Dec. 29, 1925. 1,567,391

E. H. SACKETT

AERIAL TRAMWAY GRIP

Filed April 18, 1924 2 Sheets-Sheet 1

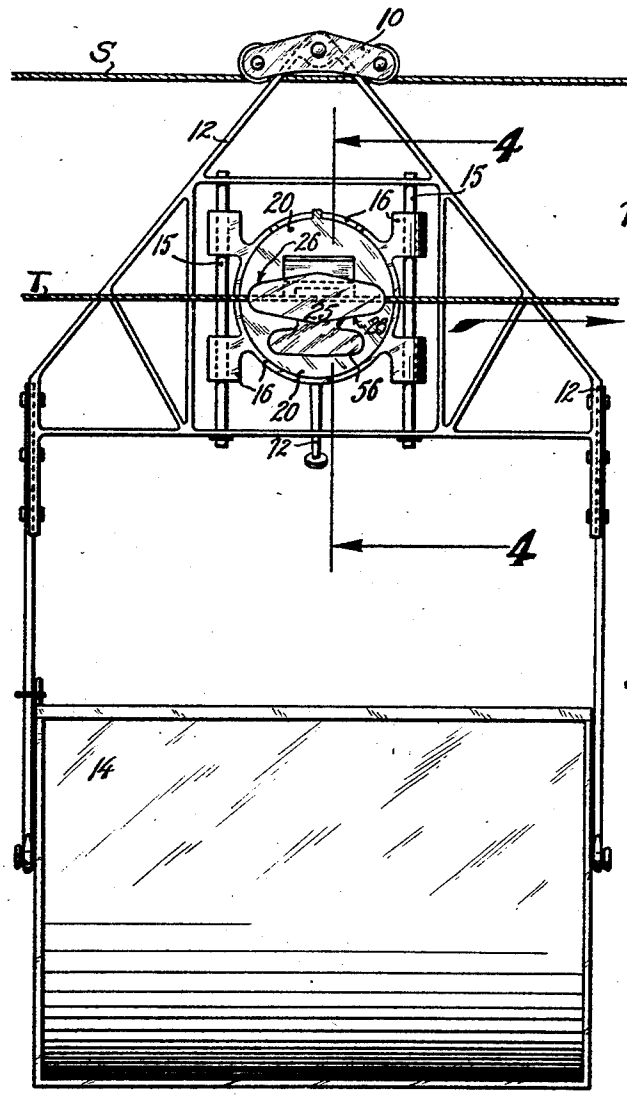


Fig. 1.

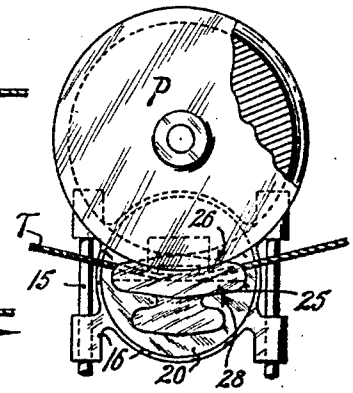


Fig. 2.

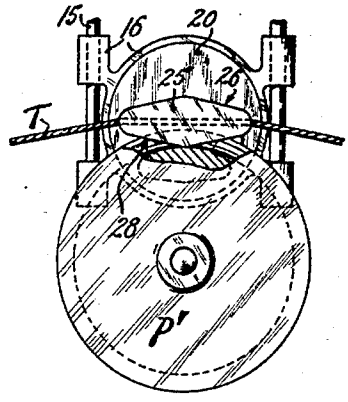


Fig. 3.

