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M. A. WEST

CARRIAGE HOLDER AND RELEASING MECHANISM

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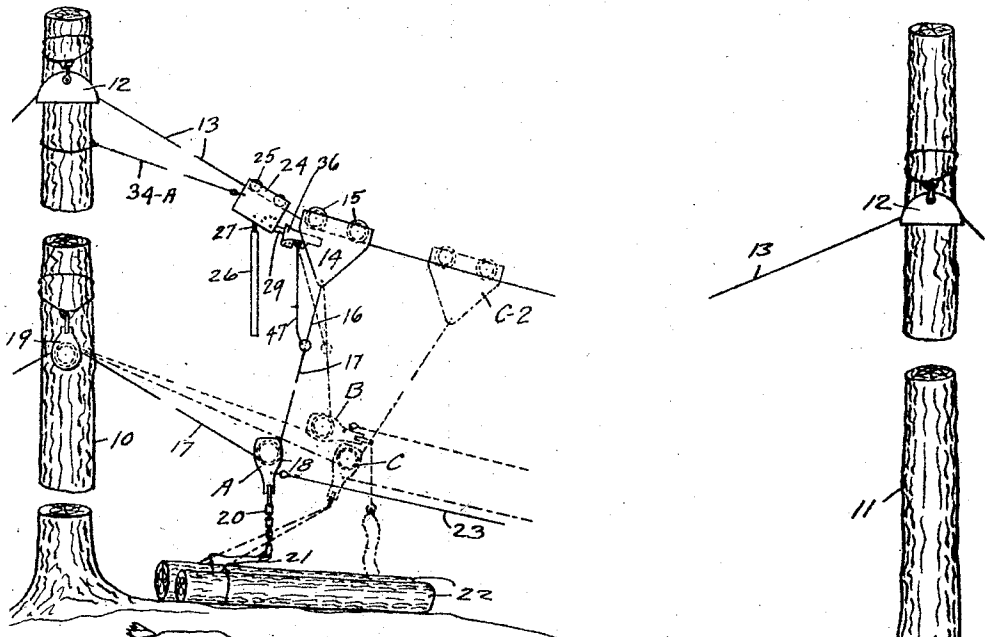

