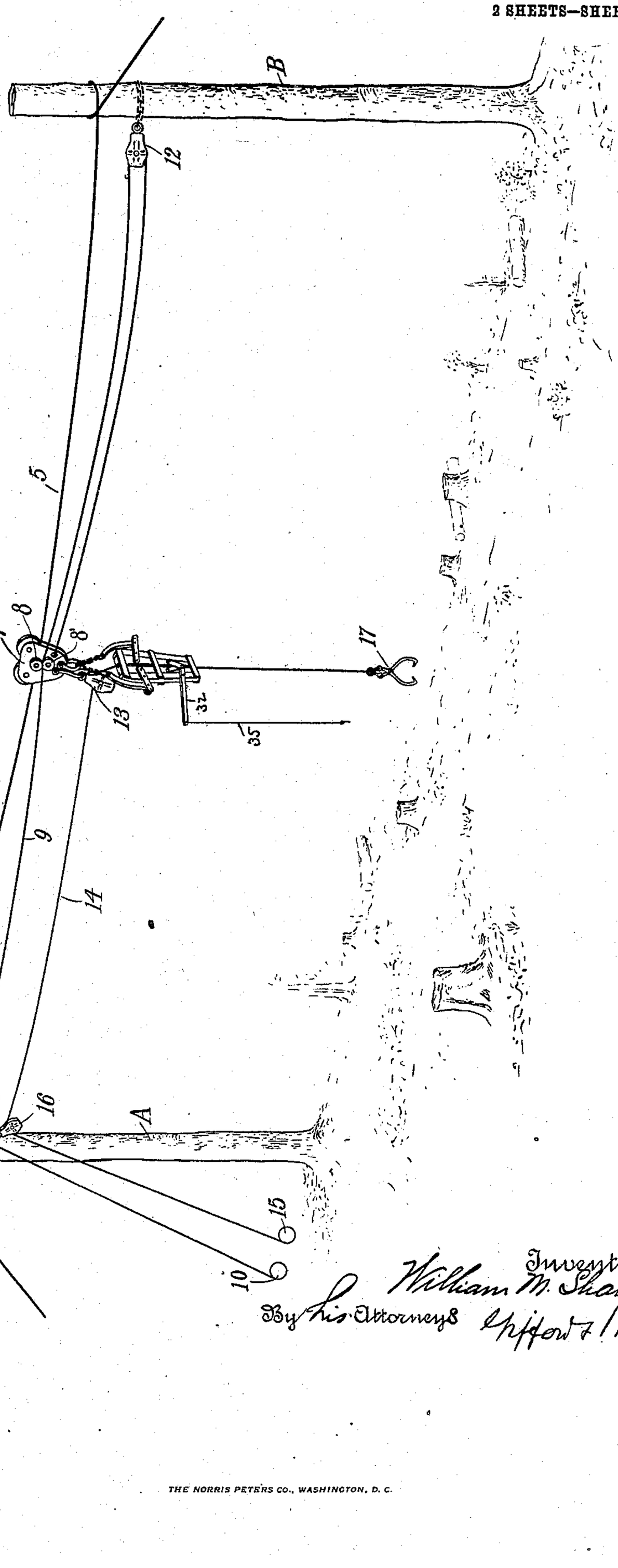

Fig. 1

Witnesses
Raphael Netter
R. D. Cavanagh.

Inventor
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2 SHEETS—SHEET 2.

