May 22, 1956 S. LE FIELL 2,746,397

AUTOMATIC SWITCH FOR OVERHEAD TRACK

Filed Aug. 30, 1954 4 Sheets-Sheet 1

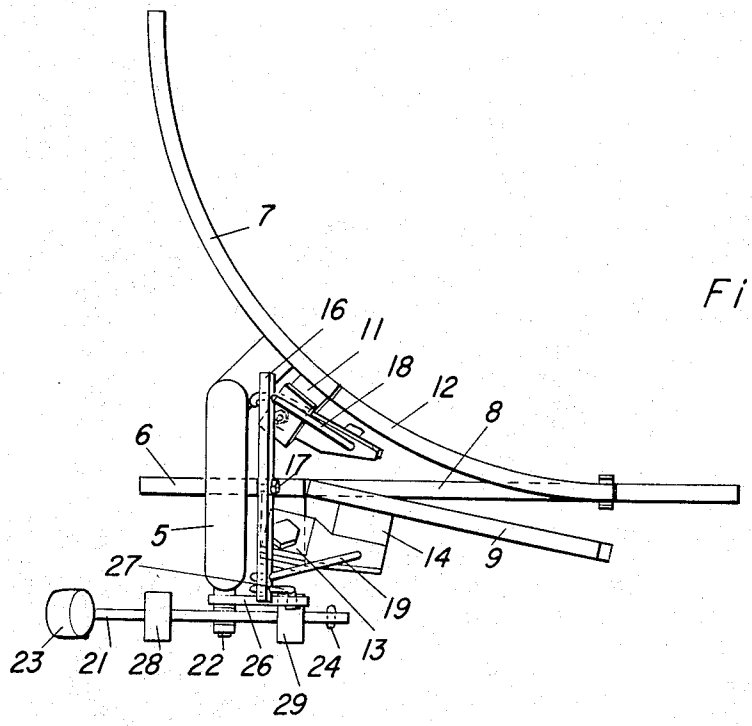

Fig 1

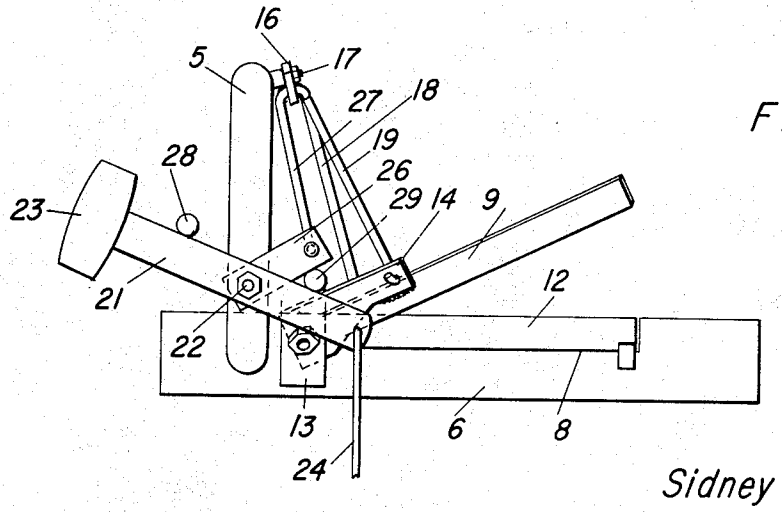

Fig 2

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May 22, 1956 S. LE FIELL 2,746,397

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Filed Aug. 30, 1954 4 Sheets-Sheet 2

