Nov. 29, 1955 B. A. BEDFORD ET AL 2,725,017

OVERHEAD TRACK SWITCH

Filed March 6, 1952 2 Sheets-Sheet 1

Fig.1

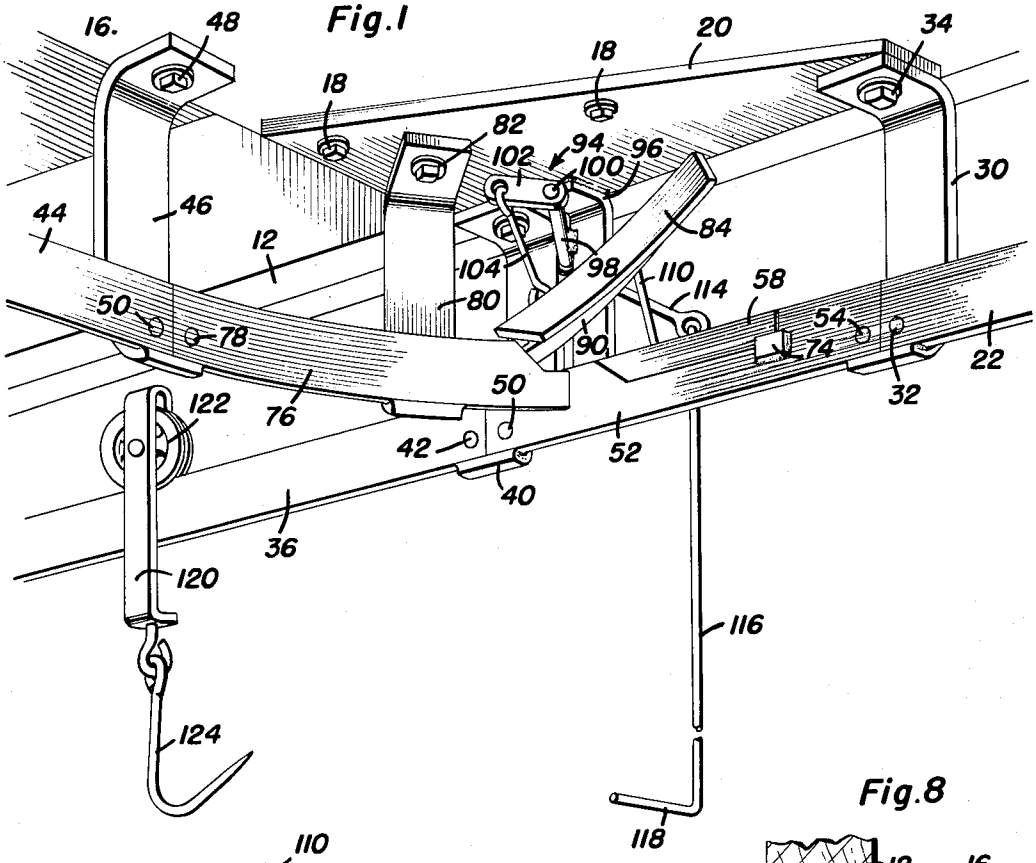


Fig.4

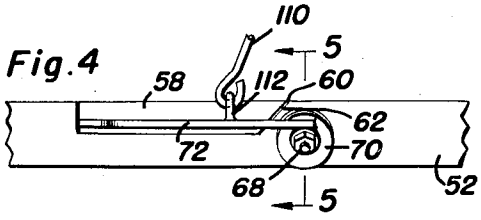


Fig.6

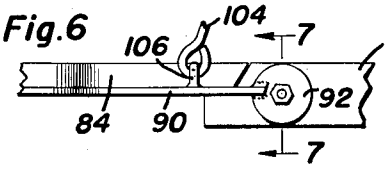


Fig.5

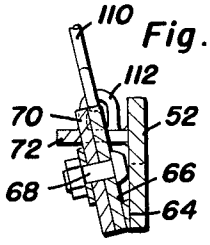


Fig.7

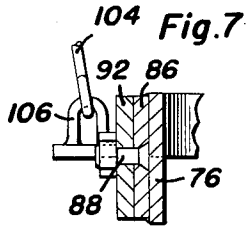
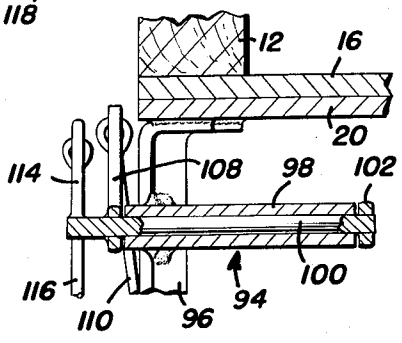


Fig.8



Beryl A. Bedford
Harry M. Andrews
INVENTORS.

