

No. 717,689.

PATENTED JAN. 6, 1903.

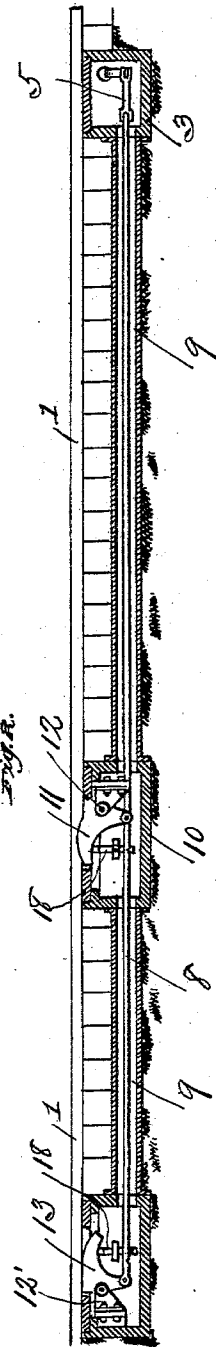
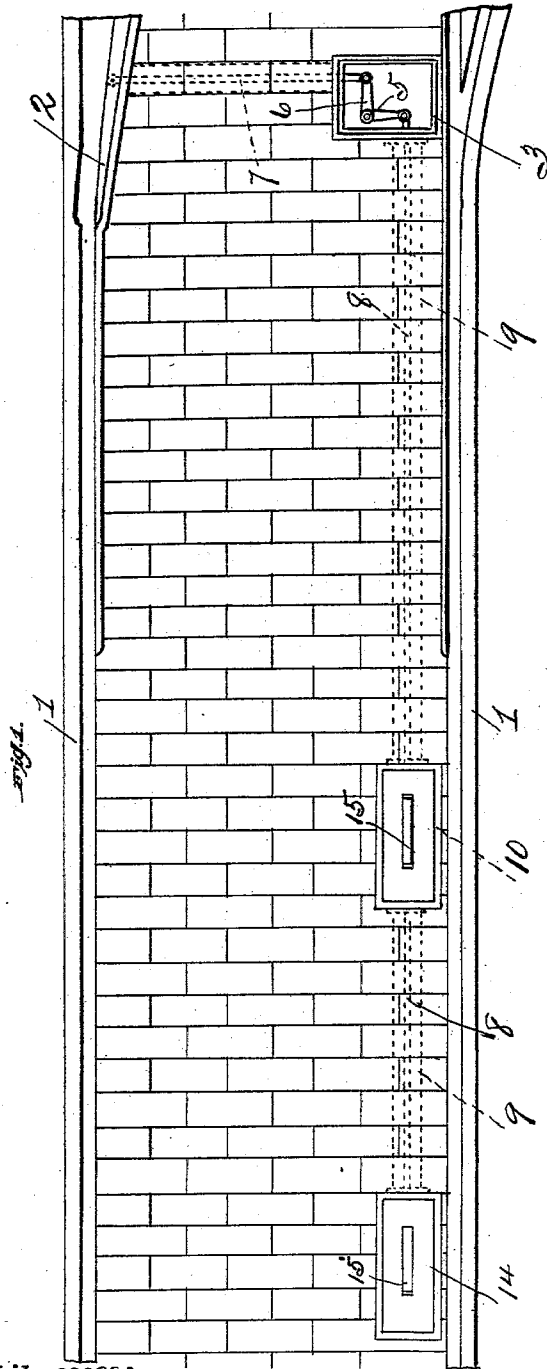
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AUTOMATIC STREET RAILWAY SWITCH.

