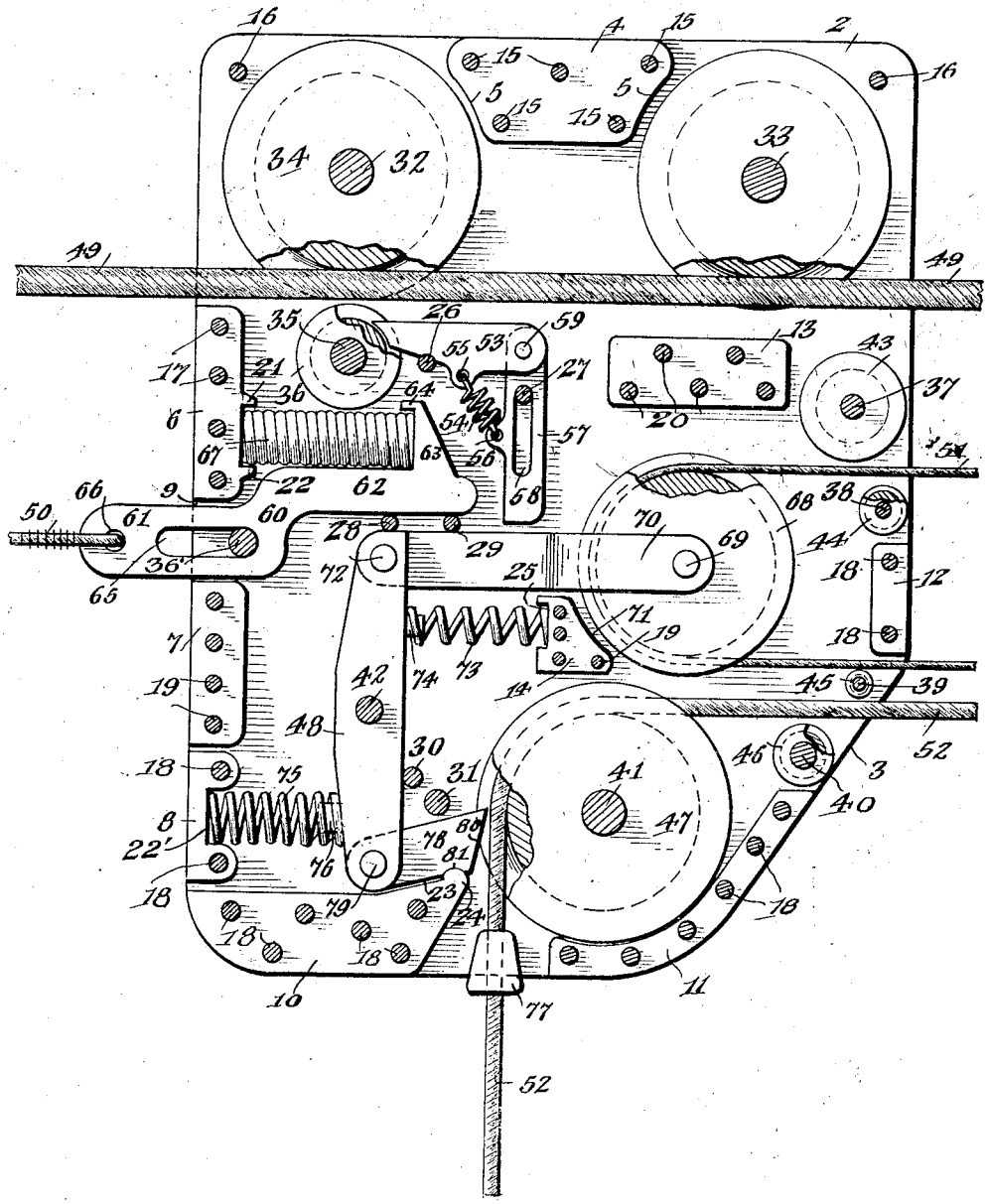
April 27, 1926. 1,582,749

C. L. HAWKINS

SKIDDER CARRIAGE

Filed June 19, 1925



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UNITED STATES PATENT OFFICE.

