

(No Model.)

3 Sheets—Sheet 1.

C. M. CHUBB.

Tramway for Curves and Cable Gripes.
No. 235,127. Patented Dec. 7, 1880.

Fig. 1

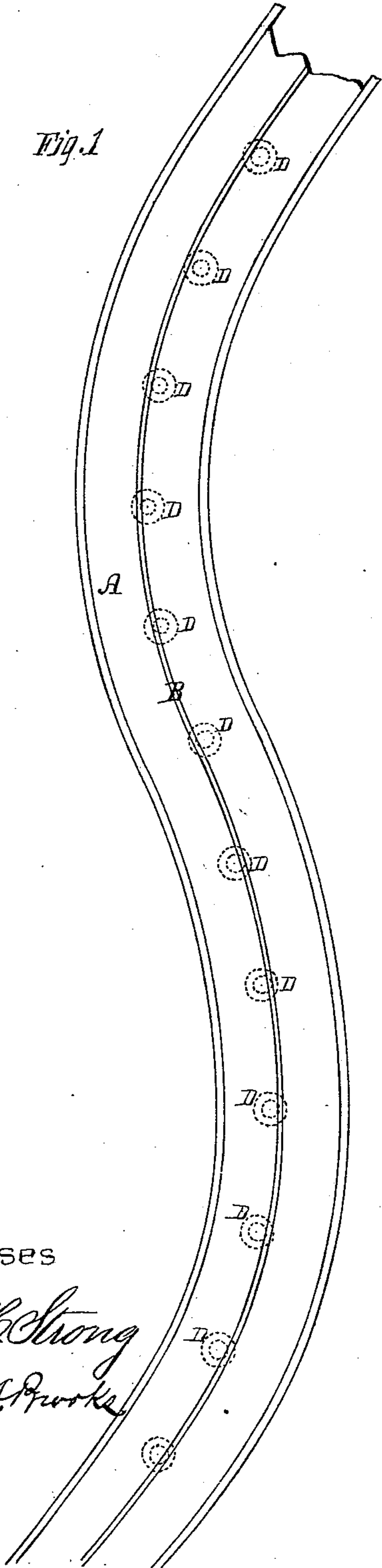


Fig. 2.