Fig. 2

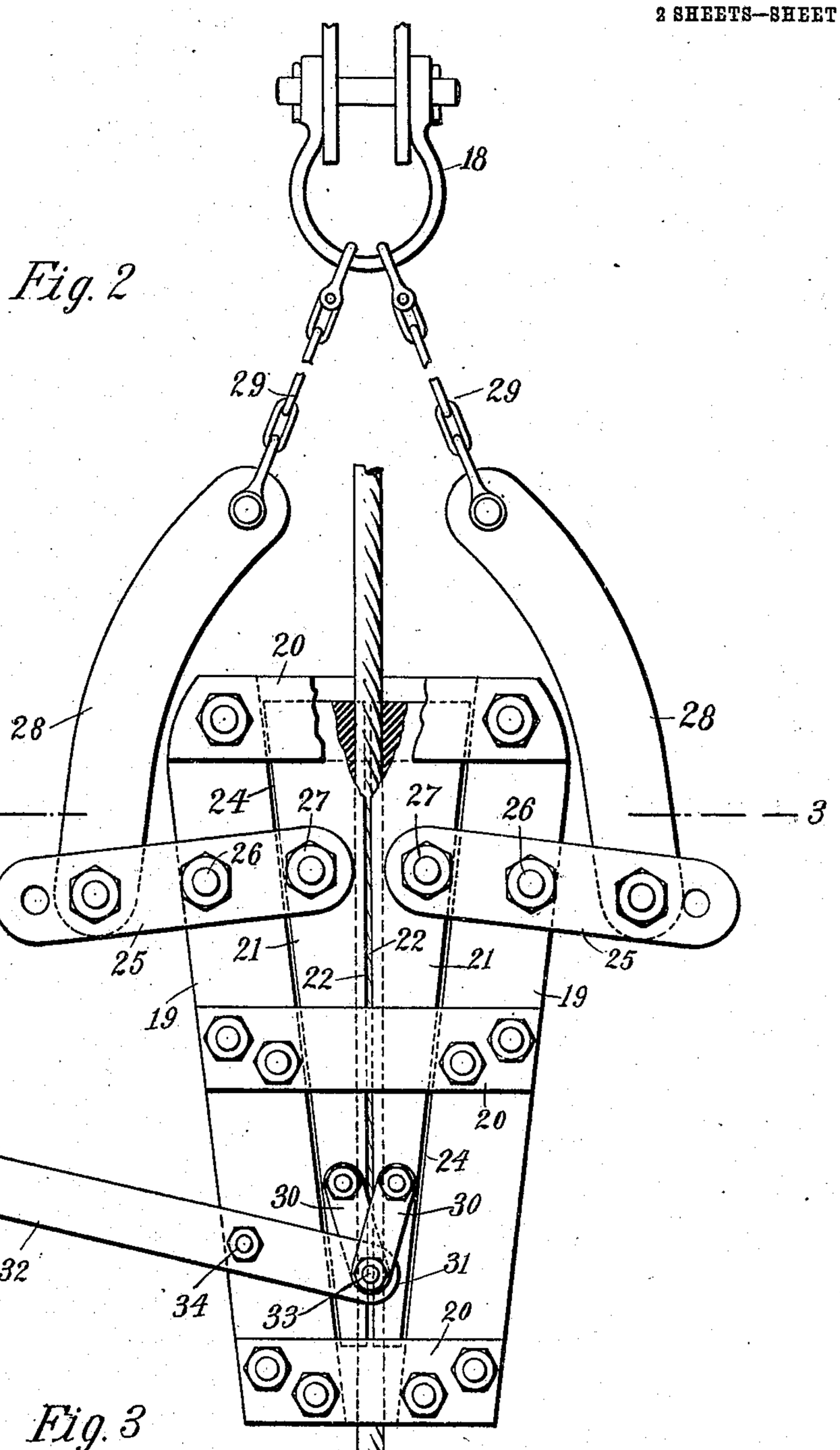

Fig. 3

Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM M. SHAW, OF GREENVILLE, MAINE.

HOISTING AND CONVEYING APPARATUS.

No. 923,899. Specification of Letters Patent. Patented June 8, 1909.

Application filed June 27, 1906. Serial No. 323,557.

To all whom it may concern:

Be it known that I, WILLIAM M. SHAW, a citizen of the United States, and a resident of Greenville, in the county of Piscataquis and State of Maine, have invented certain new and useful Improvements in Hoisting and Conveying Apparatus, of which the following is a specification.

This invention relates to hoisting and conveying apparatus, particularly to cableways employed in logging.

In logging cableways of the character to which my invention is particularly adapted, it has been customary to employ three drums for operating the outhaul rope, the inhaul rope and the slack-pulling line, respectively. But with my improvement I have found that I am able to dispense with one of said drums, so that only two drums or equivalent actuating means, need be employed; one for operating what is commonly termed the outhaul rope, and one for operating a rope so secured that it performs the double function of an inhaul rope and a load-carrying or skidding rope. This arrangement will be found especially advantageous in logging and mountainous regions.

The invention consists in the construction, combination and arrangement of parts set forth in and falling within the scope of the appended claims.

In the accompanying drawings, like characters of reference indicate like parts in all the views, and Figure 1 is a view showing my invention applied to a logging apparatus; Fig. 2 is an enlarged detail view in elevation showing my improved gripping appliance; Fig. 3 is a transverse sectional view taken on the line 3—3 of Fig. 2.

Referring now to the accompanying drawings in detail, A designates a head-tree, while the tail-tree is shown at B.

