July 6, 1965 G. L. PARKES ETAL 3,193,675

MARSHALLING SWITCH

Filed Aug. 11, 1960 3 Sheets-Sheet 1

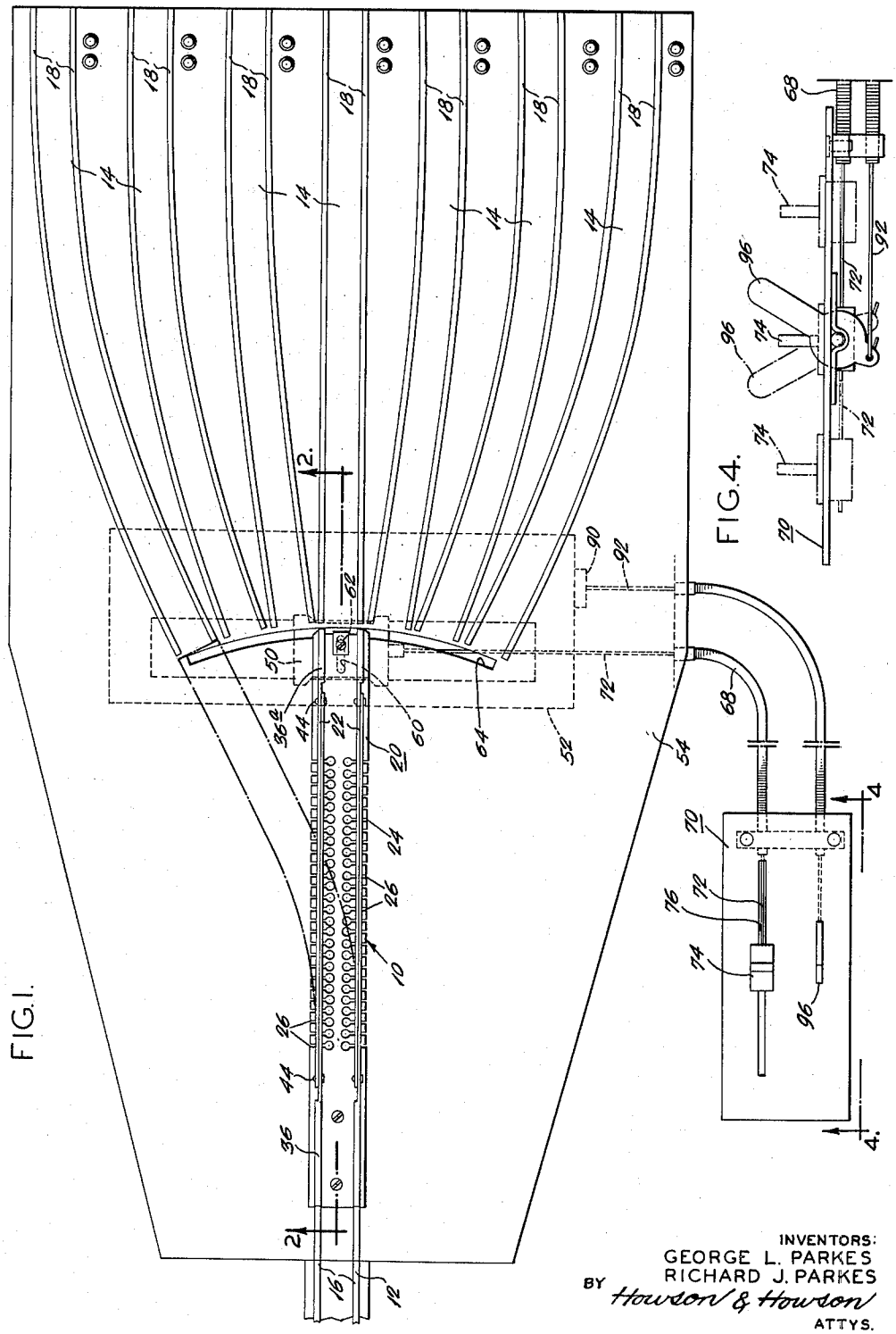


FIG. 1.

FIG. 4.

INVENTORS:
GEORGE L. PARKES
RICHARD J. PARKES
BY Howson & Howson
ATTYS.