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AERIAL TRAMWAY GRIP

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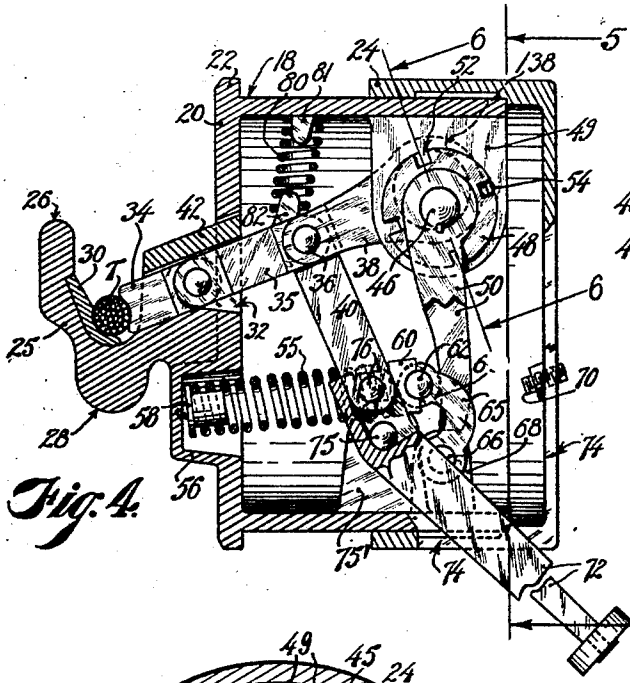


Fig. 4.

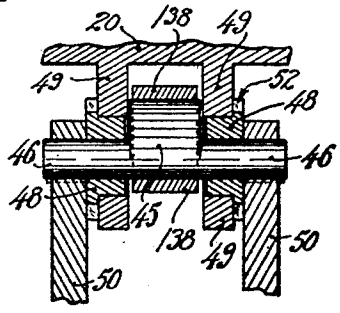


Fig. 6.

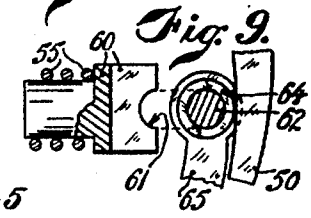


Fig. 9.

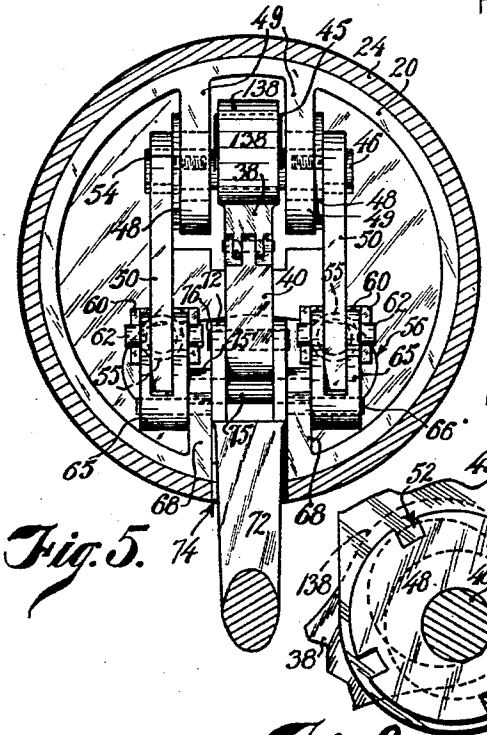


Fig. 5.

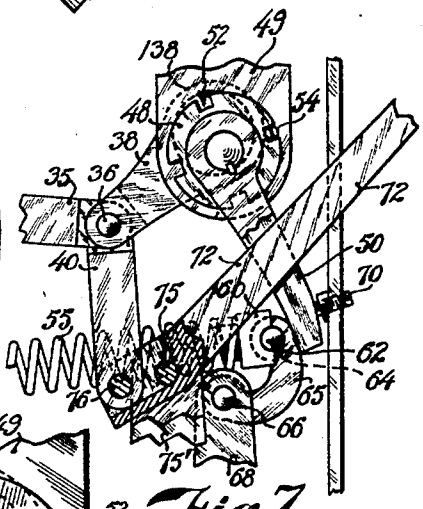


Fig. 7.

Fig. 8.

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Patented Dec. 29, 1925. 1,567,391

UNITED STATES PATENT OFFICE.

