

(No Model.)

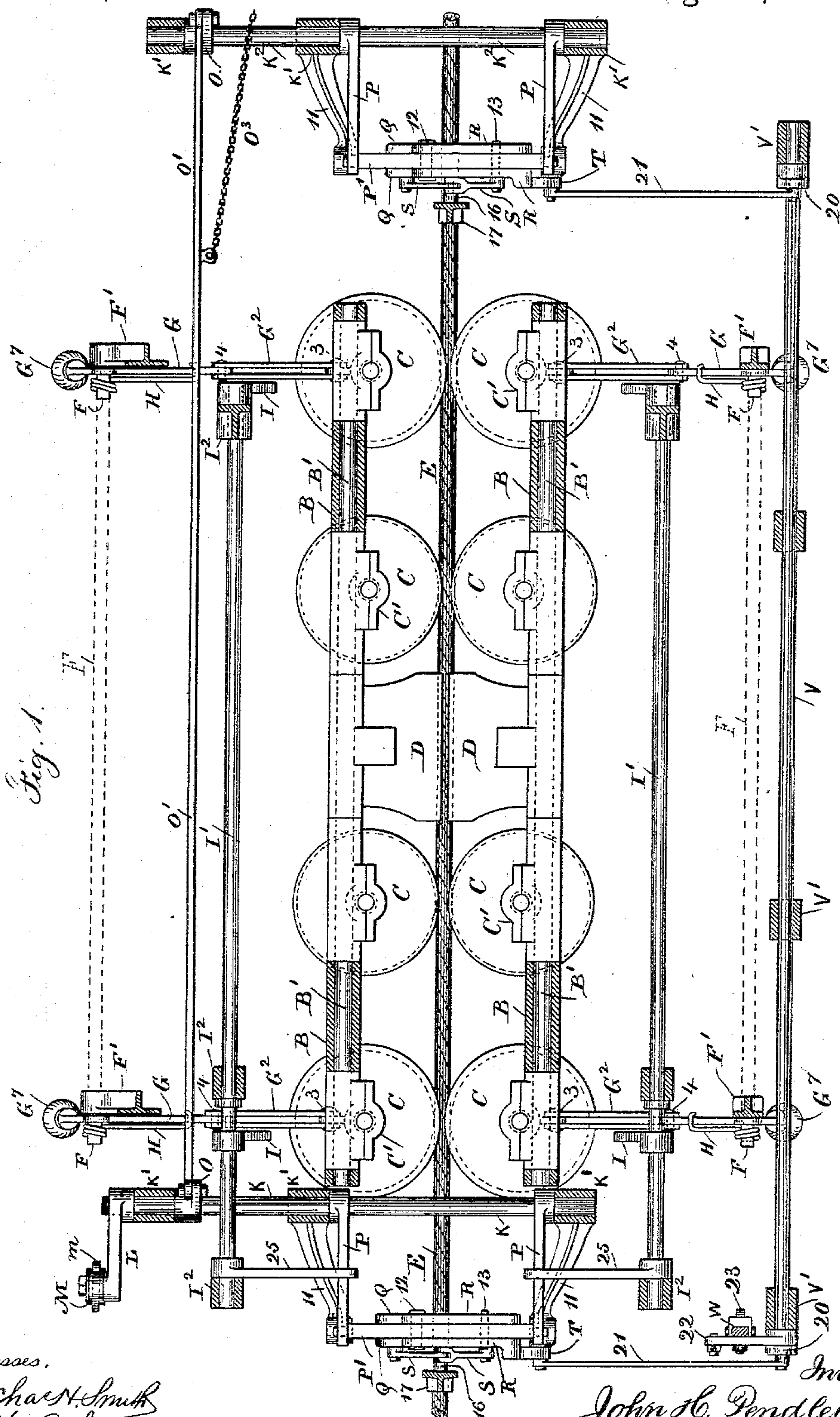
4 Sheets—Sheet 1.

J. H. PENDLETON.

MEANS FOR PICKING UP AND DROPPING CABLES IN CABLE RAILWAYS.

No. 387,998.

Patented Aug. 14, 1888.



Witnesses.

Chas. N. Smith
W. L. Serrell.

Inventor.

John H. Pendleton.
per Lemuel W. Serrell.

