

2 Sheets—Sheet 1.

CABLE RAILWAY.

~~No. 4861262.~~

Patented Nov. 15, 1892.



INVENTORS

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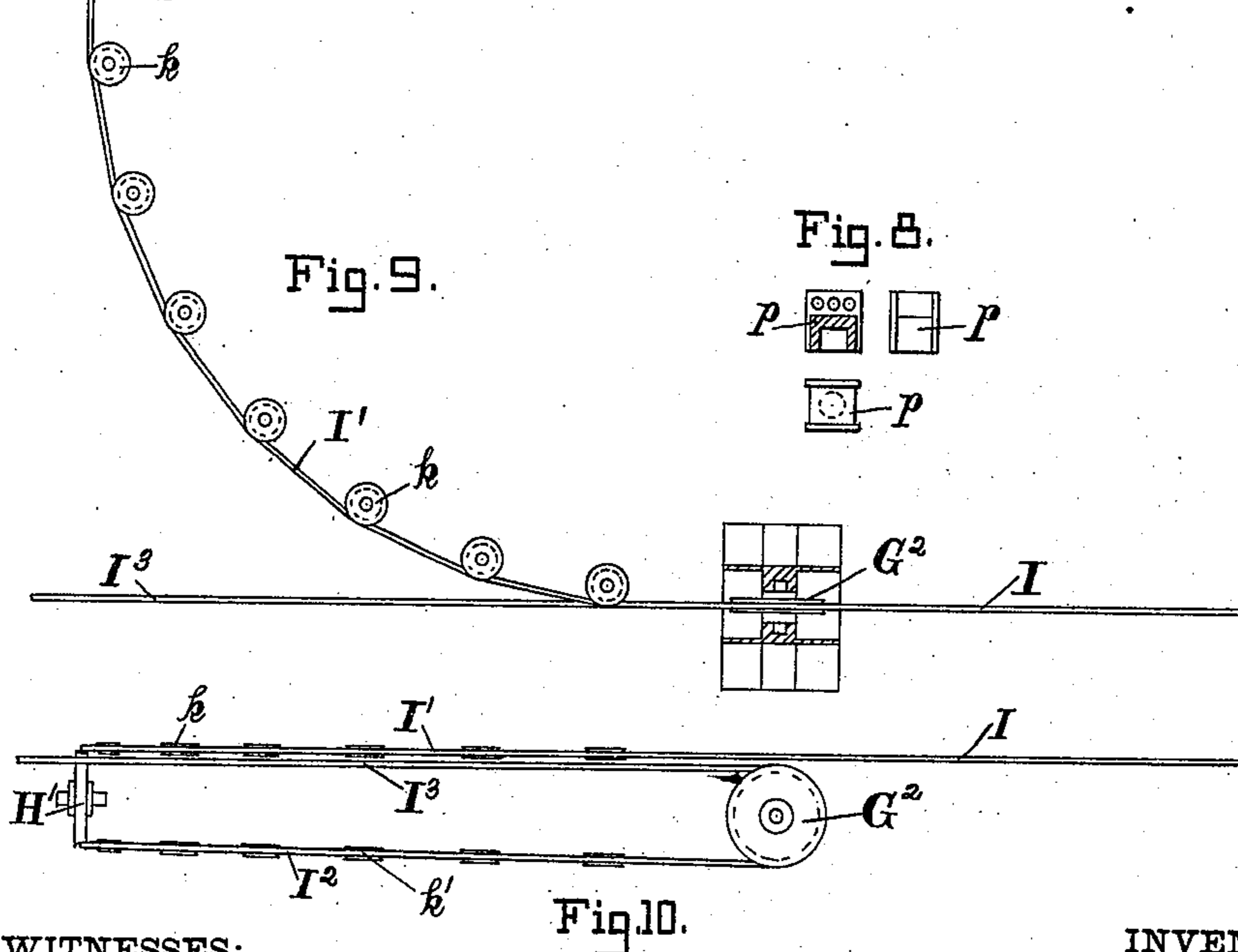