EDWARD H. SACKETT, OF ARVADA, COLORADO; BY LOUISA SACKETT, CONSERVATRIX, OF ARVADA, COLORADO.

AERIAL-TRAMWAY GRIP.

Application filed April 18, 1924. Serial No. 707,439.

To all whom it may concern:

Be it known that EDWARD H. SACKETT, a citizen of the United States, and resident of Arvada, county of Jefferson, State of Colorado, has invented certain new and useful Improvements in Aerial-Tramway Grips; and I, LOUISA SACKETT, a citizen of the United States, of Arvada, county of Jefferson, State of Colorado, conservatrix of the estate of said EDWARD H. SACKETT, do declare the following is 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, which form a part of this specification.

The object of this invention is to provide a grip for aerial tramway carriers which shall be adapted for permanent engagement with a traction cable even when passing supporting pulleys or rollers, may pass either under or above such pulleys or rollers, and will automatically adjust itself for secure engagement of cables of different sizes.

The present invention is an improvement over the form of grip disclosed in Patent No. 1,481,746 granted January 22, 1924, to Edward H. Sackett, and comprises a grip having a preferably stationary jaw provided with an upper edge adapted to engage and pass along the under side of a pulley or roller and with a lower edge adapted to engage and pass along the upper side of a similar pulley or roller. Said stationary jaw cooperates with a movable jaw for firmly gripping the traction cable which draws the tramway carriers and normally engages and is positioned by said pulleys or rollers. Said movable jaw when in operation is under the influence of means sufficiently yieldable to permit automatic adjustment thereof for the engagement of cables of various sizes within certain limits. Means is also provided for a plurality of positive adjustments of said jaw to permit a corresponding number of series of automatic adjustment under said yielding means. Thus a grip for aerial tramways is provided having wide range of application, capable of engaging almost any size of traction cable used, and capable of following a traction cable anywhere without taking the strain of the traction cable from its pulleys or rollers, thereby avoiding transmission of such strain to the grip and thence to the carrier and standing or track cable supporting the carrier.

In the accompanying drawings wherein certain embodiments of the invention are disclosed by way of illustration,

Fig. 1 is a front elevation of an aerial carrier with the present grip engaging the traction cable;

Fig. 2 shows the grip passing under a traction cable pulley;

Fig. 3 shows the grip passing along the upper side of the pulley;

Fig. 4 is a vertical section taken on the line 4—4 of Fig. 1 showing the grip and its mounting;

Fig. 5 is a section taken on the line 5—5 of Fig. 4;

Fig. 6 is a sectional detail taken on the line 6—6 of Fig. 4;

Fig. 7 is an enlarged detail chiefly in elevation showing the actuating means for the movable jaw when the latter is in released position;

Fig. 8 is a detail further enlarged showing the means for positively adjusting the movable jaw mounting for engagement of cables of varying sizes;

Fig. 9 is a detail showing parts (partially dissembled) whereby the spring which influences the movable jaw is operatively connected therewith to permit automatic adjustments thereof.

As in the earlier patent, the carrier comprises a carriage 10 having wheels for travel on a track or standing cable S, a hanger 12 and a bucket or the like 14, the hanger having vertically disposed guide rods 15 upon which there slides a yoke 16 rotatably receiving therein at 18 a cylindrical jaw box 20 retained in the yoke by an annular flange 22 at the front and by a cylindrical cap 24 secured thereon at the rear.

Secured to the front wall of the box 20, and preferably integral therewith, is the stationary jaw 25 of the grip, which jaw is elongated and has its upper and lower edges 26 and 28 respectively rounded in cross section for engagement in grooves of pulleys P and P′, which normally receive the traction cable T, as indicated in Figs. 2 and 3. In this manner the pulleys P and P′ continue to bear the strain of the traction cable T even when the grip passes the same. Ob-

viously the pulley P will require special construction (such as a wide groove or double grooves) to accommodate both the cable T and the edge 26. The fixed jaw 25 may be lined with a wearing face or shoe 30 as shown in Fig. 4.