CHESTER LEE HAWKINS, OF SUNBURST, NORTH CAROLINA.

SKIDDER CARRIAGE.

Application filed June 19, 1925. Serial No. 38,379.

To all whom it may concern:

Be it known that I, CHESTER LEE HAWKINS, a citizen of the United States, residing at Sunburst, in the county of Haywood and State of North Carolina, have invented certain new and useful Improvements in Skidder Carriages, of which the following is a specification.

This invention relates to a skidder carriage, and has for its object to provide a carriage of such class, in a manner as hereinafter set forth, with means whereby it is safe and reliable to skid down a hill towards the skidder as well as up hill; with means whereby an engine and slack line are relieved of strain from the load; with means whereby the carriage and load are automatically locked to the overhead suspending cable for the carriage when the re-haul cable is broken, and with means for removing the weight of the load from off of the skidder cable and holding the load in place while travelling from the woods to the skid yard.

Further objects of the invention are to provide, in a manner as hereinafter set forth, a skidder carriage which is simple in its construction and arrangement, strong, durable, compact, thoroughly efficient and convenient in its use, readily assembled, and comparatively inexpensive to set up.

With the foregoing and other objects in view, the invention consists of the novel construction, combination and arrangement of parts, as hereinafter more specifically described and illustrated in the accompanying drawing, wherein is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which come within the scope of the claims hereunto appended.

The drawing illustrates, in vertical section, a skidder carriage in accordance with this invention.

Referring to the drawings in detail, a skidder carriage, in accordance with this invention, comprises a housing consisting of a pair of vertically disposed plates 2, only one shown, and which are of the same contour, and of substantial height and width. One of the lower corners of each of the plates is cut away, as at 3. The plates 2 are arranged in opposed spaced relation and interposed between the top of the plates, centrally thereof, is a spacing block 4, having curved ends 5. Interposed between the plates 2, at one side thereof, is a series of vertically disposed spacing bars 6, 7 and 8 and each of which is of substantial thickness. The bar 6 is arranged above and spaced from the bar 7 to provide a passage 9. The bar 7 is arranged above and spaced from the bar 8. Interposed between the bottoms of the plates 2 is a spacing block 10 and also interposed between the plates 2, at the lower portion and other side thereof, is an angle-shaped spacing strip 11. The lower end of the strip 11 is spaced from the inner end of the block 10. Arranged between the plates 2, at that side opposite the side between which the bar 7 is interposed, is a vertically extending spacing block 12, positioned a substantial distance above the upper end of the strip 11. Interposed between the plates 2 and positioned adjacent a side edge thereof is a spacing plate 13 of rectangular contour and interposed between the plates 2 and positioned in spaced relation with respect to the bar 7 and block 12 is a triangular spaced spacing plate 14.

Holdfast devices 15 are employed for connecting the block 4 and the plates 2 together. Holdfast devices 16 are arranged at the upper corners of the plates 2 for connecting them together. Holdfast devices 17 are provided for connecting the bar 6 and plates 2 together. Holdfast devices 18 are employed for connecting the plates 2 to the bar 8, block 10, strip 11 and block 12. The holdfast devices 15, 16, 17 and 18 consist of bolts provided with nuts. Holdfast devices 19 are employed for connecting the plates 2 to the bar 7 and plate 14. Hold fast devices 20 are employed for connecting the plate 13 to the plates 2. The holdfast devices 19 and 20 are in the form of rivets. The block 4, bars 6, 7, 8, block 10, strip 11, block 12, plates 13 and 14 can be termed filler blocks.

The bar 6 has projecting from its inner side edge a pair of spaced lugs 21, 22 and which are positioned intermediate the ends of said edge. The bar 8 is cut away on its inner side to provide a seat 22′. The block 10 has the inner portion of its upper edge inclined upwardly, as at 23, towards the inner end of said block and the inclined portion 23 of said upper edge terminates in a protuberance 24 positioned at the upper inner corner of the block 10 and which is of circular contour. The vertical side edge of the plate 14 is cut away to form a seat 25.

