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(54) **Trolley for cableway.**

(57) A trolley for cableways having a pulling wire (7) and a return wire (6) passing one time around two respective cams (1, 2), which are drive-coupled with each other. The drive - coupling is formed by oil motors (9, 10) connected with the cams (1, 2), which are coupled together on the hydraulic side. Between the oil motors (9, 10) is provided a radio controlled valve (13) which closes the flow of oil to both lines (3) to the oil motor (10), connected to the cam/hoisting line drum (1, 4), and simultaneously disengages the second motor (9) allowing it to run freely when the trolley is driven along the cableway. To lift/lower a load (8), the valve is opened so that the oil motors may be coupled together on the hydraulic side and control each other's speed so that equal amounts of wire pass both the cams (1, 2) simultaneously, and the cam (1) on the pull-in side of the winch, which is coupled to the hoisting drum (4) via e.g. a chain drive, drives the hoisting line out or in depending on the direction of the winch.

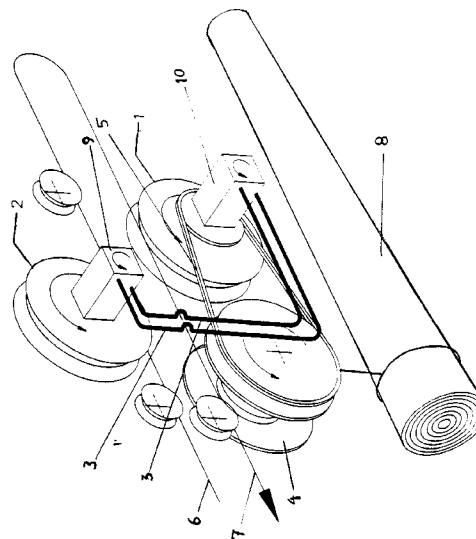


Fig. 1

The present invention relates to a trolley for cableways having a wire running via an end sheave via the trolley and back to the winch.

In previously known devices utilizing a trolley it has been necessary to lock the trolley securely to a supporting wire at the same time as the runner is used as the power outlet for raising and lowering the load. This construction is unnecessarily complicated and expensive.

The purpose of the present invention is to make it possible to secure the trolley at an arbitrary place while lifting and lowering a load, without its being necessary to undertake locking of the trolley to a supporting wire. At the same time the wire stays taut through the entire process.

It is a further purpose of the present invention to attain the same advantages as with use of a trolley for a cableway having three running lines or two running lines and a permanent supporting cable.

With traditional equipment having two lines, the cableway must be slacked down in order to be able to draw out the hoisting lines.

The aforementioned objectives are provided by means of an apparatus of the type mentioned in the introduction above, the characterizing features of which are disclosed in claim 1. Further features of the invention are apparent from the other dependent claims.

By coupling the oil motors together on the hydraulic side, these will control each other's speed. As a result, equal amounts of wire will pass both cams simultaneously. Since the cam on the pull-in side of the winch is coupled to the hoisting drum via, e.g., a chain drive, the hoisting line may be driven out or in by merely changing the winch direction.

The driving of the trolley along the cableway takes place when a radio controlled valve between the oil motors closes the oil flow to both the lines on the oil motor, connected to the cam/hoisting line drum, and simultaneously disengages the second motor so that it is able to run freely.

The invention will be described further in the following, with reference to the drawings, where:

Figure 1 is a schematic illustration of the trolley.

Figure 2 is a schematic illustration of the connection between the oil motors.

Figure 1 is a schematic view of the trolley for cableways with a pulling wire 7 passing one time around a cam 1 with the return wire 6 passing over a cam 2. Cam 2 is shown coupled with an oil motor 9 which is connected via hydraulic lines 3 with an oil motor 10 connected with cam 1. Cam 1 is shown coupled via a chain drive 5 with a hoisting drum 4. The hoisting drum may, however, be connected by other means with cam 1, such as e.g. via gear transmission, or the hoisting drum may be coupled directly with cam 1. When the trolley is moved along the line, cam 1 will stand still; i.e., the oil connection between oil motors

10 and 9 via line 3 is closed and cam 2 may run freely so that when wire 7 or wire 6, respectively, is pulled, the trolley will be moved. When lifting or lowering a load by means of the hoisting drum 4, oil motors 9 and 10 are coupled together on the hydraulic side, and these will control each other's speed so that pulling on wires 6 and 7 will turn cam 1 and 2 in the same direction with equal speed, and the trolley will then stand still whilst the hoisting drum 4 is moved for lifting or lowering a load 8.

The valves between oil motors 9 and 10 may be closed or opened by means of radio control.