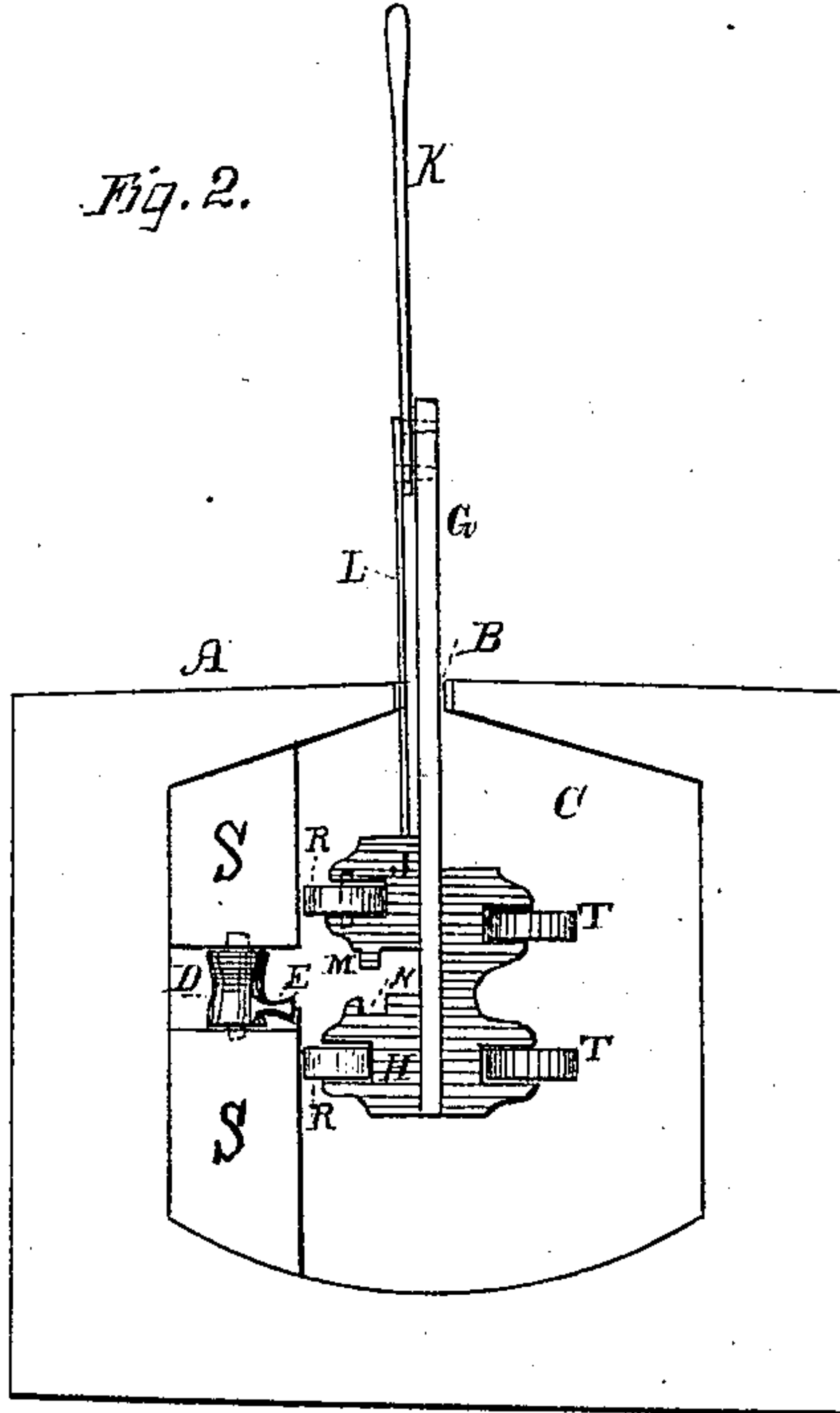
