No. 721,484 PATENTED FEB. 24, 1903.

P. F. WERNER.

SWITCH FOR OVERHEAD TROLLEY TRACKS.

APPLICATION FILED JULY 11, 1901.

NO MODEL.

Fig. 2.

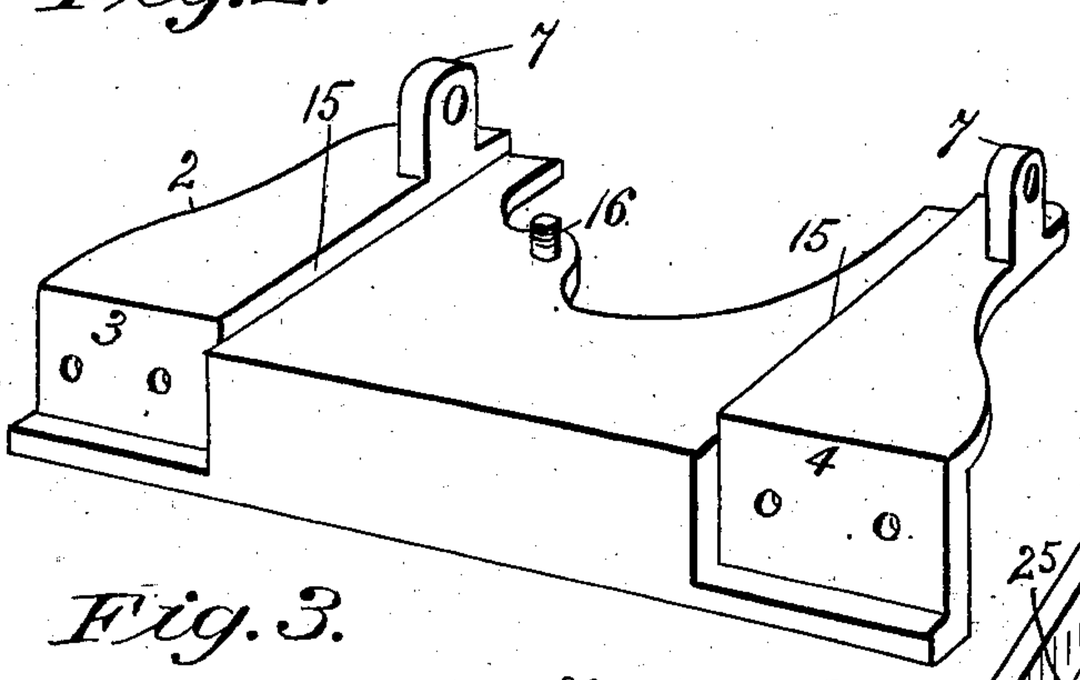


Fig. 1.

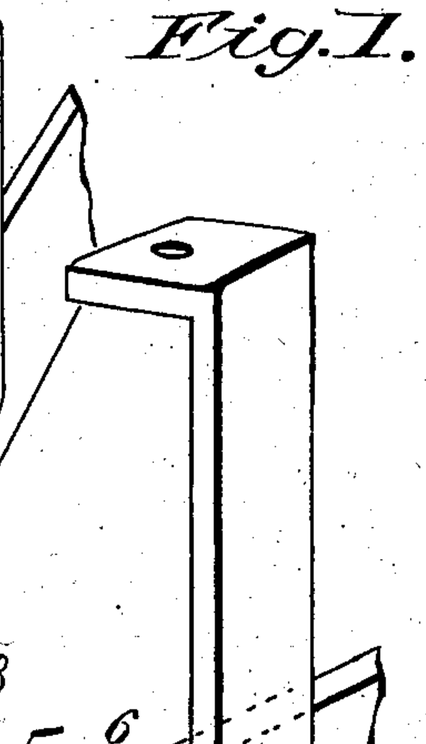


Fig. 3.

