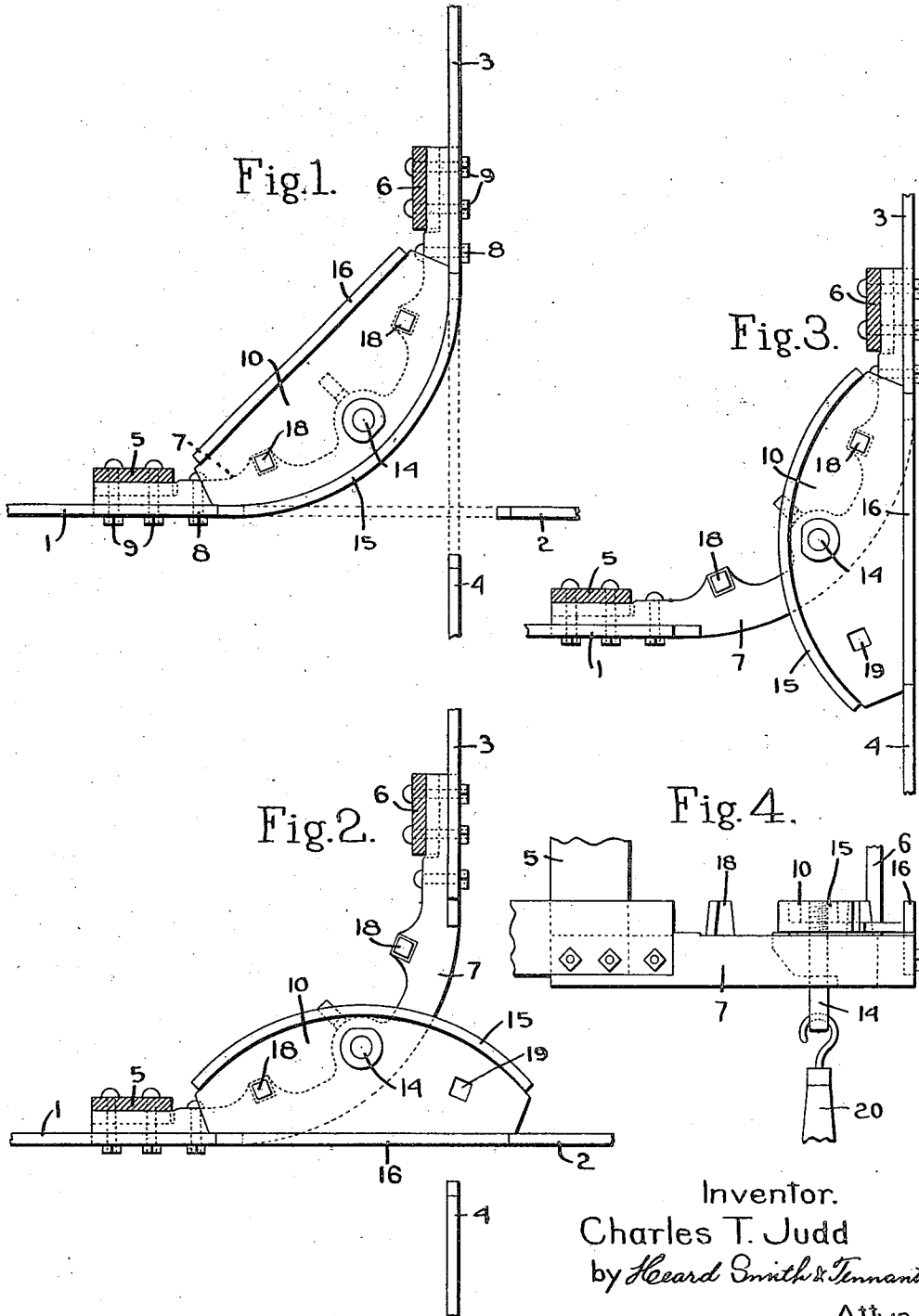


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OVERHEAD TRAMWAY COMBINED CUT THROUGH AND CURVE SWITCH.
APPLICATION FILED JULY 3, 1922.

1,435,608.

Patented Nov. 14, 1922.
2 SHEETS—SHEET 1.



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Fig. 5.

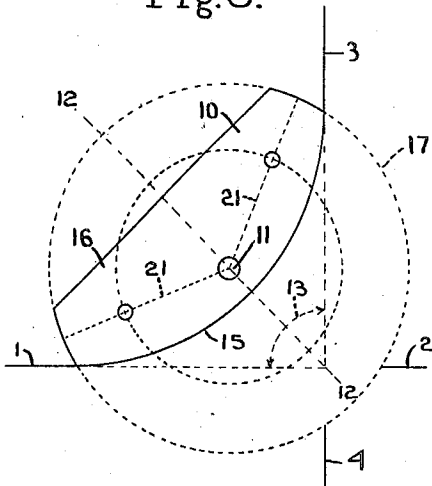


Fig. 6.