July 6, 1965 G. L. PARKES ETAL 3,193,675

MARSHALLING SWITCH

Filed Aug. 11, 1960 3 Sheets-Sheet 2

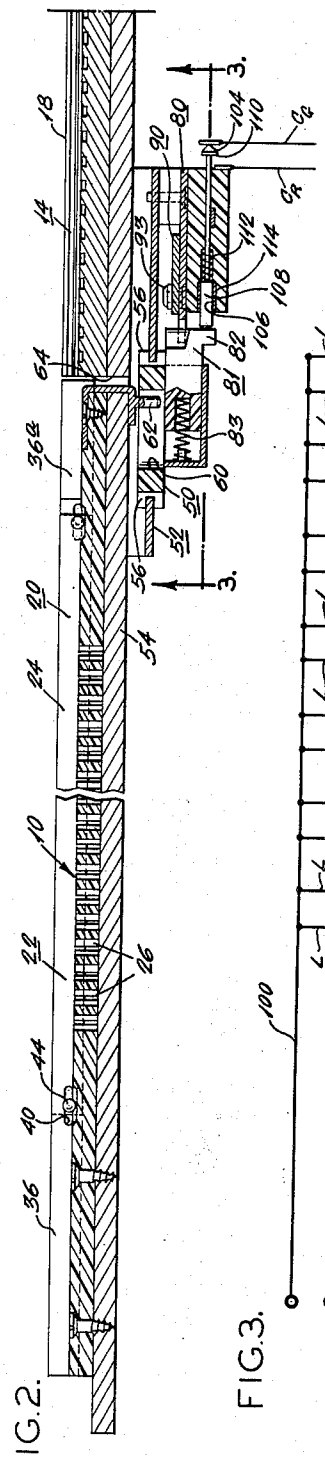


FIG. 2.

