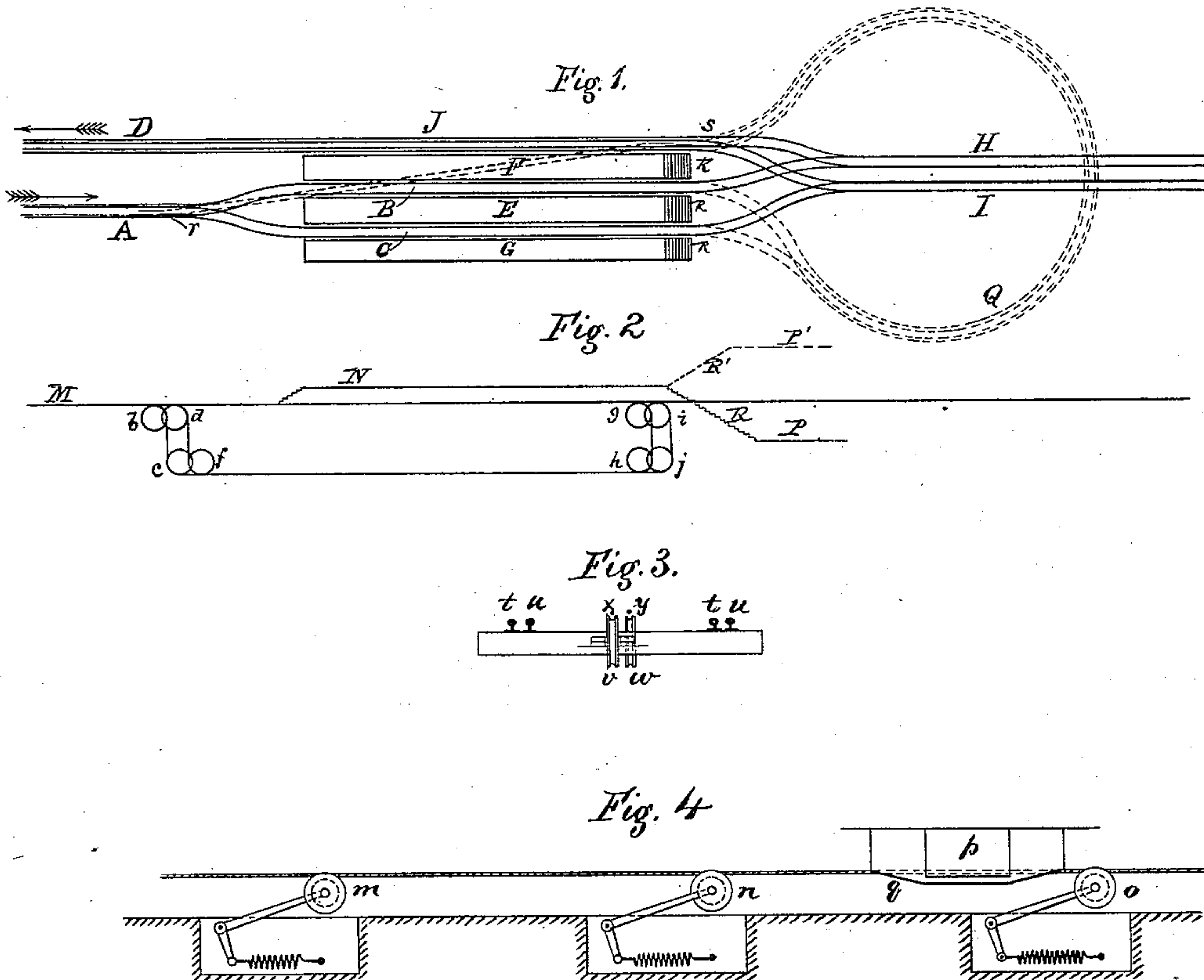


(No Model.)

C. E. EMERY.  
CABLE SUBURBAN RAILWAY.

No. 428,386.

Patented May 20, 1890.



WITNESSES:-

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# UNITED STATES PATENT OFFICE.

CHARLES E. EMERY, OF BROOKLYN, NEW YORK.

## CABLE SUBURBAN RAILWAY.

SPECIFICATION forming part of Letters Patent No. 428,386, dated May 20, 1890.

Application filed June 7, 1888. Renewed April 19, 1890. Serial No. 348,594. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES E. EMERY, of Brooklyn, Kings county, New York, (office New York city,) have invented certain new and useful Improvements in Cable Suburban Railways; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

This invention relates to an adaptation to one form of the system of multiple starting-points for suburban railroads, &c., set forth in application, Serial No. 263,295, filed February 7, 1888, of a cable-haulage system, with grips located above the lines of the rails, so that the cars may be run over ordinary switches and frogs.

In the drawings, Figure 1 is a plan view showing arrangement of tracks. Fig. 2 is a diagram elevation showing the relation of the tracks and platforms to the street-level and staircases for communication. Fig. 3 is a cross-section of double-gauntleted tracks and double cables. Fig. 4 is a side view of cable "pick-up" mechanism.

The specific arrangement shown is for a terminal station.

A is the incoming track; D, the outgoing track; H and I, rear switches; Q, rear curve.

In Fig. 2, M represents the elevation of the rails; N, the platform elevation; P, the street-level below the grade of the rails, and P' the street-level when above the grade.