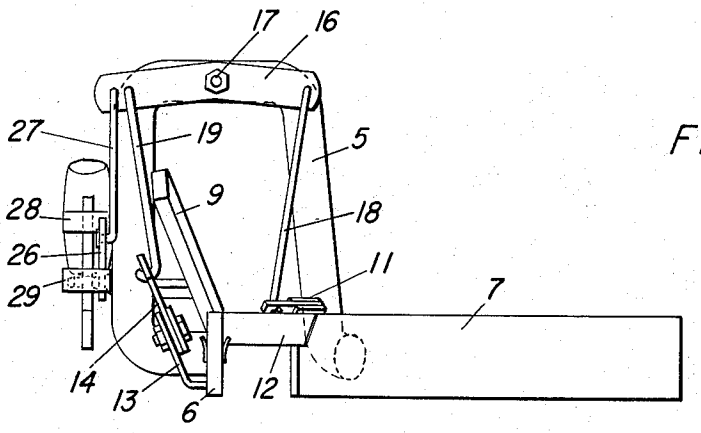

Fig 3

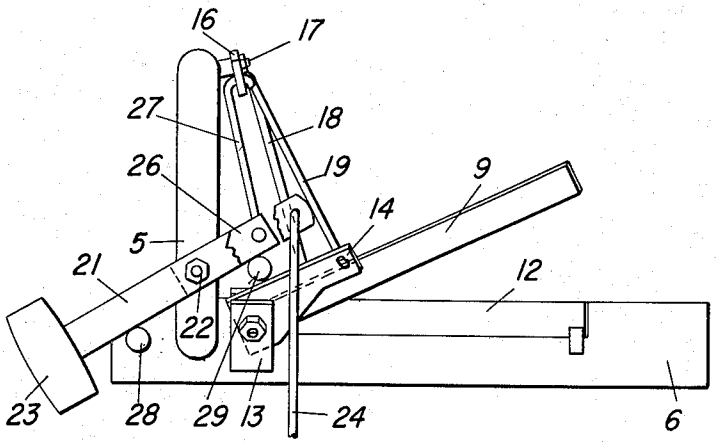

Fig 4

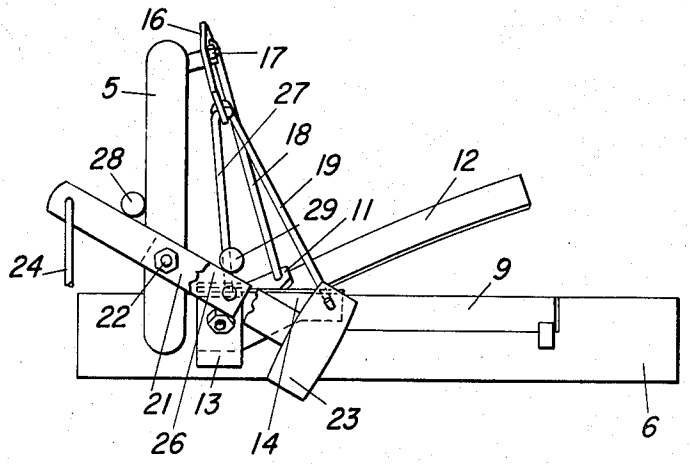

Fig 5

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May 22, 1956 S. LE FIELL 2,746,397

AUTOMATIC SWITCH FOR OVERHEAD TRACK

Filed Aug. 30, 1954 4 Sheets-Sheet 3

Fig 6

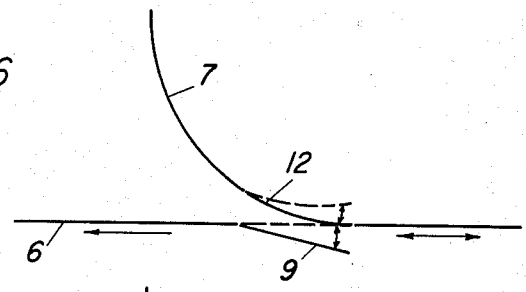


Fig 7

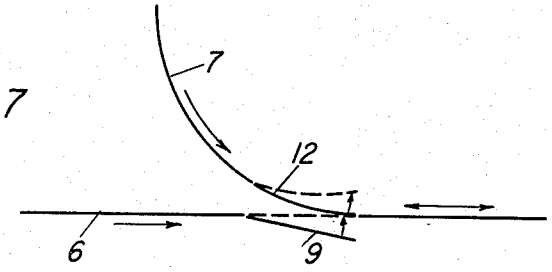


Fig 8

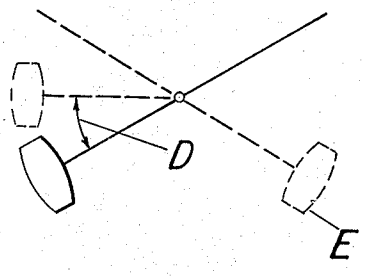
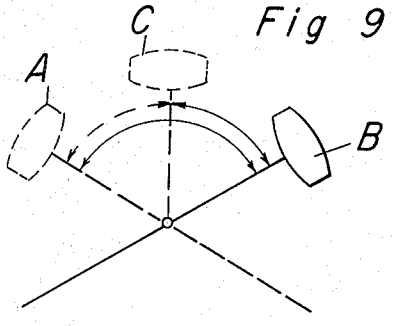


