R. PETERSEN.

CABLEWAY.

APPLICATION FILED JULY 24, 1911.

1,068,164.

Patented July 22, 1913.

2 SHEETS—SHEET 1.

Fig.1.

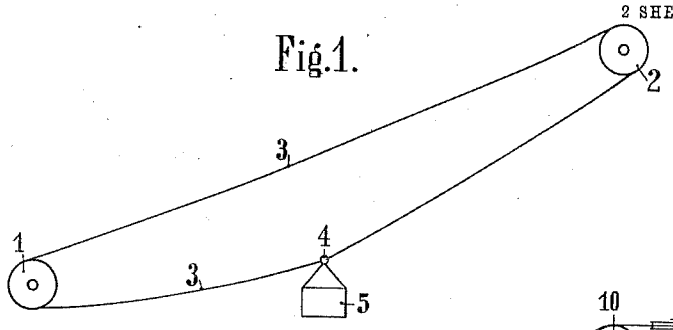


Fig.2.

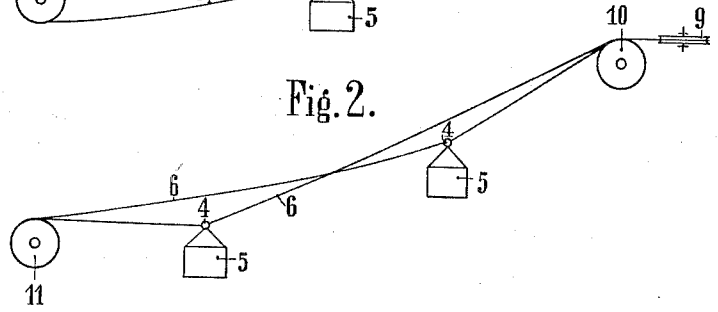


Fig.3.

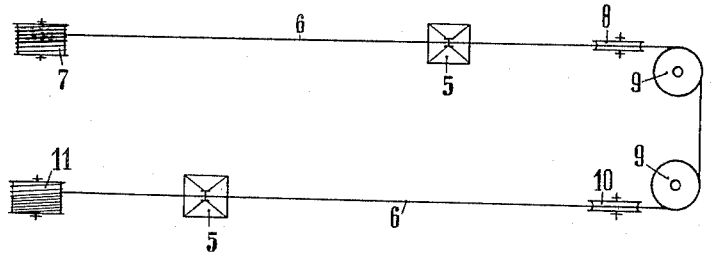
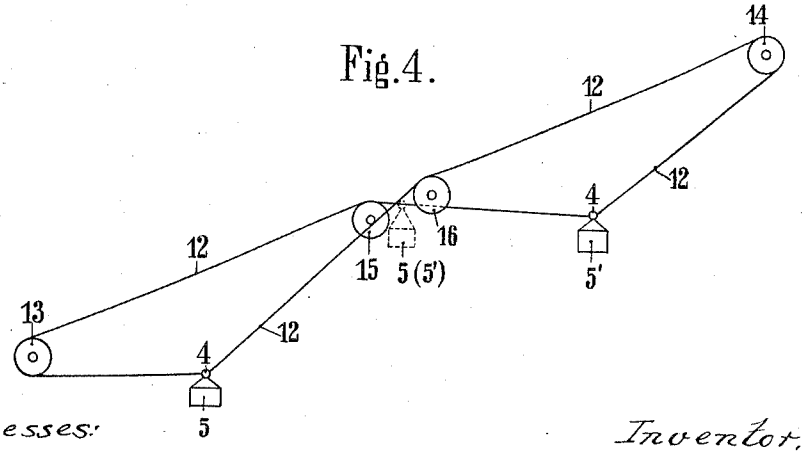


Fig.4.



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2 SHEETS—SHEET 2.

Fig. 5.

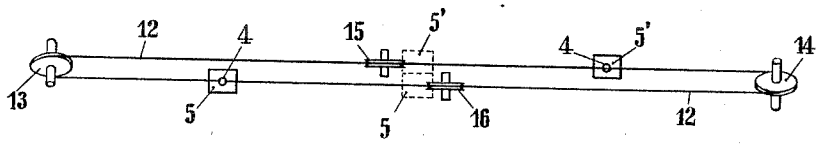
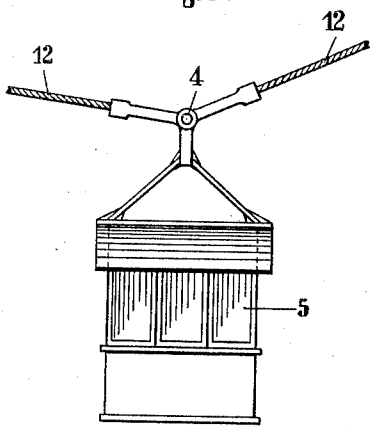


Fig. 6.



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CABLEWAY.

1,068,164. Specification of Letters Patent. Patented July 22, 1913.

Application filed July 24, 1911. Serial No. 640,328.