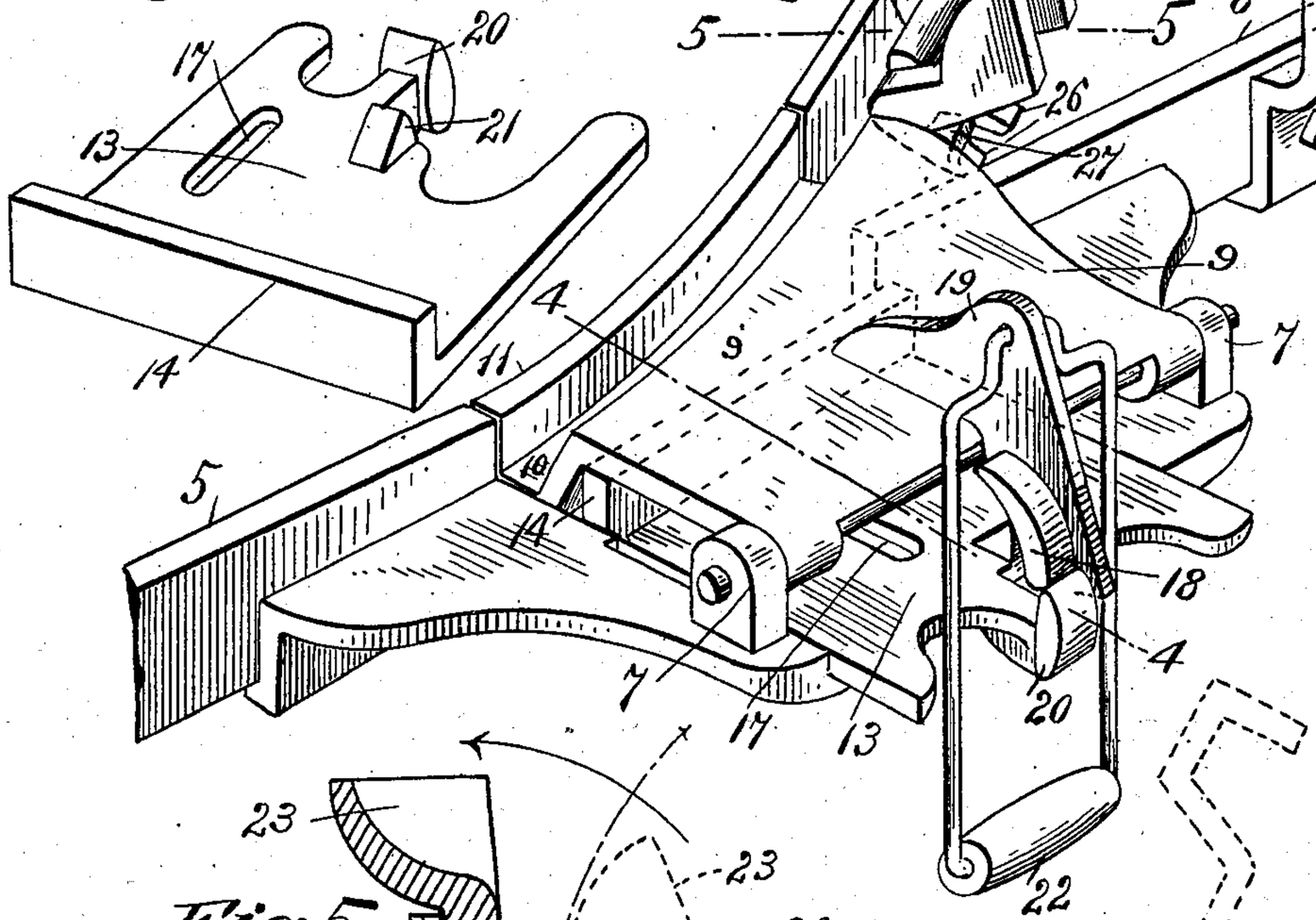


Fig. 5.