R R' are corresponding staircases.

The trains entering the station from the left over tracks A are separated, preferably, by gauntleted rails to two or more station-tracks B and C. It is intended that the cars shall be loaded from a central platform E, and unloaded for the tracks B and C, respectively, to platforms F and G. As each train is unloaded, it is by a locomotive or stationary power hauled to the rear on tail-switch tracks H and I, one for each of the two starting-tracks B and C, respectively, and pushed out onto a straight stretch or tangent of track J, which is in line with the main return-track D of the railroad. If the separate tracks B and C are gauntleted on main line A the outgoing tracks from the tail-switches H and I would, on reaching the tangent J, be

also gauntleted, and thus the trains of the multiple systems be kept separated all the time. In such case there would be two cables laid along between the rails, each on the center line of each of the gauntleted tracks, or so arranged in relation thereto that the grips on cars running on each of the same would engage therewith. With grips arranged on the cars above the lines of the rails, as proposed, so that no part will project below the latter to interfere with switching, the same as other rolling-stock, the cars cannot be run on ordinary curves when attached to cable, as the latter will not, on account of its tension, drop below the level of the rails sufficiently to engage with certainty the lateral diverting-sheaves. The cables for incoming tracks A will therefore be carried below the rails at *r* where the main-line gauntleted tracks separate to the two station-tracks B and C, one cable being guided down and diagonally across to the other track over sheaves *b* and *c* and be brought up again between the rails of main track over sheaves *g* and *h*, and the other cable guided down over sheaves *d* and *f* and brought up between rails of main return-track over sheaves *i* and *j*. Along the tangent J of main track cable pick-ups are to be provided for each of the gauntleted tracks, so that cars pushed out from each of the rear switches H and I will engage with a cable on reaching the tangent I and proceed on the return-track without stopping.

A so-called "cable pick-up" substantially like one now in practical use is shown in Fig. 4. A series of supporting-sheaves, of which three are shown, *m*, *n*, and *o*, are separately pivoted to arms of rock-shafts and held in an elevated position by springs, so that the cable will be in line with the jaws of a grip *p* attached to a car. At the side of the grip (toward the observer in the drawings) and attached to the car is an incline *q*, which, as the car approaches either roller *n*, for instance, pushes it down by coming in contact with the hub or a wheel on the side of the sheave, the cable being at the time supported in the jaws of the grip by sheaves at front and rear of the depressed pulley—for instance *m* and *o*. By this means the cable may be allowed to run through the jaws of the grip or the grip be engaged at any time while the cars are in



position or passing over a series of supporting-sheaves of this kind. There would be a set of pick-ups for each of the gauntleted tracks.

Fig. 3 shows in cross-section two sets of gauntleted rails which form separate tracks in pairs *t t u u*. On the center line of track *t t* would be located a series of supporting-sheaves, one *v* being shown, and *x* representing the corresponding cable. For the tracks *u u* a similar supporting-sheave is designated *w* and the corresponding cable *y*.

The trains would ordinarily be brought in on a downgrade on main line A, and, dropping the cable before reaching *r*, run in on the tracks B and C by gravity. They could, however, be brought in by previously-acquired speed or by auxiliary power. The cars would stop opposite the platforms, load and unload, be pulled to the rear by locomotives or other auxiliary power and transferred to tangent J of outgoing track, which is brought down in line with the main line as nearly to the rear switches as possible, so that when the cars are transferred to it they may pick the cable up and proceed at once.

The general features of operation are the same whether or not the multiple tracks are gauntleted on the incoming tracks A or the outgoing tracks D, although it is preferable that such gauntleting be adhered to. When the tracks are not gauntleted, switches will be necessary at the point *r* to separate the trains to the two starting-points, also another switch at the point *s* to bring the trains together on the single return-track J, though evidently the tracks B and C may be brought together on one of the rear switches H or I, and dispatched therefrom to the single outgoing track.

For some features involved in the invention a rear curve Q would be the equivalent of the rear switches H and I, the cars being propelled about the same by gravity or auxiliary power on single or gauntleted tracks, as

desired, until the cable can be picked up again for the return trip on the reach or tangent J.

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

1. In combination, an incoming main track, multiple station-tracks and platforms for same, rear connection from station-track to a tangent of outgoing tracks, one or more cables on the latter, and pick-up devices to enable the cars to be connected to and dispatched by cable.

2. Multiple station-tracks and platforms, rear switches for transferring trains from the station-tracks to single or multiple outgoing tracks, and a cable or cables located on a tangent of the latter, in combination with cable pick-ups operating to enable the cars to be returned by connection with cable.

3. In combination with multiple station-tracks for trains moving in the same direction, and platforms for the same connected with the street at another grade, independent cables arranged to operate the cars running to each station-track.

4. In combination with multiple station-tracks for trains moving in the same direction gauntleted together on the main line, and platforms for the station-tracks connected with the street at another grade, independent cables arranged to operate the cars running to each of the multiple station-tracks.

5. In combination with multiple station-tracks for trains moving in the same direction, and platforms for the same connected with the street at another grade, cables arranged to operate only on the tangents and provided with pick-ups at the commencement of the same, substantially as and for the purposes specified.

CHAS. E. EMERY.

Witnesses:

EDW. E. MAGOVERN,  
ROBT. M. REEVS.