(No Model.)

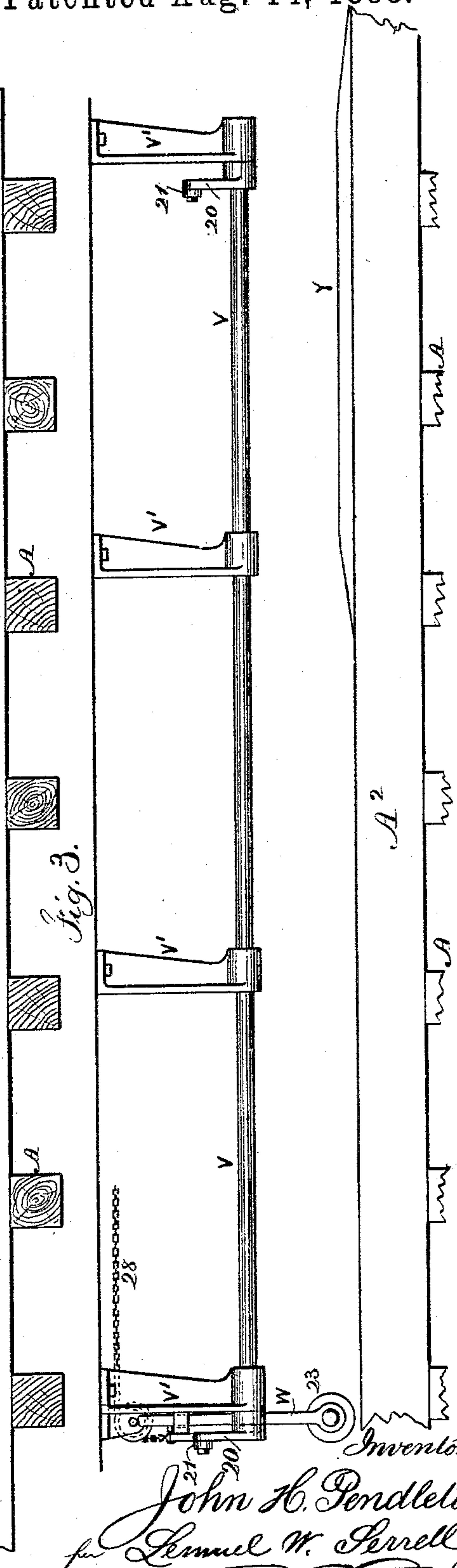
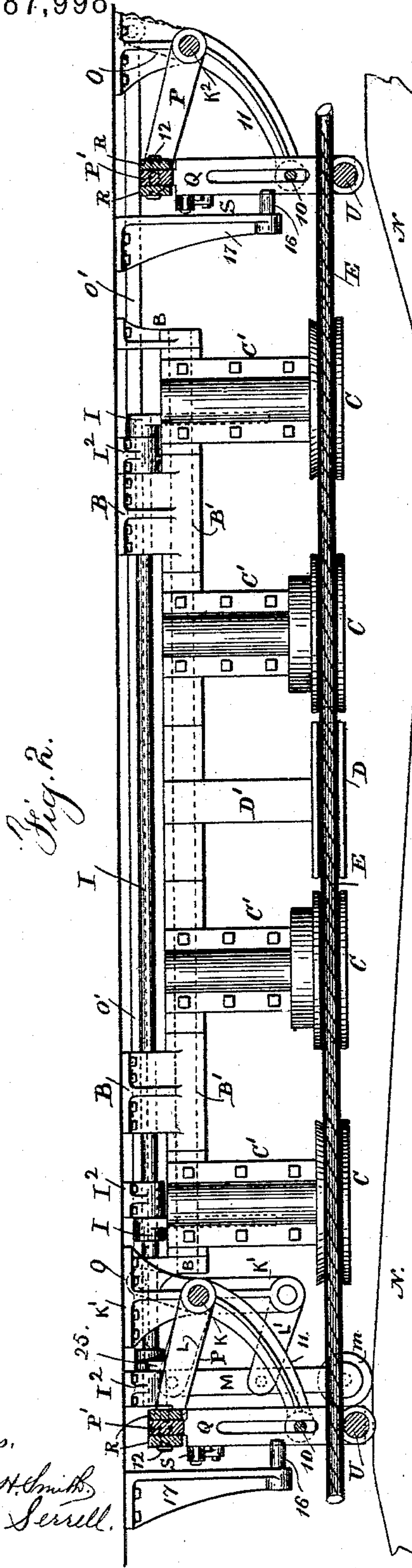
4 Sheets—Sheet 2.