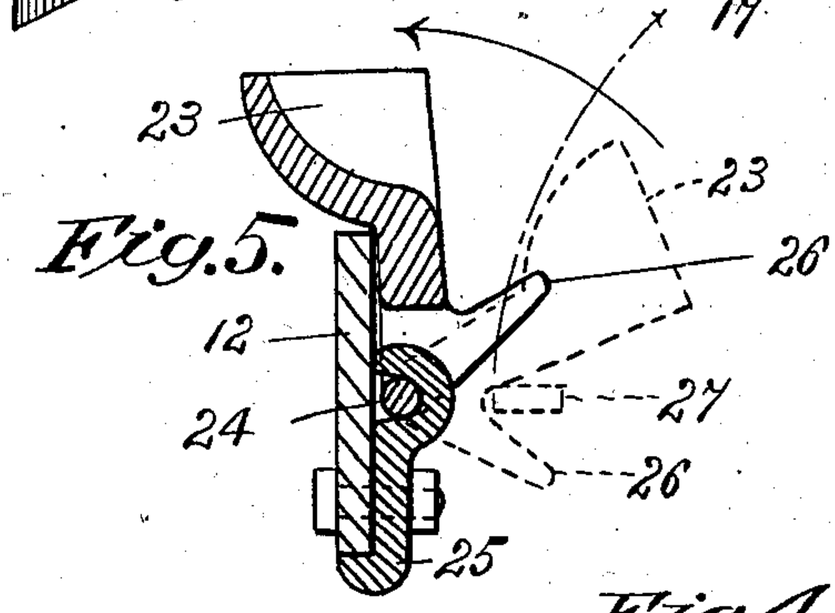
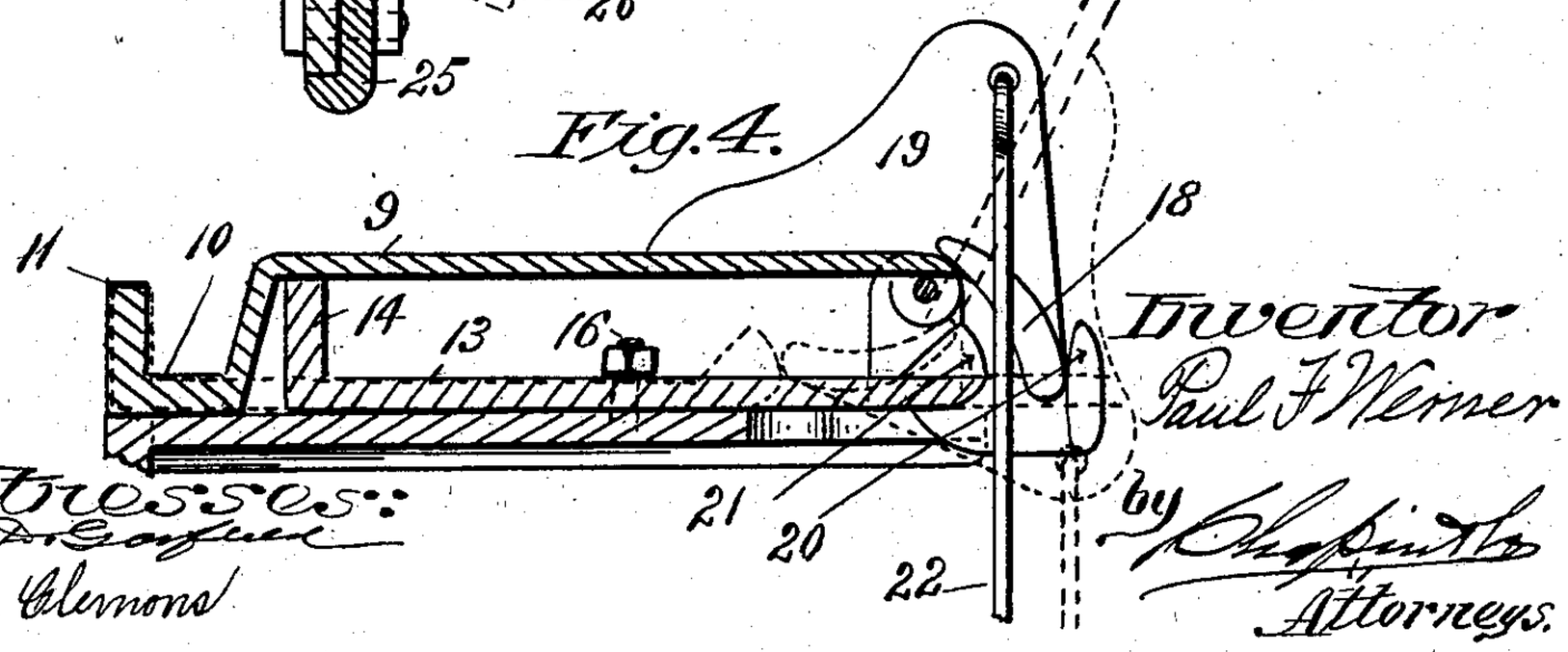


Fig. 4.



