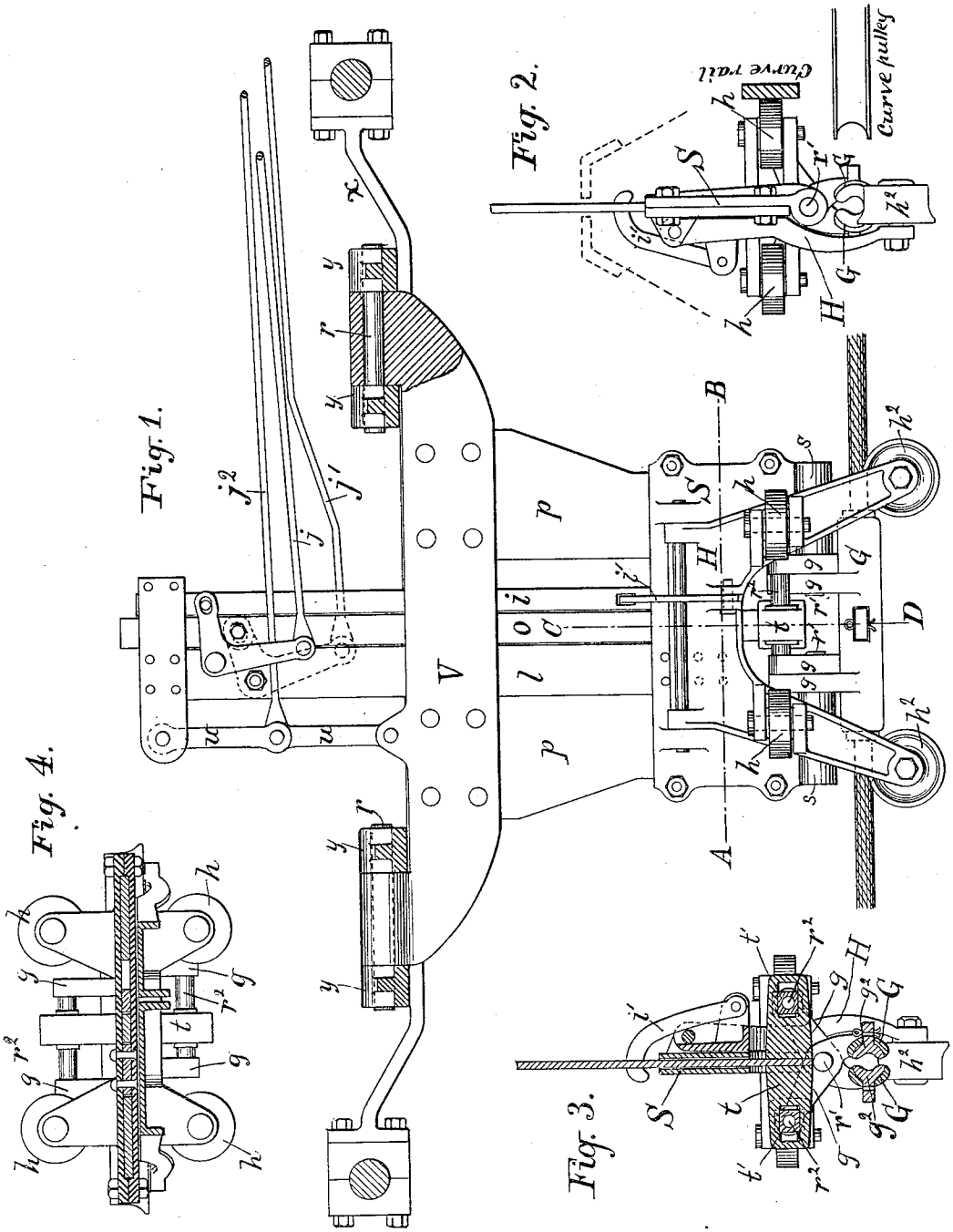
(No Model.)

D. B. ANDERS.

CABLE RAILWAY GRIP.

No. 351,036. Patented Oct. 19, 1886.



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DAVID B. ANDERS, OF PHILADELPHIA, PENNSYLVANIA.

CABLE-RAILWAY GRIP.

SPECIFICATION forming part of Letters Patent No. 351,036, dated October 19, 1886.

Application filed April 19, 1886. Serial No. 199,377. (No model.)

To all whom it may concern:

Be it known that I, DAVID B. ANDERS, a citizen of the United States, residing at Philadelphia and State of Pennsylvania, have invented new and useful Improvements in Cable-Railway Grips, of which the following is a specification.

