No. 764,781. PATENTED JULY 12, 1904

W. J. SUMNER.

SWITCH FOR OVERHEAD TROLLEY TRACKS.

APPLICATION FILED FEB. 6, 1904.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

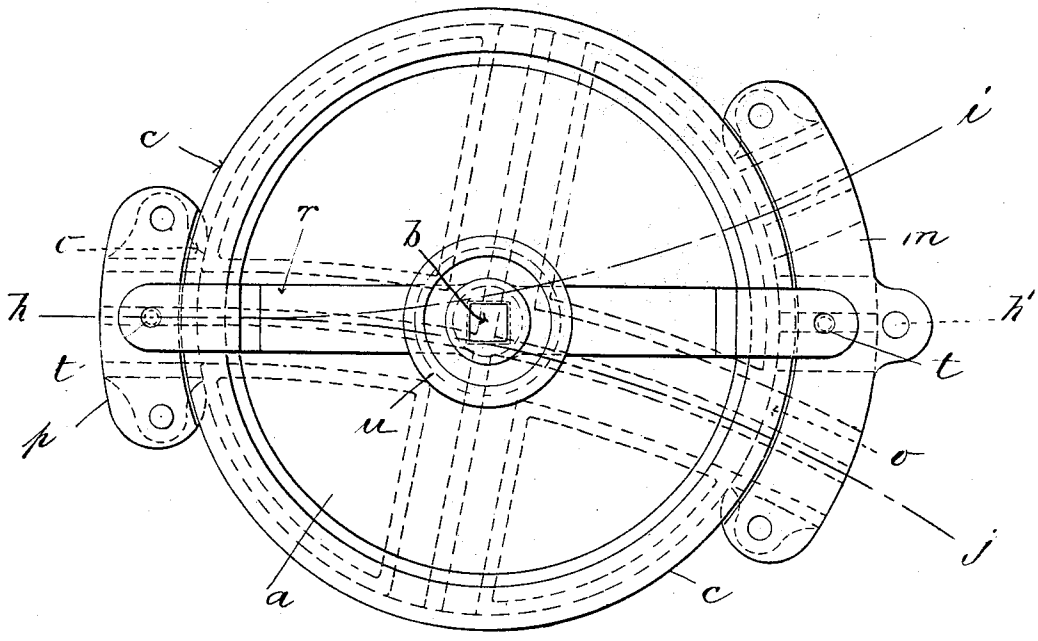
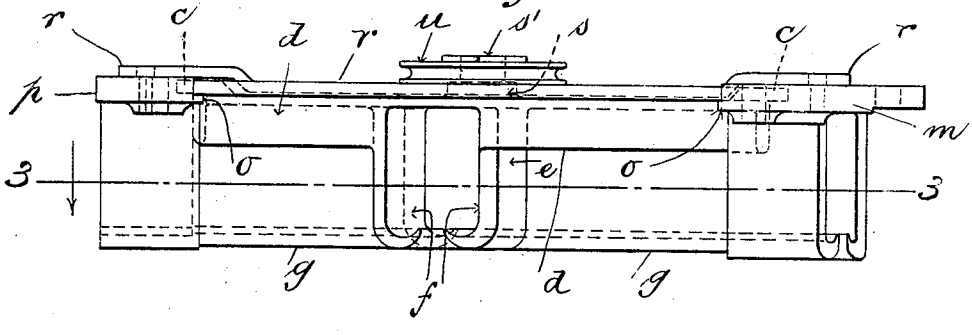



Fig. 2.




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NO MODEL. 2 SHEETS—SHEET 2.