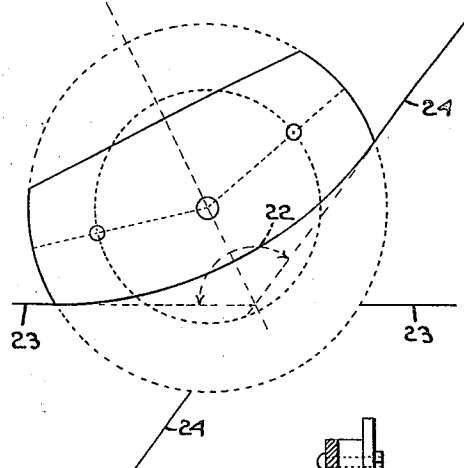


Fig. 7.

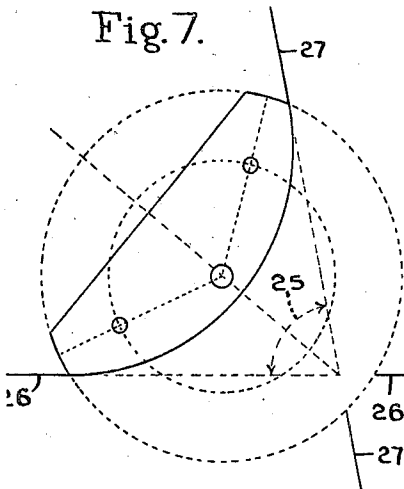


Fig. 8.

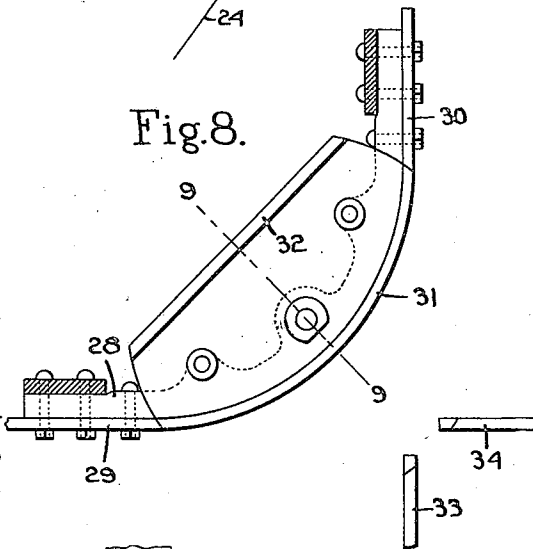
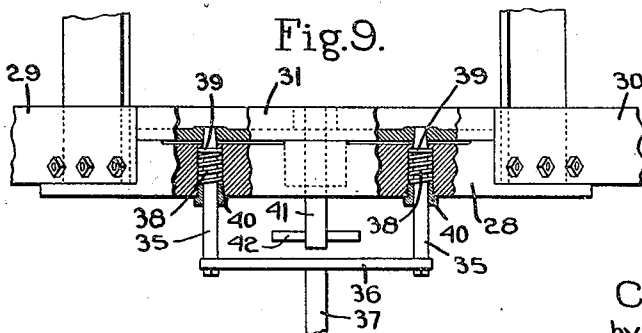


Fig. 9.



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UNITED STATES PATENT OFFICE.

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OVERHEAD TRAMWAY COMBINED CUT-THROUGH AND CURVE SWITCH.

Application filed July 3, 1922. Serial No. 572,424.

To all whom it may concern:

Be it known that I, CHARLES T. JUDD, a citizen of the United States, residing at Somerville, county of Middlesex, State of Massachusetts, have invented an Improvement in Overhead Tramway Combined Cut-Through and Curve Switches, of which the following description, in connection with the accompanying drawing, is a specification, like characters on the drawing representing like parts.

This invention relates to improvements in overhead switches for tramway rail systems such as are ordinarily used in beef houses, cold storage houses, and in other places where the load is suspended from a traveler riding along the rail system.

The object of the invention is to provide a switch for use in this type of rail system which can be shifted to connect either of two crossing rails or to connect by a curve from one of the crossing rails to the other. It is frequently desirable in this type of rail system to provide means by which the traveler may cut across either of two crossing rails on the other and also may be switched from one of the two crossing rails to the other. This invention enables this to be done by a single switching device.

The nature and objects of the invention will appear more fully from the accompanying description and drawings and will be particularly pointed out in the claims.