My invention relates to improvements in cable-grips in which the gripping-jaws can be lowered to grapple the rope by the man standing on the platform of the car. By the use of my improvements the rope may be dropped at any time to a lower level than the path of the gripping device, and again raised into the gripping-jaws at the will of the gripman with perfect ease and safety. The mechanism by which I attain these objects is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation; Fig. 2, an end elevation with slot-irons and upper portion of conduit in dotted lines, the curve rail on which the curve wheels roll, and a section of curve pulley. Fig. 3 is a cross-section through the line CD, Fig. 1. Fig. 4 is a section through AB.

Similar letters refer to similar parts throughout the several views.

Upon suitable hanging bars, *x*, which may be supported from the axles or any other part of the car, are cross-pieces *y*, from which the head-piece V is supported by the pins or rods *r*. The head-piece V has thin plates *p*, securely riveted or bolted to it, and adapted to slide through the slot in the conduit. The lower portions of the plates *p* form guides upon which the grip-carrying sleeve S slides with a vertical motion. To the sleeve S is attached the lifting-bar *l*. At the bottom of the sleeve S are the bosses *s*, into which are inserted the pins *r'*. The pins *r'* pass through the arms *g* on the grip-jaws G and form the center or fulcrum upon which the grip-jaws are suspended and operated. The operating-bar *o* passes freely through the sleeve S and is secured to the cross-head *t*. In the ends of the cross-head *t* are fitted sliding boxes *t'*. (Small steel rollers may be substituted for the boxes.) Through these boxes the rods or pins r^2 pass, connecting the pair of arms *g g* on each grip-jaw. The jaws G have removable faces g^2, that receive the wear from the cable. Hinged to one side of the sleeve S is the swinging piece H, carrying curve wheels or rolls *h* and spools h^2 at the lower extremities. To the swinging piece H is attached the link *i'*, connected with the bar *i*. Curve wheels are also provided on the opposite side of the sleeve S from the swinging piece H. The bar *i* is raised or depressed by the bell-crank fulcrumed to the lifting-bar *l* and connected to suitable lever by the rod *j*. The operating-bar *o* is also raised or depressed by a similar bell-crank and lever. The lifting-bar *l* is supported by the links *u*, attached to the top of the lifting-bar and the head-piece V and operated by suitable lever. The connecting-rods *j*, *j'*, and j^2 may be carried to both ends of the car, with suitable operating-levers on both platforms.

The operation is as follows: To grapple the rope or cable which is running on sheaves below the grip, the bar *i* is first raised, swinging the piece H aside, so that the spools h^2 will not interfere with the rope entering the jaws. The operating-bar *o* is then forced down, opening the jaws. The lifting-bar *l* is then lowered until the jaws pass over the rope, when the bar *i* is depressed and the spools h^2 swung under the rope. The lifting-bar *l* is then raised until the spools are higher than the sheaves upon which the rope runs. By raising the operating-bar *o* the jaws are forced against the rope, imparting the motion of the rope to the car. To stop the car, it is only necessary to loosen the jaws from the rope slightly and apply a brake to the wheels of the car; but when it is necessary to drop the rope the spools h^2 are swung from under the rope and the grip-jaws opened until the rope falls.

What I claim as my invention, and wish to secure by Letters Patent, is—

1. The grip-supporting sleeve adapted to move vertically upon a guide or plates suspended from the car, substantially as described, and for the purpose specified.

2. The combination of the sleeve S, gripping-jaws G, plates *p*, and bar *l*, substantially as described, and for the purpose specified.

3. The combination of the sleeve S, plates *p*, bar *l*, jaws G, with arms *g*, cross-head *t*, and bar *o*, substantially as described.

4. The combination of the sleeve S, plates *p*, bar *l*, and means to raise and lower the same,

jaws G, with arms *g*, cross-head *t*, bar *o*, and means to raise and lower the same, substantially as described, and for the purpose specified.

5. In a cable-railway grip, the combination of the gripping-jaws G, with arms *g*, cross-head *t*, pins r^2, bar *o*, sleeve S, swinging piece H, and spools h^2, substantially as described, and for the purpose specified.

6. In a gripping device for rope or cable railways, the combination of a sleeve carrying gripping-jaws, with means to operate the same, cable-supporting spools, with means for swinging them to one side to allow the cable to enter the jaws, the whole adapted to move vertically on guide-plates suspended from the car, substantially as described.

7. In a grip for cable railways, the combination of the sleeve S, plates *p*, bar *l*, with means for raising and lowering the same, jaws G, pins r^2, cross-head *t*, bar *o*, with means to operate the same, swinging piece H, spools h^2, wheels *h*, link *i'*, and bar *i*, with means for operating the same, substantially as described, and for the purpose specified.

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