

(No Model.)

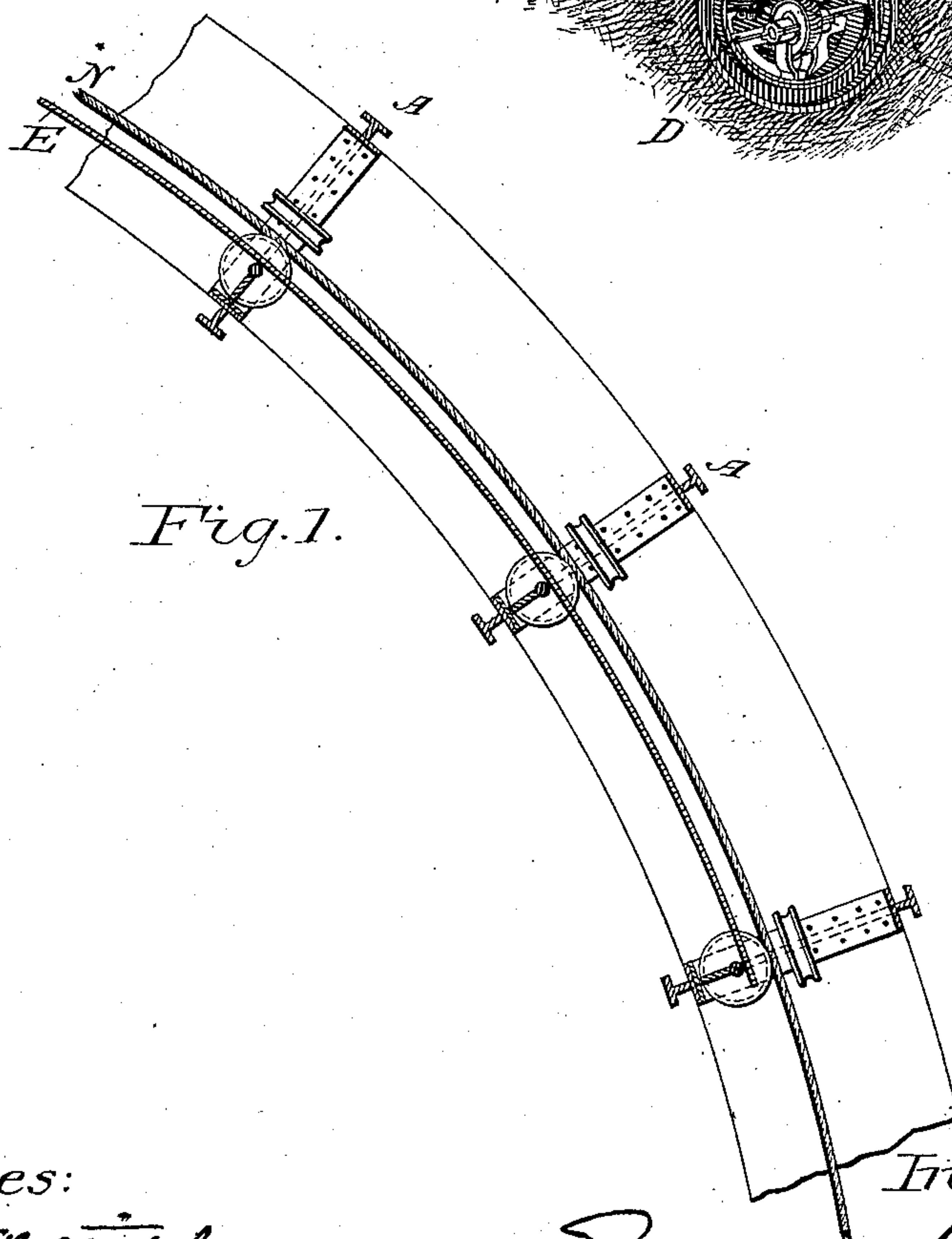
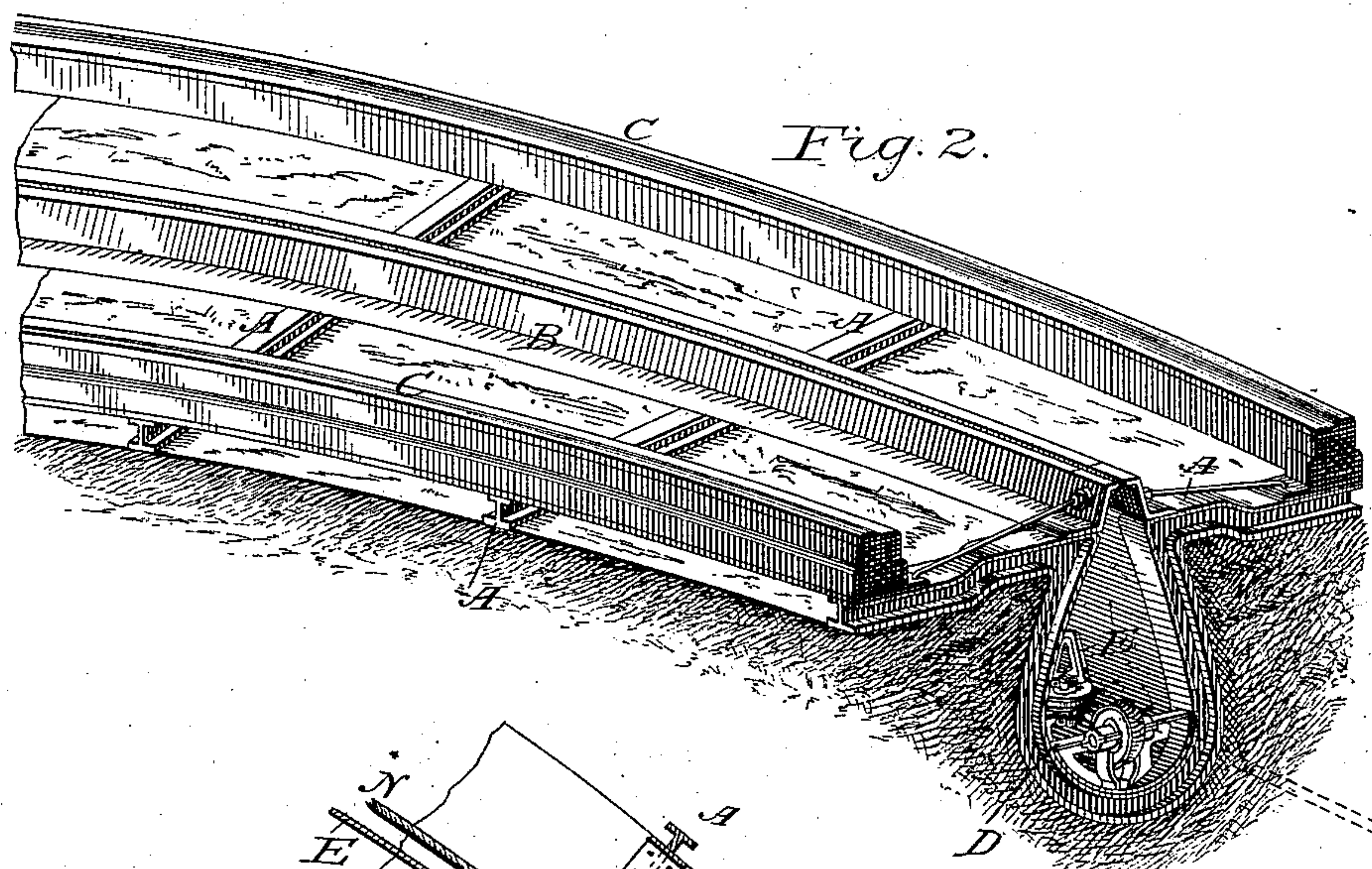
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Z. P. BOYER.