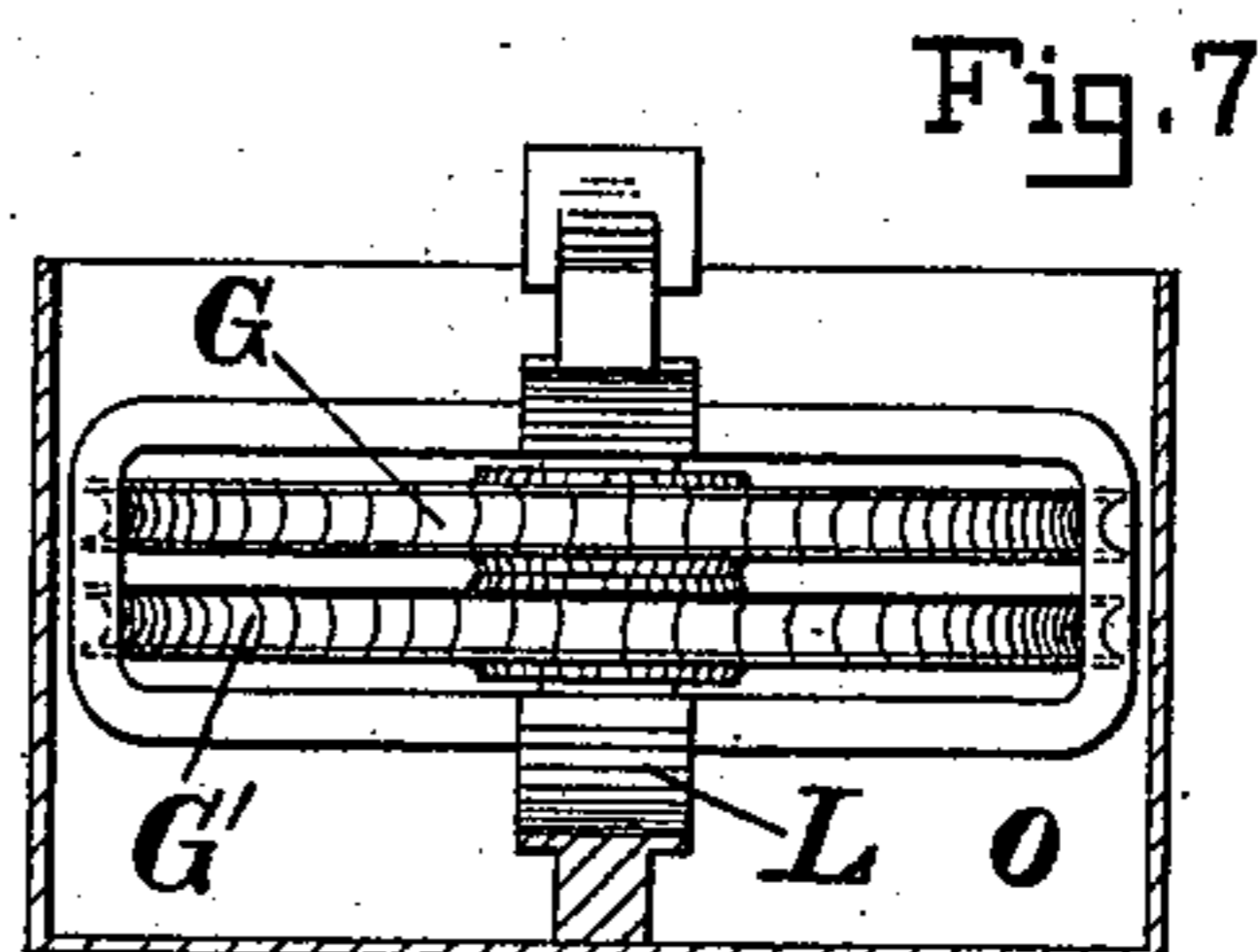
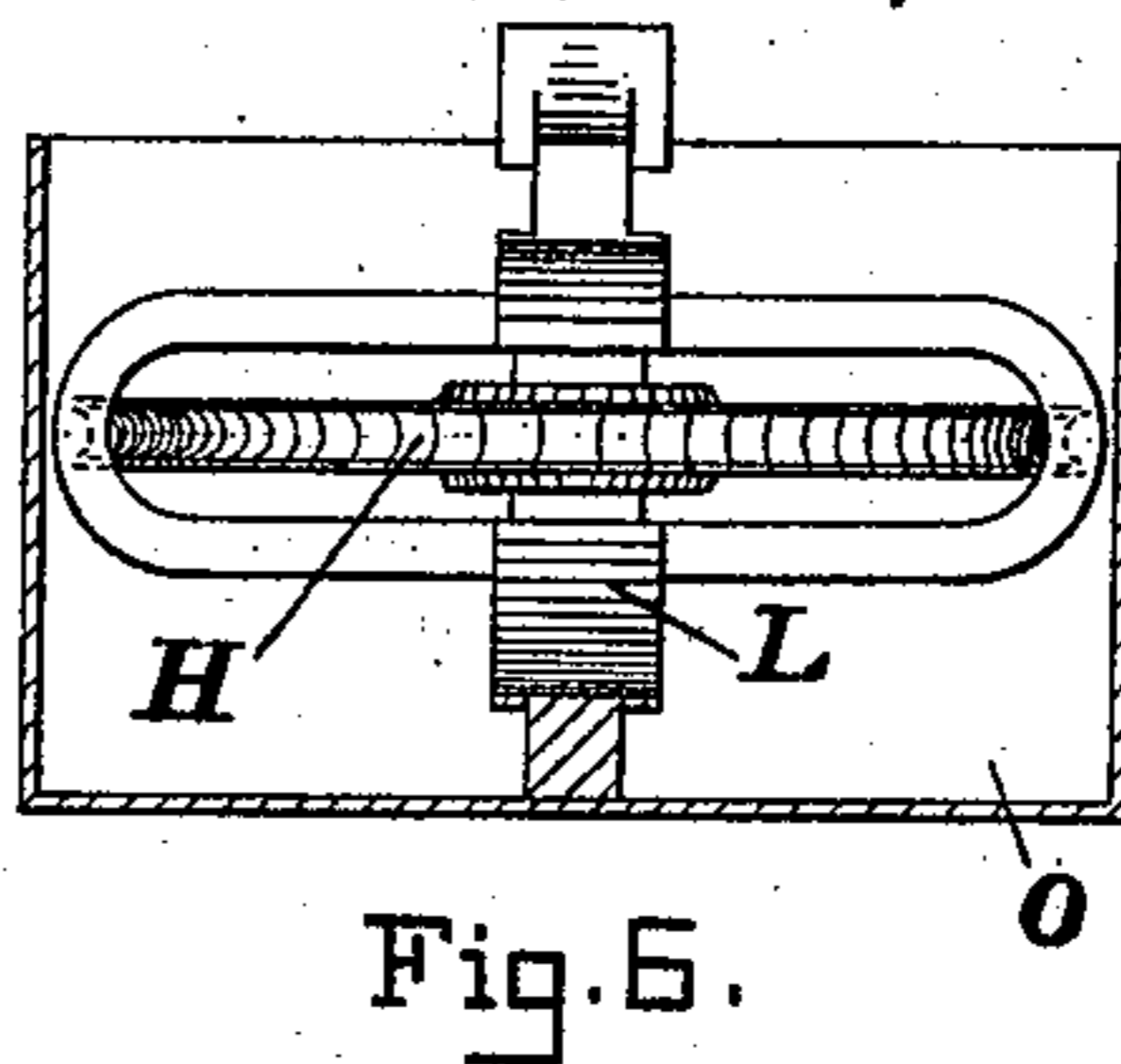
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UNITED STATES PATENT OFFICE.