To all whom it may concern:

Be it known that I, RICHARD PETERSEN, a citizen of the German Empire, residing at Schlachtensee, in the German Empire, have invented new and useful Improvements in Cableways, of which the following is a specification.

This invention relates to cableways.

In cableways in which the carrying rope simultaneously serves as the traction or pulling rope and is moved with the loads suspended therefrom, the loads have heretofore been clamped to the rope. In this arrangement, in consequence of the load the parts of the rope to which the clamps are attached are subjected to bending strains which are greater, the greater the amount the rope is bent. Consequently, in this construction it was necessary to diminish the sag as much as possible, and for this purpose to place the unloaded rope with a considerable tension on the rope pulley. For a rope of definite thickness, however, the admissible magnitude of the additional tension due to the working load is thereby correspondingly diminished. Thus when the working load is of a definite amount, the distance between the pulleys carrying the rope must be diminished the more, the greater the initial tension.

A primary object of this invention is to obviate this defect.

To this end, the invention consists in pivotally attaching two ends of the supporting rope to the cage.

Several illustrative embodiments of the invention are represented by way of example in the accompanying drawing, wherein:—

Figure 1 is a side elevation showing one form of the improved cableway; Fig. 2 is a like view of a second form, and Fig. 3 is a top plan view of the latter form; Fig. 4 is a side elevation of a third form. Fig. 5, is a plan view of the latter form; and Fig. 6 is an enlarged side view of the pivotal connection of the cable and car.

In the simplest form shown in Fig. 1, a supporting rope 3 runs over a lower pulley 1 and an upper pulley 2, its two ends being secured by means of a hinge joint 4 to the cage 5. Either of the pulleys or both may be driven by any suitable gearing not shown in the drawing. The stretch of the supporting rope occurring while the rope is at work may be taken up by any desired tightening device, not shown, near the joint 4.

The illustrative embodiment according to Fig. 1 is preferable for great distances between the two pulleys when the weight of the cage 5 including the working load is relatively small as compared with the weight of the rope which is to be driven and braked by the driving gear.

In the illustrative embodiment according to Figs. 2 and 3 the one end of the rope 6 is secured to the drum 7 and the rope runs from one upper pulley 8, located in one vertical plane, over two guide pulleys 9 to a second upper pulley 10 located in another vertical plane, whence it runs to a second drum 11 at the lower end. Between the drum 7 and the pulley 8 and between the pulley 10 and the drum 11 the rope is interrupted, and its four ends are attached by means of hinged joints to the two cages 5 so that the one cage is above when the other cage has arrived below. In this construction the weights of the cages and, in certain other cases, the working loads mutually and partly counterbalance one another. As compared with the arrangement according to Fig. 1, when the working load is equal the maximum load and therefore the size of the driving engine is thereby diminished.

The illustrative embodiment according to Figs. 4, 5 and 6 comprises a rope 12 led from a lower pulley 13 to an upper pulley 14 and back again. Each side of the rope is however supported between the ends by a pulley 15 and 16, respectively. The one side of the rope is interrupted between the pulleys 15 and 14, and the other between the pulleys 16 and 13. In each case the ends are secured by means of a hinged joint 4 to a cage 5′ and 5, respectively. When the cage 5 has arrived below at the pulley 13, the cage 5′ is located above at the pulley 14. Both cages are located beside one another when they arrive between the pulleys 15 and 16. In this form the weight of the cage 5′ running to and fro on the upper section partly counterbalances the weight of the cage 5 running to and fro in the lower section.

The described arrangements admit of the rope having a relatively large amount of sag. Consequently, the initial tension of the rope is less. The difference can be utilized by increasing the own weight of the rope, *i. e.*, by relatively increasing the distances between its supports. For example, in the case of a horizontal distance of 900 meters between the supporting pulleys, a vertical

distance of 600 meters and a sag of the rope of 150 meters the ropes and the working load still have very suitable dimensions. When the sag is so great the fluctuations of temperature no longer play any decisive part, so that devices for regulating the tension of the rope can be dispensed with if desired. On the other hand, it is possible in the described manner to move relatively large individual loads. For the above-mentioned reasons the arrangement is particularly suitable for conveying persons and for mountain cableways.

I claim:—

1. In a cableway, the combination with a movably mounted combined supporting and traction rope, of a cage supported from said rope, and means pivotally attaching the two ends of the said carrying rope to the said cage at its point of support.

2. In a cableway, the combination of a movably mounted combined supporting and traction rope having portions thereof running in two vertical planes, a cage in each of the said vertical planes, and means interpolated in the said carrying rope pivotally attaching the same to the said cages.

3. In a cableway, the combination of two end pulleys at different elevations, two intermediate pulleys in different vertical planes therebetween, a carrying rope mounted to run with one side over the one intermediate pulley and with the other side over the other intermediate pulley, two cages, and means pivotally interpolating the said cages one in each side of the rope.

In witness whereof I have hereunto set my hand in presence of two witnesses.

RICHARD PETERSEN.

Witnesses:

FELIX UCUBEMES,

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