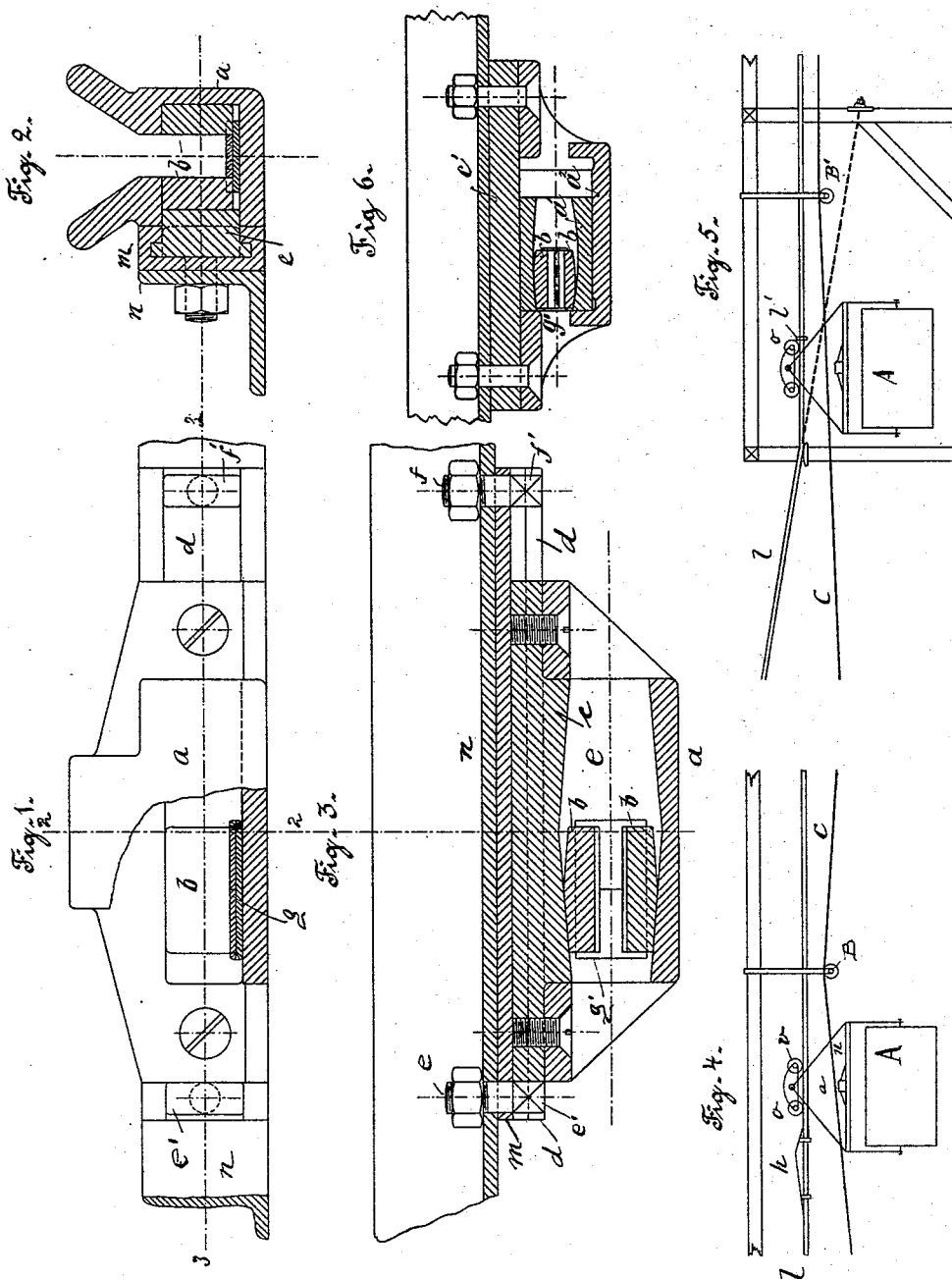


(No Model.)

P. T. SUNDBERG.
ROPE CLUTCH.

No. 487,061.

Patented Nov. 29, 1892.



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ROPE-CLUTCH.

SPECIFICATION forming part of Letters Patent No. 487,061, dated November 29, 1892.

Application filed April 5, 1892. Serial No. 427,872. (No model.)

To all whom it may concern:

Be it known that I, PER THEODOR SUNDBERG, a subject of the King of Sweden and Norway, and a resident of Domnarfoet, in the Kingdom of Sweden, have invented certain new and useful Improvements in Rope-Clutches, of which the following is a specification.

This invention relates to an improved rope clamp or clutch by means of which a carriage or bucket can be locked or unlocked from a movable traction-rope, such as are usually used in aerial railways, in lines for transmitting beams over mountains, &c., and which invention can also be used for elevators.

In the accompanying drawings, Figure 1 is a side view of my improved rope clutch or grip, parts being in section. Fig. 2 is a vertical transverse sectional view on the line 2 2 of Fig. 1. Fig. 3 is a horizontal sectional view on the line 3 3 of Fig. 1. Fig. 4 is a side view of the bucket, showing the automatic unlocking device. Fig. 5 shows a modification of the construction shown in Fig. 4. Fig. 6 is a sectional plan view of a modified construction of the grip or clutch.