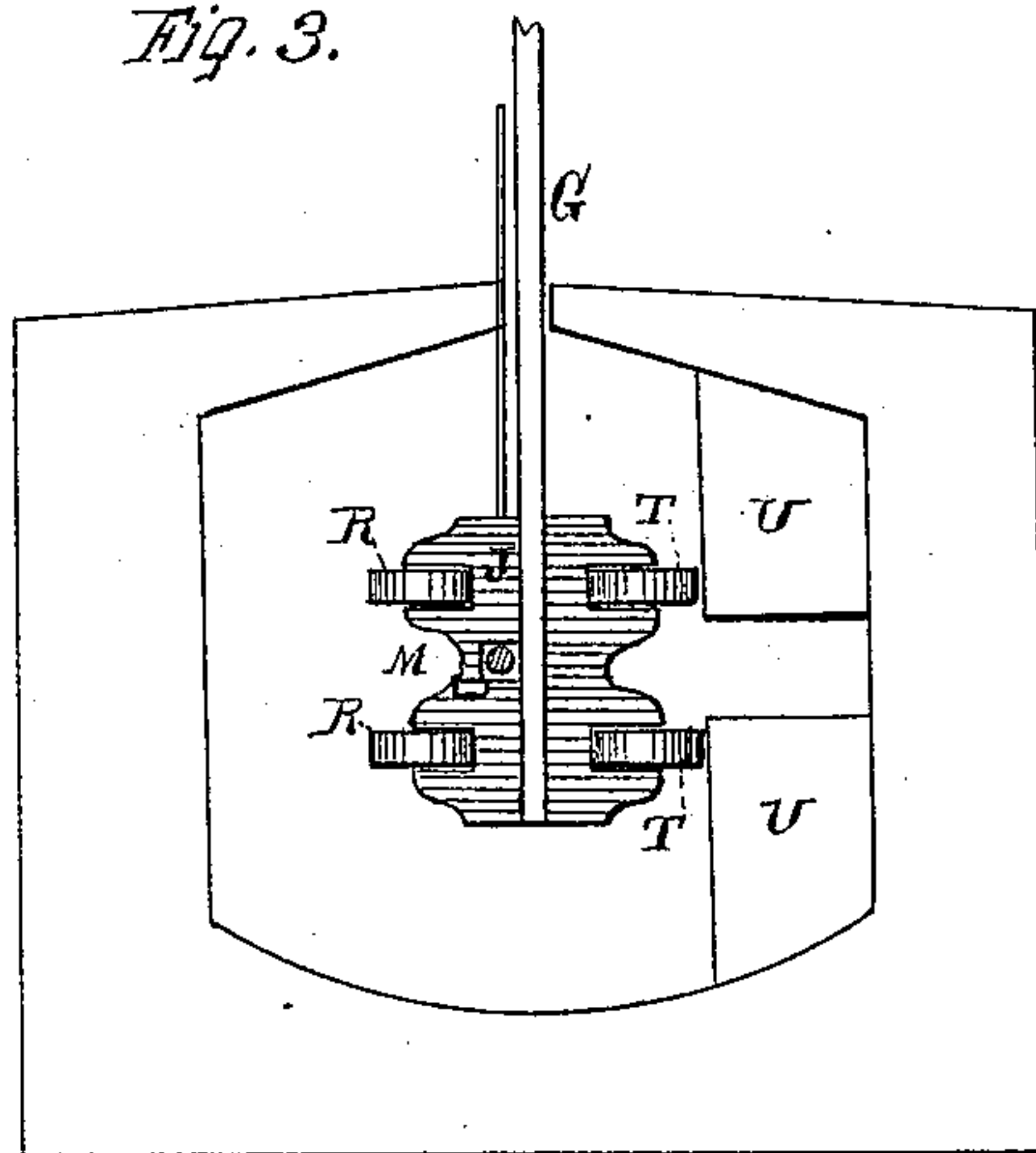