J. H. PENDLETON.

MEANS FOR PICKING UP AND DROPPING CABLES IN CABLE RAILWAYS.

No. 387,998

Patented Aug. 14, 1888.



Witnesses,
Char. H. Smith
W. L. Serrell.

Inventor,
John H. Pendleton.
for Lemuel W. Serrell, atty

(No Model.)

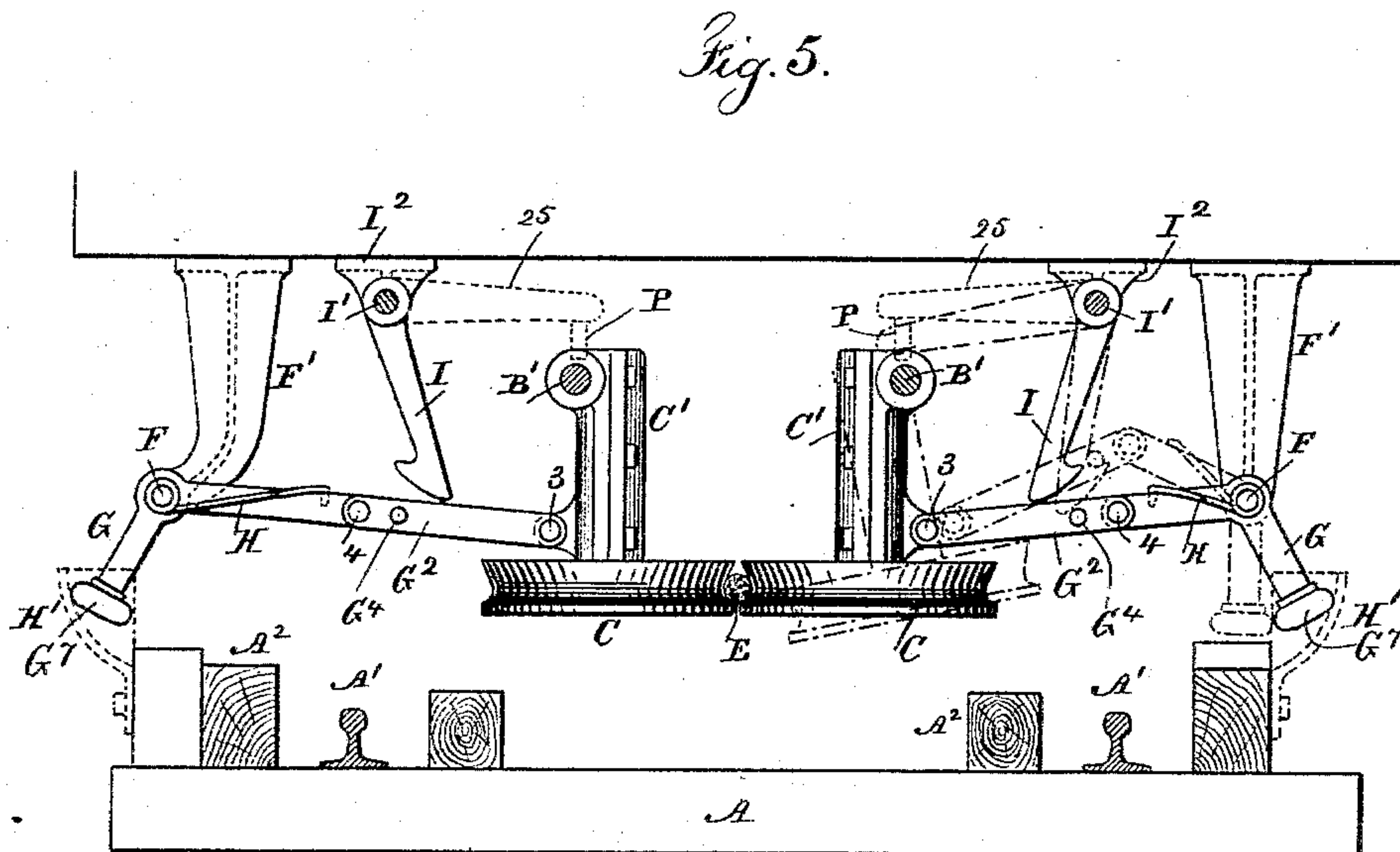
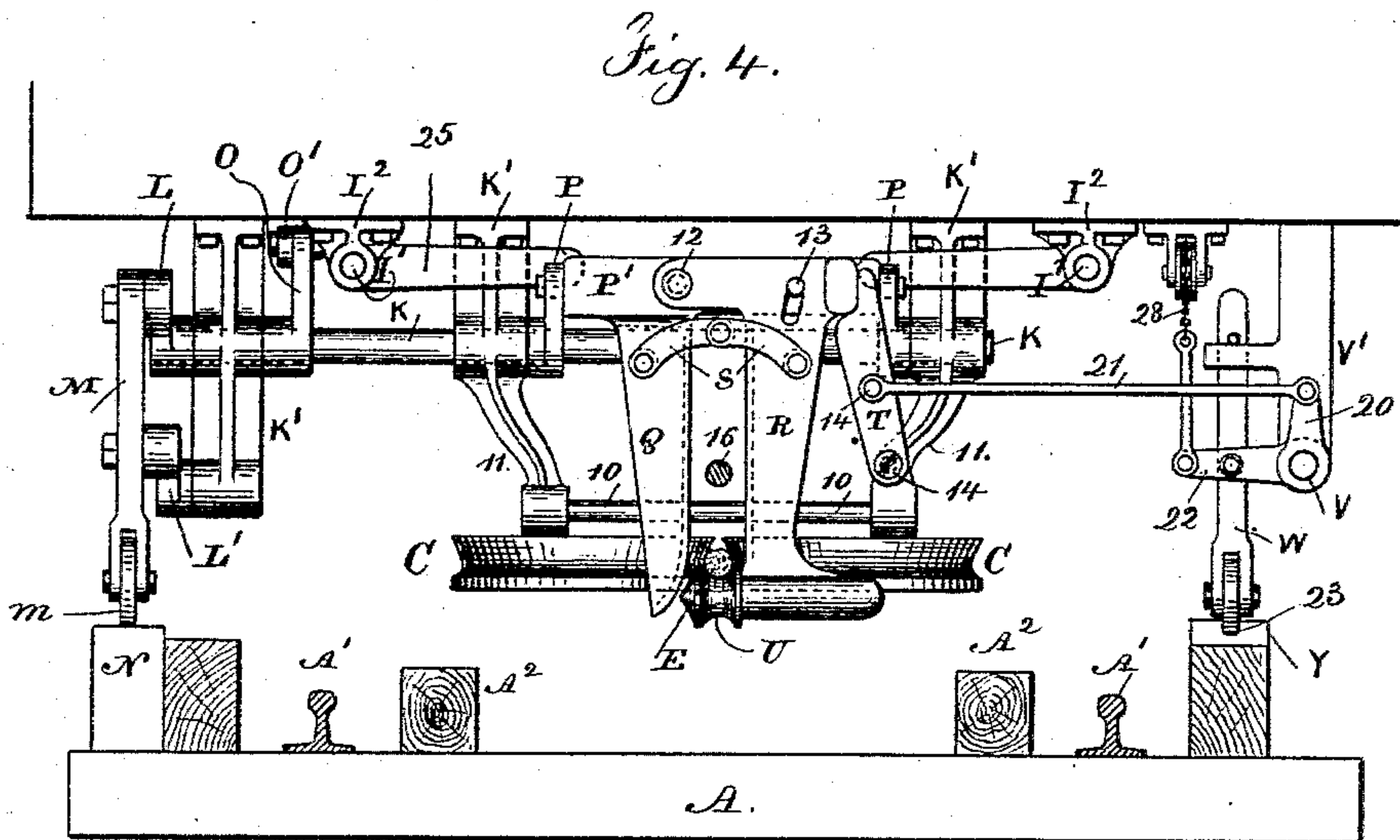
4 Sheets—Sheet 3.