ROBERT MCCLINTOCK, JOHN F. LANGHAMMER, AND JOHN WELCH LOWELL,
OF BALTIMORE, MARYLAND.

CABLE RAILWAY.

SPECIFICATION forming part of Letters Patent No. 486,262, dated November 15, 1892.

Application filed October 6, 1890. Serial No. 367,220. (No model.)

To all whom it may concern:

Be it known that we, ROBERT MCCLINTOCK, JOHN F. LANGHAMMER, and JOHN WELCH LOWELL, citizens of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Cable Railways, of which the following is a specification.

Our invention relates to certain improvements in cable railways, such as are used for street traffic, in which the car traveling on rails is driven by an endless cable.

The object of the invention is to provide for transferring a car at a street-corner from a track and cable running along one street to a track and cable running along another street at an angle to the first street.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of the surface of two cable roads at their intersection and showing by broken lines the application of our improvement. Fig. 2 is a vertical section showing a projection of the improved "cable-loop" and the pulleys at the intersection. Fig. 3 is a plan view of the cable-loop and pulleys. Figs. 4, 5, and 6 are views showing details of the box which supports the pulley of the cable-loop. Fig. 7 is a view of one of said boxes. Fig. 8 shows several views of the bearings. Figs. 9 and 10 show views of a cable-loop which is projected in a vertical plane instead of a horizontal plane.