Fig. 3.



Witnesses

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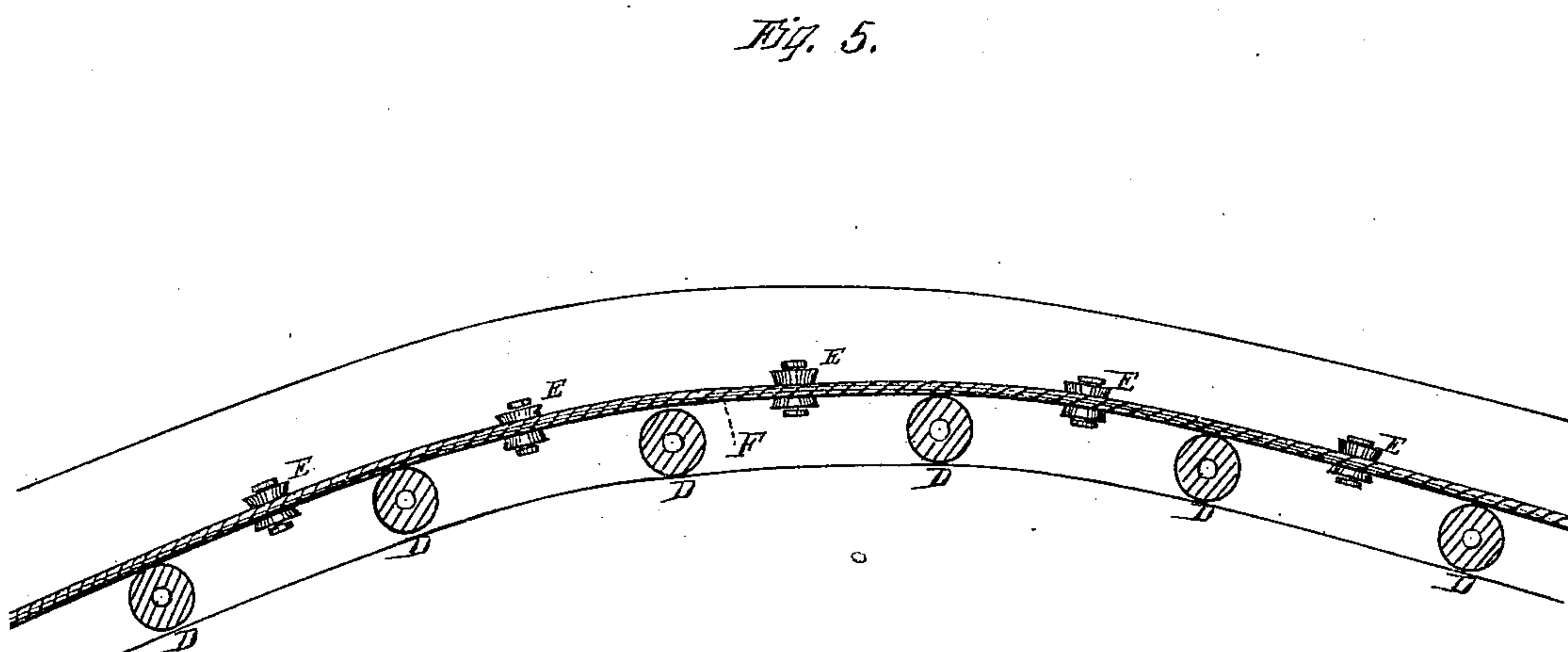
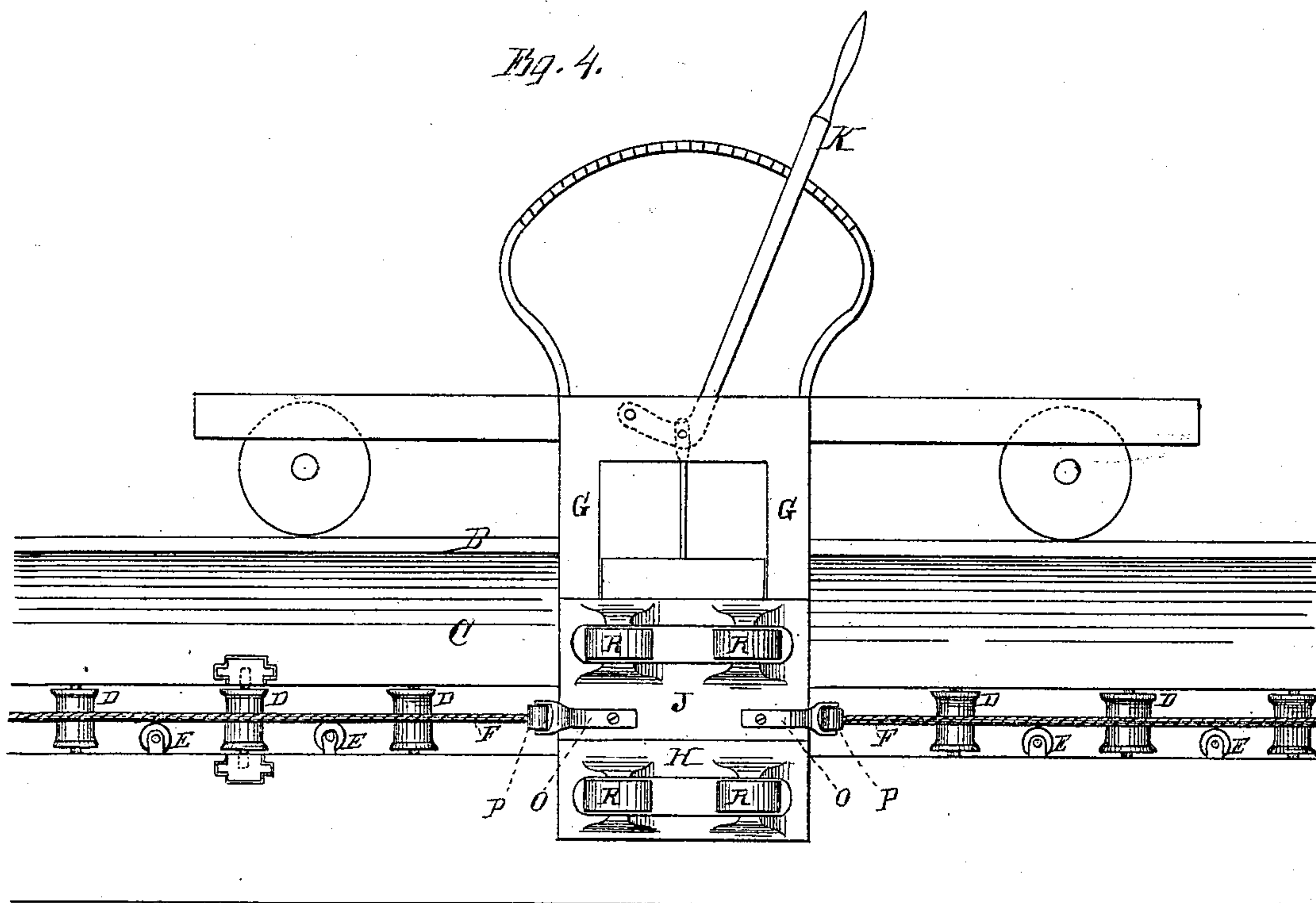