*Fig. 3.*

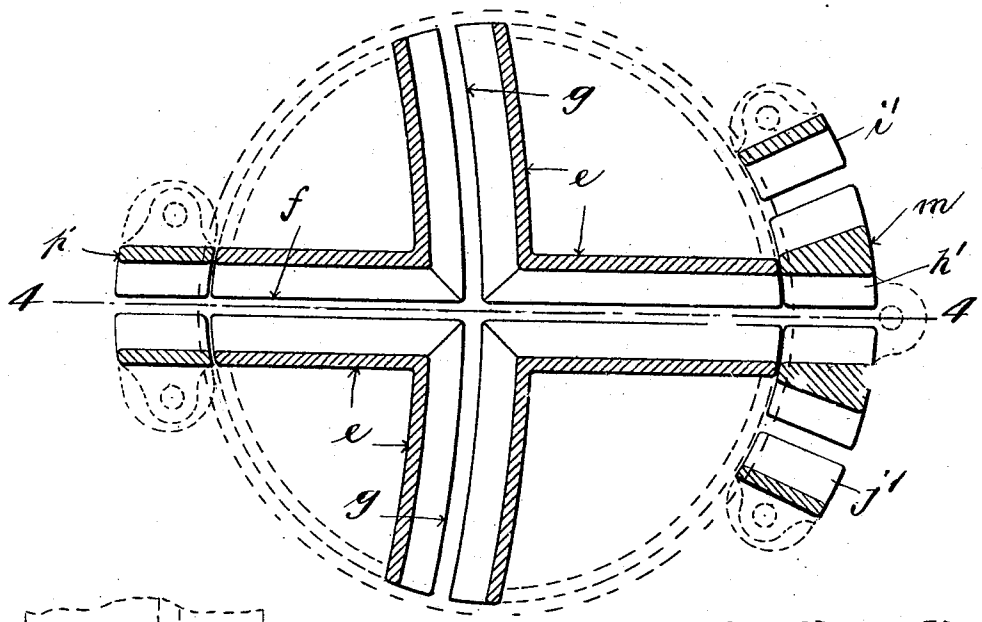
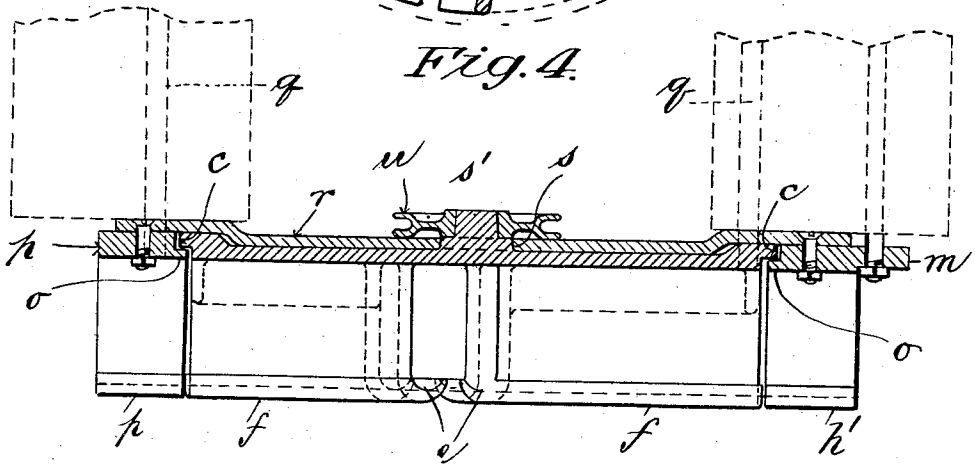



*Fig. 4.*




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# UNITED STATES PATENT OFFICE.

WILLIAM J. SUMNER, OF HOLYOKE, MASSACHUSETTS, ASSIGNOR TO COBURN TROLLEY TRACK MANUFACTURING COMPANY, OF WILLIMANSETT, MASSACHUSETTS, A CORPORATION.

## SWITCH FOR OVERHEAD-TROLLEY TRACKS.

SPECIFICATION forming part of Letters Patent No. 764,781, dated July 12, 1904.

Application filed February 6, 1904. Serial No. 192,352. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM J. SUMNER, a citizen of the United States of America, residing at Holyoke, 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, the object of the invention being to provide an improved switch of this character adapted to operate in connection with either a right-hand or a left-hand branch line entering the main line, or both, a single track on the switch mechanism being arranged to serve both the right and left hand branches.

A further object of the invention is to provide a construction which may be easily set up in operative position without the use of special skilled labor, a still further object being to provide a switch of the character described so constructed that the movable element of the switch may be maintained in its proper relation to the ends of the interrupted tracks as to permit the frictional surfaces of the parts to be greatly reduced.

Referring to the drawings accompanying this specification, Figure 1 is a plan view of the upper side of a switch constructed to operate between a main line and its right and left hand branches. Fig. 2 is a side elevation of the same. Fig. 3 is a sectional plan in the plane of line 3 3, Fig. 2. Fig. 4 is a sectional elevation in the plane of line 4 4, Fig. 3.

Referring now to the drawings, *a* indicates a circular switch-plate which is rotatable on a fixed axis, (represented by *b*,) the plate being of the turn-table type. The edge of the plate comprises a horizontally-extending flange *c*, (shown very clearly in Fig. 4,) on which the plate is supported, and depending from the under side of the plate, near the flange *c*, is the vertically-disposed flange *d*, which is concentric with the axis of the plate and extends circumferentially around the latter between the tubular track portions *e*, which are cast on the under side of the plate, of such shape as to constitute a prolongation of the interrupted main and branch lines.

In the drawings shown herein the switch represented is one adapted to be located in an overhead track of inverted-**U** shape in cross-section, the track portions being formed by curving inward the lower edges thereof, leaving a space between said edges, the trolley running within the track and a pendant therefrom extending through the space between the lower edges thereof.