FIG. 1

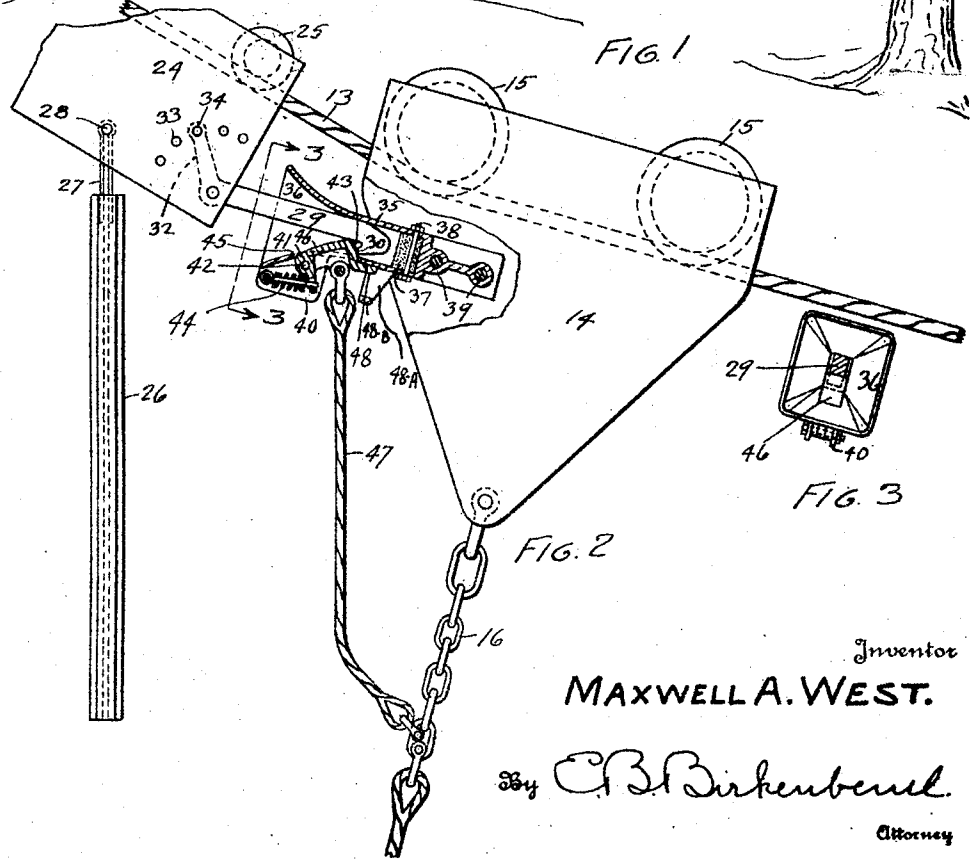

FIG. 3

FIG. 2

Inventor

MAXWELL A. WEST.

By C. B. Birkenbeuel.

Attorney

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MAXWELL A. WEST, OF PORTLAND, OREGON, ASSIGNOR OF ONE-HALF TO ADA M. QUENIN, OF PORTLAND, OREGON.

CARRIAGE HOLDER AND RELEASING MECHANISM.

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To all whom it may concern:

Be it hereby known that I, MAXWELL A. WEST, a citizen of the United States, and a resident of Portland, in the county of Multnomah and State of Oregon, have invented a new and useful Carriage Holder and Releasing Mechanism, of which the following is a specification.

This invention relates generally to the logging industry, and particularly to that branch thereof in which the logs are transported on overhead cables commonly known as sky-line systems such as the North Bend system, and others of a similar nature. Particular reference is made to the use of such systems in hauling logs along the level and on up-grades.

The first object of this invention is to provide an automatic carriage holding and releasing device whereby the carriage will be automatically caught and held over a landing so that the main line can be slacked sufficiently to allow the chokers to be unhooked, and at the same time make it possible to release the carriage as soon as the haulback line starts to take same out to the woods.

The second object is to eliminate the difficulty usually encountered when trying to release a carriage when locked on an upgrade cable, by performing this operation with the aid of the haulback line instead of manually, as is ordinarily the case.

The third object is to provide a means whereby it is possible to lock and unlock carriages of the heaviest types on inclined cableways without the loss of time and without danger to the operator.

The fourth object is to render it an extremely simple matter to release the choker hooks from the logs by preventing the carriage, with its fall-block, from dropping back down the grade as soon as tension is released from the main line in a manner to prevent the chokers from being unhooked.

The fifth object is to reduce wear on the main line over the landing by making it unnecessary for the carriage to move back and forth a number of times before the chokers are finally released.

The sixth object is to reduce the effect of the impact between the main carriage and the holding carriage by allowing the holding carriage to run along the standing line a short distance, instead of attempting to hold same rigidly in place.

The seventh object is to make it possible to easily change the landing point by merely changing the location of the holding carriage.

The eighth object is to provide an adjustment for the latching member in order to make the locking device absolutely positive under varying conditions of the load, lines, speeds and angles of inclination of the standing line.

These, and other objects, will become more apparent from the specification following as illustrated in the accompanying drawing, in which:

Figure 1 is a view showing, in full lines, the position taken by the carriage and chokers when employing this device during the operation of releasing the crokers, in which the fall block is indicated at A. In the same view the fall block is indicated at B, in dotted lines, which is the unlocking position. In the same view the fall block is shown at C, in dotted lines, together with the carriage, which is shown in dotted lines, in the position to which it has moved during the attempt to release the chokers when my device is not employed and is omitted from the carriage. Figure 2 is an enlarged view of the device itself showing same in section and attached to an ordinary carriage. Figure 3 is a vertical section taken along the line 3—3 in Figure 2.

Similar numbers of reference refer to the same parts throughout the several views.

Referring in detail to the drawing, in order to illustrate this device and the manner in which it is operated, there is indicated the usual head tree 10 and tail tree 11 provided with the tree shoes 12 over which is passed the usual standing line or skyline 13.

On the line 13 is mounted the usual carriage 14 with its sheaves 15 and the chain 16 to which is attached the main line 17,

which passes through the fall-block 18 and the lead block 19 on the head tree 10, and is attached to the skidding drum of a logging engine (not shown).