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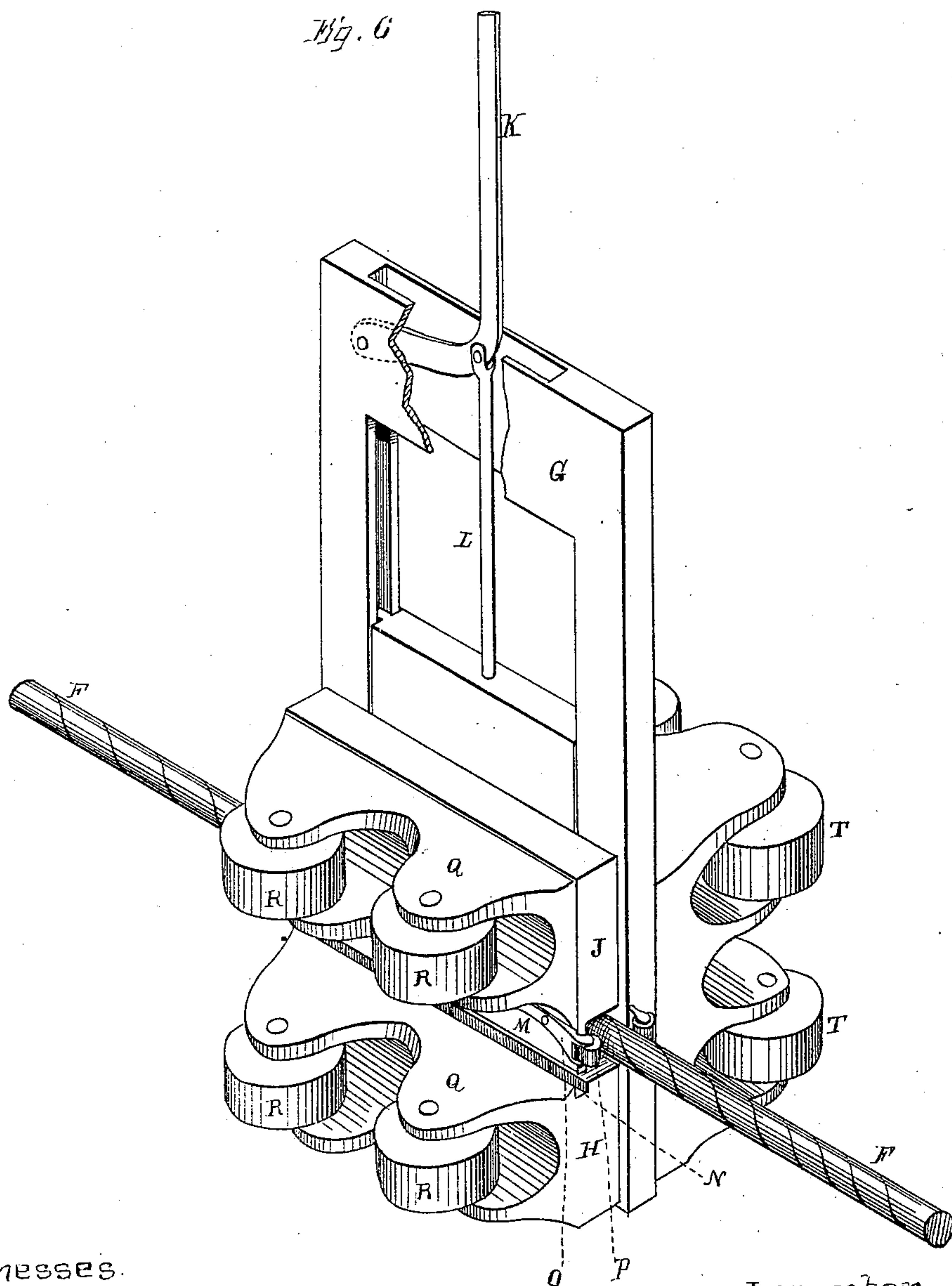
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UNITED STATES PATENT OFFICE.