In the drawings,
Figure 1 is a top plan view of a preferred form of switch embodying the invention shown in position connecting one of two crossing rails with the other;

Fig. 2 is a view similar to Fig. 1 showing the switch in position connecting one of the two crossing rails;

Fig. 3 is a view similar to Fig. 1 showing the switch in position connecting the other of the two crossing rails;

Fig. 4 is an end elevation of the construction as shown in Fig. 3;

Fig. 5 is a diagrammatic view of the construction shown in Fig. 1;

Fig. 6 is a diagrammatic view similar to Fig. 5 for the case in which the switch is located in the obtuse angle between crossing rails which are not at right angles to each other;

Fig. 7 is a view similar to Fig. 5 in which

the switch is located in the acute angle between crossing rails which are not at right angles to each other;

Fig. 8 is a view similar to Fig. 1 of another form of switch embodying the invention;

Fig. 9 is a view partially broken away and in elevation looking along the line 9-9 of Fig. 8.

As the general type of overhead tramway system with which this invention is concerned is well known and familiar to those skilled in the art no description is necessary. Such a system comprises rails usually formed of flat bars of iron arranged vertically and supported from the ceiling by suitable hangers. The load, such, for example, as a carcass of beef, is suspended from a traveler which rides along the rail.

In the construction illustrated in Figs. 1 to 4 inclusive and diagrammatically in Fig. 5, portions of such a rail system are shown. In this case the flat rails 1 and 2 extend in a straight line in one direction forming a continuous line and the sections 3 and 4 extend at right angles to the first rail and cross. These rail sections are supported at suitable points by the hangers extending to the ceiling or overhead structures and two such hangers are shown at 5 and 6. The traveler rides along the top of the rails with its load suspended beneath and consequently the hangers must all be located on the same side of each rail so as not to interfere with the traveler.

In the case of rails crossing each other as the rails 1, 2 and 3, 4, it is desirable to enable the traveler to pass along either rail and cut through the other and it is also frequently desirable to enable the traveler to pass from one rail to the other. This invention provides a single switching device for accomplishing all of these results.

In the preferred form of this invention a bracket 7 is secured to both of the crossing rails in that angle having the rail hangers of both rails on the inside of the angle which in the case illustrated is the angle presented between the rail sections 1 and 3. This bracket 7 is firmly bolted in place to the rail sections 1 and 3 as by the bolts 8 and the bolts 9 which also secure the rail sections 1 and 3 to the hangers 5 and 6 respectively.

A turntable 10 is rotatably mounted on

the bracket 7 with its axis of rotation located on a line bisecting the angle between the rail sections 1 and 3. This will be clearly understood by reference to Fig. 5 where it will be seen that the axis of rotation 11 is located on the line 12—12 bisecting the angle 13. In the construction illustrated the turntable is thus mounted by means of a stud 14 projecting from the turntable down through a circular bearing in the bracket.

The turntable carries two rail sections shown as flanges projecting upwardly from the turntable. The rail section 15 is curved and of a length to connect the rail sections, such as 1 and 3, to which the bracket is secured and is shown in this connecting position in Fig. 1. The rail section 16 is straight and of a length to connect either of the crossing rails, that is, of a length to fill in either gap between the sections 1 and 2 or the gap between the sections 3 and 4. This straight section therefore is mounted on the turntable symmetrically with respect to the curved section 15 and at right angles to the bisecting line 12—12 when the curved rail section is in connected positions.

The design of the switch will be understood by reference again to Fig. 5. The axis of rotation 11 is so located on the switch bracket 7 that the ends of the rail sections 1, 3, 2 and 4 and both ends of both switch rail sections 15 and 16 lie on the same circle as 17. Hence by rotating the turntable connection may be made directly from the rail section 1 to the rail section 3 by means of the curved switch section 15 or directly from the rail section 1 to the rail section 2 or from the rail section 3 to the rail section 4 by means of the straight switch section 16.

In order to retain the turntable in either of its positions separable co-operating means on the bracket and turntable are provided.

In the form of construction shown in Figs. 1 to 4 the switch bracket for this purpose is provided with two upwardly projecting lugs 18 while the turntable is provided with co-operating apertures 19. The turntable is also mounted so that it may be elevated from the switch bracket as by pushing upwardly on a handle 20 secured to the stud 14. Hence to shift the switch between connecting positions the operator raises the turntable by means of the handle 20 to clear it from the lugs and then rotates the turntable and drops it back on the lugs in the new position.

In order to simplify the construction and provide a minimum number of co-operating lugs and apertures they are located equidistant radially from the axis of rotation 11 on radial lines 21 (see Fig. 5) extending midway the adjacent ends of the rail sections 15 and 16.