CONDUIT FOR TRACTION OR ENDLESS CABLE RAILWAYS.

No. 359,421.

Patented Mar. 15, 1887.



Witnesses:

Walter B. Mitchell  
J. D. Detrick

Inventor:

Zacchariah Boyer

(No Model.)

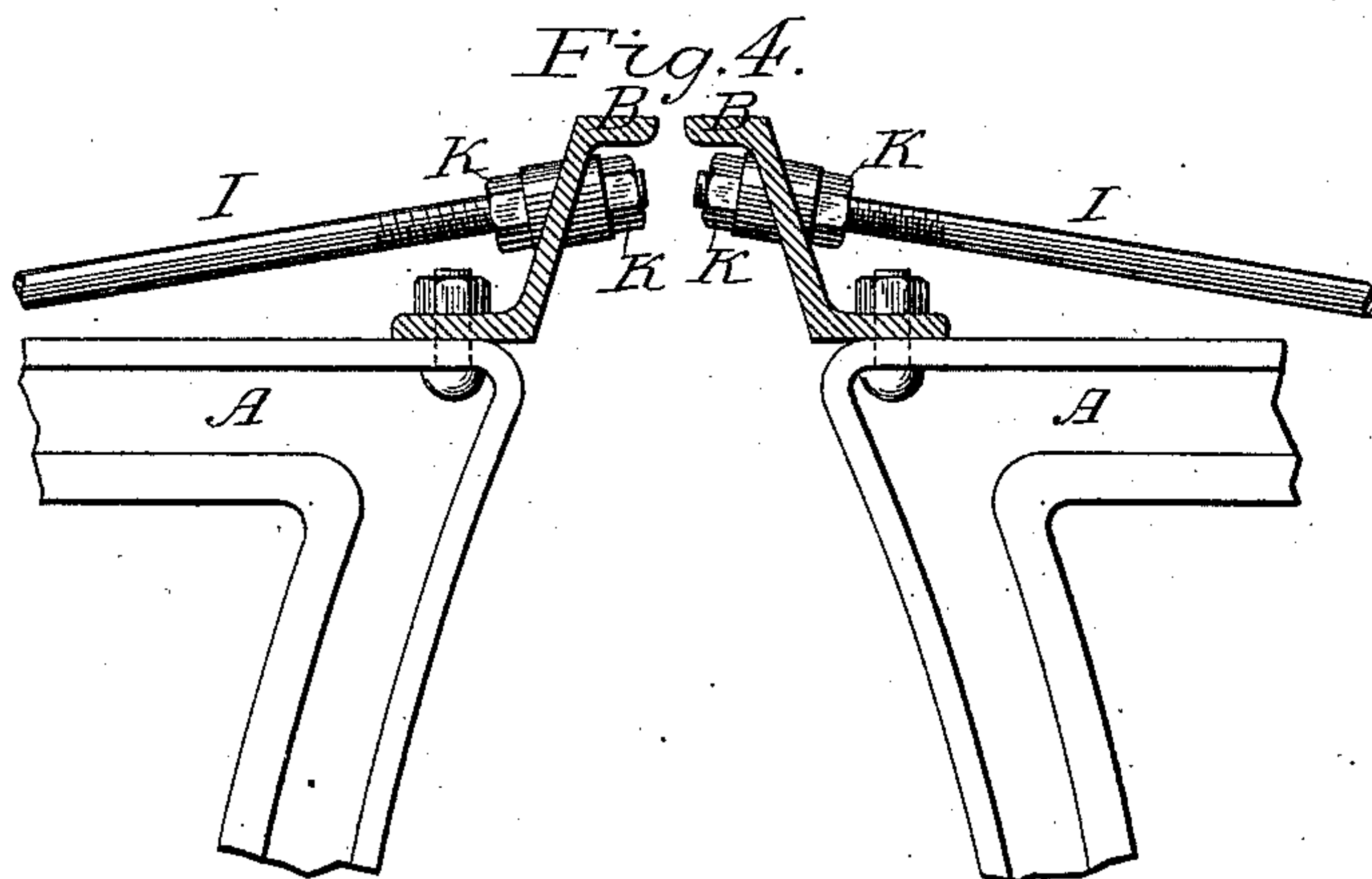
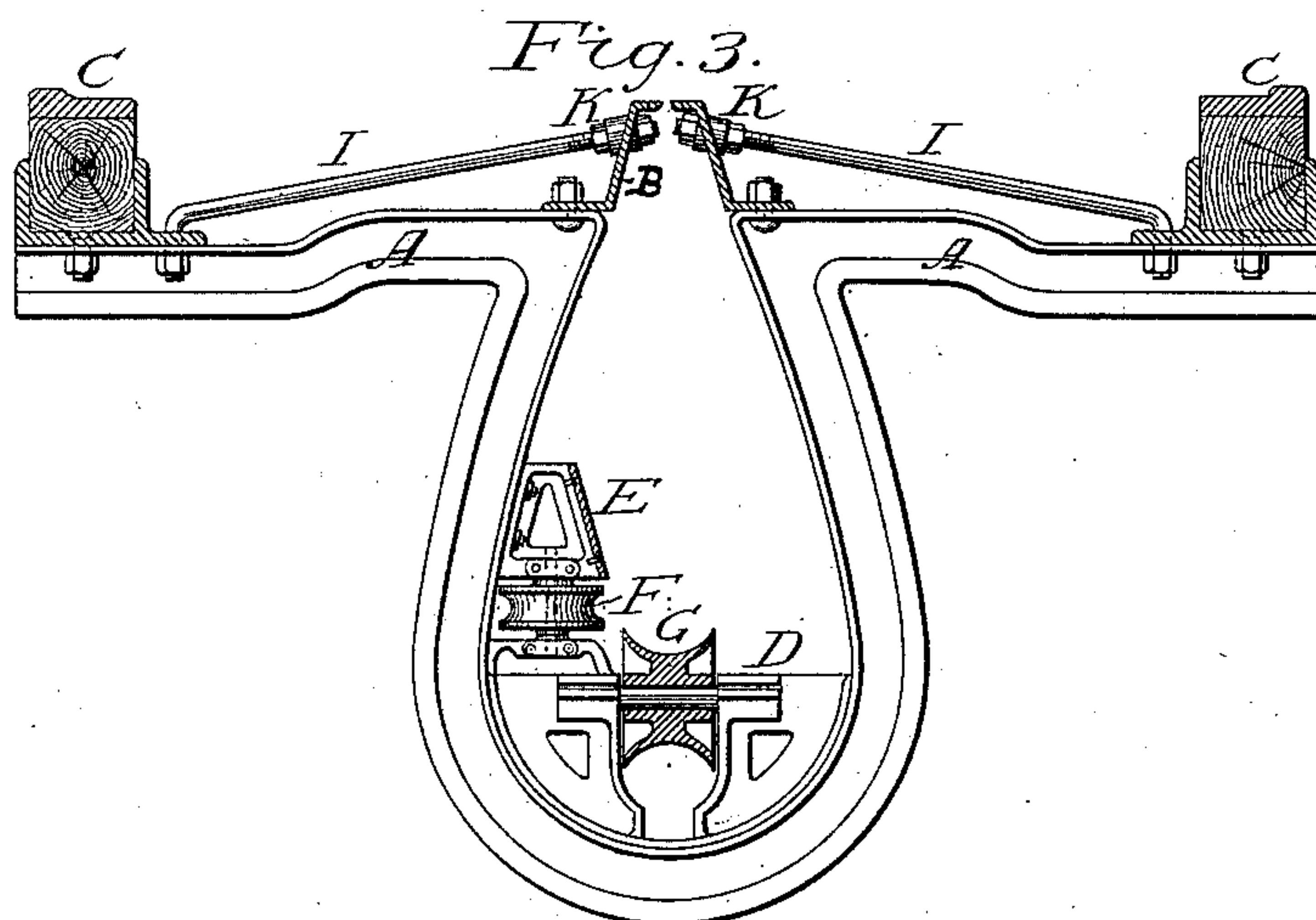
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# UNITED STATES PATENT OFFICE.