BY Clarence A. O'Brien and Harvey B. Jacobson
Attorneys

Nov. 29, 1955 B. A. BEDFORD ET AL 2,725,017

OVERHEAD TRACK SWITCH

Filed March 6, 1952 2 Sheets-Sheet 2

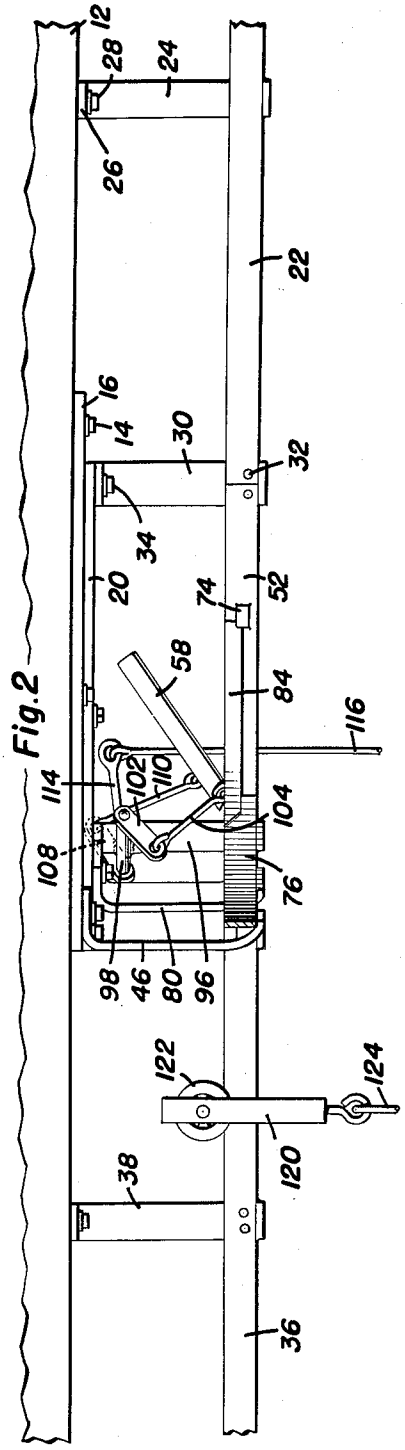


Fig. 2

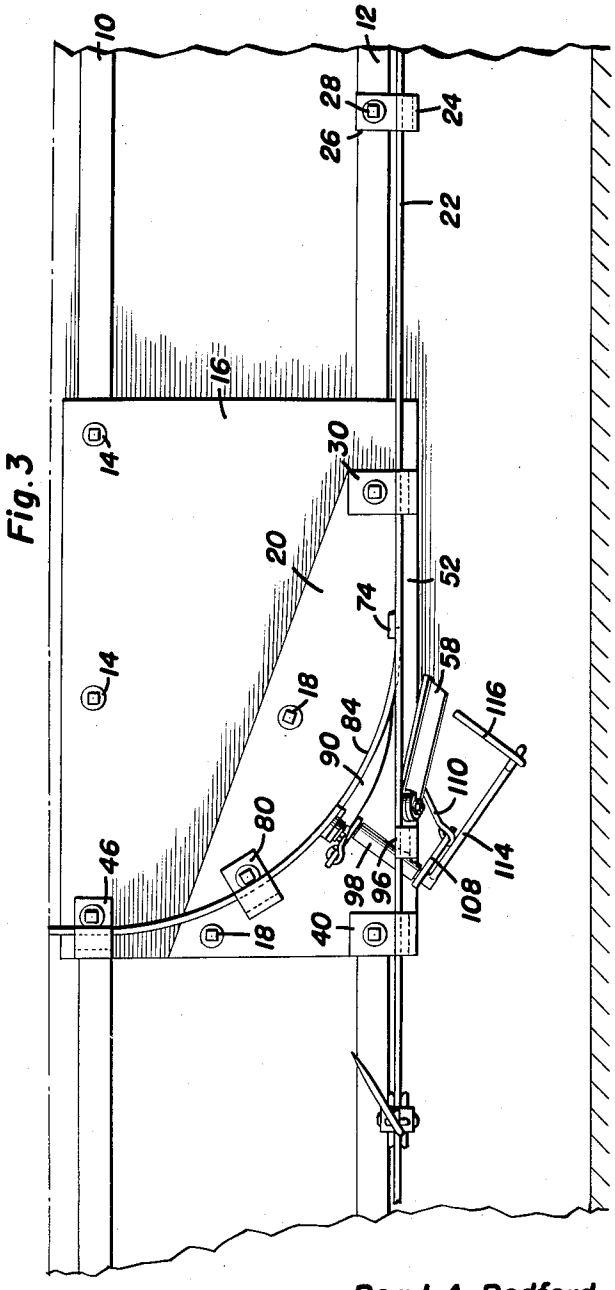


Fig. 3

Beryl A. Bedford
Harry M. Andrews
INVENTORS.

BY Clarence A. O'Brien and Harvey B. Jacobson
Attorneys

United States Patent Office 2,725,017 Patented Nov. 29, 1955

2,725,017

OVERHEAD TRACK SWITCH

Beryl A. Bedford, Sharp Park, and Harry M. Andrews, San Francisco, Calif.

Application March 6, 1952, Serial No. 275,186

4 Claims. (Cl. 104—104)

This invention relates in general to a switch construction for overhead trackways of the type generally found in packing house installations.

The primary object of this invention is to provide an improved switch construction for overhead trackways which includes intersecting rails adapted to have hangers movable thereon, said intersecting rails including switch rails movable in and out of connecting positions for selectively connecting alternate rails to a main rail, said switch rails being actuated by a common actuating mechanism.

Another object of this invention is to provide an improved switch construction for overhead trackways, said switch construction including a straight switch rail and a curved switch rail, said straight switch rail being pivotally secured to its respective rail by a pivot pin which is disposed at an angle to the horizontal whereby said straight switch rail moves in a diagonal plane and provides sufficient clearance for the curved switch rail to pass thereby during a switching operation.

Another object of this invention is to provide an improved switch rail actuating mechanism which actuates the two switch rails simultaneously in opposite directions.

Another object of this invention is to provide an improved switch construction for overhead trackways which may be easily installed in existing trackways and is of simple construction whereby it is economically feasible.

Another object of this invention is to provide an improved actuating mechanism for switch construction for overhead trackways, said actuating mechanism being mounted over said trackway and being of compact design whereby it requires a very small space.