APPLICATION FILED FEB. 5, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



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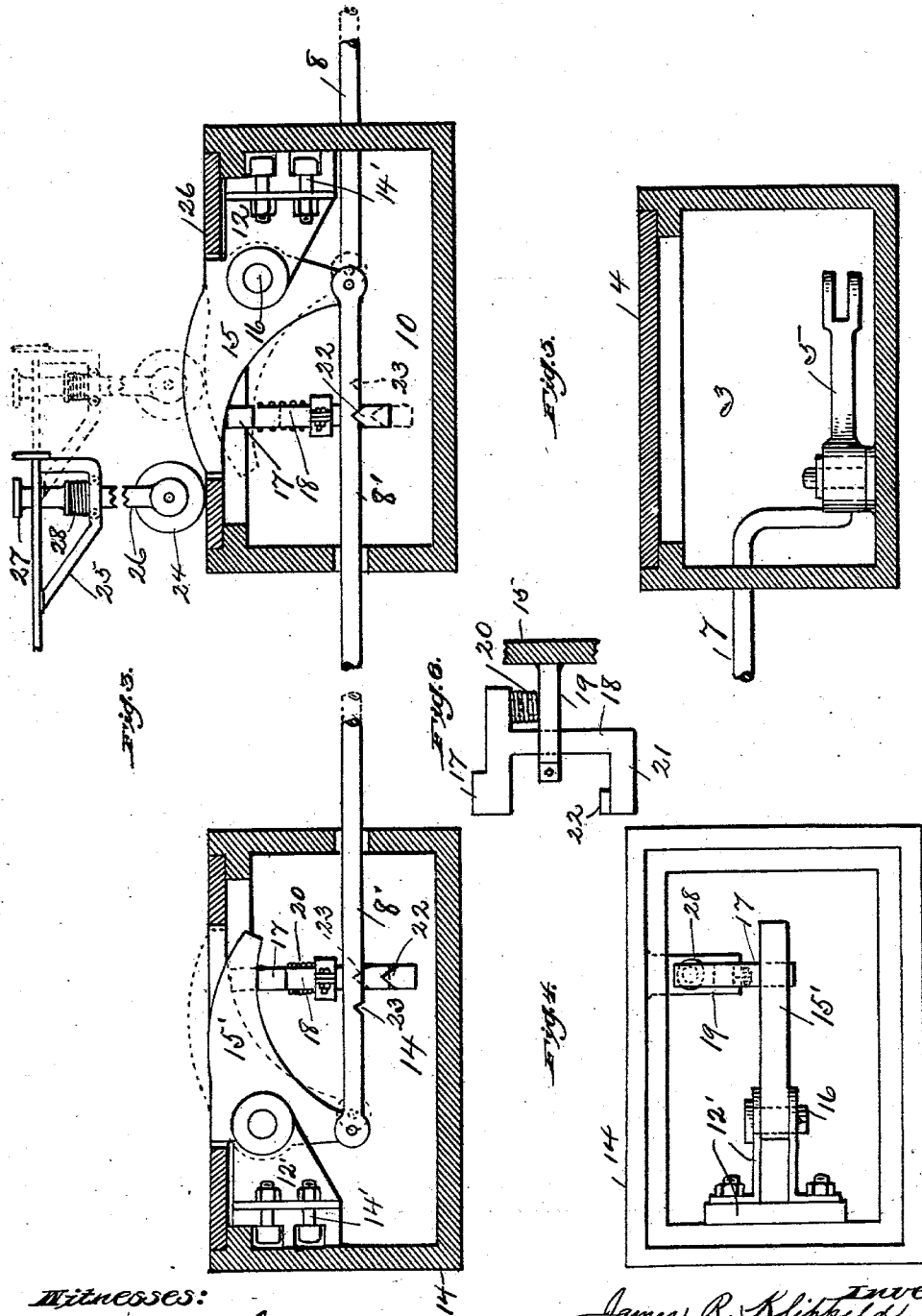
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# UNITED STATES PATENT OFFICE.

JAMES R. KLIPPELT, HOWARD W. JEFFERS, AND WILLIAM D. BRADFORD,  
OF PITTSBURG, PENNSYLVANIA.

## AUTOMATIC STREET-RAILWAY SWITCH.

SPECIFICATION forming part of Letters Patent No. 717,689, dated January 6, 1903.

Application filed February 5, 1902. Serial No. 92,696. (No model.)

*To all whom it may concern:*

Be it known that we, JAMES R. KLIPPELT, HOWARD W. JEFFERS, and WILLIAM D. BRADFORD, citizens of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Automatic Street-Railway Switches, of which improvement the following is a specification.

This invention relates to an improved automatic street-railway switch; and it consists in the certain details of construction and combination of parts, as will be fully described hereinafter.

In the accompanying drawings, Figure 1 is a plan view of a street-railway switch, the same being provided with our improved operating device, being constructed and arranged in accordance with our invention. Fig. 2 is a side sectional elevation of the same. Fig. 3 is an enlarged side sectional elevation of the two operating-levers, together with their connected operating mechanism, and also a side view of the trolley connected to the base or platform of the car. Fig. 4 is a plan view, with cover removed, of one of the operating-levers. Fig. 5 is a similar view of the box or frame containing the lever for operating the switch-tongue. Fig. 6 is an enlarged side elevation of the box or frame in which the bell-crank is mounted.