Fig 9



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May 22, 1956 S. LE FIELL 2,746,397

AUTOMATIC SWITCH FOR OVERHEAD TRACK

Filed Aug. 30, 1954 4 Sheets-Sheet 4

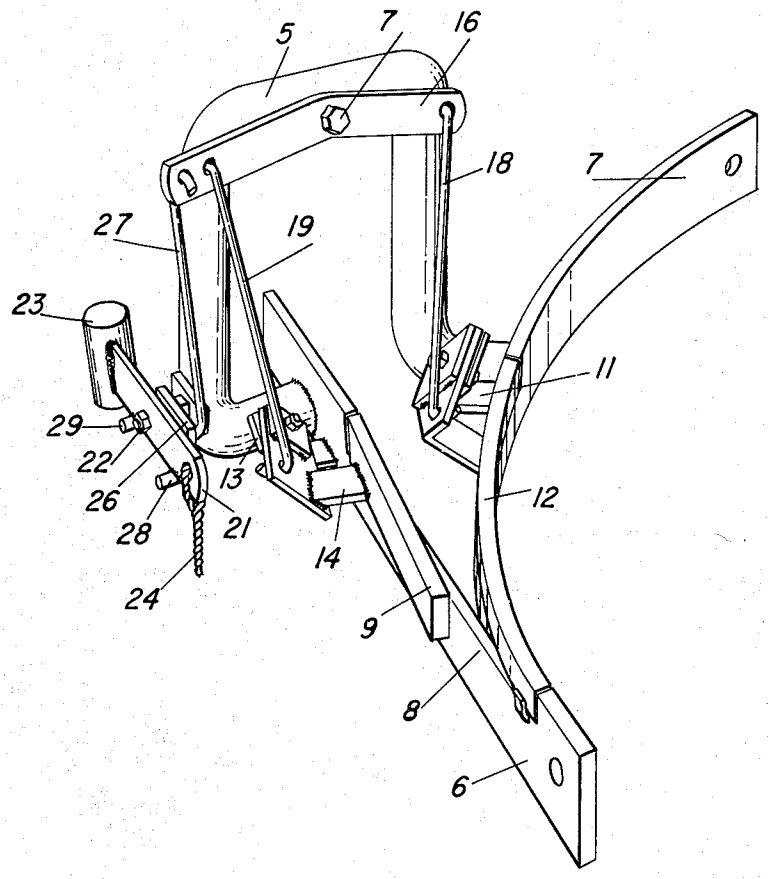

Fig 10

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AUTOMATIC SWITCH FOR OVERHEAD TRACK

Sidney Le Fiell, San Francisco, Calif.

Application August 30, 1954, Serial No. 452,845

3 Claims. (Cl. 104—101)

This invention relates to new and useful improvements in an automatic switch for overhead tracks and is a continuation-in-part of the application filed on May 11, 1953, bearing Serial No. 354,065, and now abandoned.

The principal object of this invention is to provide a unit switch which may be inserted within a straight line of track whereby a trolley passing over the track may be switched to another track curving away from the straight track, or vice versa.

A further object is to provide a switch unit which is adjustable in such a manner that one or the other of the switching elements will be automatically depressed when a trolley passes thereover and will automatically open after the trolley has moved off from the switching element.

