(No Model.) 2 Sheets—Sheet 1.

W. H. BRODIE.

AUTOMATIC SWITCH FOR TROLLEY TRACKS.

No. 489,179. Patented Jan. 3, 1893.

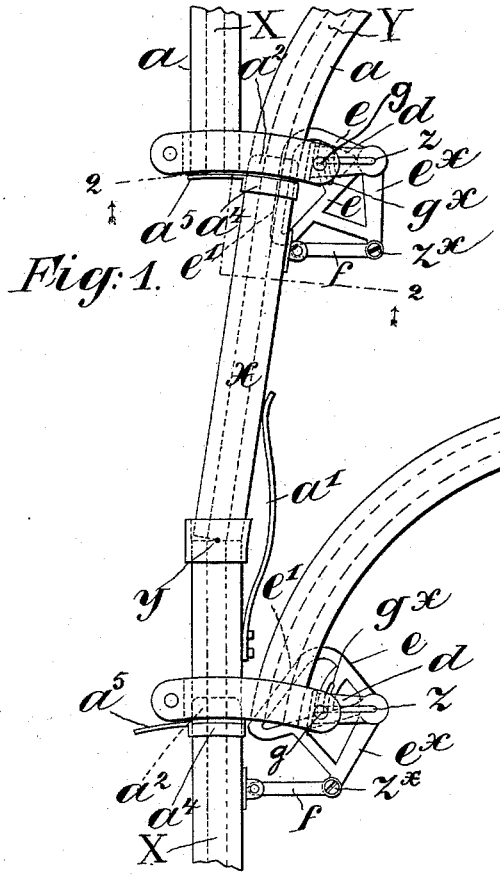

Fig. 1.

Fig. 3.

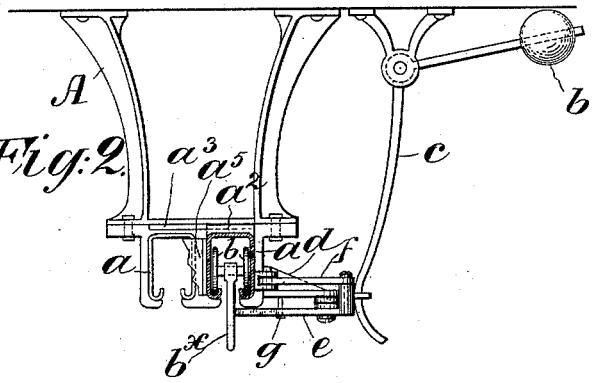

Fig. 2.

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Fig: 4.

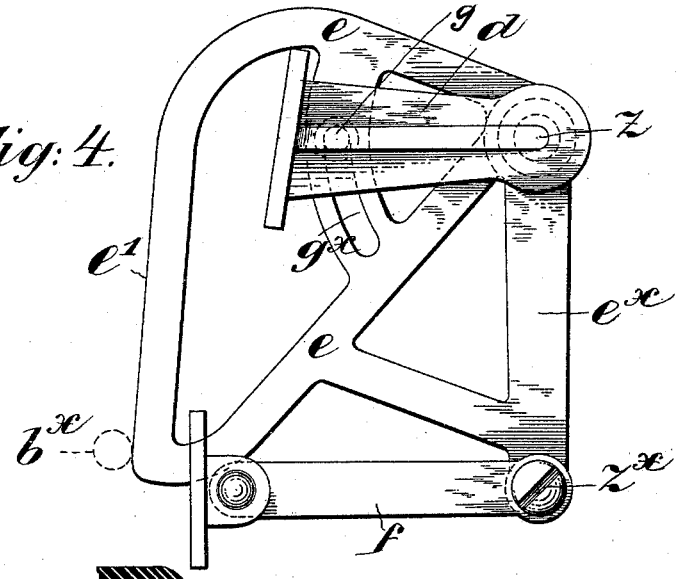
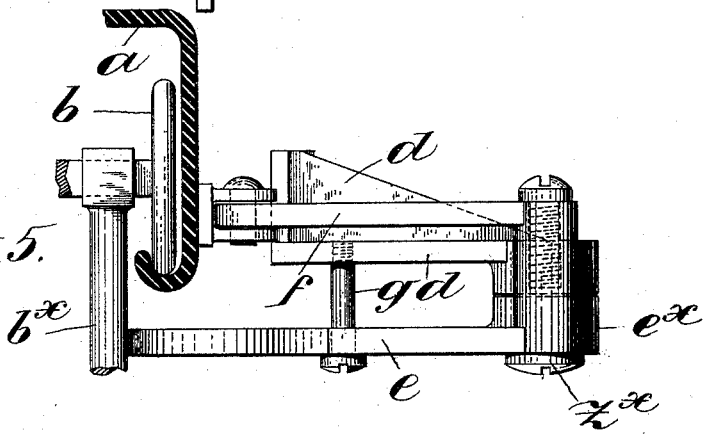


Fig: 5.