In the form of construction thus described

wherein the turntable is raised when being shifted between connecting positions the ends of the rail sections may be and are preferably squared off so that when either switch section is in either connecting position the ends of the switch sections abut squarely against the ends of the main rail sections. In the construction thus far described it has been assumed that the crossing rails are at right angles to each other but the principle is equally applicable to the cases illustrated diagrammatically in Figs. 6 and 7 where the rails 22 and 23 cross obliquely. In the case illustrated in Fig. 6 the switch is located in the obtuse angle 22 formed between the rails 23 and 24 while in the case illustrated in Fig. 7 the switch is located in the acute angle 25 formed between the rails 26 and 27. The location and determination of the center of rotation of the turntable, the co-operating lugs and apertures and the switch sections are based on the same principles as heretofore fully explained and as apparent from these diagrams.

In Figs. 8 and 9 is shown a slightly different form of switch embodying the same principles but in which the turntable is not lifted when shifted between connecting positions. The switch bracket 28 is connected as before to the rail sections 29 and 30 and the turntable is located and mounted and the switch rail sections 31 and 32 are located on the principles explained. In this case however the ends of the switch rail sections 31 and 32 and of the rail sections 28 and 30 to which the switch bracket is secured and of the rail sections 33 and 34 are all formed on the same circle so that the turntable may make connection by simple rotation into either of the desired positions. In order to enable this rotation to take place without the raising of the turntable the segmental co-operating retaining means must be modified from the construction already described. In the form illustrated, therefore, there are provided in the switch bracket 28 two vertical pins 35 which may conveniently be connected by a cross bar 36 provided with an operating handle 37. Within the body of the switch bracket and surrounding the pins 35 are located helical springs 38 seated at their upper ends against collars 39 on the pins and at their lower ends against ferrules 40 screwed into the switch bracket. The upper ends of the pins 35 are preferably conical and seat in correspondingly shaped apertures in the turntable. The stud 41 depending from the turntable is provided with a suitable handle 42.

In order to operate this form of switch the operator pulls downwardly on the handle 37 releasing the pins 35 from engagement with the turntable and then by means of the handle 42 rotates the turntable to its desired connecting position and then re-

leases the handle 37 allowing the pins 35 to be engaged with the apertures in the turn-table.

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

1. An overhead tramway combined cut through and curve switch to connect selectively either or both of two crossing rails comprising a bracket secured to both rails in that angle having the rail hangers of both rails on the inside of the angle, a turn table rotatably mounted on the bracket on an axis located on a line bisecting the said angle, a curved rail section of a length to connect the rails to which the bracket is secured and a straight rail section of a length to connect either of the crossing rails, both of said rail sections carried by the turning table, having their ends equidistant radially from the said axis and having their adjacent ends separated equidistantly, and separable cooperating means on the bracket and turn table for retaining the turn table in either of its connecting positions.

2. An overhead tramway combined cut through and curve switch to connect selectively either or both of two crossing rails comprising a bracket secured to both rails in that angle having the rail hangers of both rails on the inside of the angle, a turn table rotatably mounted on the bracket on an axis located on a line bisecting the said angle, a curved rail section of a length to connect the rails to which the bracket is secured and a straight rail section of a length to connect either of the crossing rails, both of said rail sections carried by the turn table, having their ends equidistant radially from the said axis and having their adjacent ends separated equidistantly, co-operating lugs and apertures on the bracket and turn table located equidistant radially from the said axis on radial lines extending midway the adjacent ends of the rail sections for retaining the turn table in either of its connecting positions.

3. An overhead tramway combined cut through and curve switch having the construction defined in claim 1 in which the turn table is vertically movable on the bracket to permit the separation and reengagement of the co-operating retaining

means and the rotation of the turn table between connecting positions.

4. An overhead tramway combined cut through and curve switch having the construction defined in claim 2 in which the turn table is vertically movable on the bracket to permit the separation and engagement of the co-operating lugs and apertures and the rotation of the turn table between connecting positions.

5. An overhead tramway combined cut through and curve switch to connect selectively either or both of two crossing rails comprising a bracket secured to one of the rails adjacent the crossing point, a turn table rotatably mounted on the bracket, a curved rail section of a length to connect the rails adjacent the bracket and a straight rail section of a length to connect either of the crossing rails both carried by the turn table, the said turn table acting when adjusted rotatably on the bracket either to place the curved rail section in position to form a continuous connection between the adjacent rails or to place the straight rail section in position to form a continuous connection of either crossing rail as desired.

6. An overhead tramway combined cut through and curve switch comprising the construction defined in claim 5 together with separable co-operating means on the bracket and turn table for retaining the turn table in either of its connecting positions.

7. An overhead tramway combined cut through and curve switch to connect selectively either or both of two crossing rails comprising a base mounted adjacent the crossing point of the rails in one of the angles between the rails and secured thereto and supported thereby, a switch support movably mounted on the base and carrying a curved rail section and a straight rail section the former of a length to connect adjacent rails and the latter of a length to connect either of the crossing rails, and means for moving the switch support upon the base to bring either of the rail sections into either connecting position as desired.

In testimony whereof, I have signed my name to this specification.

CHAS. T. JUDD.