The coupling of the hydraulic system between oil motors 9 and 10 is schematically illustrated on Figure 2, where the controllable valve is indicated with reference numeral 13. Reference numeral 11 designates an oil tank, and reference numeral 12 indicates check valves.

Claims

1. A trolley for cableways having a wire passing via an end sheave via the trolley and back to the winch, **characterized in** that the pulling wire (7) and the return wire (6) pass one time around two respective cams (1, 2), which are drive-coupled with each other, and that the one cam (1) is drive-coupled with a lifting/lowering device for a load (8).
2. A trolley according to claim 1, **characterized in** that the drive-coupling between the cams (1, 2) is formed by oil motors (9, 10) connected with the cams, said oil motors (9, 10) being coupled together (3) on the hydraulic side.
3. A trolley according to claims 1-2, **characterized in** that a valve (13) is provided in both lines (3) to the oil motors (9, 10), which valve may be closed or opened to the flow of oil.
4. A trolley according to claims 1-3, **characterized in** that said valve (13) is arranged to be controlled via a radio control.
5. A trolley according to claims 1-4, **characterized in** that the drive-coupling between the lifting/lowering apparatus in the form of a hoisting drum (4) is formed by a drive chain connected with the cam (1).

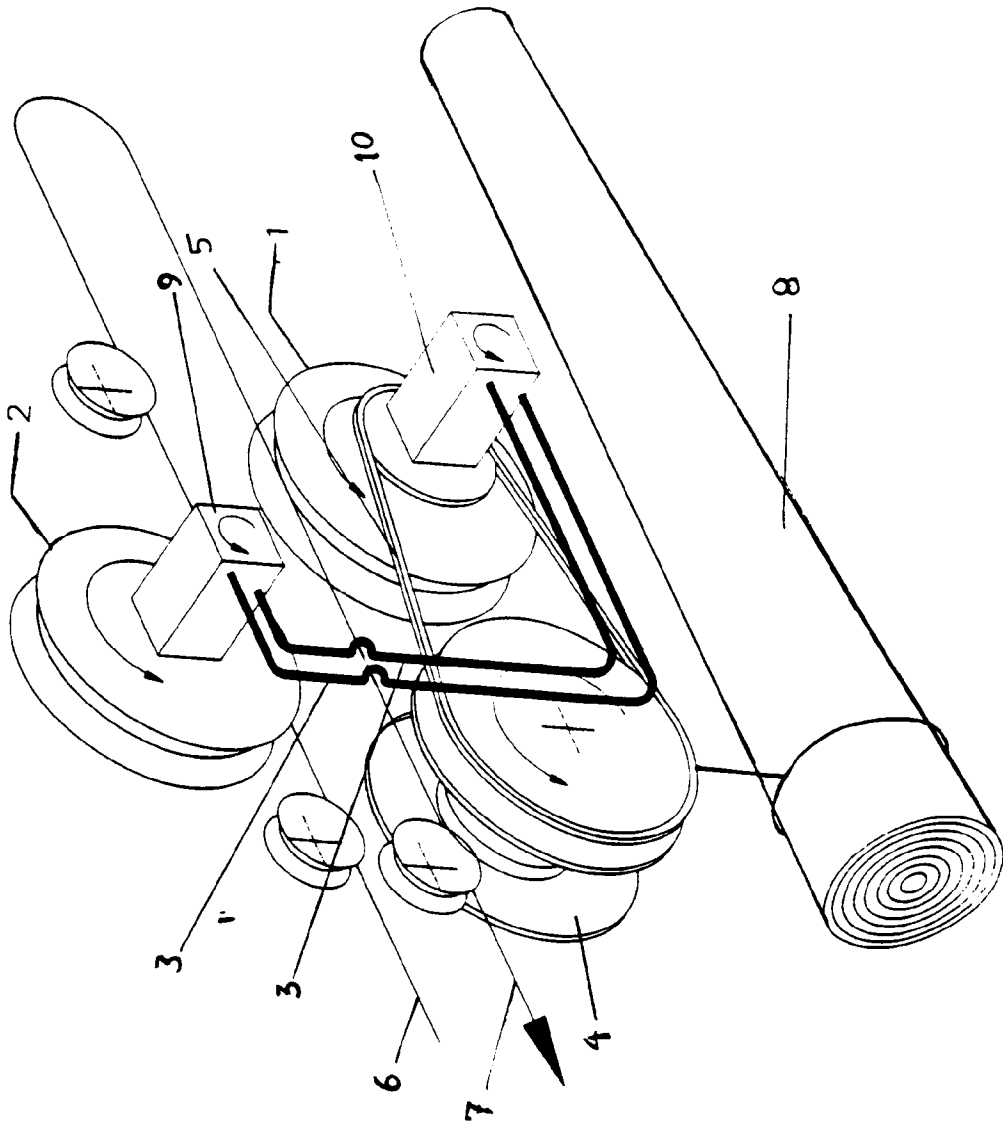


Fig. 1

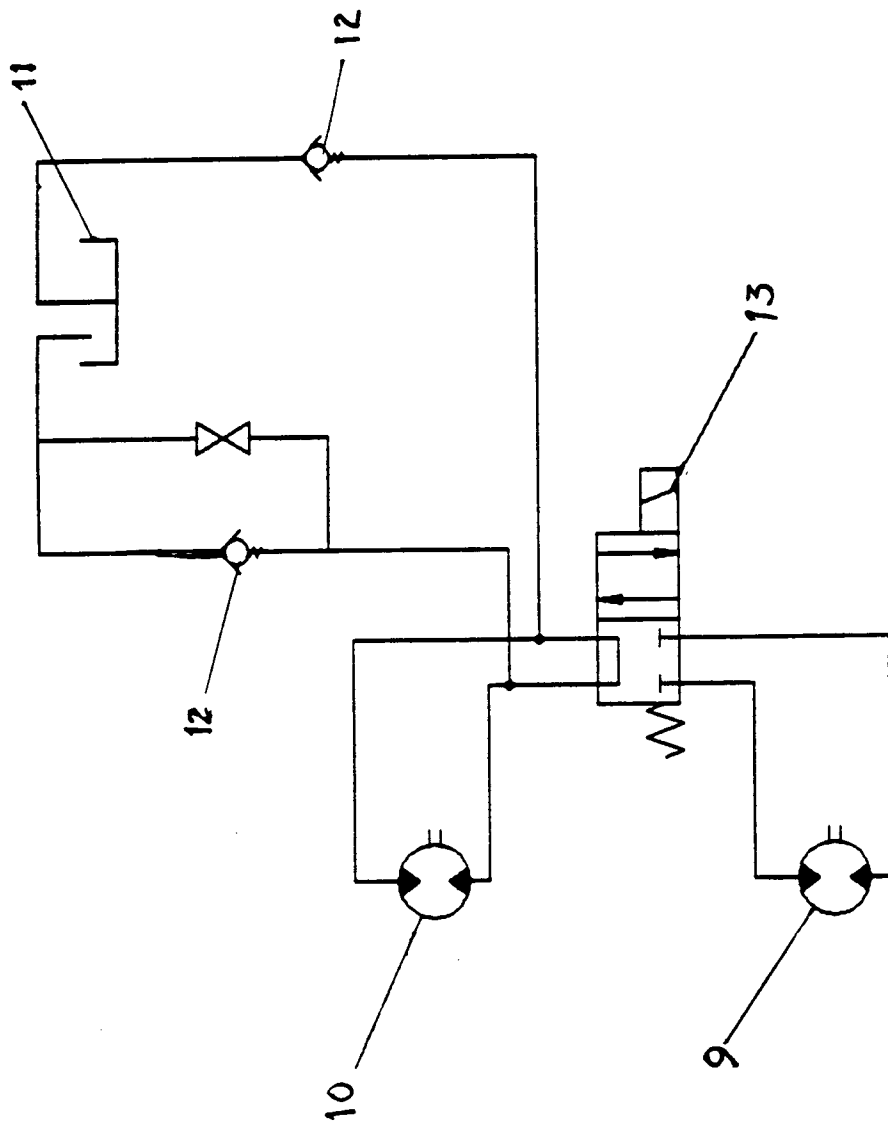


Fig. 2



European Patent
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EUROPEAN SEARCH REPORT

Application Number

EP 92 85 0254

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
A	US-A-2 601 228 (SHIELDS) * Column 2, lines 33-53; column 4, lines 38-47; figure 1 *	1	B 66 C 21/00
A	GB-A- 140 739 (DOREL) * Page 1, line 84 - page 2, line 11; page 2, lines 25-38; figures *	1	
A	CH-A- 634 785 (LÖRTSCHER) * Page 3, left-hand column, line 53 - right-hand column, line 9; figures 3,4 *	1	
A	DE-B-1 053 161 (J. POHLIG AG) * Column 4, lines 53-67; figures 4,5 *	1	
A	CH-A- 572 864 (WEBER) * Figure 4 *	1-3	
A	EP-A-0 433 941 (GAUTHIER) * Column 6, lines 18-23,34-38,45-47; figure 4 *	1,4	TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			B 66 C B 61 B B 63 B B 66 D
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 03-02-1993	Examiner GUTHMULLER J A H
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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