Cooperating with the fixed jaw 25 is a movable jaw 34 pivoted to a link 35 working in an opening 32 through the jaw box 20. Link 35 is connected by a toggle joint 36 with an eccentrically mounted arm 38 and a toggle 40 which actuates the jaw 34, said jaw 34 being retained in operative alinement by a retaining plate 42. The rear end of the arm 38 is in the form of an enlarged eye 138 receiving an eccentric 45 having eccentrically disposed journals 46 mounted eccentrically in bushings 48 carried in ears 49 depending from the top of the box 20. Depending fingers 50 are keyed to the ends of the journals 46. The position of the eccentric journals 46 is determined by the bushings 48 which are adapted to be rotated in the ears 49 and have notches 52 in their flanges for reception of positioning screws 54, Figs. 4, 6 and 8. Thus the position of the eccentric 45 and the movement of the jaw 34 may be varied.

The depending fingers 50 are under the control or influence of some constantly functioning yieldable means capable of insuring firm engagement of the traction cable T by the movable jaw 34. The means shown comprises an expansion coil spring 55 for each finger 50, the forward end of the spring entering a pocket 56 in the front wall of box 20 and engaging a seat 58 or the like pointed or otherwise formed for positioning the same. The rear end of the spring engages a seat 60 (Figs. 4, 5 and 9) having a pair of spaced ears notched at 61 to engage the ends of a journal pin 62 for a small roller 64 engaged by the respective finger 50 and carried between the jaws of a forked arm 65 pivoted at 66 on upstanding lug 68 on box 20. Thus when the parts are in the operative position shown in Fig. 4, the movable jaw 34 engaging the cable T is constantly under the influence of the springs 55 through the medium of the fingers 50 and the eccentric 45, the springs 55 permitting some variation in the size of the cable T. By removing the screws 54 and rotating the bushings 48 to bring other notches 52 into position to receive screws 54, thereby shifting the eccentric journals 46, further variations in size of cable will be permitted.

An adjustable backstop 70 or the like may be provided in the back of the cap 24 for engagement by each finger 50 when the parts are moved to the inoperative position shown in Fig. 7 by actuation of the lever 72 which operates in slots 74 in the box 20 and cap 24. The lever 72 is fulcrumed by a pin 75 on upstanding lugs 75′ which may be integral with the lugs 68, and the upper end of said lever 72 is pivoted at 76 to the lower end of the toggle 40 for positive actuation of the jaw 34 to and from cable engaging position. As in the earlier patent supra, the pivot 76 lies beyond dead center to retain the parts when in operative position, the upper end of the lever being in the form of a pocket having a back wall to engage the toggle 40 and limit movement. To insure this position a spring 80 may be employed to work against the joint 36, retaining lugs 81 on the box and 82 on link 35 being employed. In operation, the actuating lever 72 is lifted to move the parts to the position of Fig. 7 for reception of the traction cable T in the fixed jaw 25 of the grip as in Fig. 4, the lever 72 then being lowered to cause the movable jaw 34 to grip the cable T, this operation being either manually or mechanically produced. When the traction cable T pulls the carrier past a pulley P which normally receives said cable at a depression, the gradually tapered and rounded upper edge 26 of the jaw 25 enters a groove in the pulley P and removes the cable therefrom, said cable returning to the pulley after the grip passes the same. When the carrier is drawn by the cable T past a pulley P′ which normally receives the cable at rises or on level stretches, the lower gradually tapered and rounded edge 28 of the jaw 25 lifts the cable from the pulley groove and passes through the same, the pulley again receiving the cable as the jaw passes on. As in the earlier patented form above noted, the yoke 16 carrying the grip moves up and down on the guide rods 15 and the jaw box 20 rotates in said yoke, thus taking all weight and strain of the traction cable T from the track or standing cable S. With the present form, therefore, the grip may pass either under or above a pulley or roller with the advantages mentioned.