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The plates 2 carry a pair of stop members 26, 27 which are spaced from each other, and the member 27 is arranged below the member 26. The members 26 and 27 oppose and are spaced a substantial distance from the bar 6. The member 27 is spaced a greater distance from the bar 6 than the member 26. Each of said stop members is in the form of a bolt provided with a nut, and said bolts extend through the plates 2. Carried by the plates 2 is a pair of spaced supporting members 28, 29, arranged in parallelism and opposing the inner end of the passage 9. The members 28 and 29 are spaced from the passage 9 and the member 29 is spaced a greater distance from said passage than the member 28. Arranged below the members 28 and 29 and positioned adjacent the inner end of the block 10, as well as being spaced therefrom is a pair of stop members 30, 31, the former is arranged above the latter. The member 31 is spaced rearwardly with respect to the member 30. The members 30 and 31 oppose the bar 8 and are spaced a substantial distance therefrom, and with the member 31 spaced a greater distance than the member 30. The member 31 is of greater diameter than the member 30. The member 30 as well as the member 31 consists of a bolt and a nut and which extends through the plates 2.

Secured to the plates 2, at the upper portion thereof is a pair of spaced parallel bearing pins 32, 33 and upon each of which is mounted a sheave 34. The block 4 is positioned between the upper portions of the sheave 34. Arranged below the bearing pin 32 and spaced from the sheave carried by said pin 32 is a bearing pin 35, provided with a spool 36 of materially less diameter than the sheave. Arranged at the inner end of the passage 9 is a stop member 36' which is in the form of a bolt and nut and is connected with the plates 2. Connected to the plates 2 are bearing pins 37, 38, 39, 40, 41 and 42. Mounted on the pin 37 is a spool 43 positioned adjacent the outer end of the plate 13. Carried by the pin 38 is a spool 44 positioned in proximity to, but spaced from the upper end of the block 12. The pins 39 and 40 are arranged in spaced relation and positioned between the lower end of the block 12 and upper end of the strip 11. The pin 39 is arranged above the pin 40 and carries a spool 45. Mounted on the pin 40 is a spool 46. Carried by the pin 41 is a sheave 47, and mounted on the pin 42 is a lever arm 48 which opposes the bars 7 and 8, is vertically disposed and has its lower end positioned in proximity to but spaced from the block 10. The lever arm 48 is spaced from the bars 7 and 8.

The overhead or suspension cable for the carriage is indicated at 49 and which forms a track, and travelling thereon are the sheaves 34 carried by the pins 32 and 33. The cable 49 extends between the spool 36 and sheave 34 carried by the pin 32. The spool 36 is arranged in close proximity to the cable 49. The re-haul cable is indicated at 50, the slack line cable at 51, and the skidder cable at 52.

For the purpose of automatically locking the carriage to the cable 49 when the re-haul cable 50 breaks, a spring controlled locking mechanism is provided and which not only includes the spool 36, but a spring controlled locking arm 53 which normally rests on the stop member 26 and has its free end extend into the spool 36 so that when the arm 53 is released it will ride on the spool 36 to a position to wedge between the spool and cable 49 to prevent travelling of the carriage on the latter. The arm 53 is normally maintained against the stop member 26 by a spring 54 connected at one end, as at 55, to the arm 53, and at its other end, as at 56 to a slidable vertically disposed carrier 57 for the arm 53. The carrier 57 consists of a rectangular plate provided with a lengthwise slot 58 for the mounting of the carrier on the stop member 27. The arm 53 is pivotally connected to the upper end of the carrier 57, as at 59. The locking member is actuated through the medium of a spring controlled re-haul lug when the re-haul cable breaks.