The switch illustrated herein is, as stated, adapted to serve a main line with a right and left hand branch, and to that end the plate *a* has located thereon a tubular track portion extending in a straight line diametrically across the plate and serving as a continuation of the main line of the track, (this track portion being indicated specifically by *f*.) Crossing this track portion axially of the plate *a* is a curved track portion, (specifically indicated by *g*,) the curve of this track portion being such that when one end thereof is swung around into registration with one end of the main line, as shown in Fig. 1, the other end thereof will be in registration with the right-hand branch line. To more clearly designate these, the main line is indicated by a line *h* on one side and *h'* on the opposite side of the plate *a* and the branch lines by a line *i* for the left-hand branch and by a line *j* for the right-hand branch. If now the plate *a* be swung around to bring that portion of the track thereon which is in registration with the branch *j* into registration with the main line *h*, then that portion thereof now in registration with said main line will be swung into position to register with the left-hand branch *i*. The track portion *f* of the main line may be swung around in the same manner to bring its ends into registration with the interrupted ends of the main line, which movement will result in a corresponding displacement of the curved track portion *g*. When such displacement occurs, the depending flange *d* will cover enough of the ends of the lines of the track not in use to block said lines, and thus hold a trolley-carrier entirely within the track of one end of the main or

branch until such time as the proper track portion on the switch-plate is brought into registering position with said tracks.

The ends of the branch lines *i* and *j*, together with one end of the main line, terminate in a curved head *m*, in which these track ends enter and are supported, which head, as shown in Fig. 4, is provided with a lip *o*, adapted to extend under the flange *c* of the plate *a* to serve as a support for one side thereof. Diametrically opposite this head *m* is a smaller head *p*, in which one end of the main line is supported and which is also curved and provided with a lip *o* on the inner edge thereof on which the flange *c* may be supported. This head *p* and the head *m* have located thereon short track portions, (indicated by *p'* on the head *p* and by *i'*, *h'*, and *j''* on the head *m*,) in which are entered the ends of the tracks. On each of these heads, as shown in the drawings, suitable ears are cast through which bolts, as *q*, Fig. 4, may pass to secure the heads in proper position relative to the track. With the heads located, as shown herein, diametrically opposite each other and having relatively restricted bearing-surfaces for the switch-plate a bearing for the latter is provided to hold the plate in proper position relative to the bearing-surfaces, whereby it may rotate freely thereon without binding, and to this end a strap *r* is provided having a round hole formed in the center thereof which will fit down over a circular boss *s*, cast at the center of the plate *a*, other holes being formed in each end of the strap *r*, into which pins *t* may enter, (which pins are located, respectively, in the heads *m* and *p* when the parts are all in position,) and when these heads are screwed up to their supports the strap *r* will be clamped tightly between said heads and the supports to which the latter are secured and the plate *a* thus secured in a fixed relation to both heads.

Centrally of the boss *s* on the plate *a* and extending above it is cast the squared extension *s'*, over which is fitted a sprocket or other form of wheel *u*, around which a chain or other flexible connection may be passed, whereby the plate *a* may be rotated to bring any one of its track-sections into registration with the interrupted ends of the tracks.

The strap *r* serves not only to center the plate *a* relative to the heads *m* and *p*, but it serves also as means to unite these heads and the plate together in such relation that it becomes necessary only in setting up the switch to block it up against the ceiling in proper position and screw the heads up firmly to the latter, these heads and the plate being so held by the strap that it becomes necessary only for the workman to see that the extremities of the heads do not bear at one end or the other against the edge of the flange *c* on the plate, no other skill than this being required. When all the parts are in position, the strap centers the plate accurately between the heads, thus assuring the free rotation thereof.

It is seen from the foregoing description that the plate *a* is swung into position to bring the track-section thereon into registration with the interrupted ends of the main or branch line before the load is placed upon the plate, and when the plate is so adjusted the other track-passages through the head *m* will be closed by the depending flange *d* on the plate. This is unlike any of the switch constructions of the turn-table type with which I am familiar, as in these constructions the trolley is generally run onto the track-section on the plate, the latter, with its load, then being swung around to bring the track portion into registration with that end of a main or branch line onto which it is desired to switch the carrier.

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

1. A switch for overhead-trolley tracks comprising suitable heads in which the ends of the interrupted main line and branch lines of the track are supported, a circular switch-plate located between said heads and bearing on the contiguous edges thereof, a track-section on said switch-plate extending across the latter, a bar pivotally engaging said plate centrally thereof and extending over said heads, and means of engagement between the latter and said bar whereby the position of said heads relative to the plate is determined, and suitable means to rotate the plate to locate the track-section thereon in registering position with two ends of the interrupted track.

2. A switch for overhead-trolley tracks comprising a circular switch-plate, track-sections thereon extending diametrically thereacross, angularly disposed one to the other; suitable heads located on opposite sides of said plate arranged to support the latter rotatably, and arranged to support the ends of interrupted main and branch lines, together with a bar having a pivotal engagement with the plate centrally of the latter, and means of engagement between the ends of said bar and said heads, whereby the relative positions of said heads and the plate may be determined, and suitable means to rotate the plate.

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