ZACCUR PRALL BOYER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO  
THE UNITED STATES CABLE MOTOR CONSTRUCTION COMPANY, OF SAME  
PLACE.

## CONDUIT FOR TRACTION-ROPE OR ENDLESS-CABLE RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 359,421, dated March 15, 1887.

Application filed October 17, 1884. Serial No. 145,791. (No model.)

*To all whom it may concern:*

Be it known that I, ZACCUR PRALL BOYER, a citizen of the United States, residing at Philadelphia, Pennsylvania, have invented a new and useful Improvement in a Conduit for Traction-Rope or Endless-Cable Railways for Passing Around Curves, of which the following is a specification.

My invention relates to a new and useful improvement in a conduit for traction-rope or endless-cable railways for passing around curves, for the purpose and object of aiding the passage of traction-railway cables around the said curves. I attain this object by the mechanism illustrated in the accompanying drawings, which form part of this specification, in which—

Figure 1 represents a longitudinal section of the device constructed in manner and form as shown. Fig. 2 is a top view of the conduit in manner and form as shown. Fig. 3 is an end or vertical cross-section view of the yoke used in the conduit, with horizontal and vertical pulleys in place. Fig. 4 is a half vertical or end cross-section view of the device, showing slot beams and braces in place with double nuts in place.