The re-haul lug to which the re-haul cable 50 is secured, is referred to generally by the reference character 60 and is formed of a pair of arms 61, 62, one offset with respect to the other so that the arms will extend in parallel planes. The arm 62 is arranged above the arm 61 and rides on the supporting members 28, 29. The arm 62, in proximity to its inner end, is formed with a vertically disposed triangular extension 63, terminating in a lateral lug 64 which extends towards the bar 6. The arm 61 is formed with a lengthwise slot 65 for the purpose of slidably mounting the re-haul lug on the strip member 36. The arm 61 is furthermore provided with an opening 66 for connecting the re-haul cable 50 therewith. The arm 61 extends through the passage 9. The controlling spring for the re-haul lug 60 is indicated at 67 and is positioned above the arm 62 and interposed between the extension 63 and lugs 21 and 22. Under normal conditions the re-haul cable 50 maintains the spring 67 under tension. Now if the re-haul cable 50 should break, springs 67 would expand, forcing the re-haul lug 50 inwardly and against the lower end of the carrier 57, whereby the latter will be rocked on its stop member, so that the arm 53 will be shifted towards the spool 36 and be moved to a wedging position with respect to the spool 36 and cable 49, thereby locking the carriage from movement.

The slack line cable 51 travels between the spools 43 and 44 and also between the lower end of the block 12 and sheave 45. The slack line cable 51 further travels around a sheave 68 carried by a bearing 69 which projects from one end of a connecting arm 70, which is arranged between the plate 14 and the stop members 28, 29 and these latter constitute a guide for said arm 70. The plate 14 has a curved edge 71 arranged in proximity to the sheave 68 and said curved edge 71 provides a support for the sheave 68 when the latter lowers. The arm 70 is pivotally connected as at 72, to the upper end of the lever 48 and the latter is spring controlled through the medium of a controlling spring 73 which is interposed between the plate 14 and the lever 48 above the bearing pin 42. The lever 48 is provided with a lateral lug 74 which extends into one end of the spring 73. The other end of the spring 73 is mounted in the seat 25. The stop member 30 associates with that portion of the lever 48 below the bearing pin 42 and is normally maintained against said stop member by a controlling spring 75, which is interposed between the lower portion of the lever 48 and the bar 8 and extends in an opposite direction with respect to the direction in which the spring 73 extends. One end of the spring 75 is arranged in the seat 22 and its other end has extending therein a lug 76 which projects laterally from the lever 48.

The skidder cable passes between the spools 45 and 46 and around the sheave 47 and then downwardly between the block 10 and lower end of the strip 11. The skidder cable carries a load stop 77 of frusto-conical contour. Associated with the stop 77 is a holding dog 78, which is pivotally connected, at one end, as at 79, to the lower end of the lever 48. The dog 78 extends towards the sheave 47 and has its free end edge 80 inclining upwardly and towards the sheave 47. The lower edge of the dog 78 is provided with a curved seat 81 for the reception of the protuberance or extension 24. The stop member 31 associates with the dog 78 for limiting its upward movement.

The slack line sheave 68 travels back and forth between the plates 2 and is connected with the holding dog 78 through the medium of the arm 70 and lever 48. When the load stop 77 is resting on the dog 78, thus taking the weight of the load off of the skidder cable and holding the load in place while travelling from the woods to the skid yard. The said dog 78 is maintained in such position by the springs 73 and 75. When the load reaches its destination the re-haul line 60 is held tight, the skid line 52 is given a pull, thus disengaging the load stop 77 allowing for the load to descend to the ground. The spools 36, 37, 44, 45 and 46 are in the form of small sheaves and the purpose thereof is to take care of the slack that occurs at times in the different cables and to take the wear from the plates 2.

The function of the spring 54 is to normally maintain the arm 53 and carrier 57 in the position shown and to restore the same to normal position after performing its locking function.

The arm 70, lever 48 and spring 73 and 75 in connection with the sheave 68 provide what may be termed a combined spring controlled slack line connecting and load retaining mechanism. The spring controlled re-haul lug provides what may be termed an actuating mechanism for the locking mechanism for the carriage.

It is thought that the many advantages of a skidder carriage, in accordance with this invention, can be readily understood, and although the preferred embodiment of the invention is as illustrated and described, yet it is to be understood that changes in the details of construction can be had which will fall within the scope of the invention as claimed.