A further object is to provide means for throwing the switching elements automatically when a trolley passes into engagement with the open switching element.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawings forming a part of this specification and in which like numbers are employed to designate like parts throughout the same,

Fig. 1 is a top plan view of my switch unit;

Fig. 2 is a side elevation of Fig. 1;

Fig. 3 is a front elevation of Fig. 1, looking from the right of the drawing;

Fig. 4 is a view similar to Fig. 2, showing the counterweight and counterweight lever in reverse position, and lugs in bottom position;

Fig 5 is a view similar to Fig. 4, showing the counterweight moved through its complete arc of movement;

Fig. 6 is a diagrammatic view, showing a switching operation from a straight track to a curved track; and

Fig. 7 is a similar view, showing the switching operation from a curved track to a straight track;

Fig. 8 is a diagrammatic view, showing the path of movement of the counterweight in the positions of Figs. 4 and 5; and

Fig. 9 is a similar view showing the movement of the counterweight when the same is arranged as shown in Figs. 1 and 2.

Fig. 10 is a perspective view of my switch showing the bridging element connected to the curved rail in down position on the straight rail.

There are many instances where it is necessary to move material from one point to another, as for instance in warehouses, meat packing plants and the like, where overhead tracks are used. These tracks may follow various patterns and in order to move from one straight track to another or to curved tracks and vice versa, it is necessary to provide switching mechanisms.

Applicant has therefore devised a switching mechanism in the form of a unit having a straight portion and a curved portion spaced one from the other, and to provide bridging units or switching elements which are moved into and out of position so as to bridge the gap

during the time that the wheeled trolleys and loads are being transferred from one point to another.

It sometimes occurs that all of the traffic over the rails will be in one direction, as, for instance, in a straight-away run, or from a curved track into the straight-away run. In such instances it is advisable to have the mechanism so set that the switching element will remain in fixed position during the time that the trolleys are being moved thereover.

There are other instances where it is advisable to move, for instance, along a straight track and then to reverse the movement on to the curved track. In such instances it is advisable to have the switching units so arranged that the trolley, in engaging one of the switching units, will cross it, thus permitting the load to pass over the gap to the continuation of the straight track and to then reverse the movement on to the curved track. In such instances it is vital that the curved track switching element return to closed position as soon as the load has moved off from the straight-track switching element. I have therefore provided such a mechanism.

In the accompanying drawings, wherein for the purpose of illustration is shown a preferred embodiment of my invention, the numeral **5** designates a yoke which connects a straight track section **6** to a curved track section **7**. The straight track section has a portion thereof cut away as shown at **8** and adapted to be filled in by a switching element **9**. The curved track **7** has pivoted thereto, through the medium of an angularly disposed bracket **11**, a curved switching element **12**.

The switching element **9** is pivoted to an angularly disposed bracket **13** by an offset brace **14**. In order to move the switching elements **9** and **12** I provide a walking beam **16** pivoted as at **17** to the yoke **5**. A link **18** connects one end of the walking beam with the switching element **12**, and a link **19** connects the opposite end of the walking beam with the bracket **14**. The result is that when the walking beam **16** is moved about its pivot **17**, one of the switching elements will be moved into horizontal position so that a trolley can pass thereover, while the other switching element will be raised.

In order to actuate the walking beam, I provide a controlling lever **21** pivoted as at **22** to the yoke **5**. This lever has a counterweight **23** at one end thereof and a pull rod **24** at its opposite end.

Mounted upon the pivot **22** is a lever **26** which is connected by a link **27** to the walking beam **16**.

In order to cause the control lever **21** to actuate the lever **26** and to rock the walking beam **16**, I provide a pair of lugs **28** and **29** secured to one edge of the control lever **21**, which are adapted to engage the top and bottom of the lever **26** so as to rock it about its pivot. In Fig. 2 it will be noted that the lug **29** engages the underside of lever **26**, which effects a lifting of the switching element **9** and the lowering of the switching element **12**.

When the lever **21** is in the position of Figs. 1, 2 and 3, a trolley coming from the left of the drawing along the straight track **6** will first engage the switching element **9**, forcing it downwardly, and through the linkage **19**, **17** and **18**, the switching element **12** will be raised. This movement is illustrated in Fig. 7, wherein the switching element **9** moves from open to closed position, and the switching element **12** moves from closed to open position as shown. In so doing, the counterweight will be thrown from the dotted-line position at A in Fig. 9 to the full line position B through the fact that the counterweight is moved by the lever **26** pressing down on lug **29**, and the downward movement will be caused by the link **27** pushing down on the lever **26** through the path shown by the dotted arrow moving to the position C, and the

inertia of the movement will carry the counterweight over to the position B.