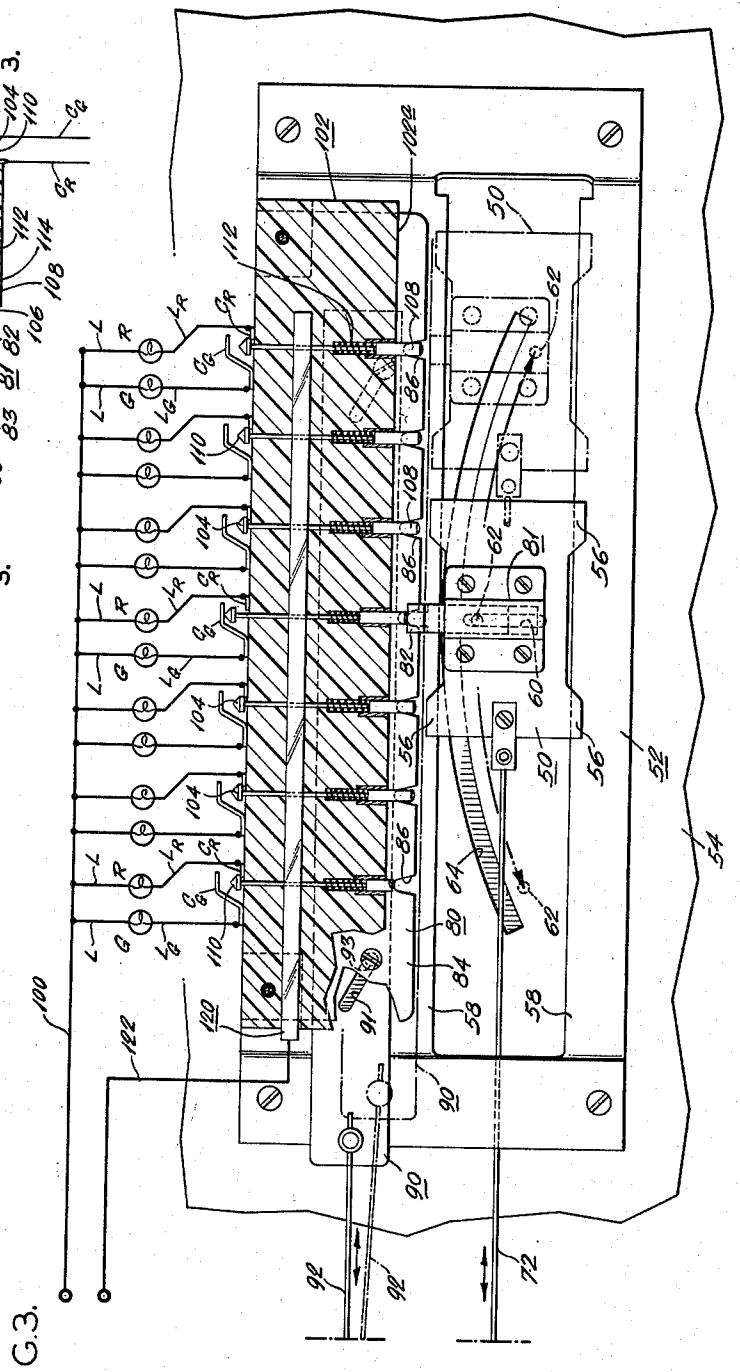


FIG. 3.

INVENTORS
GEORGE L. PARKES
RICHARD J. PARKES
BY Howson & Howson
ATTYS

July 6, 1965 G. L. PARKES ETAL 3,193,675

MARSHALLING SWITCH

Filed Aug. 11, 1960 3 Sheets-Sheet 3

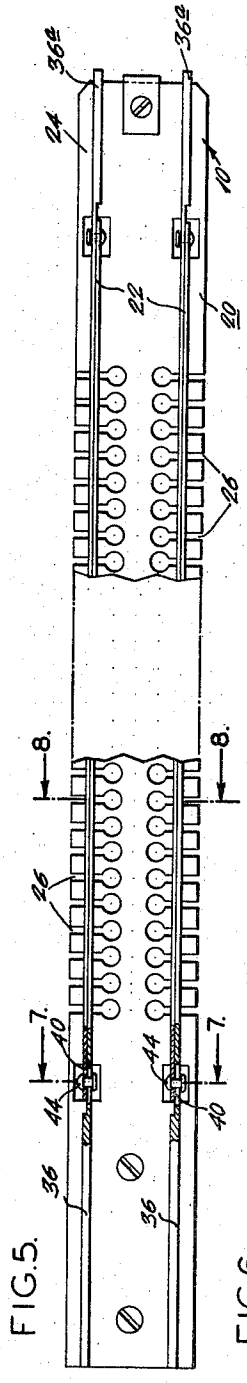


FIG. 5.

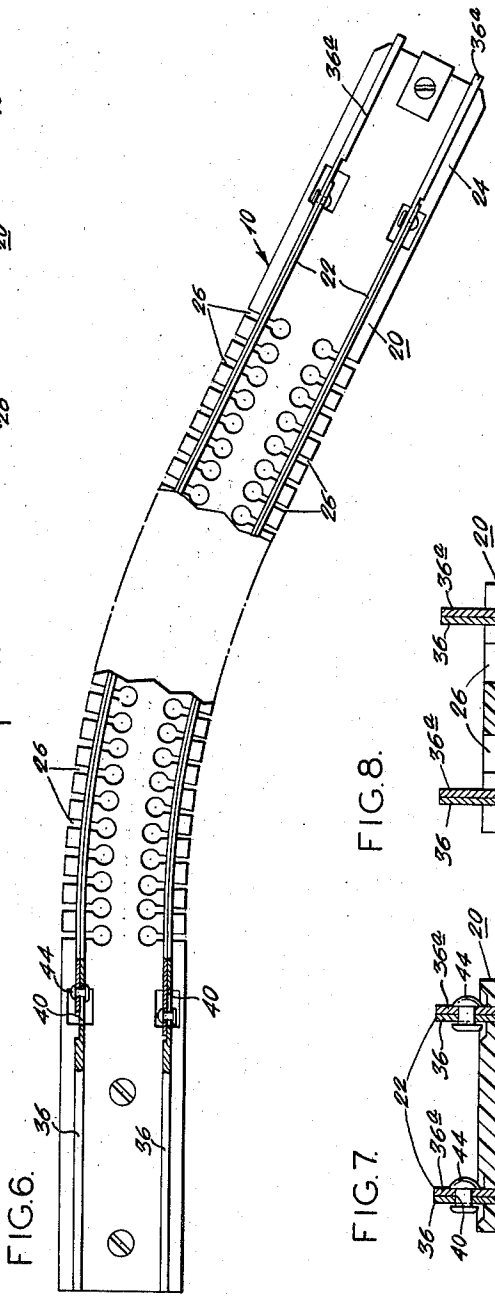


FIG. 6.

FIG. 8.

FIG. 7.