What I claim is:—

1. A skidder carriage comprising a housing provided with sheaves for travelling upon a suspension cable, a load stop adapted to be carried by a skidder cable, a spring controlled holding element within the housing and having one end thereof normally positioned in the path of and adapted to support said stop to remove the weight of the load from off the skidder cable, and a spring controlled slack line connecting mechanism arranged within the housing, above said element and having its lower end pivotally connected to the other end of said element and constituting a carrying, a releasing and a retaining device for said element.

2. A skidder carriage comprising a housing provided with sheaves for travelling upon a suspension cable, a load stop adapted to be carried by a skidder cable, a spring controlled holding element within the housing and having one end thereof normally positioned in the path of and adapted to support said stop to remove the weight of the load from off the skidder cable, a spring controlled slack line connecting mechanism arranged within the housing, above said element and having its lower end pivotally connected to the other end of said element and constituting a carrying, a releasing and a retaining device for said element, a stop arranged at one side of said mechanism for arresting movement thereof in one direction, and a stop arranged over said element for arresting the upward movement thereof.

3. A skidder carriage comprising a housing provide with sheaves for travelling upon a suspension cable, a load stop adapted to be carried by a skidder cable, a spring controlled holding element within the housing

and having one end thereof normally positioned in the path of and adapted to support said stop to remove the weight of the load from off the skidder cable, a spring controlled slack line connecting mechanism arranged within the housing, above said element and having its lower end pivotally connected to the other end of said element and constituting a carrying, a releasing and a retaining device for said element, and means arranged below said element to provide a seat for that end thereof positioned in the path of the stop.

4. A skidder carriage comprising a housing provided with sheaves for travelling upon a suspension cable, a sheave arranged within said housing at one lower corner thereof, a skidder cable travelling over said sheave and depending from the housing centrally thereof, a load stop fixedly secured to the depending portion of said skidder cable, a spring controlled holding element arranged in the lower portion of the housing and having one end thereof normally positioned in the path of and adapted to support the stop to remove the weight of the load from off the skidder cable, and a spring controlled slack line connecting mechanism positioned within the housing above said element, pivotally connected at its lower end to the other end of said element and constituting a carrying, a releasing and a retaining device for said element.

5. A skidder carriage comprising a housing provided with sheaves for travelling upon a suspension cable, a sheave arranged within said housing at one lower corner thereof, a skidder cable travelling over said sheave and depending from the housing centrally thereof, a load stop fixedly secured to the depending portion of said skidder cable, a spring controlled holding element arranged in the lower portion of the housing and having one end therof normally positioned in the path of and adapted to support the stop to remove the weight of the load from off the skidder cable, a spring controlled slack line connecting mechanism positioned within the housing above said element, pivotally connected at its lower end to the other end of said element and constituting a carrying, a releasing and a retaining device for said element, and means arranged in the lower portion of the housing to provide a seat for that end of said element which is normally positioned in the path of the stop.

6. A skidder carriage comprising a housing provided with sheaves for travelling upon a suspension cable, a sheave arranged within said housing at one lower corner thereof, a skidder cable travelling over said sheave and depending from the housing centrally thereof, a load stop fixedly secured to the depending portion of said skidder cable, a spring controlled holding element arranged in the lower portion of the housing and having one end thereof normally positioned in the path of and adapted to support the stop to remove the weight of the load from off the skidder cable, a spring controlled slack line connecting mechanism positioned within the housing above said element, pivotally connected at its lower end to the other end of said element and constituting a carrying, a releasing and a retaining device for said element, a stop positioned at one side of said mechanism for arresting movement in one direction thereof, and a stop arranged over said element for arresting the upward movement thereof.