J. H. PENDLETON.

MEANS FOR PICKING UP AND DROPPING CABLES IN CABLE RAILWAYS.

No. 387,998.

Patented Aug. 14, 1888.



Witnesses.

Chas H Smith
W. L. Serrell

Inventor.

John H. Pendleton.
Lemuel W. Serrell.

(No Model.)

4 Sheets—Sheet 4.

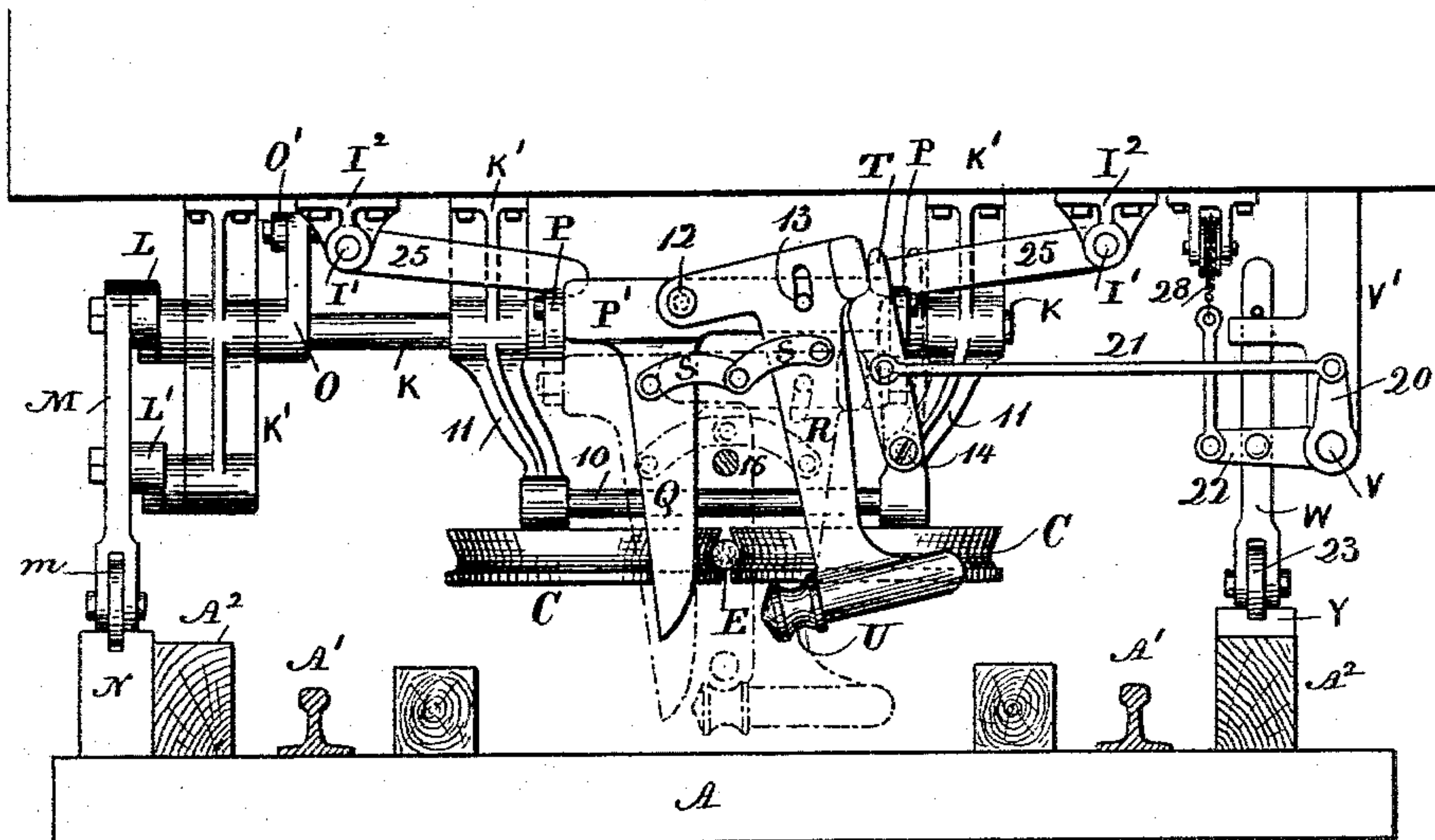
J. H. PENDLETON.