INVENTORS:
GEORGE L. PARKES
RICHARD J. PARKES
BY Howson & Howson
ATTYS.

United States Patent Office 3,193,675 Patented July 6, 1965

3,193,675

MARSHALLING SWITCH

George L. Parkes, Lyon Station, Pa., and Richard J. Parkes, 113 W. Main, Kutztown, Pa.

Filed Aug. 11, 1960, Ser. No. 49,032
6 Claims. (Cl. 246—415)

This invention relates broadly to a new and useful switch for use in model railroad layouts. More particularly, this invention relates to a marshalling switch for selectively connecting and linking a main feeder track with any one of a plurality of siding tracks.

In prior model railroad track layouts, a main feeder track was generally connected to the plural sidings of a marshalling yard by means of a plurality of conventional turn-out switches. Marshalling yards of this type occupied a considerable amount of surface area, since each siding required a turn-out switch, and usually resulted in the sidings being progressively shorter in length as they were positioned further from the main feeder track. Additionally, in a multiple switch layout having plural controls, a considerable amount of manipulation was required to maneuver trains into and out of the marshalling yard. The many switches and controls also added to the cost of a layout of the above type.

Turntables have a limited application for connecting a feeder track with a plurality of sidings for the reason that they are not suitable for establishing a direct route between a feeder track and any one of a plurality of siding tracks.

With the foregoing in mind, an object of the present invention is to provide a novel and simple marshalling switch for selectively connecting a feeder track with any one of a plurality of siding tracks which has structural and operational advantages over prior-known switches and the like, and is not possessed of any of the above-discussed limitations. More particularly, the marshalling switch of the present invention comprises a connecting track section which may be positioned at one end in registry with at least one feeder track section and may be selectively positioned at its other end in registry with any one of a plurality of siding track sections. Accordingly, it may be seen that with the present invention a marshalling yard may be planned which requires only a single switch and one control for connecting a feeder to any one of multiple sidings, as compared with prior layouts discussed above requiring a number of switches and controls. Maneuverability of trains into and out of sidings is greatly simplified and more direct with the switch of the present invention. Moreover, the surface area required by the sidings is reduced considerably, compared with an equal number of sidings in prior layouts.

A further object of the present invention is to provide a marshalling switch which may be constructed easily and economically, and which is fully effective in operation and use.

These and other objectives of the invention, and the various details of construction and operation thereof are hereinafter more fully set forth and described with reference to the accompanying drawings, in which:

FIG. 1 is a plan view of a marshalling switch made in accordance with the present invention in registry with a feeder track section and one of a plurality of siding track sections;

FIG. 2 is an enlarged sectional view taken on the line 2—2 of FIG. 1 showing a mechanism for actuating the switch;

FIG. 3 is an enlarged sectional view taken on line 3—3 of FIG. 2, showing in more detail the actuating mechanism and a light circuit;

FIG. 4 is an enlarged side elevational view of the manual remote controls for the actuating mechanism;

FIG. 5 is an enlarged plan view of a marshalling switch of the present invention;

FIG. 6 is a plan view of the switch in the flexed position;

FIG. 7 is an enlarged sectional view of the switch taken on the line 7—7 of FIG. 5; and

FIG. 8 is an enlarged sectional view taken on the line 8—8 of FIG. 5.

Referring to the drawings, reference numeral 10 designates generally a marshalling switch made in accordance with the present invention for selectively connecting trackways of a feeder track section 12 with any one of the trackways of a plurality of siding track sections 14. In the illustrated embodiment of the invention, the trackways of the feeder track section 12 and siding track sections 14 comprise spaced rail members 16 and 18, respectively, suitable, for example, for HO gage trains. It is, of course, to be understood that the switch may be adapted for use with other gages and with trackways other than a trackway consisting of spaced parallel rails.

A marshalling switch made in accordance with the present invention comprises broadly a connecting track section 20 having trackways adapted at one end to be positioned in registry with the trackways of at least one feeder track section 12, and at the other end in registry with the trackways of any one of the plurality of siding track sections 14, which in the illustrated embodiment terminate at points along an arcuate path. In the present instance, the connecting track section is a flexible, extensible section comprising spaced rail members 22, 22 mounted on a flexible support member 24 formed, for example, of a flexible plastic material such as nylon. A plurality of spaced, transversely-extending cut out portions 26 are provided in the support member 24 extending from at least one side edge inwardly, less than the width of the support member 24, so that the support member 24 may, for example, be fixed at one end and flexed along its length with its other end describing an arcuate path. As shown, for example in FIGS. 5 and 6, cutout portions 26, 26 are formed in both side edges of the support member so that one side edge is free to extend, and the other side edge is free to contract during flexing movement of the support member as shown in FIG. 6. The cutout portions 26, 26 may be aligned crosswise of the support member 24, as illustrated, and terminate on opposite sides of the central longitudinal axis of the support member 24.

