B. S. SPAULDING.

OVERHEAD HOISTING TROLLEY.

APPLICATION FILED JAN. 11, 1913.

1,065,399. Patented June 24, 1913.

Fig. 1.

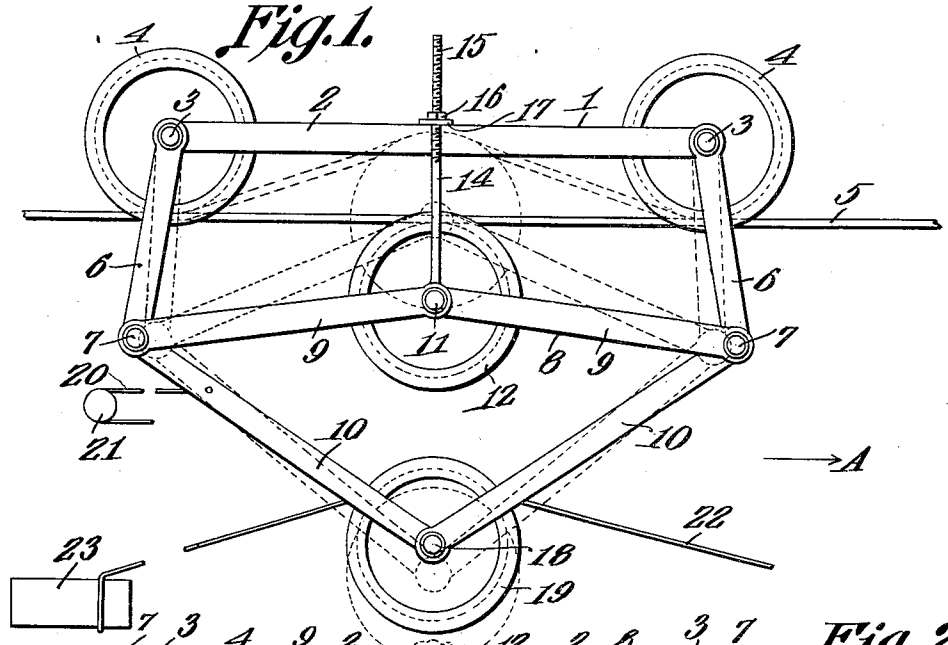



Fig. 2.

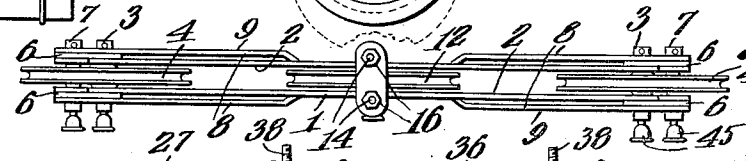



Fig. 3.

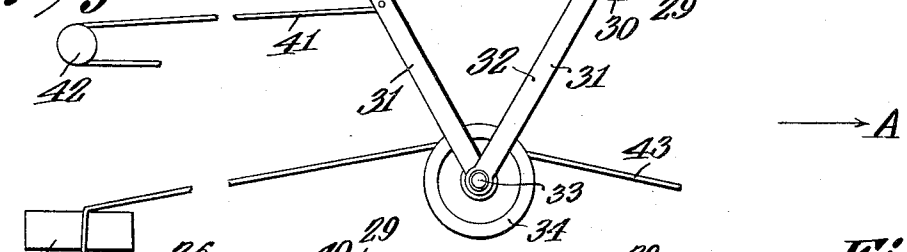
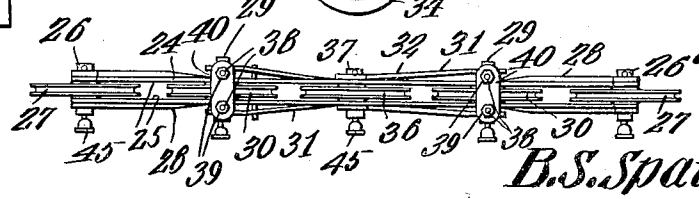



Fig. 4.

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# UNITED STATES PATENT OFFICE.