A further object of this invention is to provide an improved switch construction for overhead trackways, said switch construction including switch rails being pivotally connected to their respective rails, said switch rails having their pivoted ends in alignment with the respective rails in all positions whereby a hanger moving down one of said rails will ride upon its associated switch rail and cause movement of same in a downward direction in order to connect said rail with another rail.

With these objects definitely in view, this invention resides in certain novel features of construction, combination and arrangement of elements and portions as will be hereinafter described in detail in the specification, particularly pointed out in the appended claims, and illustrated in the accompanying drawings which form a material part of this specification, and in which:

Figure 1 is a perspective view of the improved switch construction mounted in an overhead trackway, the straight switch rail being illustrated in a closed position and the curved switch rail in an open position;

Figure 2 is a side elevational view of the switch construction of Figure 1 with the switching mechanism and the switch rails in reversed positions;

Figure 3 is a bottom plan view of the switch construction of Figure 1 with the positions of the switch rails and actuating mechanism reversed;

Figure 4 is an enlarged rear side elevational view of the connection between the straight switch rail and its associated rail;

Figure 5 is an enlarged transverse vertical sectional view taken substantially upon the plane indicated by the section line 5—5 of Figure 4 and showing the general relationship of the various portions of the connection between the switch rail and its associated rail;

Figure 6 is an enlarged rear side elevational view of the connection between the curved switch rail and its associated rail;

Figure 7 is an enlarged transverse vertical sectional view taken substantially upon the plane indicated by the section line 7—7 of Figure 6 and showing the details of the connection; and

Figure 8 is an enlarged fragmentary transverse vertical sectional view taken through the actuating mechanism and showing the general details thereof.