The rail members 22, 22, as shown in FIGS. 7 and 8, are mounted in spaced, longitudinally-extending grooves 32, 32 in the support member 24, and are adapted to extend or contract during flexing movement of the support member 24. To this end, each of the rail members 22, 22 may comprise at least two rail segments 36, 36a which, in the illustrated embodiment, are in the form of elongated flat strips made of metal. One segment 36 is secured at one end of the support member 24 and the other segment 36a is fixed to the other end of the support member 24. Each of the rail segments 36, 36a is provided with a slotted opening 40 adjacent its fixed end to the support member 24, and each segment mounts a headed pin 44 at its free end which engages within the respective slot opening 40 of the adjacent rail segment to maintain the pairs of segments in close side-by-side relation and permit the rails to extend or contract during flexing movement of the support member 24.

Another important feature of the present invention is the provision of mechanism for actuating the connecting track section 20 so it may be selectively positioned in registry with any one of the plurality of siding track sections 14. In the illustrated embodiment of the present invention, the actuating mechanism includes a carriage 50 slidably mounted in a frame 52 secured to the lower side of a mounting base 54 for movement in a direction

generally transverse to the direction of the feeder and siding track sections. The carriage 50 is generally rectangular, having slotted guide shoes 56 at the corners thereof which slidably engage with spaced runners 58 forming part of the frame 52. A pin 62 is mounted on the outer free end of the connecting track section which is engaged within a slotted opening 60 in the carriage 50 extending transversely to the direction of movement of the carriage. The pin 62, as shown, extends through an arcuate slot 64 in the base 54 and is free to move back and forth in the slotted opening 60 during movement of the carriage along the runners 58. Accordingly, as the carriage is moved back and forth in the frame, the outer free end of the connecting track section describes an arcuate path coincident with the terminal ends of the siding track sections 14.

In the present instance, manual remote control means is provided to move the carriage, comprising a flexible cable 68 secured at one end to the base 54 and at its other end to a control panel 70. The cable 68 houses a wire 72, slidable in the cable, which is attached to the carriage 50 at one end, and to a selector bar 74 at the other which is slidably mounted in a slotted opening 76 in the control panel. Movement of the bar 74 lengthwise of the opening 76 effects movement of the carriage 50 along the runners 58.

Still another feature of the present invention is the provision of means for selectively locking the connecting track section 20 in registry with any one of the plurality of siding track sections 14. This means may comprise a keeper 80 mounted on the frame and a latch 81 on the carriage adapted to be removably engaged with the keeper when the connecting track section 10 is in registry with a selected one of the plurality of siding track sections 14. In the present instance the latch consists of a plunger 82 normally urged toward the keeper by means of a coil spring 83. In the illustrated embodiment the keeper 80 consists of an elongated flat bar 84, co-extensive with the runners 58, having a plurality of spaced slots 86 extending inwardly from a side edge thereof. The slots 86 correspond in number to the number of siding track sections 14 and are spaced along the length of the bar 84 so that the connector track section 20 is in registry with one of the siding track sections 14 when the plunger 82 is engaged within any of the slots 86. Selective actuation of the plunger 82 to lock with a selected one of the slots 86 is controlled by an elongated control plate 90, movably mounted in the frame between an outer position overlying the slots 86, wherein the latch engages a continuous side edge of the plate 90, and an inner position, wherein the plunger 82 is operable to engage within the slots 86. As shown, the control plate 90 is actuatable between inner and outer positions by a cam arrangement consisting of a slotted opening 91 adjacent each end of the plate 90, and a pair of pins 93 secured to the frame. A wire 92, housed in a flexible cable 94, is connected at one end to the plate 90 and at the other end to a lever 96 pivotally mounted in the control panel. The lever 96 controls movement of the plate 90 between inner and outer positions, as shown, for example, in FIG. 3 in solid and phantom lines, respectively.

