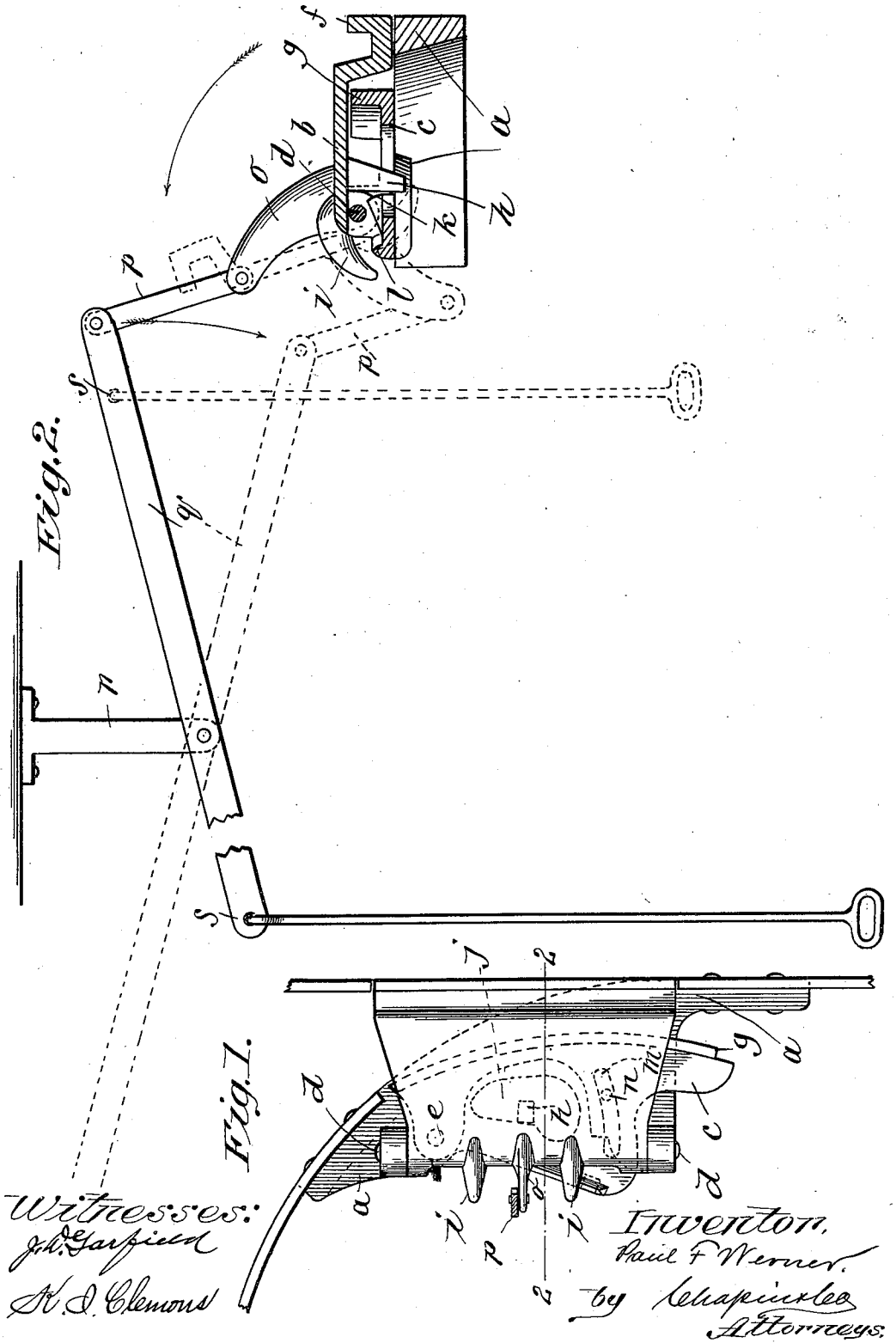
No. 651,561. Patented June 12, 1900.

P. F. WERNER.

SWITCH FOR OVERHEAD TROLLEY TRACKS.

(Application filed Apr. 12, 1900.)

(No Model.) 2 Sheets—Sheet 1.