To the fall-block 18 is attached the butt chains 20 to which are attached the chokers 21 adapted to be secured around the logs 22 being transported. Attached to the fall-block 18 is a haulback line 23 which carries the chokers toward the tail tree 11. It is of course understood that the haulback line is preferably power driven and is carried around one or more sheaves back to the haulback drum on the logging engine.

Turning now to the device itself, attention is drawn to the holding carriage 24 consisting of a pair of side members preferably of plate material, and having two sheaves 25 between same which ride on the standing line 13. A relatively long counterweight 26 is hinged to the lower side of the holding carriage 24 by means of a strap 27 which passes around the bolt 28, which, in turn, passes through the sides of the holding carriage.

Between the sides of the holding carriage 24, and on the side facing the carriage 14, is a latch 29 having a hook 30 formed on the end thereof. This latch is mounted on the bolt 31. An arm 32 projects upwardly from the hinged end of the latch 29 and is provided with a hole which can be made to register with any of the holes 33. A bolt 34 is employed to hold the arm 32 in the desired position for easy latching, depending upon the inclination of the main line at the landing, and other factors. A line 34^A attaches the holding carriage to the head tree 10.

In some instances it is desirable to provide a yielding holder for the arm 32 instead of rigidly attaching the entire latch to the holding carriage 24. This, of course, can be readily accomplished by providing a spring on one or both sides of the arm 32, without departing from the spirit of this invention.

To the carriage 14 is attached the locking means itself which consists of a frame 35 having a funnel-shaped mouth 36 which has a rubber cushion 37 secured in the end thereof by means of a bolt 38, to permit ready replacement. The frame 35 is attached to the carriage 14 by means of the bolts 39, or in any other convenient manner. Obviously the angular relation between the latch 29 and the frame 35 could be adjusted equally well by changing the relation of the frame 35 to the carriage 14.

On the under side of the frame 35 are formed the spaced lugs 40, between which the mouth 36 is slotted, in which slot is hinged a lock 41 on the pin 42. The lock 41 is provided with a shoulder 43 which is adapted to engage the hook 30 of the latch 29. The lock 41 is also provided with a spring 44 adapted to urge the shouldered portion 43 through the slot 45, and to make same project into the interior of the frame 35.

The face 46 is so formed as to permit the end of the latch 29 to force the lock 41 out of the way of the on-coming hook 30. Under the urge of the spring 44 the lock again moves into the frame 35 and locks the carriage 14 to the holding carriage 24. To the lock 41 is attached a light line 47 whose other end is attached to the chain 16 at some distance below the carriage 14. The lip 48 on the lock 41 prevents same from extending too far into the frame 35. The lip 48 also works in a slot formed between the U-shaped guide 48^A whose closed end 48^B acts as a stop for the lock 41 to prevent same from being withdrawn sufficiently far to over-compress the spring 44.

The operation of the device is as follows: When bringing in a load of logs they are brought up to the landing in the usual manner until the carriage 14 is locked to the holding carriage 24. The main line is now released quickly and completely slacked away and the butt chains and chokers take positions similar to those shown in full lines in Figure 1. When the chokers are unhooked the haulback line is used to pull the fall-block and its chain toward the tail tree sufficiently far to cause the line 47 to withdraw the lock 41 and thereby release the latch 29, which, of course, releases the entire carriage 14.

When picking up logs from beyond the tail tree there is little possibility of undue strains being placed on the line 47. Owing to the fact that the carriage 14 is near the tail tree, its angle of inclination is reversed from that which it assumes at the head tree, at which time the line 47 must be of the correct length to permit the side pull, above mentioned, to release the carriage.

Holding carriages intended to secure a logging carriage automatically have been constructed in the past, but in this device there is provided not only a means for securing the carriage but also for releasing same automatically by the use of the power lines themselves, with a considerable saving in labor and reduction in loss of logging time, which, of course, means an increase in capacity for a given system.

Existing devices having automatic locks are extremely uncertain in their action—in other words—conditions must be just right for them to function at all, and since ideal conditions in logging operations are the exception rather than the rule, it is evident that means for adjusting the latching mechanism to meet the needs and different set-ups is highly important.