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UNITED STATES PATENT OFFICE.

WILLIAM H. BRODIE, OF BROOKLYN, NEW YORK.

AUTOMATIC SWITCH FOR TROLLEY TRACKS.

SPECIFICATION forming part of Letters Patent No. 489,179, dated January 3, 1893.

Application filed August 11, 1892. Serial No. 442,805. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. BRODIE, a citizen of the United States, and a resident of Brooklyn, Kings county, New York, have invented certain new and useful Improvements in Automatic Switches for Trolley-Tracks, of which the following is a specification.

The present invention relates to automatic switches and particularly to switches in overhead trolley tracks such as are used in abattoirs for carrying meats. Heretofore it has been a common practice in such constructions to employ what is known as the "Coburn trolley track," and in many cases to effect the switching by hand, frequent accidents being the result.

The object of my invention is to provide this class of tracks with a simple and positive automatic switch to enable the trolley to pass from one line of track to the other, and to prevent a trolley on the main line from running off the track at an open switch.

My invention will be fully described hereinafter and its novel features carefully defined in the claims.

In the accompanying drawings—Figure 1, is a plan view of a trolley line provided with my improvements, the view showing the main line and two branch lines and switches, one switch being shown open to the branch and the other open to the main line. Fig. 2, is a transverse section taken on line 2, 2, in Fig. 1, and Fig. 3 a longitudinal section. Fig. 4, is a plan and Fig. 5 a front view of the switching device, detached and on a larger scale.

The track *a*, as herein shown, is that employed in the Coburn system, and consists of a tube of sheet steel with a slot or open way at the underside, and two longitudinal troughs or hollows at the sides of the slot for the wheels, *b*, of the trolley to run in. This tube is ordinarily mounted in hangers, A, suspended from the ceiling.

X represents the main trolley line and Y, the branches leading into it. There will sometimes be many branch lines, but two will suffice to fully illustrate the invention. A portion, *x*, of the main track or line forms the switch rail or track, and this portion is pivoted at *y*, so that its free or movable end may be brought into line with either the main track X or the branch track Y. Normally the switch rail *x*, is held in line with the main track by means of a spring, *a'*, seen in Fig. 1, or by a weight *b*, acting through a lever *c*, as seen in Fig. 2. I provide means for returning the switch rail to its normal position automatically, and it may be by a weight, spring, or other equivalent device. When the loaded trolley approaches the main line, moving along the branch, it finds the switch closed to the main line and open to the branch, and by means of the switching mechanism I will now describe, it automatically shifts the switch rail *x* and thus closes the same to the branch, holding it thus closed until the trolley has passed out onto the switch rail, when the spring or weight will be free to shift the rail and close the switch to the main line. A bracket, *d*, is secured to the hanger A, and projects laterally therefrom; and at *z*, a switching cam, *e*, is pivotally mounted on the bracket. This cam stands in a plane below the track *a*, and to an arm, $e^{\times}$, on the cam is coupled at $z^{\times}$, a link *f* which is coupled at its other end to the switch rail. When the switch rail is closed to the main track, the cam *e* lies obliquely across the slot in the lower face of the branch track, and when the trolley on the branch approaches the switch, the pendent hook, $b^{\times}$, thereof, which moves along the slot in the track, encounters said cam and pushes it out of the path, thus swinging the cam around about its pivot *z*, and causing the link *f* to draw the switch rail *x* into position to close the switch to the branch. This brings the elongated plain face, *e'*, of the cam into line with the slot of the switch rail and as the trolley moves onto and along said rail, the shank of its pendent hook must pass beyond the cam before the spring or weight can shift the switch rail to its normal position and close the switch to the main line.

To form a stop for limiting the movement of the switch rail in both directions, a stud, *g*, is secured in the under side of the bracket *d*, said stud playing in a curved limiting slot, $g^{\times}$, in the cam *e*. The head of the stud, which takes under the cam, serves as a support for the latter in its movements. The switch rail *x*, is supported at its moving end by a lip, a^2,

thereon, which plays in a keeper, a^3, formed in the hanger A, as seen in Fig. 3. This lip is formed, as here shown, by providing the end of the switch rail with a band or sleeve, a^4, of cast iron, on which the lip a^2 is formed. The length of the keeper a^3 may be made to limit the movement of the switch rail, also.