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Fig. 3

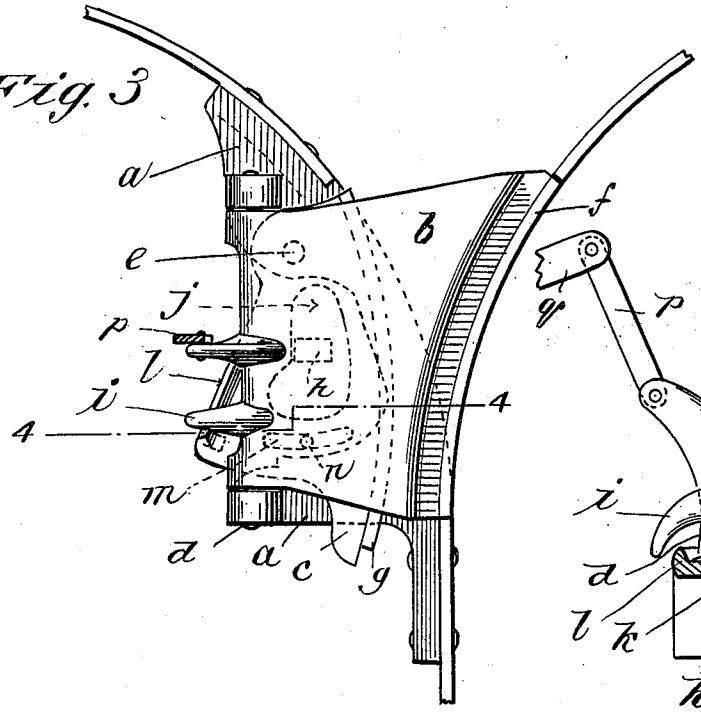


Fig. 4.

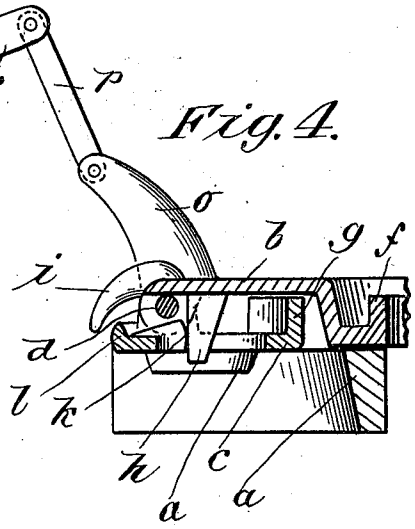


Fig. 5.

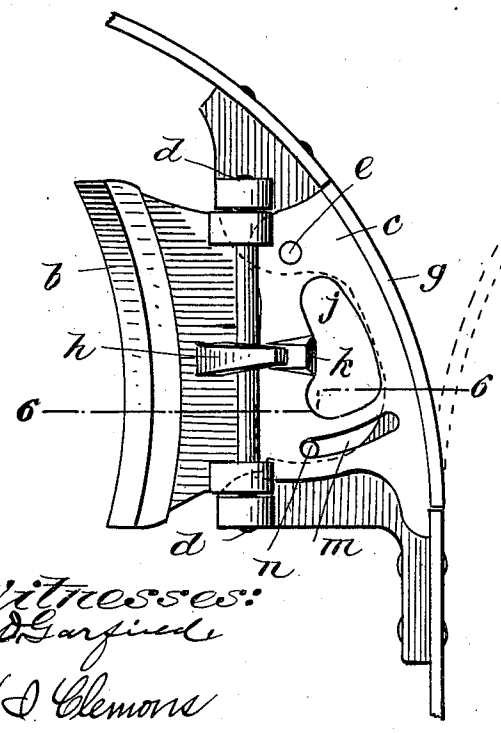
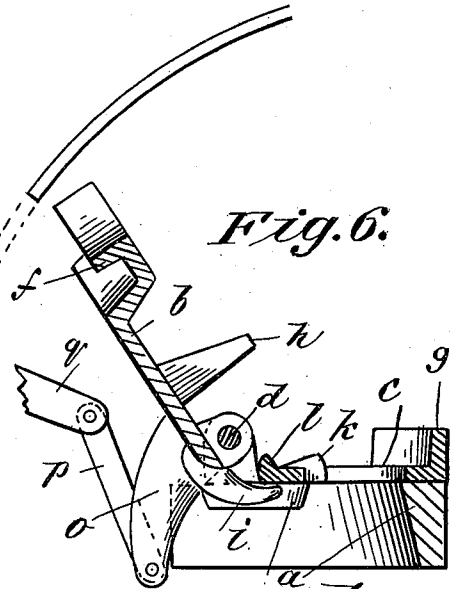


Fig. 6.