Similar letters throughout the figures designate corresponding parts.

The device consists, principally, of a conduit with proper slot beams and braces, a plate having the proper curve and horizontal and vertical pulleys so adjusted as to accelerate the passage of a cable around curves.

In Fig. 1, A A A are the yokes, bent into a form approximating the form of a horseshoe, they being set at suitable distances from each other at angles proper to the radii of the curves intended to be overcome. B B are the Z-beams or slot-rails, bent into the form to suit the curves. C C are the stringers or sills, upon the tops of which rests the iron or steel rail, and which are secured to the ends of the yokes, as shown in Fig. 3. E is a plate, of steel or other suitable metal, secured not to the sides of the conduit, but to the body of the horseshoe-yoke, on properly-formed brackets, slightly inclined to suit the curves of the conduits, and with slightly-rounded corners, so adjusted over horizontal pulley F, for the purpose,

first, and mainly, to receive the horizontal wheel or wheels of the grip when a car is passing around the curve; and, secondly, after the passage of said car, to receive any vibration in the cable, and then to guide the cable upon the pulleys H and G. It is apparent that in use the plate E need not necessarily be exactly in the form as shown in the drawings, as some slight alterations may be made in the form of said plate to better accomplish the purposes above described. D is the bracket secured to the lower center of the arch of the yoke for the purpose of securing vertical pulley G, as shown in Fig. 3. G is a vertical pulley for the purpose of preventing the friction or rubbing of the rope or cable while traveling around the curve.

The axes of vertical pulleys G and horizontal pulleys F are in Figs. 1 and 2 represented in a vertical transverse plane. In Fig. 3, however, the vertical pulley is shown in section and the horizontal in full lines. This might imply that their axes were not as represented in Figs. 1 and 2. The design is such that the margins of said pulleys are immediately adjacent to each other. These pulleys are to be of substantial identity and continuity of curvature across the peripheries, and the axes of the pulleys are to be so placed that the cable cannot by any ordinary vibration escape the pulleys.

Fig. 2, A A A shows the yoke in place with the pulleys in position. N is the rope or cable in position when passing around a curve.

Fig. 3, C C shows the rails located upon, and sills in place on the end of the vertical cross-section of the yoke. A A is the yoke bent into the form of a horseshoe. D is the bracket, in which rests the horizontal pulley F and vertical pulley G. E is the inclined plate above described shown in section. I I are the brace or stay bolts or rods connecting the yokes and Z-beams in manner and form as shown. K K are the nuts upon each side of the slot-beams for the purpose of preventing any variation of the slot and to hold the Z-beams in a rigid position, as shown in the figure.

Heretofore provision has only been made for preventing the closing of the slot-irons; but in



my device, the outer ends of the brace-rods I being securely fixed against movement in any direction by applying nuts to said brace-rods inside and outside of the slot-irons, it is obvious  
5 that by setting said nuts either way the slot-irons can besprung either way to open or close the slot.

Fig. 4, B B are the Z or slot beams. K K are the nuts. I I are the brace rods or bolts.

10 Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, with the yokes A A and the slot-irons B B, set to accommodate the  
15 radii of a curve, of the brace-rods I I, adjustable by nuts thereon inside and outside of the slot-irons, and the inclined plate E, adjusted and secured to the body of the yokes and the axes of the horizontal pulley F and the vertical pul-  
20 ley G, all substantially as shown and described.

2. The combination, with the yokes and the slot-irons, of the braces having their outer

ends rigidly fixed to the yokes and their inner ends provided with nuts within and outside of the slot-irons for adjustment in either direc- 25 tion, substantially as shown and described.

3. The combination of the horizontal and vertical pulleys having the peripheries so grooved and themselves being so placed that the moving cable in its up-and-down move- 30 ment shall be taken by one from the other.

4. The combination, with the horizontal pulleys, of the inclined plate E, properly curved and extending along the curved portion of the tube, substantially as shown and described. 35

5. The combination, with the pulleys F and G, of the inclined plate E, of proper shape, securely fixed to the body of the horseshoe-yoke, for the purposes described.

ZACCUR PRALL BOYER.

Witnesses:

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W. K. WOODBURY.