7. A skidder carriage comprising a housing provided with sheaves for travelling upon a suspension cable, a sheave arranged within said housing at one lower corner thereof, a skidder cable travelling over said sheave and depending from the housing centrally thereof, a load stop fixedly secured to the depending portion of said skidder cable, a spring controlled holding element arranged in the lower portion of the housing and having one end thereof normally positioned in the path of and adapted to support the stop to remove the weight of the load from off the skidder cable, a spring controlled slack line connecting mechanism positioned within the housing above said element, pivotally connected at its lower end to the other end of said element and constituting a carrying, a releasing and a retaining device for said element, a stop positioned at one side of said mechanism for arresting movement in one direction thereof, a stop arranged over said element for arresting the upward movement thereof, means arranged in the lower portion of said housing to provide a seat for that end of said element positioned in the path of the load stop, and guiding means for said mechanism.

8. A skidder carriage comprising a housing provided with sheaves for travelling upon a suspension cable, a load stop adapted to be carried by a skidder cable, a spring controlled holding element within the lower portion of the housing and having one end thereof normally positioned in the path of and adapted to support the stop to remove the weight of the load from off the skidder cable, and a spring controlled slack line connecting mechanism arranged within the housing above said element, said mechanism including a lever pivoted intermediate its ends and having its lower end connected to the other end of said element, said mechanism further including a pair of controlling springs extending in opposite directions with respect to each other, one arranged above the other and bearing against opposite sides of said lever and acting to normally maintain said element in the path of

the load stop, said mechanism providing a carrying, a releasing and a retaining device for said element.

9. A skidder carriage comprising a housing provided with sheaves for travelling upon a suspension cable, a load stop adapted to be carried by a skidder cable, a spring controlled holding element within the lower portion of the housing and having one end thereof normally positioned in the path of and adapted to support the stop to remove the weight of the load from off the skidder cable, a spring controlled slack line connecting mechanism arranged within the housing above said element, said mechanism including a lever pivoted intermediate its ends and having its lower end connected to the other end of said element, said mechanism further including a pair of controlling springs extending in opposite directions with respect to each other, one arranged above the other and bearing against opposite sides of said lever and acting to normally maintain said element in the path of the load stop, said mechanism providing a carrying, a releasing and a retaining device for said element, means within the housing for arresting movement in one direction of said mechanism, and means within the housing for arresting the upward movement of said element.

10. A skidder carriage comprising a housing provided with sheaves for travelling upon a suspension cable, a load stop adapted to be carried by a skidder cable, a spring controlled holding element within the lower portion of the housing and having one end thereof normally positioned in the path of and adapted to support the stop to remove the weight of the load from off the skidder cable, a spring controlled slack line connecting mechanism arranged within the housing above said element, said mechanism including a lever pivoted intermediate its ends and having its lower end connected to the other end of said element, said mechanism further including a pair of controlling springs extending in opposite directions with respect to each other, one arranged above the other and bearing against opposite sides of said lever and acting to normally maintain said element in the path of the load stop, said mechanism providing a carrying, a releasing and a retaining device for said element, means within the housing for arresting movement in one direction of said mechanism, means within the housing for arresting the upward movement of said element, and means within the lower portion of the housing to provide a seat for that end of said element positioned in the path of the load stop.

11. A skidder carriage comprising a housing provided with sheaves for travelling upon a suspension cable, a load stop adapted to be carried by a skidder cable, a spring controlled holding element within the lower portion of the housing and having one end thereof normally positioned in the path of and adapted to support the stop to remove the weight of the load from off the skidder cable, a spring controlled slack line connecting mechanism arranged within the housing above said element, said mechanism including a lever pivoted intermediate its ends and having its lower end connected to the other end of said element, said mechanism further including a pair of controlling springs extending in opposite directions with respect to each other, one arranged above the other and bearing against opposite sides of said lever and acting to normally maintain said element in the path of the load stop, said mechanism providing a carrying, a releasing and a retaining device for said element, means within the housing for arresting movement in one direction of said mechanism, means within the housing for arresting the upward movement of said element, means within the lower portion of the housing to provide a seat for that end of said element positioned in the path of the load stop, and guiding means within the housing for said mechanism.

In testimony whereof, I affix my signature hereto.

CHESTER L. HAWKINS.