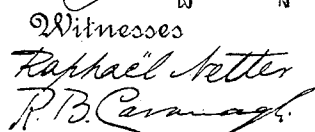


931,892.

3 SHEETS—SHEET 2.

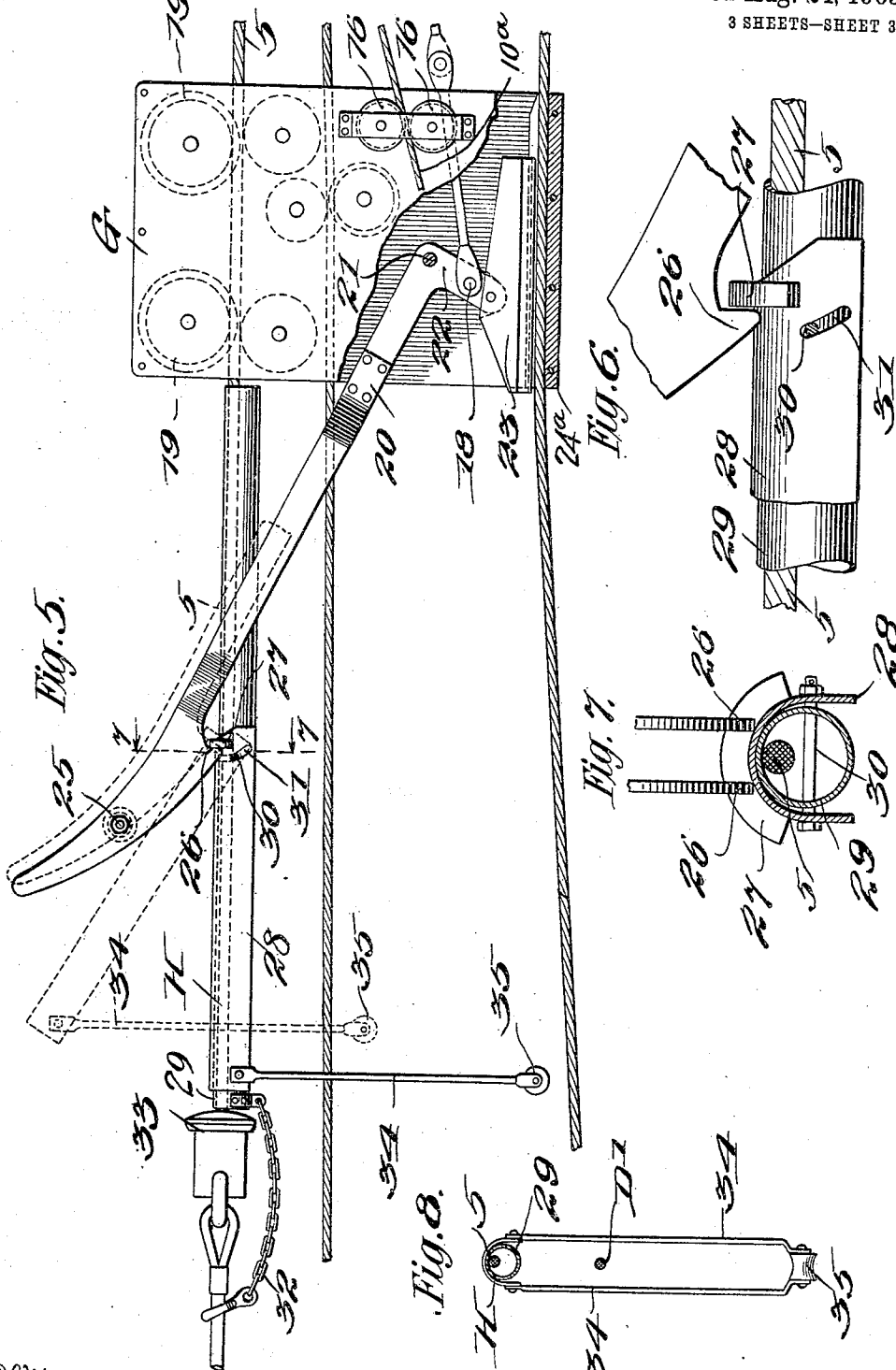


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W. M. SHAW.
CONVEYING APPARATUS.
APPLICATION FILED DEC. 24, 1906.

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Patented Aug. 24, 1909.
3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

WILLIAM M. SHAW, OF GREENVILLE, MAINE.

CONVEYING APPARATUS.

931,892.

Specification of Letters Patent.

Patented Aug. 24, 1909.

Application filed December 24, 1906. Serial No. 349,242.

