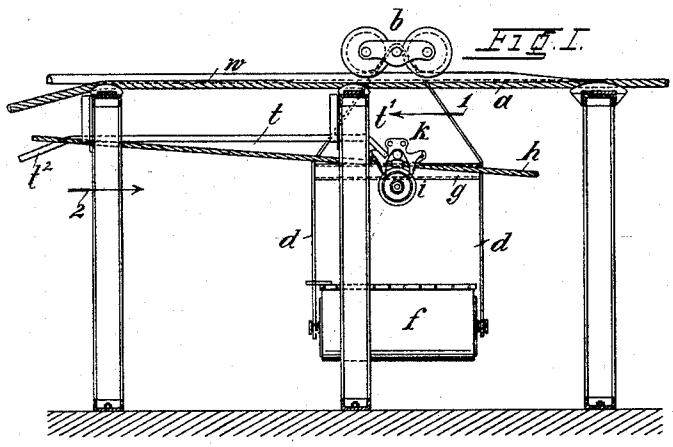
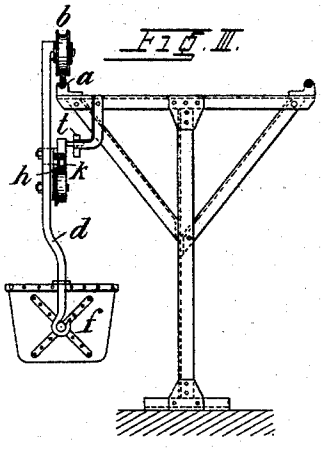
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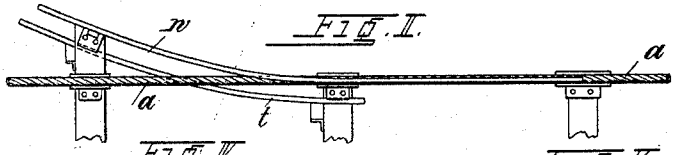
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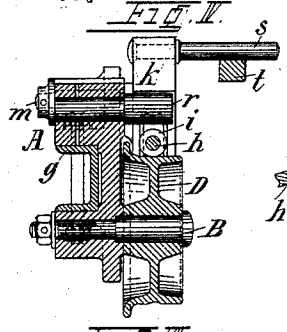
APPARATUS OR GRIP FOR BUCKETS OF ROPEWAYS.

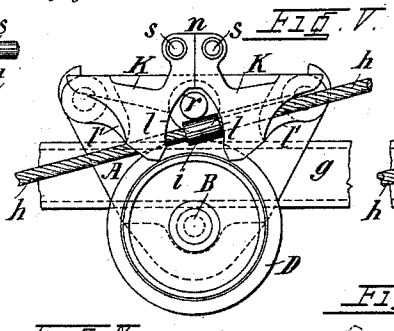
No. 456,696. Patented July 28, 1891.

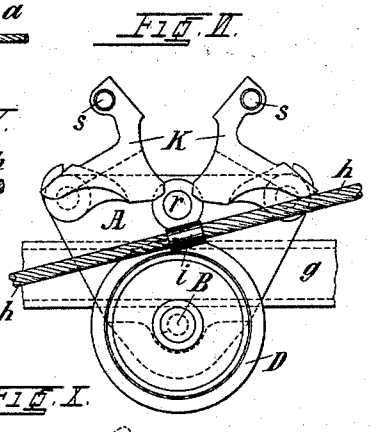


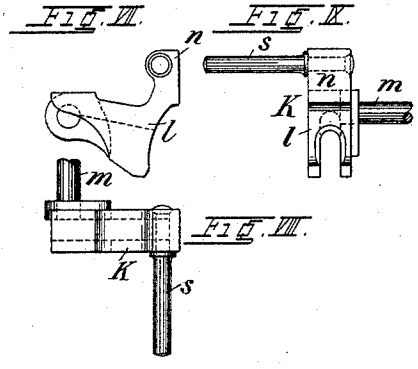


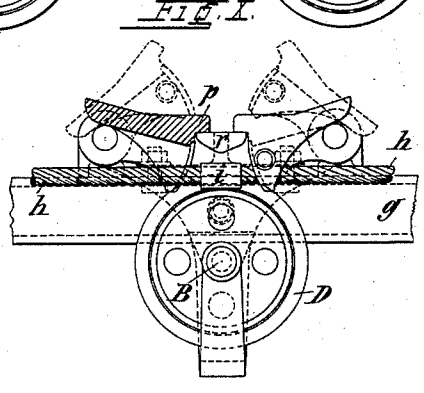












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UNITED STATES PATENT OFFICE.