Another feature of the present grip is its adaptability to a large range of cable sizes automatically and by positive adjustment. The springs 55 perform a double function of permitting variation in cable sizes and compensating for pressure on the cable. The value of these springs is such that when the desired pressure is reached upon the cable during movement of lever 72 to operative position, further movement of the lever will be permitted largely by compression in the springs 55. This permits only the desired pressure and eliminates possible injury to the cable. It also affords automatic adjustment for differences in diameter of about one-fourth inch. By rotation of the eccentric bushings 48 to bring various notches 52 into position to receive positioning screws 54, further series of automatic adjustments are had. Thus gripping is regulated and governed by value of

springs 55 and ratio of fingers 50 to eccentricity of part 45 as modified by eccentric positioning of journals 46.

What is claimed is:

1. A grip for aerial tramways provided with a jaw having both upper and lower edges adapted to engage and pass a cable-receiving roller.

2. A grip for aerial tramways having a fixed jaw, said jaw having an upper edge adapted to engage and pass under a cable-receiving roller and a lower edge adapted to engage and pass above a cable-receiving roller, and a movable jaw for clamping the cable against the fixed jaw.

3. A grip for aerial tramways provided with a fixed jaw and a movable jaw, means for actuating the movable jaw to clamp a cable between them, one of the jaws having an upper edge adapted to engage and pass a cable-receiving pulley and one of the jaws having a lower edge adapted to engage and pass a cable-receiving pulley.

4. A grip for aerial tramways having a pair of jaws, means to cause the jaws to grip a cable between them, one of the jaws having an upper edge adapted to engage and pass below a cable-receiving roller, and one of the jaws having a lower edge adapted to engage and pass above a cable-receiving roller.

5. A grip for aerial tramways having a movable cable-engaging jaw, means to actuate the same to engaging position, means for positively adjusting the engaging position thereof and compensating means to limit the pressure of the jaw upon the cable.

6. A grip for aerial tramways having a movable jaw and a relatively fixed jaw for gripping a cable between them, actuating means for moving the movable jaw into gripping position, and resiliently actuated yieldable means controlling the movable jaw when in gripping position to compensate for variation in cable diameters.

7. A cable grip having a movable jaw and a relatively fixed jaw, and resilient yieldable means influencing the movable jaw and permitting and enabling automatic adjustment thereof for variation in cable sizes.

8. A cable grip having a pair of jaws one of which is movable, yielding means normally acting upon the movable jaw and actuable for the purpose of obtaining automatic adjustment thereof for variation in cable sizes, and positively adjustable means cooperating with the yielding means for variation of the field of automatic adjustment.

9. A cable grip having a pair of jaws one of which is movable, an eccentric operatively connected with the movable jaw for actuation thereof, and resiliently actuated yielding means operating upon said eccentric to permit automatic adjustment of the movable jaw for variation in cable sizes.

10. A cable grip having a pair of jaws one of which is movable, an eccentric for actuation of the movable jaw, a finger connected with the eccentric, yielding means operating upon the finger to permit automatic adjustmert of the movable jaw, and means for adjusting the position of the eccentric.

11. A cable grip having a pair of jaws one of which is movable to gripping position, means for urging the jaw which is movable to cause the same to press upon a cable, resilient yielding means operating upon said urging means and actuable for providing automatic adjustment of the movable jaw, and means for adjusting the position of the urging means.

12. A cable grip having a pair of jaws one of which is movable, a toggle and lever connection with said movable jaw for moving the same to and from operative position, an eccentric also connected with said movable jaw for actuation thereof, yielding means operating upon said ecentric for controlling the pressure of the jaw upon a cable and permitting automatic adjustment of the movable jaw for variation in cable sizes, and means for positively adjusting the position of the eccentric for varying the field of automatic adjustment.

In testimony whereof I affix my signature.

LOUISA SACKETT,
Conservatrix of the Estate of Edward H. Sackett.