Similar characters of reference designate similar or identical elements and portions throughout the specification and throughout the different views of the drawings.

Referring now to the accompanying drawings in detail, it will be seen that the overhead trackways construction includes a pair of longitudinally extending supports **10** and **12**. While these supports **10** and **12** support the trackway in the vicinity of the switch construction, it will be understood that the trackway may be secured equally well directly to a ceiling or some other similar supporting structure and it is not intended to limit the invention to trackways supported by elongated supports, such as the supports **10** and **12**.

Carried by the elongated supports **10** and **12** and secured to the underside thereof by a plurality of fasteners **14**, is an elongated rectangular plate **16**. Secured to the underside of the plate **16** by a plurality of fasteners **18** is a generally triangular switch supporting plate **20**.

Extending in general alignment with the elongated support **12** is a main rail **22** which is in the form of a vertically extending rectangular bar. The main rail **22** extends in substantial alignment with the elongated support **12** and is secured thereto by a plurality of conventional L-shaped hangers **24** which are suspended from the elongated support **12** and include horizontal flanges **26** engaging the underside of the elongated support and secured thereto by fasteners **28**. One end of the main rail **22** terminates in substantial vertical alignment with one corner of the triangular switch construction supporting plate **20** and is secured thereto by an L-shaped hanger **30**. It will be understood that the main rail **22** extends only one half of the width of the L-shaped hanger **30** and its end is connected thereto by a rivet **32**. The horizontal portion of the L-shaped hanger **30** is in face to face engagement with the undersurface of the switch mechanism supporting plate **20** and is secured thereto by a fastener **34** which also secures the supporting plate **20** to the elongated rectangular plate **16**.

In longitudinal alignment with the main rail **22** is a first secondary rail **36** which is partially supported from the elongated support **12** by another conventional L-shaped hanger **38**. As is best illustrated in Figure 1, the first secondary rail **36** terminates short of the one end of the main rail **22** and is supported from the switch mechanism support plate **20** by an L-shaped hanger **40**. The end of the first secondary rail **36** extends only half way of the width of the other L-shaped hanger **40** and is secured thereto by a rivet **42**.

Extending at substantially right angles to both the main rail **22** and the first secondary rail **36** is a second secondary rail **44** having one end terminating short of the main rail **22** and the first secondary rail **36**. The end of the second secondary rail **44** is connected to the plate **16** by another conventional L-shaped hanger **46** whose horizontal por-

tion is secured to the plate 16 by a conventional fastener 48. The end of the second secondary rail 44 extends only half way of the width of the L-shaped hanger 46 and is secured thereto by a rivet 50.

Extending between the spaced ends of the main rail 22 and the first secondary rail 36 and in alignment therewith is a straight switch section 52 whose ends abut the main rail 22 and the first secondary rail 36 and are secured to the hangers 30 and 40 by rivets 54 and 56, respectively. The central upper portion of the straight switch section 52 is cut away and provided with a straight switch rail 58 which is pivotally connected to the straight switch section at its end adjacent the first secondary rail 36.

Referring now to Figures 4 and 5 in particular, it will be seen that the straight switch rail 58 is generally in the shape of an elongated bar having a diagonal end 60 which is in close alignment with a diagonal edge portion 62 of the straight switch section 52. Welded to the straight switch section 52, as at 64, is an angular plate 66 which is disposed at a slight angle to the straight switch section 52. The angular plate 66 is provided with a centrally located fastener 68 which forms a pivot pin and has rotatably mounted thereon a second angular plate 70 which is in face to face engagement with the first angular plate 66. Carried by the straight switch rail 58 and projecting from one side thereof is a rib 72 which extends longitudinally of the diagonal edge 60 of the straight switch rail 58 and is welded to the second angular plate 70.

In view of the foregoing, it will be obvious that when the straight switch rail 58 pivots about the pin 68 that it quickly moves out of the plane of the straight switch section 52 and that it pivots in a diagonal plane. However, inasmuch as the rear end of the straight switch rail 58 is in substantial alignment with the pivot pin 68, it remains in vertical alignment with the straight switch section 52 in all positions.