MEANS FOR PICKING UP AND DROPPING CABLES IN CABLE RAILWAYS.

No. 387,998.

Patented Aug. 14, 1888.

Fig. 6.



Witnesses.

Chas H. Smith.
W. L. Serrell.

Inventor.

John H. Pendleton.
per Lemuel W. Serrell
att'y.

UNITED STATES PATENT OFFICE.

JOHN H. PENDLETON, OF BROOKLYN, ASSIGNOR TO THE RAPID TRANSIT
CABLE COMPANY, OF NEW YORK, N. Y.

MEANS FOR PICKING UP AND DROPPING CABLES IN CABLE RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 387,998, dated August 14, 1888.

Application filed April 28, 1887. Renewed June 30, 1888. Serial No. 278,683. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. PENDLETON, of Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Means for Picking Up and Dropping Cables in Cable Railways, of which the following is a specification.

In cable railways, at their terminals and where one cable railway crosses another, it is necessary to drop the cable by opening the grip, and the cable has to be again grasped at the proper place for connecting the car to the same.

My present invention is intended for performing the dropping and picking-up operations automatically, so that the car may pass an intersection by its momentum, and the picking-up mechanism will be made to operate between one stationary supporting-wheel upon the track and the next, and thereby not come into contact with any portion of the cross-ties, track, or guide-wheels, and hand mechanism is also provided, so that the cable can be dropped or picked up with facility whenever required.

In the drawings, Figure 1 is a general plan view of the mechanism made use of below the car, some of the hangers and bearings being in section. Fig. 2 is an elevation of the wheels and grip at one side of the cable and a section of the parts that are directly over the cable. Fig. 3 is an elevation of one of the side shafts and a portion of the guard-rail of the track. Fig. 4 is a cross-section showing the picking-up devices. Fig. 5 is a cross-section illustrating the manner in which the wheels act to receive and hold the cable; and Fig. 6 is a cross-section with the picking-up devices open, ready to be dropped for passing below and raising the cable.

The cross-ties A, rails A', and guard-rails A² are of any ordinary character, and my improvements are especially adapted to elevated railways and bridges.

Beneath the car there are hangers B, in pairs, to receive the rods or shafts B', from which are suspended the bearings or journal-boxes C', containing the shafts of the grooved wheels C, which are in pairs at opposite sides of the cable, as illustrated in Fig. 1, and there are also

gripping-blocks D, suspended by the stocks D' from the shafts B', and these gripping-blocks and the journal-boxes are fastened upon the shafts B', so that they can be swung toward the cable E or away from the same simultaneously, the shafts B' forming the axis upon which the parts swing. In order to hold the wheels toward the cable, I make use of the shafts F in hangers F' from the under side of the car, and upon these shafts F are bent levers G, one end of each of which levers is hinged at 4 to the toggle-bar G², and the other end of the toggle-bar is hinged at 3 to one of the journal-boxes C'.

When the levers G are swung so that the joint 4 is raised, the bearings C' are swung outwardly at their lower ends and the wheels C separated, so as to drop the cable, and upon the parts being moved in the opposite directions the wheels C are brought against the cable. I prefer to make use of springs H to bring the toggles into line, and thereby hold the wheels G toward each other. These springs may be of any suitable character. At the lower end of each bent lever G is a roller, G', to be acted upon by a stationary incline or cam, H', upon one of the guard-rails of the track, so that at the proper place upon the track the levers G will be moved and the cable dropped.

In Fig. 1 I have shown four sets of bent levers and toggle-bars, two of these being adapted to act upon the rear pair of bearings and the other two upon the forward pair of bearings; but if the shafts F are extended, as indicated by dotted lines, the levers G may be fastened permanently upon such shafts, and it will only be necessary to have rollers upon two of the bent levers for operating upon all four sets of toggle-bars and levers.

I have not shown any means for acting upon the positive gripping-blocks D to firmly clamp the cable by such blocks, as mechanism adapted to this object is well known and the same may be of any desired character.

When the bent levers and toggle-bars are turned into the position shown by dotted lines in Fig. 5, they are kept in that position by hanging hooks I upon the shafts I', that are supported in hangers I², and these shafts are turned by mechanism hereinafter described,

so as to unhook the toggle-bars and allow the springs H to swing the bearings and wheels C up against the cable after the cable has been lifted.