Another feature of the present invention is the provision of means for visibly indicating to the operator when the connecting track section 20 is locked in registry with a selected one of the siding track sections 14. In the present instance this is accomplished by providing a set of red and green lamps R and G for each of the siding track sections, which are mounted on the base 54 and are readily visible to the operator. The red lamp R for each siding track section is adapted to be energized when the connecting track section 20 is actuatable with respect to the siding track sections 14; that is, when the connecting track section 20 is not locked in registry with any one of the siding track sections 14. In the present instance this condition exists when the control plate 90 is in the outer position overlying the slots 86 on the keeper bar 84. When the connecting track section 20 is locked in registry with a selected one of the siding track sections, then the red lamp R for this track is de-energized, and simultaneously the green lamp G is energized, the red lamps R for the other siding track sections 14 remaining energized. The electrical circuit for accomplishing this is shown in FIG. 3. As shown, the red and green lamps R and G are arranged in parallel, each having one terminal lead L connected to a main connector lead 100 which is connected to a suitable electrical supply source, as, for example, a battery. The other terminal lead L_G for each of the green lamps is connected to an electrical contact C_G mounted on a housing 102 which is made of a non-electrically conductive material. The housing 102 is mounted on the frame 52 with a side wall 102^a thereof substantially parallel to the direction of movement of the carriage 50. The other terminal lead L_R for each of the red lamps R is connected to an electrical contact C_R on the housing. A plurality of spear elements 104 made of an electrically conductive material are slidably mounted in spaced cylindrical chambers 106 extending widthwise of the housing. A bus bar 120 is mounted in the housing in contact with each of the spears, and is connected to the electric supply source through a main lead 122. Each of the spears 104 has an enlarged terminal end portion 108 at one end which extends beyond the side wall 102^a of the housing, and an enlarged head portion 110 at its other end. A coil spring 112 is mounted in each of the chambers 106 in engagement with an annular shoulder 114 of the spear to normally urge the spears toward the side wall 102^a of the housing. In this position the head portion 110 of each spear engages its respective electrical contact C_R and the terminal end 108 of each spear extends beyond the side wall 102^a of the housing to thereby complete the circuit through each red lamp R. When all of the spears are in this position, all of the red lamps are energized and the connecting track section 20 is freely movable with respect to any one of the siding track sections 14. When, however, the carriage 50 is moved so that the connecting track section 20 is substantially aligned or in registry with a selected one of the siding track sections, as shown for example in FIG. 1, and the plate 90 is activated by the lever 96 to the inner position, the plunger 82 engages within the slotted opening 86 to lock the connecting track section 14 in registry with the selected siding track section. In this position, as shown in FIG. 3, the plunger 82 engages the terminal end 108 of the respective spear for the selected siding track section, and moves it forward so that the head portion 110 engages the electrical contact C_G. This movement of the spear opens the red lamp circuit for the selected siding track section, and simultaneously closes the green lamp circuit to energize the green lamp G for the selected siding track section. As illustrated, the red lamp circuits for the remaining track sections remain closed, and their red lamps R remain energized.

While a particular embodiment of the present invention has been illustrated and described herein, it is to be understood that changes and modifications may be incorporated within the scope of the following claims.

We claim:

1. Apparatus of the type described, comprising a base, a feeder track section mounted on said base, a plurality of siding track sections each having spaced trackways mounted on said base, a connecting track section having one end positioned in registry with said feeder track section and having its opposite end selectively movable and adapted to be positioned in registry with any one of said plurality of siding track sections, a carriage mounted beneath said base movable in a direction generally transverse to said siding track sections and con-

nected to said opposite end of said connecting track section operable to position said end in registry with any one of said siding track sections, means to move said carriage in said transverse direction, a latch mounted in said carriage, an elongated bar having grooves therein corresponding in number to the number of siding track sections and spaced along the bar so that the connecting track is in registry with a particular siding track section when the latch engages a corresponding one of said grooves, means for selectively engaging said latch within a selected one of said grooves whereby said connecting track is maintained in registry with said selected one of said siding track sections, at least one indicator lamp for each of said siding track sections, circuit means connecting said lamp to a source of electrical power, a spring biased spear mounted in each of said grooves to close said circuit for a lamp of a given one of said siding track sections when said connecting track section is locked in registry with said given siding track section.