BENJAMIN SHEPHARD SPAULDING, OF ARCATA, CALIFORNIA.

## OVERHEAD HOISTING-TROLLEY.

1,065,399. Specification of Letters Patent. Patented June 24, 1913.

Application filed January 11, 1913. Serial No. 741,599.

*To all whom it may concern:*

Be it known that I, BENJAMIN S. SPAULDING, a citizen of the United States, residing at Arcata, in the county of Humboldt and State of California, have invented a new and useful Overhead Hoisting-Trolley, of which the following is a specification.

One object of the present invention is to provide a trolley for logging operations and the like, so constructed that the same will maintain its grip upon the cable-way while the log or other article is being drawn along the ground, the construction being such that when the log is out of engagement with the ground, the trolley will move readily along the cable-way.

Another object of the invention is to provide a device of this type having novel means for adjusting the relative positions between the pulleys which engage, respectively, with the upper and lower edges of the cable-way.

It is within the scope of the invention to improve generally and to increase the utility of devices of that type to which the present invention appertains.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed it being understood that changes in the precise embodiment of invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings:—Figure 1 shows one form of the invention in side elevation; Fig. 2 is a top plan of the structure shown in Fig. 1; Fig. 3 is a side elevation showing a modified form of the invention; and Fig. 4 is a top plan of the structure shown in Fig. 3.

In carrying out the invention and referring particularly to Figs. 1 and 2, there is provided a support 1 which preferably consists of parallel bars 2, united at their ends by axles 3. Journaled for rotation upon the axles 3 and located between the bars 2 are primary pulleys 4 adapted to engage the upper edge of the track or cable-way 5. Depending links 6 lie upon opposite sides of the cable-way 5, the upper ends of the links 6 being pivotally supported by the axles 3. Extended through the lower ends of the links 6 are pivot elements 7, supporting the ends of a yieldable frame, denoted generally by the numeral 8. The frame 8 comprises upper bars 9, the outer ends of which are pivotally supported upon the members 7, and lower bars 10, similarly mounted at their outer ends. The adjacent ends of the upper bars 9 are pivotally connected by an axle 11 upon which is journaled for rotation a secondary pulley 12. The bars 9 and 10 are disposed in pairs, transversely of the structure. Ties 14, upwardly extended, are pivotally connected at their lower ends with the axle 11, the upper ends of the ties 14 being threaded as indicated at 15, to receive nuts 16, bearing upon a bridge 17, extended transversely of, and adapted to bear upon the upper edges of the bars 2 of the support 1.

The lower ends of the lower bars 10 of the yieldable frame 8 are pivotally connected by means of an axle 18, supporting for rotation, a sheave 19.

A return line, denoted generally by the numeral 20, is connected with any suitable portion of the structure, the return line 20 being trained about a sheave 21, indicated diagrammatically and supported in any chosen way. The hauling line 22 extends across the upper portion of the tread of the sheave 19, one end of the hauling line 22 being connected with the log or like object, indicated at 23.

In practical operation, suppose that tension is applied to the hauling line 22, in the direction of the arrow A and that the log 23 is dragging along the ground. Under the circumstances above pointed out, the sheave 19 will be drawn downwardly, swinging the upper ends of the lower bars 10 together and causing the adjacent, connected ends of the bars 9 to move upwardly, thus effecting a raising of a secondary pulley 12. When the secondary pulley 12 is raised in the manner above described, the cable-way 5

will be pinked or curved, between the pulleys 12 and 4, and thus, the trolley will be prevented from moving longitudinally of the cable-way 5, in the direction of the arrow A. Ultimately, the log or like object, indicated at 23, is lifted free from the ground, it being understood that in practice, the log 23 is located at a much greater distance below the trolley than that shown in the drawings. When the log 23 is no longer in frictional contact with the ground, the entire tension applied to the hauling line 22 will be made effective to move the trolley and and the log 23 in the direction of the arrow A, toward the log landing. The trolley may be hauled back along the cable-way 5, by manipulating the return line 20.