CHARLES M. CHUBB, OF OAKLAND, CALIFORNIA.

TRAMWAY FOR CURVES AND CABLE-GRIPES.

SPECIFICATION forming part of Letters Patent No. 235,127, dated December 7, 1880.

Application filed September 27, 1880. (No model.)

To all whom it may concern:

Be it known that I, CHARLES M. CHUBB, of Oakland, county of Alameda, and State of California, have invented an Improved Tramway for Curves and Cable-Gripes; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to certain improvements in wire rope or cable tramways in which cars are propelled by means of a gripe attached permanently to each, and so constructed that it may be made to hold or let go of the cable at will.

My invention consists in a method of supporting and guiding the cable, so that it will pass around curves of any desired radius, and in a peculiar gripe, which is capable of seizing the cable and of being carried by it around the curve, without interference with the supporting-pulleys or guides, as will be more fully described by reference to the accompanying drawings, in which—

Figure 1 is a top view of a portion of a curved track. Figs. 2 and 3 are transverse sections of the same. Fig. 4 is a longitudinal section through the tunnel. Fig. 5 is a horizontal section of the same. Fig. 6 is a perspective view of my gripping device.

The object of my invention is to overcome the difficulty of passing a cable around curves, and so connecting a car with it that it may be drawn around in the same curve.

By my invention a cable-road can be constructed whereon a car can be made to take a route over any street despite the curves and not be compelled to run along in a straight line.

Let A represent a curved roadway. B will show the slot through which the neck of the gripe passes. Under the slot B the cable-tunnel C is provided with the vertical rollers D, and between them are the horizontal rollers E, which serve as rests for the cable when slack.

F represents the cable passing over the rollers D, which are at such short distances apart that the cable practically forms itself into curved lines corresponding with the curve of the road.

H is the stationary jaw of the gripe, projecting to one side of the upright carrying-plate

G, as shown. The plate G has a wide vertical slot, the edges of which form guides, within which the plate which carries the movable jaw J slides, so as to allow the jaws to be separated or closed, as may be desired.

The plate G extends up through the slot in the roadway, and is firmly secured to the car or dummy. Upon its upper end is a lever, K, of any suitable form or style; or, if desired, a screw may be used. This is to operate the movable jaw. In the present case the lever K is bent at right angles, and the end of the short arm is pivoted to the plate G, while the angle is connected with the slide or plate of the movable jaw by means of a rod, L. The upper or long arm of the lever extends up into the car within easy reach of the operator, and may be held in any position by the aid of a pawl and a curved rack, in the usual manner.