It must be understood that when my device is not employed that the carriage runs down the incline to the position shown at C^2 in Figure 1 before it is possible to unhook the chokers. It is then necessary to attach an auxiliary line such as a straw line to the butt chains and remove the tension from the chokers sufficiently to permit them to be released. The tension on the straw line is then released sufficiently to permit same to be removed from the butt chains. On steep grades this is often accomplished only at a considerable distance from the point where the chokers were fastened and results in the loss of a great deal of time. In other words—not only is time conserved, but labor as well, since instead of two men required it is possible for one man to take care of the chokers.

I claim:

1. The combination of a holding carriage; a latch adjustably mounted on said carriage; yielding means for holding said carriage in an upright position; a lock-holding member having a funnel-shaped mouth adapted to guide said latch to said lock, said lock-holder forming a part of a logging carriage; and means for withdrawing said lock by the first portion of a pull on the haulback line after the load has been removed from said carriage.

2. In a log transporting device, the combination of a holding carriage; a latch adjustably mounted on said carriage; means for holding said carriage in an upright position; a lock-holding member having a funnel-shaped mouth, said member being mounted on a logging carriage; a spring-urged lock member hinged to said lock holder; and a line secured to said lock adapted to be attached to the standing end of a main line below the logging carriage, said line having a length adapted to cause same to release said latch when said main line is pulled by the haulback line.

3. A carriage-holding and releasing mechanism consisting of a latch between a logging carriage and a holding carriage; and means for releasing said latch consisting of a short line attached to the carriage haulback line adapted to disengage said latch just prior to the movement of the carriage caused by a pull on the haulback line.

4. A carriage-holding and releasing mechanism having, in combination, a yielding holding carriage; a latch mounted on said holding carriage; a lock attached to a logging carriage and adapted to engage said latch when said carriages meet; and means for releasing said latch by the first portion of a pull on the outhaul line preceding the return of said carriage to the woods.

5. In a log-handling device, the combination of a standing line; a logging carriage mounted on said line; a holding carriage mounted on said line adjacent to the head tree; a line for securing said holding carriage to said head tree; a latch between said carriages adapted to lock same together by contact; and lock means on said carriage adapted to release said latch by the first portion of the pull on the haulback line after said carriage is freed from its load.

6. In a log handling device, the combination of a standing line; a logging carriage mounted on said line; a holding carriage anchored on said line near the head tree; a latch adjustably projecting from said holding carriage in the direction of said logging carriage; a lock mounted on said logging carriage adapted to engage said latch; and a line attached near the standing end of a main line below said logging carriage adapted to withdraw said lock in a manner to release said latch when the standing end of said main line is inclined by the haulback line.

7. A holding mechanism for logging carriages having a funnel-shaped lock holder mounted on the logging carriage; a spring-urged locking arm hinged in the side of said holder, said arm having a shoulder formed thereon adapted to project into said holder and having its hinged end nearest the mouth of said holder, said arm having a projecting lug formed thereon limiting the distance said shoulder can project into said holder; a chain depending from the logging carriage for attaching the standing end of the main line; a line joining the lower end of said chain to said locking arm; and a holding carriage on the standing line having a latch projecting therefrom in the direction of said lock holder, said holding carriage having a counterweight hinged therefrom and having a line by means of which it is anchored to the head tree.

8. In a logging apparatus including a logging carriage mounted on a standing line and having attached thereto the standing end of a main line, said main line having a fall-block placed thereon bearing the butt chains and choker hooks and having a haulback line attached to said fall-block, in combination with a holding carriage on said standing line anchored to the head tree, said holding carriage having an adjustable latch projecting therefrom in the direction of said logging carriage, said logging carriage having attached thereto a funnel-shaped frame adapted to receive the end of said latch; a spring-urged lock mounted in the side of said frame and projecting therein; and a line attached between said lock and said main line at a point below said carriage, said line having a length which will cause same to withdraw said lock from said frame in a manner to disengage said carriages when the standing end of said main line is sufficiently inclined by a pull on the haulback line.

9. In a log-handling device, the combination of a standing line; a holding carriage yieldingly mounted on said line; a logging carriage also mounted on said line; a fall-block under said locking carriage; a main line passing through said fall-block and fastening to said logging carriage; a haulback line attached to said fall-block; a latch between said carriages adapted to secure same together by contact; and means for releasing said latch by a pull on said haulback line.

MAXWELL A. WEST.