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UNITED STATES PATENT OFFICE.

PAUL F. WERNER, OF SPRINGFIELD, MASSACHUSETTS.

SWITCH FOR OVERHEAD-TROLLEY TRACKS.

SPECIFICATION forming part of Letters Patent No. 651,561, dated June 12, 1900.

Application filed April 12, 1900. Serial No. 12,622. (No model.)

To all whom it may concern:

Be it known that I, PAUL F. WERNER, a citizen of the United States of America, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Switches for Overhead-Trolley Tracks, of which the following is a specification.

This invention relates to switches for overhead-trolley tracks, one object thereof being to provide a switch of such construction that it may be adapted to whatever arrangement of intersecting tracks that may be constructed, either curved or straight, or any combination of the curved and straight tracks together.

Another object of the invention is to provide means for operating the switches either from a position near the latter or remote therefrom.

The invention consists in the construction described in the following specification and pointed out in the claims.

In the drawings forming part of this specification, Figure 1 is a plan view of a switch embodying this invention adapted to operate at the junction of a curved with a straight track. Fig. 2 is a section on line 2 2, Fig. 1, and showing means for operating the switch. Fig. 3 shows the switch adapted to operate at the junction of two curved tracks, the switch being set for the right-hand track. Fig. 4 is a sectional view of the switch in Fig. 3 on line 4 4. Fig. 5 is a view of the switch shown in Fig. 3 set for the left-hand track. Fig. 6 is an end elevation of Fig. 5.

It has not been considered necessary to show in the drawings all of the different forms of track intersections to which this switch is applicable; but enough has been shown to illustrate its adaptability to any combination. That shown in Fig. 1, where a curved track merges into a straight, can be readily altered to adapt it to two straight tracks merging in like manner by making the curved members of the switch straight, and a mere reversal of the said curved members will adapt the switch to operate on a track entering the straight track from the right instead of the left hand side. The same is true of the construction shown in Figs. 3 and 5.

The various parts of the switch are made of some suitable metal, as cast-iron.

Referring now to the drawings, for each switch I provide a base-plate *a* of such form as to adapt it to the particular place in which it is to be located, and this plate serves not only as a support for the movable members of the switch, but also serves to unite rigidly the converging parts of the tracks. As shown in the various figures, the continuity of the tracks is broken at the switch locations, and two movable switch members *b* and *c* are provided for each switch. *b* is the upper member and is pivoted on the base-plate *a* at *d*, and its outer edge is made either curved or straight to conform to the track of which it forms a part. In Fig. 1 it is of one form and in Figs. 3 and 5 of another. The switch member *c* is the lower member and lies under the member *b* when the latter is in operative position, as in Figs. 1 and 3, and is operated by the swinging movements of the switch member *b*, which has a swinging movement toward and away from the base-plate *a*, and the member *c* has a horizontal swinging movement on the top of said plate, it being pivotally secured thereto by one corner thereof, as at *e*. The outer edges of the members *b* and *c* constitute short sections of each of the two converging tracks, that on the member *b* being indicated by *f* and that on the member *c* by *g*, and when the member *b* is in operative position, as in Figs. 1 and 3, the member *c* is withdrawn thereunder, and the track-section *f* on *b* will then form one continuous line with two separated ends of the tracks which converge at the switch. If the member *b*, however, be thrown upward and backward, as in Fig. 6, the member *c* will by that movement be swung forward so that its track-section *g* thereon will register with two other separated ends of the tracks converging at the switch, thus forming a continuous line of track leading in another direction from that formed with the aid of the member *c*.

The means whereby the member *c* is operated by the member *b* are provided by the location of a short rigid arm *h* (seen in Figs. 2, 4, and 6) on the under side of the member *b* and projecting at right angles therefrom and of one or more curved arms *i i*, extend-

ing from the rear edge of the member *b* outward and slightly downward. A hole *j* is made through the member *c*, through which the arm *h* may pass when the member *b* is swung downward from the position it occupies in Fig. 6 to that shown in Fig. 4. In its descent the arm *h* strikes the edge of the hole *j* and forces the member *c* from the position it occupies in Fig. 5 to that shown in dotted lines in Fig. 3. When the member *b* is swung in the opposite direction, the curved arms *i i* will engage the rear edge of the member *c* and push it forward into proper registering position with the tracks.