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, county of Piscataquis, and State of Maine, have invented a novel and useful form of Conveying Apparatus, of which the following is a specification.

The present invention relates to a conveying apparatus of the type and character shown in United States Letters Patent Nos. 561,855, 680,934 and 688,475, my invention being in the nature of an improvement thereon.

In the present instance, I have shown my improvement as used in connection with log handling cableways, but it will be understood that the invention, and certain features thereof, may be employed in connection with other conveying mechanism.

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

Referring now to the accompanying drawings, wherein a preferred embodiment of my invention is delineated: Figure 1 shows in elevation an apparatus embodying my improvement; Fig. 2 is a detail view showing a portion of the load supporting carriage and the traveling grip used in connection with the same; Fig. 3 is a sectional view. Fig. 4 is a detail sectional view taken on the line 4, 4 of Fig. 2; Fig. 5 is an enlarged detail view of a portion of the apparatus showing the grip mechanism in conjunction with the grip stop or abutment; Fig. 6 is an enlarged detail view of a portion of the horn of the grip lever and a portion of the abutment with which the horn interlocks. Fig. 7 is a cross-sectional detail view taken on the line 7, 7 of Fig. 5; Fig. 8 is a detail view in side elevation of the hanging loops attached to the abutment.

Referring now to the accompanying drawings in detail and particularly to Fig. 1 thereof; A indicates the head support or tree and B the tail support or tree, and the main cable which is shown at 5 extends between and is maintained in an elevated position by the supports A and B. The load carriage which is shown at C is of a trolley-like nature, and is designed to move back and forth on the main cable 5. The numeral 6 indicates the receding or outhaul rope wrapped about the drum D of the engine E, said outhaul rope passing upward

and over the sheave 7 at the head support, thence through guides on the grip carriage G, thence through the carriage C to the block 9 at the tail tree, the end of the receding line coming back and is fastened at the point 10 to the load carriage. The load pulling rope 11 which is in the nature of a combined conveying and inhaul rope is operated from the drum D' and passes from such drum over the block 12 at the head support or tree, thence through the grip carriage G and through the pilot sheave 13 swiveled to the carriage C. This rope 11 carries a suitable load engaging device such as the tongs 14. In connection with this, I also employ what I will for the purpose of convenience term the slack pulling rope 10^a and this rope is operated from the drum D² of the engine and passes over the pulley block 15 through suitable guide rollers 16 on the grip carriage, around the pulley wheel 17 of the load carriage, and thence back to the grip carriage where it is fastened to the grip operating lever at the point 18.

I will now proceed to describe the construction of the gripping mechanism in detail.

The frame of the grip carriage G is provided with suitable sheave wheels 19 for supporting the gripping carriage upon the main cable so that it may move freely along the same at desired times. This frame is adapted to straddle the cable and houses the gripping device proper. This gripping device comprises a lever 20 having the portion within the frame somewhat of the nature of the bell crank lever which is pivoted at 21. The short arm 22 of this lever is connected to the end of the slack pulling rope at 18, as heretofore mentioned, and the extreme end of such arm is pivotally connected with the gripping wedge or block 23 of the grip which is adapted to wedge or hold the hoisting rope 11 against and in conjunction with the portion 24^a of the gripping frame. The lever 20 is formed with a relatively long bifurcated portion extending upward from the gripping frame, the main cable and receding rope passing through this bifurcated part of the lever. The ends of these bifurcated arms are widened to form horns 24 carried therebetween, and the bearing roller 25 may be journaled in various positions along the horn by inserting the shaft of the roller in the openings 25^a. The horn portion of the lever

is also provided with the hooking ends 26 adapted to engage at desired times with the top or projection 27 carried by the open sleeve member 28 of the grip abutment H.

5 This grip abutment comprises in conjunction with the open sleeve portion 28 a tubular sleeve 29 incasing the main cable and relatively longer than the sleeve 28, so that the outer end of the incasing sleeve forms a stop

10 or abutment surface to limit the inward travel of the load carriage. A pin 30 extends through the tubular sleeve and projects into a segmental slot 31 formed in the open sleeve, so that the latter may be tilted

15 to rise and fall according as the horn of the lever is engaged or disengaged in the manner hereinafter described. The abutment H is not intended to be moved along the cable, but is held or anchored by any suitable

20 means such as the hook and chain 32 connected to one end of the sleeve and also to the portion of the main cable beyond the button stop. In order to limit the upward movement of the one sleeve portion as it is swung

25 or tripped by the impact of the horn of the grip, I have provided the looped guide 34 pivotally hung from this sleeve 28 and carrying at its lower or free end the roller 35. In addition to limiting the upward movement of the sleeve, the loop also assists in holding

30 the abutment steady and prevents such abutment from turning or shifting, the roller also at times forming a bearing for the receding rope.

