

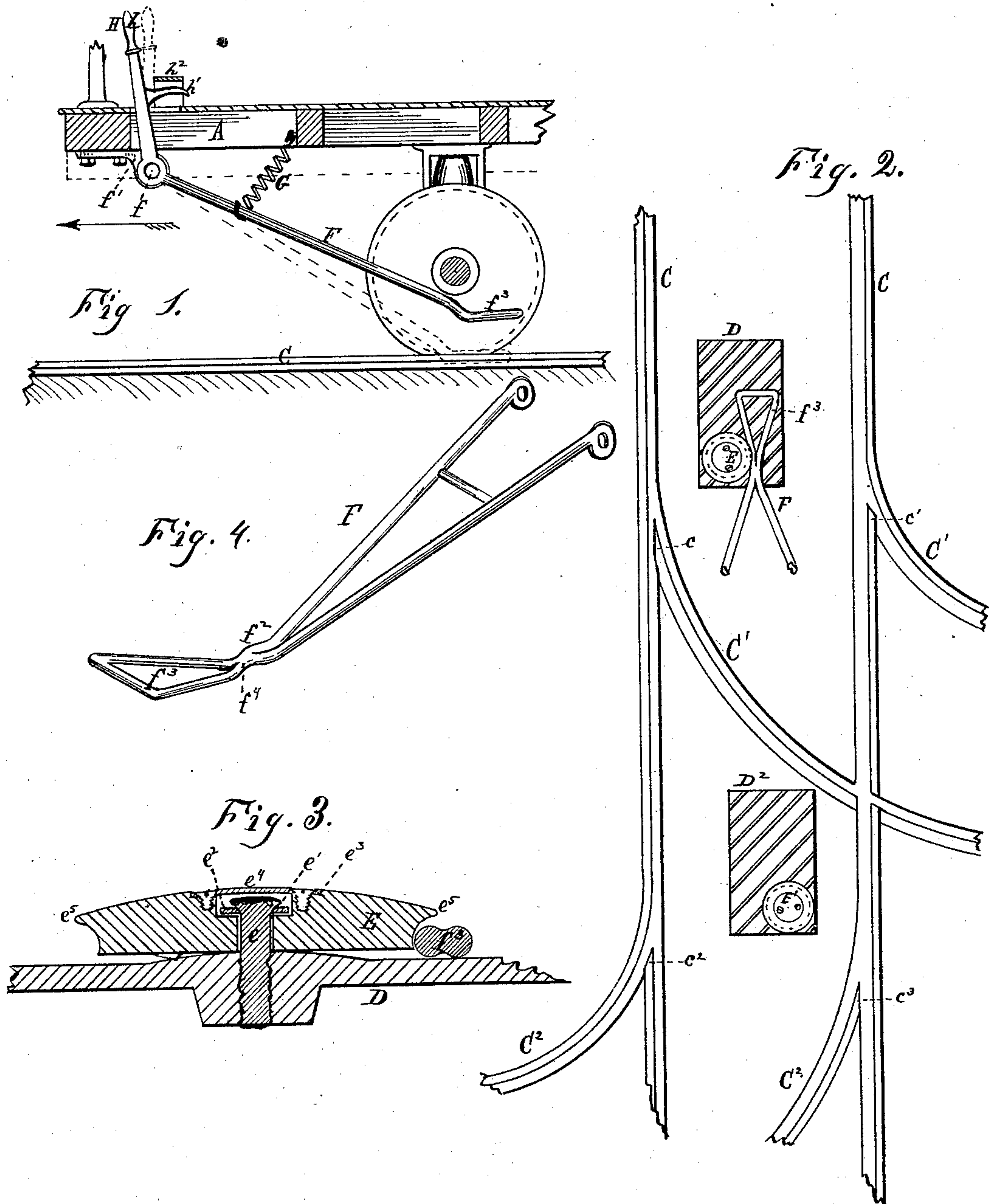
(No Model.)

T. B. ESTEP.

STREET CAR SWITCHING SYSTEM.

No. 280,300.

Patented June 26, 1883.



Attest:
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UNITED STATES PATENT OFFICE.

THOMAS B. ESTEP, OF CINCINNATI, OHIO, ASSIGNOR OF ONE-HALF TO
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STREET-CAR-SWITCHING SYSTEM.

SPECIFICATION forming part of Letters Patent No. 280,300, dated June 26, 1883.

Application filed September 22, 1882. (No model.)

To all whom it may concern:

Be it known that I, THOMAS B. ESTEP, of Cincinnati, county of Hamilton, and State of Ohio, have invented a new and useful Improvement in Street-Car-Switching Mechanism; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification.

10 Figure 1 is a partial vertical longitudinal section of a street-car. Fig. 2 represents a plan of a portion of a car-track. Fig. 3 is an enlarged sectional view of the guide-roller. Fig. 4 is a perspective of the drop-lever.