The base-plate *a* is cut away at its rear side, as shown by its dotted outline in Fig. 5, to the end that the arms *h* and *i i* may act on the member *c*, as described.

In Fig. 1 two arms *i* are shown, whereas but one is shown in Fig. 3, and in explanation thereof it may be said that in some forms of switches the member *c* may be used either right or left handed, and in that case two arms *i* would be provided, though only one would be in use with a given member *c*—viz., that farthest away from the pivotal point of the member. The member *b* may be provided with either one or two arms *i*, according to the requirements of the construction.

The member *b* is made of such form as will adapt it to close down over the member *c* and at the same time bring its track-section into the same horizontal plane with that of the last-named member.

Those portions of the member *c* against which the arms *h* and *i* bear may be thickened up, as indicated at *k* and *l*, to provide against the too-rapid wear of said member at those points.

A groove *m* is preferably cut through the member *c* concentric with the pivotal point of said member and a pin *n* passed through said groove and secured in the base-plate *a*, whereby the degree of swinging movement permitted to said member may be limited.

It is desirable to provide means for operating the member *b* of the switch in either direction either at the switch proper or from some point remote therefrom, and to this end a short arm *o* extends from the rear side of the member *b* upwardly and rearwardly, which is connected, by means of a link *p*, with a lever *q*, which may be of any desired length and which at some point between its two extremities is pivotally supported on a suitable hanger *r*. Holes *s* are made in said lever at different points thereon, with which a hand-hook may be engaged to swing said lever in a vertical plane to impart the desired movement to the member *b*.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The combination with two interrupted converging lines of track, of a switch member adapted to swing in a vertical plane into and out of a position of registration with one of said tracks, and a second switch member adapted to swing in a horizontal plane into and out of a position of registration with the other of said tracks, whereby said members may constitute a continuation of each of said tracks, substantially as described.

2. The combination with two interrupted converging lines of track, of a switch member adapted to swing in a vertical plane into and out of a position of registration with one of said tracks, and a second switch member adapted to swing in a horizontal plane into and out of a position of registration with the other of said tracks, one of said members being automatically operated by the other, and whereby said members may constitute a continuation of each of said tracks, substantially as described.

3. The combination with two interrupted converging lines of track, of a switch member adapted to swing in a vertical plane into and out of a position of registration with one of said tracks, and a second switch member adapted to swing in a horizontal plane into and out of a position of registration with the other of said tracks, said second member being automatically operated by said first-named member, whereby, when the latter is moved into operative position, said second member will be moved out of operative position, and vice versa, substantially as described.

4. A track-switch comprising one switch member adapted to be swung vertically into and out of operative position; a second switch member adapted to be swung horizontally into and out of operative position, and means on one of said members adapted to engage the other of said members, whereby the movement of one will effect the movement of the other, as described.

5. A switch for overhead-trolley tracks comprising a plate uniting two ends of an interrupted track, a switch member adapted to move horizontally on said plate to complete said track, and a second member adapted to swing vertically on said plate to form a continuation of a track approaching said plate, with one end of the track secured thereto, substantially as described.

6. The combination with two interrupted converging lines of track, of a switch member adapted to swing in a vertical plane into and out of a position of registration with one of said tracks, and a second switch member adapted to swing in a horizontal plane into and out of a position of registration with the other of said tracks, said second member being automatically operated by said first-named member, whereby, when the latter is moved into operative position, said second member will be moved out of operative position, and vice versa, combined with means for operating said vertically-swinging member from a position near to or remote from said switch, substantially as described.

7. A switch for overhead-trolley tracks com-

prising a plate uniting two ends of an interrupted track, a switch member adapted to move horizontally on said plate to complete said track, and a second member adapted to swing vertically on said plate to form a continuation of a track approaching said plate, with one end of the track secured thereto, combined with a lever, a link on one end thereof, pivotally connected to said vertically-moving member, whereby the actuation of said lever may impart swinging movements to said member, substantially as described.

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