By adjusting the nuts 16 upon the ties 17, the spaces existing between the secondary pulley 12 and the primary pulleys 4 may be adjusted, thereby regulating the curvature of the cable-way 5 at the inception of the pull in the direction of the arrow A upon the hauling line 22. In Figs. 3 and 4, the support is denoted by the numeral 24, the same consisting of bars 25, connected at their ends by axles 26, supporting primary pulleys 27. Downwardly extended links 28 are pivotally connected with the axles 26, the lower ends of the links 28 carrying axles 29 upon which secondary pulleys 30 are journaled, the axles 29 serving to support a yieldable frame 31, the secondary pulleys 30, thus, in effect, being carried by the frame 31. The frame 31 consists of converging pairs of bars 32, the lower ends of which are pivotally connected by an axle 33, supporting a sheave 34.

The track or cable-way is indicated by the numeral 35, the primary pulleys 27 engaging the upper edge of the cable-way. Another primary pulley 36 may be located between the primary pulleys 27, the last mentioned primary pulley 36 being journaled for rotation on an axle 37 supported by and connecting the bars 25 of the support 24. Upwardly extending ties 38 are pivotally connected at their lower ends with the axles 29, and the ties 38 carrying nuts 39, engaging bridges 40, bearing upon the upper edges of the bars 25 of the support 24. The return line is indicated by the numeral 41, the same being trained about a pulley 42, supported in any desired manner. The hauling line is indicated by the numeral 43, and the log or like object is indicated by the numeral 44.

In that form of the invention last above described, it will be understood that by rotating the nuts 39, the ties 38 may be raised and lowered, and thus the relative vertical relation existing between the pulleys 30, 36 and 27 may be altered, so as to regulate the curvature of the cable-way 25.

When tension is applied to the hauling line 43 in the direction of the arrow A, the log or like object 44 will first be drawn along the ground, and then will be elevated. So long as the log 44 is in contact with the ground, the trolley will remain stationary, but so soon as the frictional engagement between the log 44 and the ground is broken, the trolley will move in the direction of the arrow A, the log 44 being thereby carried toward the log landing. The trolley may be returned to its original position by means of the line 41.

It is to be noted, referring to Fig. 1, that the grip upon the cable-way 5, afforded by the pulleys 4 and 12 is released when the trolley no longer supports the weight. In that form of the invention which is shown in Fig. 3, the grip of the several pulleys 27, 36 and 30 upon the cable-way 35 remains constant, except when the ties 38 are adjusted. When the return line is manipulated by hand, the form shown in Fig. 1 will be the more acceptable, owing to the small amount of power required to haul the trolley back to its original position.

In both forms of the invention, oil cups 45 may be provided at any and all points where lubrication is desired.

Having thus described the invention, what is claimed is:—

1. In a device of the class described; a support; primary pulleys carried by the support; a yieldable frame located below the support; a secondary pulley carried by the yieldable frame; a sheave carried by the yieldable frame below the secondary pulley; links connecting the yieldable frame with the support; and adjustable means for varying the relative positions of the frame and the support to move the secondary pulley toward and away from the primary pulleys.

2. In a device of the class described, a support; primary pulleys carried by the support; a yieldable frame located below the support; a secondary pulley carried by the yieldable frame; a sheave carried by the yieldable frame below the secondary pulley; links connecting the yieldable frame with the support; a tie connected with the yieldable frame; and adjustable means on the tie for engaging the support to move the secondary pulley toward and away from the primary pulleys.

3. In a device of the class described, a support; primary pulleys carried by the support; a quadrilateral frame located below the support; links connecting the ends of the frame with the support; a secondary pulley located at one angle of the frame; and a sheave located at the opposite angle of the frame.

4. In a device of the class described, a support; primary pulleys carried by the support; a quadrilateral frame located below the

support; links connecting the ends of the frame with the support; a secondary pulley located at one angle of the frame; a sheave located at the opposite angle of the frame; and an adjustable connection between the first specified angle of the frame and the support.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

BENJAMIN SHEPHARD SPAULDING.

Witnesses:

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**Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."**