5 indicates the main cableway upon which the carriage is adapted to travel, said cable passing over a suitable sheave 6 at the head-tree and is properly secured in any desired manner. The conveyer carriage traveling along the cableway is indicated at 7, said carriage having small guide sheaves 8 arranged at the side thereof for supporting a run of the outhaul or traction rope 9. This latter rope operated from a drum, conventionally illustrated at 10, passes over the pulley 11 carried by the head-tree, thence between the guide sheaves on the carriage to the pulley block 12, secured to the tail-tree, and thence back to the carriage to which it is secured. Preferably a pilot sheave 13 is swiveled to the carriage, over which pilot sheave passes the hoisting or skidding rope 14. This rope is also operated from a drum, conventionally illustrated at 15, and passes over the pulley 16 carried by the head-tree, thence to and through the pilot sheave aforesaid, the portion of the rope between the carriage and the free end forming what I may term a fall-rope. And at this free end of said skidding rope, or the fall-rope portion, I provide the log-engaging tongs 17.

The operation of the conveying apparatus is as follows: The outhaul line is operated by its drum to haul the carriage along the cableway to the tail-tree, or to the point where the logs to be gathered lie. The tongues are then secured to a log. Heretofore it has been customary to employ three drums in an apparatus of this general type—one drum for operating the outhaul rope, another drum for operating the hauling rope, and still another or a third drum for the slack-pulling rope. But with my invention I need employ but two drums, which I will term the outhaul drum and the inhaul drum, respectively. The outhaul drum, as usual, operates to outhaul the carriage to the desired point along the cableway. The other drum operates a skidding rope which combines the function of a fall rope or load-carrying rope, and a carriage inhaul rope. It is to the manner and means of operating this last mentioned or skidding rope to accomplish the recited ends, that my invention is particularly directed.

I will now proceed to describe one means for acting upon the skidding rope which enables it to perform the dual function of a log-hauling and carriage-hauling rope and to dispense with a slack-pulling rope and drum therefor.

I herein show a form of gripping device or appliance which is suspended from a ring 18 secured to the frame of the carriage and comprises an approximately wedge-shaped frame formed of the two longitudinal side bars 19 converging toward their lower ends and diverging at the top thereof, said side bars being connected through the medium of pairs of cross pieces 20 bolted thereto and on opposite sides, so that a wedge-shaped space or way is formed within the frame. Within

this space or way lie the wedge-shaped rope-engaging blocks 21, 21, the inner parallel edges 22 of said blocks being grooved as at 23 to accommodate the portion of the skidding rope passing therethrough, while the outer or inclined side edges 24 of the blocks lie approximately parallel with the inner sides of the bars 19. The oppositely arranged bars 25 are fulcrumed as at 26 to the side bars and are also bolted at their inner ends 27 to the wedge blocks 21, while to the outer ends of said bars are secured the curved arm portions 28 connected at their upper ends by means of chains 29 with the ring 18, so that the device is supported and suspended from the carriage. At the lower ends of the wedged rope-engaging blocks is a toggle arrangement comprising the small pivoted links 30 connected at their lower ends with each other and with the end portion 31 of the lever 32 through the medium of the bolt 33, such lever 32 in turn being fulcrumed as at 34 to one of the side bars 19, and this lever is operated by a rope, or other suitable means, 35.

The action of the gripping device upon the rope will be readily understood from the above description and may be briefly stated to be as follows: The normal position of the device is shown in Fig. 2; that is to say, with the rope wedged or clamped between the vertically sliding wedge-shaped blocks 21. This clamping position is maintained by the relative positions normally assumed by the bars 25 and arms 28, the toggle link mechanism and the weight of the blocks themselves, the weight of such parts tending to throw the wedged blocks toward the lower part of the frame and by operating the links 30 to throw the operating lever 32 upward or into the position shown in Fig. 2. In order to release the grip from its action upon the rope it is only necessary to pull down upon the rope 35 which, swinging the lever 32 upon its fulcrum point 34, throws or thrusts the gripping blocks upward and outward away from the rope, the toggle links 30 and the linked arms 19 and 28 assisting in this function.