To construct a switch-turning device in accordance with our invention, whereby the moving car will automatically turn the switch-bar in either direction, we arrange in connection with the ordinary switch or turn-out, consisting of the rails 1 and the pivoted switch-bar 2, and directly opposite the latter, a box or frame 3, the same being flush with the street-level and provided with a lid or cover 4. Pivotally mounted within this box 3 is a bell-crank 5, attached to a connecting-bar 7, the other end of which is loosely connected to the switch-bar 2, the said connecting-bar passing through an underground conduit, as will be seen by reference to Fig. 1 of the drawings. Attached to the other end of this said bell-crank 5 is a bar 8, arranged in a similar conduit 9 and connected loosely to the lower end of an angular operating-lever 15. This angular operating-lever 15 is mount-

ed in a frame 10 upon suitable brackets 12, (see Fig. 3,) attached in position by means of bolts 14, and the upper portion of the said lever projecting above the general surface of the street in order that a contact-trolley 24 may engage with the same during the movement of the car over the device. The said trolley and its connections will be hereinafter described. This operating-lever 15 is pivoted or journaled upon a shaft 16 and projects above the surface of the lid or cover 26 of the box containing the same, and a spring-actuated device (see Fig. 6) is arranged beneath to recover or bring the parts back to their normal position. This last-mentioned device consists of a bar 18, arranged in suitable slides, the top portion of which is constantly in contact with the under side of the lever 15 and is formed at the base with an angular portion 21, formed with a V-shaped part 22, adapted to engage with a notch 23, formed on the under side of the bar 9, above mentioned, for the purpose of locking the switch-tongue 2 in the position thrown by the last car passing over the device. The spring 20 for recovering the parts rests upon a bracket 19, formed integral with the box or frame 10, and bears against a projecting portion of the vertically-moving bar 18. At the left of Fig. 3 of the drawings is a similar box or frame, which is located along the line of track at a greater distance from the switch bar or tongue 2 and contains the same mechanism previously described when referring to the box or frame nearest the switch. These two operating-levers 15 and 15' are connected together by a bar 8' and operate in unison, the one at all times being either above or below the surface of the cover 26, ready to engage with the trolley 24, before mentioned. This above-mentioned trolley 24 is suitably mounted upon a vertically-sliding bar 26, mounted in a suitable frame attached beneath the platform of the car and provided with a tread and recovering-spring 27 and 28 in a manner that the motorman or operator may by means of his foot press the said trolley down and be brought in contact with the levers 15 or 15', depressing either of the levers to operate the switch-tongue in either direction.

In operation the car provided with our improved device will upon approaching the switch automatically turn the same for the main track or the turn-out, at the option of the motorman, it only being necessary to engage the trolley 24 with the first lever 15' to open the switch for the turn-out, or with the second lever 15 for the main track, as is obvious, and also to lock the said switch in any desired position by the engagement of the parts 22 with the notches 23, formed upon the under side of the bar 8.

Other slight modifications and changes may be made in the various details of construction without departing from the spirit of the invention.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The herein-described automatic-operated street-railway switch, consisting of the bell-crank loosely attached to the switch-bar, the operating-levers 15, and 15' arranged the one in line with the other and attached to the said bell-crank, a spring to recover the said

levers, and a trolley attached to the car adapted to contact with and operate the levers, as and for the purpose described.

2. In a device for the purpose described, the combination consisting of the bell-crank 5, loosely connected to the switch-bar 2, and mounted within a suitable box or frame 3, the two operating-levers 15 and 15' the one arranged in line with the other and adapted to be extended above the surface of the rails, a spring-actuated bar 18 arranged beneath each of the said levers, and a locking device adapted to engage with the bar connecting the aforesaid levers, all arranged and combined, substantially as and for the purpose described.

In testimony whereof we have hereunto signed our names in the presence of two subscribing witnesses.

JAMES R. KLIPPELT.  
HOWARD W. JEFFERS.  
WILLIAM D. BRADFORD.

In presence of—  
JOHN GROETZINGER,  
M. HUNTON.