WILHELM ELLINGEN, OF COLOGNE, GERMANY, ASSIGNOR TO J. POHLIG, OF SAME PLACE.

APPARATUS OR GRIP FOR BUCKETS OF ROPEWAYS.

SPECIFICATION forming part of Letters Patent No. 456,696, dated July 28, 1891.

Application filed September 16, 1890. Serial No. 365,191. (No model.) Patented in Germany May 14, 1885, No. 33,953; in France December 28, 1885, No. 173,193; in Belgium December 28, 1885, No. 71,390; in Austria-Hungary May 13, 1887, No. 3,556 and No. 22,064; in England May 23, 1887, No. 7,507; in Italy June 30, 1888, XXII, 23,320, XLVII, 322, and in Spain June 30, 1888, No. 8,085.

To all whom it may concern:

Be it known that I, WILHELM ELLINGEN, engineer, a subject of the King of Prussia, residing at 32 Gereonshof, Cologne, in the Kingdom of Prussia, Germany, have invented certain new and useful Improvements in Apparatuses or Grips for Buckets of Ropeways, (for which Letters Patent have been granted in Germany to Wilhelm Ellingen, No. 33,953, dated May 14, 1885; in Austria-Hungary to Theo. Otto, No. 3,556 and No. 22,064, dated May 13, 1887; in France to Theo. Otto, No. 173,193, dated December 28, 1885; in Belgium to Theo. Otto, No. 71,390, dated December 28, 1885; in Italy to Theo. Otto, Vol. 22, No. 23,320, Vol. 47, No. 322, dated June 30, 1888; in Great Britain to Henry Harris Lake as communication from abroad by Theo. Otto, No. 7,507, dated May 23, 1887, and in Spain to Julius Pohlig, libro 6, folio 385, No. 8,085, dated June 30, 1888;) and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to an apparatus or grip for buckets of ropeways, the hauling-rope of which is provided at certain distances of its length with knots or projections which serve for attaching the vehicles to it.

The improved grip, as compared with the grips heretofore used for similar purposes, is very simple and durable; but it differs from the latter especially by the fact that its operation is not interfered with when the hauling-rope asumes a very inclined position, even of an inclination of one meter in one meter.

The device constructed according to the aforesaid invention is essentially characterized by two pivoted claws of peculiar form which have their operative surfaces turned toward each other and take between them the knot or the projection on the hauling-rope when the vehicle is coupled to the latter. Both the uncoupling of the vehicle from the hauling-rope and the coupling to the same take place automatically by means of this grip.

In the accompanying drawings, Figures 1, 2, and 3 represent an elevation, transverse section, and plan of the end of a ropeway provided with a shunting and representing the arrangement for coupling and uncoupling of the grip. Fig. 4 shows a vertical section of the grip. Figs. 5 and 6 are front elevations of the same when coupled and released. Figs. 7, 8, and 9 show a claw in detail. Fig. 10 illustrates a modification of the grip.

In the arrangement represented in Figs. 1 to 3, *a* designates the supporting or carrying rope, upon which the truck *b* moves, and from the latter is suspended the transporting-vessel or bucket *f* by means of the frame or hanger *d*. Below the rope *a* is a hauling-rope *h*, which is actuated in the well-known manner by a steam-engine or the like and with which the vehicle is connected when it is to be set in motion. For this purpose the hauling-rope is provided with knots *i* or with projections of any other suitable kind, which serve for attaching and carrying away the vehicle through the medium of the grip K, fixed to the bar *g*, which is a part of the aforesaid hanger *d*.