The movable jaw J has a projection, M, at its outer edge, which extends downward, and when the jaws are closed this projecting ledge enters a corresponding groove, N, in the fixed jaw. This forms a strong support for the movable jaw, to enable it to resist side strains which may be brought upon it when the gripe holds the cable and is moving around a curve.

Upon the outer face of the projection M, at each end, is a stout spring-arm, O, having a roller or pulley, P, fitted to turn in it. This pulley receives the cable if it runs to one side within the gripe when the car is not in motion, and the elasticity of the spring-arm holds it in such a position that it prevents the cable from running against the side of the gripe, and thus wearing it out. The plate G, on the opposite side of the gripping-jaws, is similarly provided with protecting springs and rollers.

From the side of each of the gripping-jaws H and J a roller or wheel-frame, Q, projects, and each frame supports the journals of two wheels or rollers, R, the axles of these wheels standing vertically while the faces of the wheels are adapted to roll upon guides or rails S within the cable, tunnel, or tube, these rails being placed above and below the vertically-placed rollers D, which guide the cable around the curve.

Upon the opposite side of the plate G, and corresponding with these rollers R, I place similar rollers T, which are fitted to run upon

guides or rails U upon that side, similar to the rails S.

It will be manifest that the rails or guides will in each case be placed only upon the inside of the curve around which the cable and car are to pass, and they serve to support the gripe as it travels upon its rollers against the side strain caused by its lifting the cable from the rollers D as it passes. The rollers and guides or rails upon one side will be used when the curve is in that direction, and those upon the other side when the curve is in the opposite direction.

That the application of my gripe may be more readily understood, I will explain the operation. The cable F is set in motion in the ordinary manner. It runs within the tube or tunnel C over the rollers D and E. The gripe moves within the tube, being connected with the car by means of the neck or plate G, as before described, and it passes down to one side of the cable F, the rollers D and E working in the space between the lower and upper wheel frames or supports, Q.

When the lever K is raised, by which the movable plate J is lifted, leaving an opening between the two jaws, the cable will run freely without moving the car; but when the jaws are forced together by means of the operating-lever, the car will be compelled to move with the cable. The guides or rails within the cable-tunnel upon which the rollers R R of the gripe travel are so placed with reference to the guide-rollers of the cable that the groove in the gripe which clasps the cable will be at all times very nearly in the line of the curve through which the cable travels.

By this construction the strain of the cable will be mostly supported by its permanent bearing-rollers D, and but little of it will be transferred to the gripe as it passes these rollers. The rollers or wheels upon the gripe will, however, travel upon their rails, and sustain any side pressure which may be brought upon the gripe by the action of the cable.

It will be seen that the guide-rails for the gripe-rollers are only necessary upon the inner

side of the curve, and if the cable passes from one curve into a reverse curve the guides would be simply transferred from the inner side of one curve to the inner side of the opposite curve.

In order to relieve the movable jaw of the side strain which may be brought upon it by the action of the cable, the projecting lip M, which enters the groove in the stationary jaw, as before described, serves to sustain it.

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

1. The guides for carrying the wire rope or cable in a curve within its tunnel, said guides being placed upon the inside of the curve, in combination with the rollers R upon the gripe and their supporting-blocks Q, substantially as herein described.

2. The gripe consisting of the stationary jaw H, having a groove in its outer side, and the movable jaw J, with its projecting lip or flange M fitted to enter the groove and support and steady the jaw, substantially as herein described.

3. The gripe consisting of the stationary and the movable jaws H J, between which a cable may be compressed and held, in combination with the elastic arms O and the rollers P, to hold the cable away from the sides of the gripe and prevent wear, substantially as herein described.

4. The cable tube or tunnel C, having the vertical and horizontal cable-supporting rollers D E, and the guides or rails S U, in combination with a rope-gripping device having the rollers or wheels R T, which may run upon the rails, whereby the cable may be run around a curve in either direction, and the gripe from a car may be attached to and carried with it, substantially as herein described.

In witness whereof I have hereunto set my hand.

CHARLES M. CHUBB.

Witnesses:

S. H. NOURSE,
R. COWAN.