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UNITED STATES PATENT OFFICE.

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SWITCH FOR OVERHEAD-TROLLEY TRACKS.

SPECIFICATION forming part of Letters Patent No. 721,484, dated February 24, 1903.

Application filed July 11, 1901. Serial No. 67,859. (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 Willimansett, 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 tracks, and has special reference to a switch for the flat-bar tracks, such as are used in warehouses, and which consist in flat steel bars supported edgewise on brackets secured to the ceiling, the object of the invention being to provide a switch whereby when the switch member is in line with each end of an interrupted track the passage thereover of a carrier will not operate to throw said switch member out of line with the track; and a further object is to provide means operated by the switch whereby when the main line is operative the side track forming a junction therewith may be blocked, which blocking means may be operated automatically to clear the side track at the proper time.

In the drawings forming part of this application, Figure 1 is a perspective view of a portion of the main and of the side track having my invention applied thereto. Fig. 2 is a perspective view of a plate to which the ends of an interrupted main line of tracks are secured and which carries the switch members. Fig. 3 is the switch member for the main track. Fig. 4 is a sectional view on line 4 4, Fig. 1. Fig. 5 is a sectional elevation on line 5 5, Fig. 1, the parts, however, being in a different position.

In carrying my invention into practice the support for the switch member (which is clearly shown in Fig. 2 and indicated by 2) is a cast-iron plate adapted to receive on the squared surfaces 3 and 4, lying at right angles to the upper surface of said plate, two ends of an interrupted main track, which ends are shown in Fig. 1 and indicated by 5 and 6. This plate 2 when secured to the ends of the track rigidly unites the latter. On said switch member support or plate 2 are two upstanding lugs 7, in which is pivoted the switch member 9. The outer edge of this member has formed therein a channel 10, the outer wall 11 of which constitutes the continuation of a rail 12 of the side track and constitutes when in operative position a connecting-section of track between the end of said side track 12 and the end 5 of the main track. When this member 9 is raised to the position shown in dotted lines in Fig. 4, it makes a break between the end 5 of the main track and 12 of the side track and effects the movement of another switch member 13, (shown in Fig. 3,) which carries on its forward edge a connecting portion of track (indicated by 14) which constitutes a continuation of the straight track when in operative position. This switch member 13 is let into the plate 2, to the end that the upper surfaces of both may be flush and to the end that this member 13 may be thereby guided in its reciprocatory movement toward and from the main track by its confinement between the two parallel walls 15. At any convenient point on the plate 2 there is a stud 16, which projects through a slot 17 in the switch member 13 and limits the reciprocatory movements of the latter toward and from the track. This stud may be provided with a nut if required.

To operate the switch member 13 to swing it toward the main track when the switch member 9 is raised and to retract said member when the member 9 is lowered, there is provided a cam projection (indicated by 18) on said member 9. This projection is located on the side of a web 19, cast on the top of said member 9, the lower end of which web hangs down below the axis of said member and in position to engage with the two cam-surfaces 20 and 21 in the switch member 13. Said web 19 has secured thereto an operating-handle 22, which may be of any desired construction, whereby the member 9 may be raised and lowered to break the connection between the side and the main track and to operate the switch member 13 to produce a continuous main track. When the switch member 9 is swung from the position shown in Fig. 1 to the position shown in dotted lines in Fig. 4, the cam projection 18 will strike the cam-surface 21 on the switch member 13, and as the member 9 rises this member 13 will be

forced forward to the position shown in dotted lines in said figure, and its upturned edge 14, which constitutes a short section of track, will fill the gap between the ends 5 and 6 of the main track. When the switch member 9 is swung down again to break the main line and establish communication between it and the track 12, then the projection 18 will swing against the cam-surface 20, and as the member 9 falls the member 13 will be retracted. It will be observed by referring to Fig. 4 that when the switch member 13 is forced forward the lower end of the cam projection 18 will when said switch member reaches the limit of its forward movement be so nearly in line between the axis on which it swings and the cam-surface 21 as to practically constitute a block for the member 13, whereby it is held in its proper relation to the separated ends of the main track.