As is best illustrated in Figure 1, the straight switch section 52 has secured to one side thereof by welding an aligning plate 74 which aligns the free end of the straight switch rail 58 with the straight switch section 52 when it is in its closed position.

Extending from the end of the second secondary rail 44 towards the straight switch section 52 is a curved switch section 76 which has one end in abutting relation with the second secondary rail 44 and is secured to the hanger 46 by rivets 78. The curved switch section 76 is also supported by another conventional L-shaped hanger 80 which is secured to the underside of the switch mechanisms supporting plate 20 by a fastener 82. Carried by the curved switch section 76 is a curved switch rail 84 which has the same general side elevational outline as the straight switch rail 58, but is longitudinally curved.

Referring now to Figures 6 and 7 in particular, it will be seen that secured to one side of the curved switch section 76 adjacent the free end thereof is a first annular plate 86 which has mounted therein a fastener forming a pivot pin 88. The pivot pin 88 extends at right angles to the curved switch section 76 and lies in a horizontal plane. The curved switch rail 84 has secured to one side thereof an elongated flat bar 90 which projects outwardly therefrom and has secured to the rear end thereof a second annular plate 92. The second annular plate 92 is rotatably mounted on the pivot pin 88 and is in face to face engagement with the annular plate 86.

It will be understood that the curved switch rail 84 is so positioned and of such a length whereby when it is moved to a horizontal position, it will fit within the recess formed in the upper central portion of the straight switch section 52 and be in alignment with the track thereof and engage the plate 74 secured to one side thereof. When the curved switch rail 84 is in a vertical or open position, the rear end thereof remains in alignment with the curved switch section 76 for purposes to be explained in further detail hereinafter.

Due to the constructions of the straight switch section 52 and the curved switch section 76, it is readily apparent that the main rail 22 may be selectively connected to either the first secondary rail 36 or the second secondary rail 44. In order that the switch rails 58 and 84 may be selectively opened and closed, the switch mechanism includes an actuating mechanism which is referred to in general by the reference numeral 94.

As is best illustrated in Figures 1 and 8, the supporting plate 20 has secured to the underside thereof by welding an L-shaped hanger 96 whose lower end is connected to the straight switch section 52 and braced thereby. Secured to the L-shaped hanger 96 by welding is a horizontally extending tubular member 98 in which is rotatably mounted an elongated shaft 100. Carried at one end of the shaft 100 and rigidly connected thereto is a first crank arm 102 whose free end is connected by a link 104 to a hook 106 carried by the bar 90 projecting from the curved switch rail 84 and adapted to move same upon actuating the shaft 100. Rigidly secured to the shaft 100 in angular offset relation to the crank arm 102 is a second crank arm 108. The crank arm 108 is secured to the shaft 100 at the opposite end of the tubular member 98 and adjacent the other free end thereof. The crank arm 108 is connected to a link 110 which is in turn connected to the bar 72 of the straight switch rail 58 by a hook 112 welded thereto.

In order that the shaft 100 may be rotated in order to actuate the switch rails 58 and 84, it is provided with an actuating arm 114 which has depending therefrom an actuating lever 116. The actuating lever 116 is provided with a horizontal handle portion 118 at its lower end.

Referring now to Figure 1 in particular, when the actuating lever 116 is moved downwardly, the shaft 100 is rotated clockwise and the straight switch rail 58 is moved to a closed position and the curved switch rail 84 is moved to an open position. When it is desired to connect second secondary rail 44 to the main rail 22, the actuating lever 116 is moved upwardly with the resulting counter-clockwise rotation of the shaft 100. The straight switch rail 58 is then moved outwardly and the curved switch rail 84 is allowed to move downwardly into a closed position in alignment with one end of the main rail 22.

Illustrated in Figure 1 mounted on the first secondary rail 36 is a conventional movable hanger 120 which is provided with a wheel 122 engageable with the rails for permitting movement of the hanger therealong. The bottom of the hanger 120 is provided with a hook 124 swivelly connected thereto, the hook 124 being intended for engaging large pieces of meat whereby they may be readily transported upon the hanger 120 through the packing plant.