The rail-supports, the conduit, and its grip-slot may be of any approved construction.

The letter A designates the track or rails of one road; B, the track of the intersecting road; C, a curved part of track leading from one road A to the other road B, and D the grip-slot in which the grip-bar travels. At the curved part of the track is a curved slot D', and at the point of intersection of the straight slot and curved slot are the frog-points *e e'*, and in the track-rails adjacent is the switch *f*.

All the parts thus far named are common.

We provide a pulley G below ground adjacent to the switch *f* and slot-point *e*, and another pulley H adjacent to the other slot-point *e'*. The cable I of one road moving in the

direction indicated by the darts diverges at the first pulley G from the road A and passes in a curved line I' below the curved slot D' to the other cable J. Rollers *k* are at this curve and the cable bears against these rollers. At the second pulley H the cable passes around and returns, as at I², to the first pulley G and around it and passes below that part I of the cable which first reaches this pulley, and at the slot-point *e* the cable resumes alignment, as at I³, with that part of the cable I in the road which has not reached the first pulley G. It will thus be seen that by means of the pulleys G H the cable is made to form a loop I' I², which extends laterally at one side of the roadway and returns thereto, and that one end of the cable-loop is coincident with the slot-point *e* of one road A and the other end of the loop with the slot-point *e'* of the intersecting road B. Thus the entire cable of the road A will travel over the loop-forming pulleys G H. At the point near the second pulley H, where the curved line I' of the cable-loop becomes coincident with the cable J of the other road, the said cable-loop will at this point pass below the other cable J.

The operation of the cable-loop to transfer a car is as follows: If a car on one road A is to be transferred to the other road B and move in the direction shown by the darts, it will leave the road A at the switch *f*, and the same cable, without any relaxation of the gripper, will move the car around the curve C to the other road B. When the cable-gripper of the car reaches the cable J of the intersecting road, the gripper must let go of the first cable and take hold of the said cable J.

When a car on the road A is to continue straight on past the intersecting road B, the cable-gripper of such car upon nearing the first pulley G must let go of its cable and "jump" or pass over that end of the cable-loop and then again grip the cable.

The yoke L, which supports the cable-conduit N and the track-rails also, has attached thereto the boxes O and the bearings *p q*, which support the pulley of the transfer-cable loop. These parts are shown in detail in Figs. 4, 5, 6, 7, and 8. It will be seen that the bearings *p q* are attached to the box O,

and that the latter is built up with and as part of the yoke L. Thus great stability is secured.

In the arrangement of the loop shown in Figs. 1, 2, and 3 the first pulley may have two grooves, or two pulleys G G' may turn on the same axis or shaft, as shown in Fig. 7.

Instead of having the cable-loop in a horizontal plane, as in Figs. 1, 2, and 3, it may have a different position. For instance, it may be in a vertical plane, as shown in Figs. 9 and 10. Here the pulleys G² and H' revolve in a vertical plane. The loop forms a curved line, as before, but the return stretch I² in this instance bears against a second set of rollers k'.

It is evident that the arrangement, construction, and location of the various parts may be varied and the transfer-track C, the shape and position of the cable-loop, and other parts may be altered without departing from my invention.

We do not claim, broadly, as our invention transferring cable cars by diverging one cable at the intersection and forming a loop out of it, as we are aware that the broad idea is claimed by a prior applicant.

Having described our invention, we claim—

1. The combination of two intersecting cable railways, each having a grip-slot, a curved track, and a curved slot leading from one railway to the other and having a point at each union of the curved slot with the other slots, a separate cable for each railway, one of the cables forming a loop one end of which is coincident with the slot-point of the intersecting road and the other end with the slot-point of its own road, as and for the purpose set forth.

2. The combination of two cable railways crossing each other, yokes to support the conduit and rails of each road, two pulleys, each mounted in a separate box and each box attached to a supporting-yoke on each road, and the cable of one of the roads formed into a loop which passes over both of said pulleys.

In testimony whereof we affix our signatures in the presence of two witnesses.

ROBERT McCLINTOCK.
JOHN F. LANGHAMMER.
J. WELCH LOWELL.

Witnesses:

A. O. BABENDREIER,
OTTO H. EHLERS.