35 I will now proceed to describe in detail the operation of my improved apparatus, which is, as heretofore stated, an improvement on the type of apparatus shown and described in the patents referred to.

40 The device shown in the drawings is one especially adapted for hauling logs. In an invention of this sort in running out into the woods, to the place where the load is to be taken on, the loading or skidding line unwinds from its drum and is pulled out by the

45 receding line, the tongs on the load pulling line coming up to the pilot sheave that is attached to the carriage. It is necessary, in order to get a sufficient length of line at the

50 point between the carriage and the end of the tongs to hitch it to the log or load, which may be beneath the main cable or to one side, to provide some means for pulling out the skidding or loading line, and, after the

55 carriage has reached the proper position to allow the weight of the tongs or other attachment to drop to the ground where they can be carried to a point of hitching. It may be necessary, for instance, to have 100 feet of

60 line from the carriage to the point of hooking the load, and in operating my invention to accomplish the ends mentioned the operation is as follows: In starting, the gripping carriage is presumed to be held stationary

65 and hooked to the abutment by the engage-

ment of the horn of the lever. The carriage is then pulled out by the winding up of the receding line by means of the drum D, until it is about 100 feet in advance of the gripping mechanism. The drum D² operating the

70 slack pulling line 10^a is then actuated to wind up or pull upon such line, and as one end of this line is attached to the lever 20 at the point 18, the wedge 23 will grip the slack pulling rope. By putting some tension on

75 the drum and pulling sufficiently hard upon the slack pulling rope the lever will swing upon its pivot 21 and pull against the projection 27 on the open sleeve 28 with sufficient force to throw or tilt the sleeve upward as is

80 shown in dotted lines in Fig. 5, which action, throwing the stop 27 away from the horn, will permit the lever to drop free from engagement with the abutment and on to the

85 main cable over which it rides assisted by the roller 25. The operation of the drums may then be continued and as the load carriage C travels toward the tail tree, the gripping device follows it at a predetermined distance

90 behind the carriage and carries the load pulling rope outward. When the desired point for loading has been reached, the load carriage is stopped, and held stationary while the pulling upon the grip carriage continues,

95 which tends to move the latter along the cable up to the load carriage, and the tongs on the load carriage drops to the ground from its own weight. The line may then be hooked to the logs or other load. After the load is hooked on it is brought in under the

100 main cable by pulling on the skidding or load line and as the latter is still in engagement with the grip, such action permits the latter to move in toward the head tree a predetermined distance. The receding line has up to

105 this time held the carriage stationary. It is now released and permitted to unwind, while the drum operating the skidding line winds up the latter, and the load is pulled in to the head tree, the slack pulling line, of course,

110 being wound in by the drum D³. When the horn of the lever of the grip reaches the abutment sleeve it rides up over the same and drops down into hooking engagement with the stop or projection 27, which action releases the grip upon the skidding or loading

115 line and the latter may run freely through the grip, and at the same time the load carriage may be brought up in close proximity to the gripping frame. The load may then

120 be lowered, and unhooked and the operation of the apparatus repeated for subsequent loads.

While I have herein shown and described one preferred embodiment of my invention,

125 I wish to be understood that I shall not limit myself to the details of construction set forth by way of illustration, as modification and variation may be made without departing from the scope of the invention.

130

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

1. In a conveying device in combination
5 two ropes, supports therefor, means connected to and actuated by one of said ropes for engaging with the other rope to grip the latter, and means for automatically releasing the gripping means.
- 10 2. In a conveying device in combination a load-pulling rope, a load carriage, carriage traversing means, gripping mechanism, a slack-pulling rope engaging with said gripping mechanism and adapted to actuate the
15 latter to grip the load-pulling rope, and means for automatically releasing the gripping mechanism from engagement with the load-pulling rope.
- 20 3. In a conveying device, the combination of a load carriage, an outhaul rope therefor, a load-pulling rope, gripping mechanism, a rope for said gripping mechanism adapted to actuate the latter to cause it to grip the load-pulling rope at predetermined times and
25 means for automatically releasing the gripping mechanism from engagement with the load-pulling rope.
- 30 4. In a conveying apparatus, in combination, a load carriage, an outhaul rope therefor, a combined inhaul and load-pulling rope, a traveling grip, a rope for actuating said grip to cause the latter to engage the combined inhaul and load-pulling rope, a drum for the grip actuating rope, and means for
35 automatically releasing the engagement of the traveling grip at a point of the inward travel of said grip.
- 40 5. In a conveying apparatus, in combination, a load-pulling rope, a grip engaging therewith and comprising a rope gripping member and an actuating lever therefor, a slack pulling rope connected with said lever, a drum for said rope, and means for tripping the lever to release the gripping action of the
45 same upon the load-pulling rope.
- 50 6. In a conveying apparatus in combination, a load-pulling rope, a traveling grip therefor comprising a frame, a grip member carried thereby, and an actuating lever for the grip member, means connected to and adapted to actuate the lever to move the same into engagement with the load-pulling rope, and an abutment member over which
55 the grip-actuating member is adapted to ride, said abutment member being tripped to release the grip from locking engagement therewith.
- 60 7. In a conveying apparatus in combination, a load-pulling rope, a traveling grip therefor, a rope for actuating said grip to cause the same to grip the load-pulling rope, and locking means for holding said grip stationary, adapted to be tripped by pulling upon the grip actuating rope to release said
65 grip from the locking means.