5 The mechanism for picking up the cable is specially illustrated in Figs. 2, 4, and 6. The cross-shaft K is supported by the hangers K', and at one end is a crank-arm, L, and there is a second crank-arm, L', pivoted at the lower
10 end of the outer hanger, K', and the roller-bar M is connected at the outer ends of these crank-arms, and it can rise and fall, as it is held vertically, or nearly so, and the crank-arms are parallel as they swing, and at the
15 lower end of this roller-bar M is a roller, *m*, above cam-inclines N, that are upon the guard-rails, or at the sides of them, and these cam-inclines are at the proper places and at the proper inclinations, as illustrated in Fig. 2,
20 to allow the picking-up devices to drop under the cable and then immediately to be raised for lifting up the cable.

The devices for picking up the cable are applied at front and back of the pairs of wheels
25 C, and these devices are similarly constructed, and it is hence only necessary to describe one of them. There is a second cross-shaft, K², similar to the cross-shaft K, except that there is not any crank-arm L; but the two cross-
30 shafts K and K² are provided with crank-arms O, connected together by the rod O', so that said shafts K and K² move together, and one carries the forward picking-up devices and the other the rear picking-up devices,
35 which picking-up devices are alike. From the shafts K K² the arms P extend, and at their outer ends is the cross-head P', with pivot ends passing into eyes at the ends of the arms P, and below the cross-head and formed
40 with it is the fixed side Q of the pick-up, the same being slotted vertically and having through it the guide-bar 10 at the lower ends of the curved arms 11 from the hangers K', so that this cross-head and fixed side of the pick-
45 up can be raised and lowered nearly vertically as the cross-shaft (K or K²) is partially turned in its hangers. The swinging side R of the pick-up is pivoted at 12 upon the cross-head P', and it is slotted vertically for the guide-
50 bar 10 to pass through, and there is a pin, 13, through the cross-head P' and within segmental slots in R, to limit the swinging movement of this side R of the pick-up. Toggle-
55 links S extend from the fixed side Q to the swinging side R of the pick-up.

Upon one of the arms 11, below the hanger K', a pawl, T, is pivoted at 14, and the upper end of this pawl is beneath one end of the head portion of the swinging side R of the pick-up.

60 It will now be apparent upon reference to Figs. 4 and 6 that when the pick-up is in the elevated position shown in Fig. 4 the lifting-roller U at the lower end of the swinging side R is beneath the traction cable E; but if the
65 shafts K K² are partially turned, so that the arms P lower the cross-head P' to the position shown by full lines in Fig. 6, the pawl T will

swing the side R into the position shown in said Fig. 6, and the cable will be unsupported, except by the wheels and grip, and the toggle
70 S will be drawn so that their joint will be in line with each other, and the parts can remain in this position until the roller *m* runs down one of the cam-inclines N, and the shafts K K² are still further turned, and the pick-up
75 devices Q R are lowered and assume the position shown in dotted lines, Fig. 6, wherein the head of the swinging side R has slipped off the end of the pawl T, and the center of the toggle S has rested upon the stationary pro-
80 jecting pin 16 upon the arm 17, and been held up so that the lifting-roller U has swung in under the cable E, and the parts are in positions for lifting the cable by the roller *m* in
85 running upon the cam-incline N, so that the cable is brought into position between the pairs of wheels and the positive grip by the pick-up devices acting in front and at the rear
90 of such pairs of wheels previous to the said wheels and grip being brought toward each other to hold the cable.

I prefer to withdraw the pawl T automatically, so that after the cable has been liberated by the parts assuming the positions shown by
95 full lines in Fig. 6 the pawl T may still hold the pick-up mechanism from descending farther, even though the roller *m* may not be in contact with the cam-inclines N. To effect
100 this object, the shaft *v* is supported in hangers V', and it is provided with a crank-arm, 20, and a connecting-rod, 21, to the pawl T, and the crank-arm 22 on said shaft V receives a
105 roller-bar, W, with a roller, 23, at the lower end, to be acted upon by an incline or cam, Y, upon one of the guard-rails of the track, so
110 that at the proper place upon the track the cam will lift the roller 23 and bar W and turn the shaft V, and by the crank-arms 20 and connecting-rods 21 both pawls T will be simultane-
115 ously withdrawn, allowing the pick-up devices to drop and the lifting-rollers U to pass in under the cable, and immediately thereafter the cam-incline N acts to turn the shaft K K² and lift the cable up into place.