Heretofore in switches of this character the member 13 has been constructed to swing on a pivot into and out of operative relation to the ends of the track; but it has been found in practice that if for any reason the track-section 14 did not register accurately with the end of the track when a load was sent quickly over the track the wheel of the carrier striking against the edge of said swinging switch member would throw it back, thus operating the switch automatically and frequently causing trouble from breakage; but with a switch member 13 which has a movement directly at right angles to the track and is strongly supported to move in that direction only by being let into the top of the plate 2 this disadvantage is avoided.

In switches of this character as heretofore made when the member 9 is raised to establish a clear main track the end of the side track has been left unblocked, so that a carrier coming down said side track would run off of the track 12, and provision is made herein for guarding against such an accident by providing for automatically blocking the side track when the main track is in use. When the side track is in use, the main track is of course blocked by the member 9, which lies across it. The construction of this track-blocking device is clearly shown in Figs. 1 and 5, and it consists in a block 23, pivotally supported on the side of the end rail of the side track near the end of said rail. This block may be supported thereon in any convenient way which will permit it to be swung up over the top of the track and to swing down to one side thereof, as shown in dotted lines, far enough to permit the flanged wheels of the carrier to pass over the track without striking the block. In the drawings this block has been shown as having its lower extremity bifurcated and a pivot-pin 24 passing through said bifurcated ends or cast integrally thereon in a position to be engaged by a clip 25, bolted to the rail near its lower edge. On the lower edge of the block 23 a projection 26 is provided extending outwardly from the rear side of the block, as shown in Fig. 5. The block is so located that this projection 26 will lie in the path of a pin or stud 27 on the side of the switch member 9 when the latter falls, and this pin striking the said projection will cause the block 23 to swing back from its position over the track 12, leaving the latter clear. As the block falls to the position shown in dotted lines in Fig. 5 it falls back on the said pin 27, so that when the switch member 9 is raised to again establish a clear main track the first movement of the member 9 will throw the block 23 up over the top of the track 12, securely blocking it. It will be observed that the shape of the block 23 is such that it will be held in track-blocking position by the weight of that part thereof which overhangs said track. It should be observed that the block 23 being securely held close to the surface of the track it forms a very secure and rigid block and one capable of withstanding the shock of a carrier whatever may be the weight on the latter.

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

1. The combination with a switch-plate to which the ends of two converging lines of track are secured, of a switch member pivotally mounted in said plate to swing in a vertical plane into and out of registration with one of said tracks; a second switch member slidable horizontally on said plate in a straight line into and out of registration with the other of said tracks; means of engagement between said plate and said sliding switch member located substantially at right angles to the track, and track portions on said switch members each constituting a continuation of one of said tracks.

2. The combination with a switch-plate to which the ends of two converging lines of track are secured, of a switch member pivotally mounted on said plate to swing in a vertical plane into and out of registration with one of said tracks; a second switch member slidable horizontally on said plate in a straight line into and out of registration with the other of said tracks; means of engagement between said slidable member and said plate, located substantially at right angles to the track, a blocking device for one of said tracks and secured thereto, and means of engagement between said device and one of said switch members, whereby the movements of the latter to effect the opening of one line of track may operate said device to effect the blocking of the other line, and vice versa.

3. In combination with two converging lines of track and a switch therefor comprising a vertically-swinging switch member, and another member slidable bodily at right angles to the track, and means for moving the same; a blocking device for one of said tracks consisting of a pivotally-supported block secured

to the track, and means of engagement between said block and one of said switch members whereby the movements of the latter to effect the opening of one line of track may operate said device to effect the blocking of the other line and vice versa.

4. The combination with a switch-plate to which the ends of two converging lines of track are secured, of a switch member pivotally mounted in said plate to swing in a vertical plane into and out of registration with one of said tracks; a second switch member slidable horizontally on said plate into and out of registration with the other of said tracks, there being a depression in said plate located about at right angles to the track, the sides of which depression serve as guides for the sliding switch member; track portions on said switch members, and means for moving the latter to bring the track portions thereon into registration with the ends of the converging lines of track.

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