In the body A of the apparatus, Figs. 4 and 5, the roller D for supporting the hauling-rope *h* is pivoted upon a bolt or journal B. In the same body A are also pivoted the two claws K, which have their operative surfaces *l* turned toward each other, and which when coupled, Fig. 5, take between them a knot *i* or other prejection on the hauling-rope *h*. The claws, as shown in Figs. 7 to 9, are suitably provided with a journal *m*, by means of which they are pivoted in holes formed in the body A. However, the claws can also be arranged to turn upon journals fixed in the body A. At their free extremity at *l* they are made in the form of a fork or the like, Fig. 9, so that they will extend over the hauling-rope, Fig. 4, and embrace the same—that is to say, the claws or jaws K are arranged with their longitudinal axis in the plane of

the haulage-rope *h* and have their pivotal axis at right angles to and at opposite extremes of said longitudinal axis. When the claws are coupled, Fig. 5, their surfaces *n* touch each other, or their projections *p*, Fig. 10, bear upon a lug *r*, projecting from the body A. This lug prevents the draw-rope being raised too far from the roller D, Fig. 5. Both claws have, moreover, a projecting pin *s*, which serves for lifting the claws through the medium of the guide-bar *t*, Figs. 1 to 4.

The guide-bars *t* are arranged in the same manner both for the trucks which enter and leave the station. Their ends are bent downward, so that they will gradually pass below the pins *s* of the claws, raise them, and gradually allow them to fall again when the vehicle reaches the end of the bar. The height of the said bar accordingly corresponds to the highest position of the claws K K, Fig. 6, the device then being uncoupled.

When a vehicle is moved by the hauling-rope in the direction of the arrow 1′, Fig. 1, the downwardly-bent end *t′* of the guide-bar *t* passes below the pins *s* of the claws K and lifts them, so that the knot *i* is liberated and the hauling-rope *h* is placed upon the roller D. The vehicle is in this manner uncoupled and passes on to the shunt-rails *w*, Figs. 1 and 3, without being further acted upon by the hauling-rope *h*. In the further movement of the vehicle upon the rail *w* the pins *s*, and with them the claws K, will descend by reason of their weight in accordance with the downwardly-bent end *t²* of the bar *t*, Fig. 1. On the other hand, in the forward movement of a vehicle which is to be coupled to the hauling-rope in the direction of the arrow 2 Fig. 1, the claws are first lifted by the end *t²* of the bar *t*. Then they descend and with their forked ends embrace the hauling-rope, when their pins *s* slide down on the end *t′* of the bar *t*. As a knot of the hauling-rope passes, it first raises the left-hand claw K, Fig. 5, by striking against the surface *l′*. Having passed the left-hand claw K, it allows the latter to drop again, strikes against the surface *l* of the right-hand claw, Fig. 5, and in this manner carries away the vehicle. The descent of the claws in the case of great tractive power and inclination may be insured by springs.

As will be readily observed, the improved device can be employed for the movement of the hauling-rope in either direction, the knots *i* being in both cases held with certainty between the operative surfaces *l* of the two claws K. Moreover, the device will act with certainty when the vehicle moves down or up a very steep incline.

Having now described my invention, what I claim is—

1. In a cable road, the combination, with the haulage-rope provided with knots or the like, of a grip consisting of two gravitating gripping-jaws arranged with their longitudinal axes in the plane of the rope and having their pivotal axes at right angles to and at opposite extremes of said longitudinal axes, for the purpose set forth.

2. In a cable road, the combination, with the haulage-rope provided with knots or the like, of a grip consisting of two gravitating gripping-jaws arranged with their longitudinal axes in the plane of the rope and having their pivotal axes at right angles to and at opposite extremes of said longitudinal axes, and means for limiting the movement of said jaws toward each other and toward the rope, for the purpose set forth.

3. In a cable road, the combination, with the haulage-rope provided with knots or the like, of a grip consisting of two gravitating gripping-jaws arranged with their longitudinal axes in the plane of the rope and having their pivotal axes at right angles to and at opposite extremes of said longitudinal axes, said jaws having bearing on each other when in their normal position, for the purpose set forth.

4. An apparatus or grip for ropeways, the hauling-rope of which is provided with knots or projections characterized by the combination of pivoted coupling-claws which carry pins and take between them the said knots or projections, with guide-bars which are adapted to turn the claws for effecting the coupling and uncoupling, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WILHELM ELLINGEN.

Witnesses:
GUSTAVE OELRICHS,
F. A. SCHREIBER.