Upon the shaft I', before mentioned, there
115 are arms 25, that extend out above the arms P, so that as the shaft K is turned and the arms P raised in picking up the cable the arms 25 will be acted upon and the shafts I' partially
120 turned, as illustrated in Fig. 5, to swing the hooks I from beneath the pins G⁴ upon the toggle-bars G², so that the springs H and toggle-bars swing the wheels C toward each other and grip the cable simultaneously with the
125 picking up of the same.

In order to render it unnecessary to support the roller *m*, it is preferable for the parts to remain in the position shown by full lines in
130 Fig. 6 so long as the car is being acted upon by the cable; hence when the cable is to be dropped it will only be necessary to separate the wheels C by the stationary inclines or cams H' upon the guard-rails, and then when the cable is to be picked up the cam Y unlatches

the pick-up and allows the roller *m* to rest on the top of the incline *N* and roll down the same as the pick-up descends and the roller *U* passes below the cable, and then the incline
 5 *N* immediately acts to lift the pick-up and cable, the wheels and grip next close upon the cable, and then as the roller *m* passes off the incline *N* the pick-up is partially lowered and sustained by the pawl *T* in the position
 10 shown by full lines in Fig. 6.

If a chain, *O*³, is connected to one part of the bar *O'*, and the said chain passes to a shaft and the hand-wheel, similar to a brake, then the pick-up can be operated by hand instead
 15 of by the incline *N*, and a chain, 28, passing over a roller, may extend from the crank-arm 22 to a shaft and hand-wheel, so as to withdraw the pawl *T* by hand for dropping the pick-up, and it is preferable to wind up the
 20 chain *O*³ before withdrawing the pawl *T*, and then to lower the pick-up by unwinding the chain, and then to wind up such chain to raise the pick-up and cable.

I claim as my invention—

25 1. The combination, with the hangers and shafts *B'*, of the wheels *C*, the bearings *C'*, through which the shafts *B'* pass, the levers *G* and toggle-bars *G*², and stationary cams or inclines *H'*, for moving the wheels *C* apart and
 30 dropping the cable, substantially as set forth.

2. The combination, with the wheels *C*, their hanging bearings and shafts *B'*, of the levers *G*, toggle-bars *G*², hooks *I*, and shafts *I'*, substantially as set forth.

35 3. The combination, with the wheels or cable-grip, of the pick-up mechanism composed of the fixed side *Q*, swinging side *R*, and cross-head *P'*, the arms *P*, and shaft *K*, substantially as set forth.

4. The shaft *K* and hangers and the arms 40 *P*, in combination with the cross-head *P'* and fixed side *Q*, of the pick-up hanging from the same, the swinging side *R*, pivoted at 12 to the cross-head *P'*, the lifting-roller *U*, the toggle-links *S*, connecting the parts *Q* and *R*, 45 and the pawl *T*, for holding up the swinging side *R'* of the pick-up, substantially as set forth.

5. The combination, with the shaft *K* and hangers, of the arms *L L'*, roller-bar *M*, and 50 roller *m*, the arms *P*, cross-head *P'*, fixed side *Q* and swinging side *R*, of the pick-up, and mechanism, substantially as specified, for opening the pick-up and for swinging the same beneath the cable, and the incline *N*, for moving 55 the parts and lifting the cable, substantially as set forth.

6. The cable-grip and levers for opening and closing the same, in combination with the pick-up, having two arms that are closed be- 60 low the cable, and levers for moving the same up and down, and stationary inclines on the track to actuate the levers that raise the cable and close the grip, or the reverse, substantially as specified. 65

7. The cable-lift composed of the fixed side *Q*, swinging side *R*, and roller *U*, in combination with the lever-arms for raising and lowering the same, substantially as specified.

Signed by me this 19th day of April, A. D. 70 1887.

J. H. PENDLETON.

Witnesses:

GEO. T. PINCKNEY,
 W. L. SERRELL.