Similar letters of reference indicate corresponding parts.

The clutch or grip consists of a cast-metal body *a*, which is open at the top and provided with a longitudinal groove *e*, the sides of which incline toward each other, wedge-shaped from the middle toward both ends. In this groove *e* two loose jaws *b b* are arranged, the outer edges of which (that rest against the inclined sides of the groove) are also inclined or beveled from the centers of the jaws toward the ends of the same. The jaws are inserted into the groove through an opening in the side of the same, and the opening is then closed by means of a plate *c*, that is screwed to the side of the body *a*. The plate *c* can have its inner side made flat or it can be inclined or beveled, the same as the side of the groove *e*, as shown in Fig. 3, for example. A plate *g*, upon which the jaws *b b* rest, has its ends and edges bent up slightly, so as to form shoulders, against which the ends and sides of the jaws can rest, so as to prevent them from dropping against each other or changing their relative positions. The plate *c* is mounted and guided in a longitudinal groove *d* of a plate *m*, at-

tached to the part *n* of the bucket A or car, and two bolts *e* and *f*, fastened in the plate *m*, have rectangular heads *e'* and *f'*, which slide in the above-mentioned groove *d* and serve as stops for the plate *c*. In case the car or bucket is to be coupled with the traction-rope C all that is necessary is to draw the latter into the rope clutch or grip in such a manner that it passes in between the jaws *b b*. These are drawn toward one end or the other of a bevel-groove *e* in the body *a*, and are pressed up against the traction-cable between them, which is thus firmly gripped. As the load increases the strain on the cable increases and the grip of the jaws on the cable increases correspondingly. This coupling thus acts entirely automatically. For the purpose of disconnecting the traction-cable from the clutch or grip wedge-shaped blocks *h* are secured on the supporting-table *l*, over which blocks *h* the wheels *o* of the bucket A must run. In case the wheels run over said wedge-shaped block *h* the bucket-wheels run down the inclined part of said block *h* at a speed which for a short time is greater than that of the traction-cable, and the body *a*, which until now has rested against the head of the bolt *f*, is moved lengthwise on the plate *m* and strikes against the head of the other bolt *e*, whereby the jaws *b* are moved toward the center of the body *a* and release the traction-cable, which passes over a guide-roller B adjacent to the raised part *h* on the supporting-cable, so that said traction-cable is thrown out of the jaws of the clutch. It is not necessary to use the disconnecting device shown in Fig. 4 for automatically disconnecting the cable from the clutch; but this is the simplest and cheapest. It is always essential that whenever the traction-cable is to be disconnected from the clutch the car or basket A must have a speed that is greater or less than that of the traction-cable. In the construction shown in Fig. 5 the speed of the bucket A is less than that of the traction-cable, and thus the latter in its attempt to transmit its speed to the basket thereby produces a jar, which is necessary to disengage the jaws. In this case the bucket runs from the inclined plane upon a horizontal track, upon which it is to come to a standstill. The jaws are jammed so tightly that they retain the same

position that they had on the inclined part, and it is the same shown in Fig. 3. At the point where the bucket is to be stopped a stop-piece l' is fastened to the supporting-cable, and a short distance from the said stop-piece l' the traction-cable runs over a guide-roller B' . When the wheels o of the bucket strike against the stop l' , the bucket is stopped and the traction-rope pulls the piece a forward, so that it strikes against the head of the bolt f . Thereby the jaws $b b$ are loosened and carried toward the middle of the groove of the piece a , and thereby the traction-cable is released and is pulled out from between the jaws. It frequently occurs that the beveled parts if not constructed with great care become worn out, and in consequence thereof the parts of the clutch bind and do not operate easily. For the purpose of avoiding this the jaws $b b$ and the plate g , on which they rest, are placed into a separate compartment a' , the inner walls of which are beveled, as previously described, and which box or compartment is mounted to slide in a piece a^2 , that corresponds to the piece a . The box a' with the jaws $b b$ is introduced into the piece a through an opening in the rear wall, and this opening in the rear wall is then closed by the plate c' , by means of which the part a^2 is bolted to the bucket or car.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a cable grip or clutch, the combination, with a casing having the inner faces of its side walls beveled toward both ends, of

two loose sliding jaws in said casing, the outer surfaces of the jaws being also beveled toward both ends, substantially as set forth.

2. In a grip or clutch for cables, the combination, with a plate attached to a car or bucket, of a sliding plate mounted on the plate connected with the car or bucket, bolts forming stops for the sliding plate, a casing connected with the sliding plate and provided with a groove having its inner side beveled toward the ends of two loose sliding jaws in said groove, the outer faces of which jaws are also beveled toward the ends, substantially as set forth.

3. The combination, with a supporting-cable and a traction-cable, of a bucket or car, rollers supporting the bucket or car from the traction-cable, obstructions placed upon the supporting-cable adjacent to the supporting-roller for the traction-cable, and a grip on the car, which grip is composed of a sliding casing having a groove the inner sides of which are beveled toward the ends, and sliding jaws in said groove, which sliding jaws have their outer faces beveled toward the ends, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 23d day of December, 1891.

PER THEODOR SUNDBERG.

Witnesses:

WALDEMAR BOMAN,

C. W. ERDMAN,

U. S. Consulate at Stockholm, Sweden.