The operation of the entire apparatus may be briefly related as follows: The carriage is outhauled toward the tail-tree by winding in on the rope 9 until a position adjacent to the log is reached when the carriage is brought to a stop and the cord 35 is pulled to bring the lever 32 down and thus release the wedge from its locking engagement with the rope 14, when the weight of the tongs 17 will pull the rope down and such tongs may be connected with the log to be hauled. The drum 15 is operated to haul in upon the rope 14 to elevate one end of the log a desired distance above the ground and the lever 32 is then released so that the blocks 21 drop back into gripping or clamping engagement with the skidding rope and the hauling in of the line 14 being continued the carriage with its connected parts and the log is hauled in toward the head-tree to the desired point. It will be noted that the greater the weight of the log, or the strain placed upon that portion of the rope between the gripping device and the tongs, the tighter will be the gripping action of the device upon the rope, so that while the portion of the rope 14 between the drum and the gripping device may be fully wound to haul in the carriage and the load connected thereto, the part of the rope between the gripping device and the tongs will be free from any pulling action by the drum insofar as being pulled upward through the gripping block is concerned, and the end of the log connected to the tongs may be maintained at the desired point of elevation above the ground and hauled in with the carriage.

While I have herein shown, by way of illustration, the system or type of hoisting apparatus at present preferred by me, I wish it to be understood that I do not limit myself to the specific construction, combination and arrangement of parts which I have herein delineated; but wish to be understood as claiming any and all constructions, combinations and arrangements of parts which are the substantial equivalents of those mentioned in or falling within the scope of the appended claims.

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

1. In a hoisting and conveying apparatus, the combination of a trackway, a carriage traveling thereon, a traction rope therefor, a skidding rope, and a gripping device connected to the carriage adapted to engage the skidding rope, said gripping device comprising a frame member, rope-engaging means movably mounted in the frame and normally designed to engage the rope, and means connected to the rope-gripping means for releasing the grip upon the rope.

2. In a hoisting and conveying apparatus, the combination of a trackway, a carriage traveling thereon, a traction rope therefor, a skidding rope, and a gripping device connected to the carriage adapted to engage the skidding rope, said gripping device comprising a frame, wedge-shaped rope-engaging means carried by said frame and normally engaging the rope and means for releasing the grip of the wedge-shaped means upon the rope.

3. In a hoisting and conveying apparatus, the combination of a trackway, a carriage traveling thereon, a traction rope therefor, a skidding rope, and a gripping device connected to the carriage adapted to engage the skidding rope, said gripping device comprising a wedge-shaped frame, rope-engaging blocks mounted within said frame, and arms pivoted to said frame and connected to said

blocks, supporting means connected to said arm, and means for throwing the blocks into and out of engagement with the rope.

4. In a hoisting and conveying apparatus, the combination of a trackway, a carriage traveling thereon, a traction rope therefor, a skidding rope, and a gripping device connected to the carriage adapted to engage the skidding rope, said gripping device comprising a frame, rope-gripping members therein, a lever or arm fulcrumed to said frame adapted to throw the rope-gripping members into and out of engagement with the rope.

5. In a hoisting and conveying apparatus, the combination of a trackway, a carriage traveling thereon, a traction rope therefor, a skidding rope, and a gripping device connected to the carriage adapted to engage the skidding rope, said gripping device comprising a frame, rope-gripping members carried thereby, oppositely disposed arms pivoted to said frame and connected to the rope-gripping members, an arm connected to the first-mentioned arm, and means for moving the rope-gripping members into and out of gripping engagement with the rope.

6. The combination of a trackway, a carriage traveling thereon, a traction rope for the carriage, a skidding rope, load-engaging means carried by the skidding rope, and a gripping device connected to the carriage and adapted to engage the skidding rope at a point between the carriage and the load-engaging means.

7. The combination of a trackway, a carriage thereon, a skidding rope connected to the carriage and passing through a support thereon, and means gripping and holding that portion of the skidding rope between the carriage and the free end of said rope.

8. The combination of a trackway, a carriage, an out-haul traction rope for the carriage, a skidding rope passing over a support on the carriage, and mechanism engaging with the skidding rope at a point beyond the carriage for holding such portion of the skidding rope against movement through the support on the carriage.

9. The combination of a trackway, a carriage traveling thereon, a traction rope for such carriage, a skidding rope running through a support on the carriage, and means suspended from the carriage and engaging with the portion of the skidding rope beyond the carriage for holding such portion of the rope from running through its support on the carriage when such skidding rope is in-hauled to operate the carriage.

10. The combination of a trackway, a carriage thereon, a skidding rope connected to the carriage, and a gripping device suspended from the carriage and adapted to engage the skidding rope, said gripping device comprising a frame member, rope gripping members carried by the frame and normally designed to grip the rope, and means for actuating said rope-gripping members to release the rope.

In testimony whereof I have hereunto signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM M. SHAW.

Witnesses:
S. W. PHILBINCH,
F. W. ALLEN.