15 Similar letters of reference indicate like parts.

This invention is an improvement on Letters Patent No. 259,675, granted to me June 20, 1882.

20 The nature of my invention relates to a device whereby the driver of a street-car may switch his car to any diverging track without stopping the car or taking up any considerable portion of his time and attention, and without the use of any movable switch.

25 It consists, mainly, of a drop-lever, which is journaled at two points some distance apart, and attached to the front of the car-bed A, the free arm of said drop-lever terminating below in a triangular structure, forming a shoe, and which comes in contact with a roller pivoted horizontally and near the center of the track C, and in such position as to guide one of the front wheels of the car into the open switch when said drop-lever is lowered for that purpose.

30 In construction my invention is as follows: The track to be made use of in this system of switching cars is in every respect similar to those ordinarily in use, except that the movable switch is dispensed with. The point where one track leaves the other has the bearing-face of the straight rail cut down, as seen at *c*, and the diverging rail at *c'*, so the flanges of the car-wheels may leave the straight rail and enter on the diverging track C'. The same construction is seen in the other diverging track, C², where the high bearing-faces of the rails are cut away at *c²* and *c³*. For the track C', a cast-iron bed-plate, D, is permanently and securely bolted down on a timber, which is em-

bedded in the roadway, and is also interlocked with a number of the cross-ties or track-timbers, to give it greater permanency. The plate D is to be left flush with the surface of the roadway. To plate D is pivoted guide-roller E by means of a strong vertical stud, *e*. This stud is cast or driven and strongly riveted into plate D, and passes up into roller E, as shown. At the point where stud *e* enters plate D the latter is given a convex form, as seen in Fig. 3. Roller E has two recesses turned in its upper face, the one seen at *e'* being to receive a stop-washer, *e²*, over which the stud *e* has a large head riveted, which prevents the roller E leaving its place. The upper recess, *e³*, receives a close-fitting cover or lid, *e⁴*, which is held in place by a number of non-corrodible screws, whose heads are well sunken to protect them from injury. The roller E is further provided with a flange, *e⁵*, as seen in Fig. 3. The proper position for said roller with respect to the straight tracks is opposite to the one diverging, placed a distance from a longitudinal central line equal to half the diameter of the roller added to half the width of the shoe of the drop-lever. The diverging track C² has its corresponding plate D' and roller E'. The position of roller E with respect of the open switch is such that the shoe of the drop-lever will come in contact with said roller when the front wheel of the car has arrived at the open switch.

35 The actuating mechanism consists of a drop-lever, F, which is fastened to the front of the car-bed by means of a shaft, *f*, passing through two journal-bearings, *f' f'*, which are firmly bolted to the under side of the car-bed. This shaft passes through the two arms of the drop-lever, which are extended some distance to give greater rigidity to the structure and to resist lateral strain. These arms converge until they meet at a point, *f²*, where they are firmly welded together, then separating again to form the triangular shoe *f³*, as seen in Fig. 4. This shoe is so formed that when resting on the ground it is parallel therewith, and at a point, *f⁴*, where it meets the two arms, being the narrowest part of the shoe, it is made to rise in almost a vertical line, so that it may escape contact with the flange of guide-roller E.

A spring, G, is so arranged as to draw the

drop-lever F at all times to the top when it is left free to act. Many other forms of springs, as well as a counter-weight, will, however, serve the same purpose.

5 The hand-lever H, which is also permanently fastened to F, rises from its point of attachment, passing through a slot in the platform of the car, and is surmounted with a suitable handle, *h*. A pedal may be attached, as seen at *h'*,
10 so that the operator can switch the car by hand or by foot. A shield, *h²*, is placed over the pedal to prevent the accidental depression of drop-lever F.

In operation my invention is as follows:
15 When the driver desires to run on the straight track, no attention on his part will be necessary. If he desires to run on the diverging track C', he will draw handle *h* toward him, so as to depress drop-lever F at such a point that its shoe
20 *f³* will come in contact with roller E. The shoe will thus come in contact with the roller at its narrow portion *f⁴*, and as the car moves forward the diverging sides of the shoe *f³* will force the car toward the diverging track, so
25 that the front wheel of the car will enter the open switch *c*. The rear wheels will automati-

cally follow. As soon as the wheel has entered the open switch, the operator releases the handle or pedal, when the spring G again elevates the drop-lever F. The same operation applies
30 to diverging track C².

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

1. The flanged roller E, pivoted, as described,
35 on the track, in combination with triangular shoe *f³*, attached to or made a part of drop-lever F, as described.

2. In combination with drop-lever F and its pedal *h'*, the shield *h²*, which prevents said
40 pedal from being accidentally depressed, substantially as set forth.

3. The drop-lever F, consisting of two converging bars united at their lower ends, and having a triangular shoe, *f³*, formed in one
45 piece therewith, and arranged to be parallel with the earth when resting thereon, substantially as set forth.

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