Therefore when the control lever is arranged as shown in Figs. 1, 2 and 3, the counterweight rotating on its pivot **22** will move either to the position A or B, depending upon which one of the switching elements **9** or **12** is depressed.

If the pull rod **24** is actuated, then the throw of the counterweight from the position of Fig. 2 to the position B of Fig. 9 will cause the lug **28** to move against the lever **26** and throw the link **27** to move the walking beam **17** and consequently there will be lowering of the switching element **9** and the raising of the switching element **12**.

When it is desired to change the switch so that there is an automatic closing of one of the switching elements, which will then immediately return to open position, it is only necessary to remove the control lever **21** from its pivot, turn it over from the position of Fig. 2 to that of Fig. 4, with the result that the lugs **28** and **29** will now be below the arm **21** and the lug **29** will underlie the lever **26**.

It is to be here noted that the counterweight will now be angularly disposed at a point below the pivot **22**, while in Fig. 2 it was angularly disposed at a point above the pivot **22**.

The result is that when a trolley comes along the straight track, for instance, and engages the switching element **9**, this element will be depressed, but the movement of the counterweight will be only that indicated by the arrow D, Fig. 8. Therefore, as soon as the load moves off of the switching element **9**, the switching element **9** will again be raised to open position ready to receive the next trolley which comes, for instance, from the left of the drawing in Fig. 6. This action is caused by the fact that the counterweight only raised and fell back through the arc D of Fig. 8 and did not pass over the center as at Fig. 9.

Also due to the fact that the switching element has automatically opened itself again, the trolley can be moved directly over the closed switching element **12** to the curved track **7**.

It is obvious that if the counterweight is moved to the dotted line position E, Fig. 8, the action will be to hold the element **12** open with the switching element **9** in closed position, that is, if a trolley were coming from the upper portion of the drawing, Fig. 6, it would close switching element **12** and move on to the right-hand end of the straight track, after which **12** would again open, and the trolley could then move toward the left of the drawing over the closed switching element **9**.

Having thus described my invention, I claim:

1. A switch unit for overhead tracks comprising a straight portion of track, a curved portion of track, the end of the curved portion being spaced from the straight portion and in the same horizontal plane therewith, a yoke connecting each of said track sections, the straight section of track having a portion of its upper section cut away to form a recess, said curved track section having its adjacent end cut away to form a ledge, a walking beam pivoted to said yoke, a link secured to each end of said walking beam, and a switching element pivotally connected to each of said links and to its respective track sections, whereby movement of said walking beam will move alternately one of said switching elements into said recess in said straight track section or from said recess to said curved section.

2. A switching unit for overhead tracks comprising a straight track portion, a curved track portion, the end of said curved portion being spaced from said straight track portion and in the same plane therewith, a rigid yoke connecting said straight portion and said curved portion, said straight track portion having its upper surface recessed, said curved track portion having its end formed with a ledge, each of said track portions having an offset angularly disposed bracket secured thereto, each of said brackets having a lever pivoted thereto, each of said levers having a switching element secured thereto, and means for alternately moving said levers to cause the respective switching elements to fill said recess in said straight track or between said straight track and said curved track.

3. A switching unit for overhead tracks comprising a straight track portion, a curved track portion, the end of said curved portion being spaced from said straight track portion and in the same plane therewith, a rigid yoke connecting said straight portion and said curved portion, said straight track portion having its upper portion recessed, said curved track portion having its end formed with a ledge, each of said track portions having offset angularly disposed brackets secured thereto, a switching element pivotally secured to each of said brackets, one of said switching elements pivoting from said curved track portion and adapted to have its free end moved into engagement with the recessed portion of said straight track portion, the other of said brackets having a switching element pivoted thereto and adapted to be moved into the recessed portion of said straight track portion, a walking beam pivoted to said yoke, links connecting the opposite ends of said walking beam with each of said switching elements, a lever pivoted to said yoke and having linked connection with said walking beam, and a pivoted controlling lever mounted on the same pivot as said last mentioned lever, and means carried by said control lever for engaging said link-connected lever whereby said link-connected lever may be moved in an upward or downward direction, said control lever having a counterweight arranged at one end thereof and a pull rod at its opposite end.

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