2. Apparatus of the type described comprising a base member, a feeder track section mounted on said base, a plurality of siding track sections each having spaced trackways mounted on said base, a connecting track section having one end positioned in registry with said feeder track section and having its opposite end selectively movable and adapted to be positioned in registry with any one of said plurality of siding track sections, a carriage mounted beneath said base movable in a direction generally transverse to said siding track sections and connected to said opposite end of said connecting track section operable to position said end in registry with any one of said siding track sections, means to move said carriage in said transverse direction, a latch mounted in said carriage, an elongated bar having grooves therein corresponding in number to the number of siding track sections and spaced along the bar so that the connecting track is in registry with a particular siding track section when the latch engages a corresponding one of said grooves, means for selectively engaging said latch within a selected one of said grooves whereby said connecting track is maintained in registry with said selected one of said siding track sections, a pair of indicator lamps for each of said siding track sections, circuit means connecting each of said lamps to a source of electrical power, a spring biased spear mounted in each of said grooves of said bar normally biased to a first position to close said circuit to energize one lamp of each pair to indicate said connecting track is not registered with a siding track section and actuatable by said latch to a second position to energize the other lamp of a pair for a given siding track section to indicate said connecting track is locked in registry with the given siding track section.

3. Apparatus as claimed in claim 1 wherein said connecting track section comprises an elongated flexible continuous support member, means defining spaced, longitudinally extending grooves in said support member, flexible rail members mounted in said grooves, said support member having one end fixed in registry with said feeder trackway and adapted to be flexed along its length so that its other end may be positioned with respect to any one of said plurality of siding sections whereby said rail members and trackways of a selected one of said siding track sections are in accurate registry, each said rail members comprising at least two continuous side by side rail segments slideable longitudinally with respect to one another, one of said rail segments being fixed at one end of said support member and the other of said rail segments being fixed at the other end of said support member whereby during flexing movement of said support member, the ends of said rail members are spaced closely adjacent the terminal ends of the siding track sections.

4. Apparatus as claimed in claim 3 including a slotted opening in each of the rail segments at ends opposite their fixed connection to said support member, and pins in each of said rail segments, each of said pins engaging within said slotted opening of the other rail segment to maintain the rail segments in side-by-side contacting relation.

5. Apparatus as described, comprising a base member, a feeder track section mounted on said base, a plurality of siding track sections having spaced trackways mounted on said base, a connecting track section having one end positioned in registry with said feeder track section and having its opposite end selectively movable and adapted to be positioned in registry with any one of said plurality of siding track sections, a carriage mounted beneath said base movable in a direction generally transverse to said siding track section and connected to said opposite end of said connecting track section operable to position said one end in registry with any one of said siding track sections, means to move said carriage in said transverse direction, a latch mounted in said carriage, an elongated bar having grooves therein corresponding in number to the number of siding track sections and spaced along the bar so that the connecting track is in registry with a particular siding track section when the latch engages a corresponding one of said grooves, biasing means normally biasing said latch in a direction to engage in said grooves, a control plate overlying said bar and at least coextensive therewith operable between a first position wherein a continuous side edge thereof is engaged by said latch to prevent said latch from entering into said grooves and permit said carriage to be freely movable in said transverse direction and a second position wherein said side edge of said control plate is spaced back from said grooves to permit entry of said latch in said grooves.

6. Apparatus as claimed in claim 5 including an angularly disposed slot in said control plate and a pin engaging in said slot depending from said base whereby actuation of said control plate in said transverse direction effects positioning of the side edge thereof between opposite limit positions.

References Cited by the Examiner

UNITED STATES PATENTS

280,988	7/83	Wood	246—440 X
437,675	10/90	Carlson	246—403
519,230	5/94	Brackelsberg	246—403
2,068,403	1/37	Ekstrom.	
2,120,251	6/38	Johnson	238—10
2,428,468	10/47	Pinder	238—10
2,514,652	7/50	Leithold	238—10
2,565,359	8/51	Dubilier	238—10

FOREIGN PATENTS

65,529	11/42	Norway.
407,129	3/34	Great Britain.
489,503	7/38	Great Britain.
508,637	9/30	Germany.
611,085	6/26	France.
870,508	12/41	France.

LEO QUACKENBUSH, *Primary Examiner.*

JAMES A. SHANK, *Examiner.*