Due to the novel arrangement of the switch rails 58 and 84 with respect to the switch sections, it is impossible for the hanger 120 to move to an open switch and drop down on the floor of the packing plant. For example, if the switch rail 58 were in an open position and the hanger 120 is moving along the first secondary rail 36 towards the main rail 22, the wheel 122 would engage the rear of the straight switch rail 58 and tend to climb up thereon. As the wheel 122 moved up upon the switch rail 58 the weight of the hanger combined with the piece of meat hung from the hook 124 would cause downward movement of the switch rail 58 and cause that switch to close whereby the hanger 120 would proceed along the straight switch section 52 and on to the main rail 22. If the hanger 120 were on the second secondary rail 44, the same occurrence would take place with the curved switch rail 84 moving to a closed position due to the weight of the hanger 120 and meat disposed upon the hook 124.

Due to this novel feature, applicant has not only devised a compact and novel switch construction which may be readily mounted in conventional overhead track construction, but has also devised a foolproof switch construction

whereby the danger of hangers jumping the switches at intersections of rails is eliminated.

When the switch rails **58** and **84** are both in partially opened positions, derailing of the hanger **120** is prevented by it striking the end of one of the switch rails. Due to the close linkage of the switch construction, the end of one of the switch rails **58** and **84** will always be adjacent the end of the rail **22** to form either a stop or to function in its normal capacity as a switch rail.

The operation of this device will be understood from the foregoing description of the details thereof, taken in connection with the above recited objects and drawings. Further description would appear to be unnecessary.

Minor modifications of the device, varying in minor details from the embodiment of the device illustrated and described here, may be resorted to without departure from the spirit and scope of this invention, as defined in the appended claims.

Having described the invention, what is claimed as new is:

1. A switch for connecting a pair of aligned track rails and a right angularly related track rail to one rail of the pair, said switch including a pair of rigid movable switch rails, actuating mechanism connected to said switch rails for simultaneously moving same in opposite directions, said pair of switch rails including a curved switch rail and a straight switch rail having free ends movable in intersecting paths in a switching operation, said straight switch rail being mounted for pivotal movement about an axis inclined relative to the horizontal whereby said straight switch rail passes said curved switch rail in horizontally spaced relation during a switching operation.

2. A switch for connecting a pair of aligned track rails, and a right angularly related track rail to one rail of said pair, said switch including a pair of rigid movable switch rails, actuating mechanism connected to said switch rails for simultaneously moving same in opposite directions, said pair of switch rails including a curved switch rail and a straight switch rail having free ends movable in intersecting paths in a switching operation, said curved switch rail being mounted for pivoting in a vertical plane about a horizontal pivot pin carried by one of said track rails, said straight switch rail being mounted for pivotal movement about an axis inclined relative to the horizontal whereby said straight switch rail passes said curved switch rail in horizontally spaced relation during a switching operation.

3. A switch for connecting a pair of aligned track rails and a right angularly related track rail to one rail of said pair, said switch including a pair of rigid movable switch rails, actuating mechanism connected to said switch rails for simultaneously moving same in opposite directions, one end of each switch rail being pivotally connected to an associated track rail, said connection including a first angular plate rigidly secured to one of said track rails, a pivot pin carried by said first angular plate, an outwardly directed rib on one of said switch rails, a second angular plate rigidly connected to said rib, said second angular plate being rotatably mounted on said pivot pin in face-to-face relation to said first named plate.

4. A switch for connecting a pair of aligned track rails and a right angularly related track rail to one rail of said pair, said switch including a pair of rigid movable switch rails, actuating mechanism connected to said switch rails for simultaneously moving same in opposite directions, one end of each switch rail being pivotally connected to an associated track rail, said connection including a first angular plate rigidly secured to one of said track rails, a pivot pin carried by said first angular plate, an outwardly directed rib on one of said switch rails, a second angular plate rigidly connected to said rib, said second angular plate being rotatably mounted on said pivot pin in face-to-face relation to said first named plate, one of said switch rails being straight, the angular plates and pivot pins of the connection for said straight switch rail being inclined transversely of said straight switch rail.

References Cited in the file of this patent

UNITED STATES PATENTS

571,607	Werner	Nov. 17, 1896
1,078,945	Murray	Nov. 18, 1913
2,067,981	Ohlson	Jan. 19, 1937
2,517,326	LeFiell	Aug. 1, 1950

FOREIGN PATENTS

421,225	Great Britain	Dec. 17, 1934