8. In a conveying apparatus the combination with a load-pulling rope, of a traveling grip member, a rope for operating said grip member to cause the same to engage said load-pulling rope, and grip-locking means
70 adapted to engage with and lock the grip at a point of the latter's inward travel, such locking means being tripped by the outward travel of the grip, to release the latter.

9. In a conveying apparatus, the combination of a load-pulling rope, a traveling grip for said load-pulling rope designed to draw the latter outward, a rope for engaging said traveling grip to move the latter outward, a
80 member for actuating said grip, and an abutment member over which said grip actuating member is adapted to ride to engage therewith, said abutment member being tripped to release the grip from locking engagement therewith in the outward travel of said grip. 85

10. The combination of a load-pulling rope, a grip adapted to actuate the load-pulling rope, a rope for hauling the grip outward, an abutment device at the inward end of the conveying device, a horn carried by
90 said grip adapted to engage said abutment device, said grip being released therefrom by pulling upon the grip outhaul rope.

11. In a cableway, the combination with a load-pulling rope, gripping mechanism
95 therefor comprising a gripping member and a lever therefor, means for actuating the lever to cause the member to grip the rope and then to pull the rope outward, a locking abutment for the grip comprising a pivoted
100 locking stop designed to be engaged by a portion of the lever and to be tripped by pulling upon the grip outhaul rope to trip said stop and permit the grip to be released therefrom.

12. In a conveying device, in combination,
105 a rope, a grip therefor, a lever for said grip, a rope for pulling said grip outward when in gripping engagement, and a locking stop for said grip near the end of the path of its inward travel, said stop comprising a member
110 adapted to be struck by the lever to throw the lever upward, and a movable locking projection pivoted to said member and designed to lock the end of the lever.

13. The combination of a main cableway,
115 a carriage traveling thereon, an outhaul rope for the carriage, a load-pulling rope, gripping mechanism for preventing the backward travel of the load-pulling rope, a lever for operating said gripping mechanism, a rope,
120 connected to said lever and adapted to actuate the latter and a lock abutment on the cableway comprising a sleeve member and a stop pivoted thereto, adapted to engage with a portion of the gripping mechanism to lock
125 the same at the end of the path of the inward travel of said gripping mechanism.

14. The combination of a cableway, an out-haul rope for the load carriage, a load-pulling rope, a traveling grip upon the cable- 130

way, comprising a gripping wedge and a lever for actuating the same, a rope connected to the lever for actuating the gripping wedge, and an abutment stop upon the main cable for locking the lever, said stop comprising a sleeve member and a movable stop carried thereby, adapted to engage with the end portion of the lever to hold the grip mechanism in its movement.

10 15. In a conveying device, the combination with a load-carriage, a load-pulling rope, carriage traversing means, an abutment member comprising a tubular sleeve, a pivoted open sleeve, and a locking stop on the
15 latter, a gripping wedge for engaging the load-pulling rope, and a lever pivoted to the wedge, and having a bifurcated portion designed to engage with the locking stop on the sleeve.

16. In a conveying device, a load-carriage, 20 a load-pulling rope, carriage traversing means, a gripping device for engaging the load-pulling rope, a sleeve member on the cableway, a tilting lock pivoted thereto and of less longitudinal dimensions than said sleeve, 25 a guide hanger secured to the sleeve, a rope-engaging wedge, a rope for operating the latter, and a horned lever connected to the wedge and having a hooking portion at one end adapted to engage with the tilting lock. 30

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

WILLIAM M. SHAW.

Witnesses:

T. W. ALLEN,
ERNEST G. JUDKINS.