To close the main line when the switch is open to the branch, I provide a closing plate, a^5, carried by the switch rail and adapted to be drawn across the end of the tubular track of the main line when the switch rail is shifted. This plate a^5 may be cast in one with the sleeve a^4, or be secured rigidly thereto.

Where the trolley track is in the nature of a tube I prefer that the shut-off device a^5 shall be a plate, but it may be a bar as well, or any device to prevent the trolley from running into the open switch. The carrying pendant, $b^\times$, of the trolley is usually a hook, but the form or kind of pendant is not essential to my invention.

I have shown the bracket d as standing, when viewed in plan, at an angle less than a right-angle with the axis of the open track Y at the switching point on the side from which the trolley approaches the switch. This is done in order to set the pivot point z more nearly opposite to the point where the trolley pendant strikes the cam; and the pivot point z may be set even farther over in the direction from which the trolley is approaching in order to permit the cam to swing the more freely out of the way of the trolley.

I have called X, the main line and Y, the branch, and have shown the switch rail x, in and forming, normally, a part of said main line, but it will be understood that these names are arbitrary. By whatever names the parts of the line are called, the switch rail will be closed normally to one of them and the approach of the trolley on the other, open track or line will shift the switch rail and close it to the line the trolley is on.

I am aware that it is not new in parcel carriers where the tandem trolley wheels roll along a slit in a tube, and where there is no shifting switch rail, to provide means whereby the trolley swings a tongue from one side of the slit to the other where the tube forks, thus directing the trolley into the proper branch of the slit; this construction I do not claim, nor would it be adapted to the kind of trolley track to which my invention is applied.

Having thus described my invention, I claim:—

1. The combination with an overhead trolley track, a switch-rail in and forming a part of said track, a similar track terminating adjacent to the free end of the switch-rail, whereby the switch-rail may be closed to either of the tracks, and means for holding the switch-rail closed to either of said tracks, of a trolley mounted on the track and having a carrying pendant and an automatic shifting mechanism arranged at the switch, said mechanism comprising a cam e, pivoted under the track on a vertical axis and situated with its face e', standing, normally, obliquely to the path traveled by the trolley pendant, and a link, f, coupling the cam to the switch-rail, whereby the pendant on the passing trolley turns the cam about its pivot until its face e' is parallel with the track, thus shifting the switch-rail, and holding the cam in this position until the pendant passes the elongated face of the cam, as set forth.

2. In a switch for trolley tracks, the combination with a main track, a pivoted switch rail in the latter, and a branch track, all composed of tubes longitudinally slitted along the under side and provided with ways to receive the trolley wheels, and the trolley, mounted in the said tube and provided with a carrying pendant which plays along said slit in the tube, of means substantially as described for holding the switch rail closed to one track, and a switch device at the switching point comprising a pivoted cam which stands across the slit of the open track, and a link coupling said cam to the switch rail, whereby, when the trolley approaches the switch its carrying pendant encounters and moves the cam about its pivot thus shifting the switch rail, as set forth.

3. The combination with an overhead trolley track, a pivoted switch-rail therein and forming normally, a part of said track, another track, as Y, open normally at the switch and adapted to be connected with the first named track by the shifting of the switch-rail, a trolley on the track having a carrying pendant which extends downward below the track, and an automatic shifting mechanism situated adjacent to the free end of the switch-rail and adapted to be operated by the trolley approaching the switch on the track Y, said mechanism comprising a cam e, pivoted to turn about a vertical axis, and arranged under the track with its face across, and oblique to the path followed by the trolley pendant, and a link f, connected at one end to said cam and at the other end to the free end of the switch rail, substantially as set forth.

4. The combination with two overhead trolley tracks, a pivoted section of one of said tracks adapted to form a shifting track, x, means for keeping said pivoted section normally closed to one of said tracks, a limiting stop to limit the movement of said pivoted section of the track, a trolley on one of said tracks, and a switching mechanism actuated by the moving trolley, said mechanism comprising a pivoted cam which stands normally across the path of a part of the moving trolley, and a link connecting said cam with the free end of the pivoted section of the track, as set forth.

5. The combination with two trolley tracks and a pivoted section x in one of them, of a

switching device comprising a fixed bracket, *d*, a switching cam *e*, arranged to stand normally across one of said tracks and having an arm or part $e^{\times}$, and a link *f*, coupled at one end to said arm $e^{\times}$ and at the other end to the free end of the pivoted section *x*, substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

WILLIAM H. BRODIE.

Witnesses:
HENRY CONNETT,
PETER A. ROSS.