C. C. KORNS.

SWITCH THROW.

APPLICATION FILED DEC. 5, 1918.

1,313,995. Patented Aug. 26, 1919.

Fig. 1.

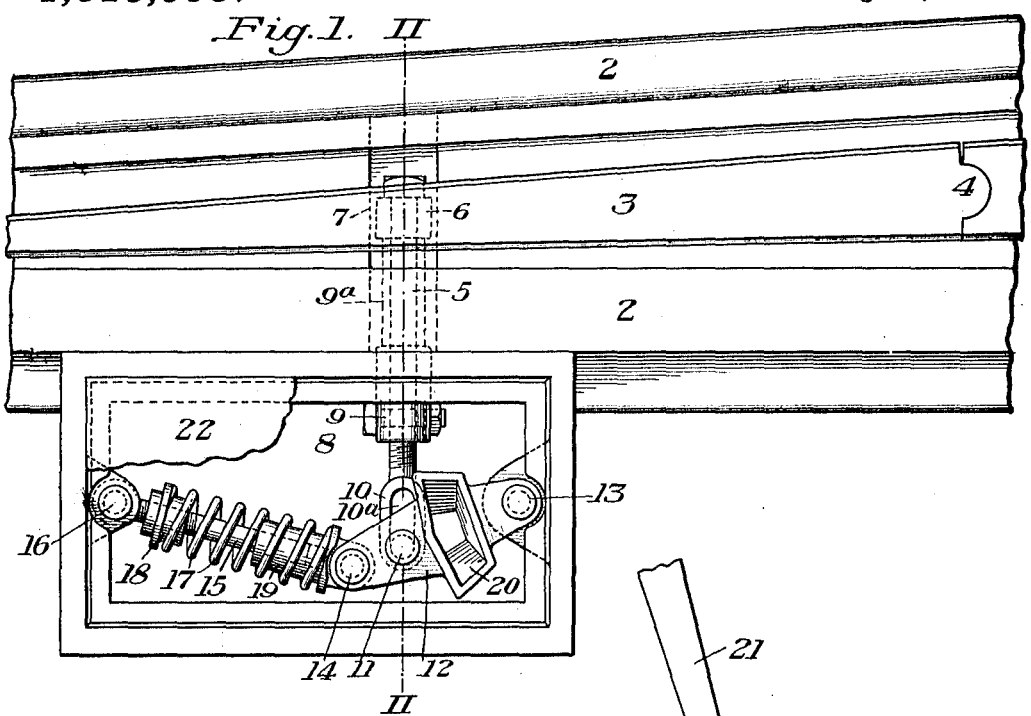


Fig. 2.

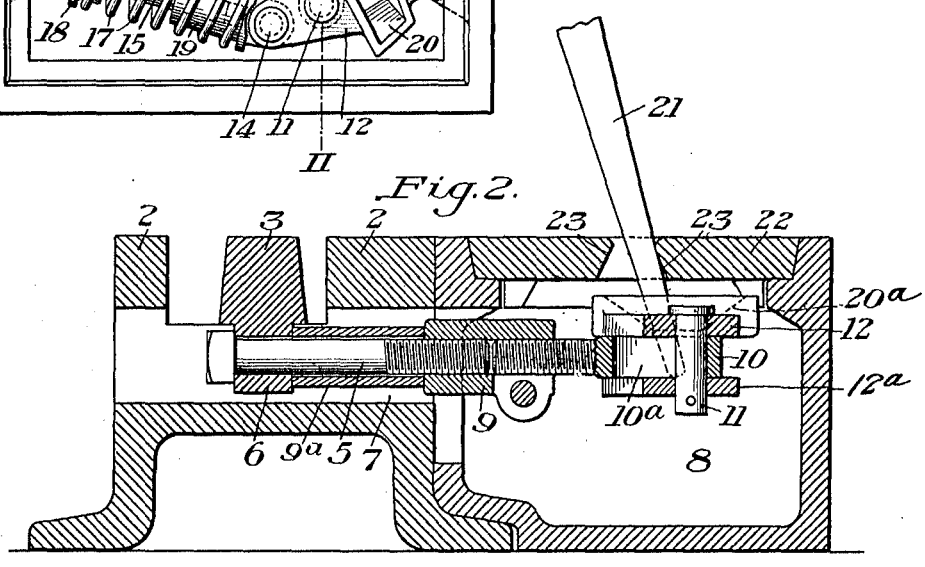
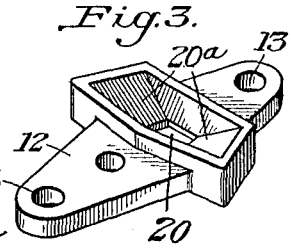


Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

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SWITCH-THROW.

1,313,995. Specification of Letters Patent. Patented Aug. 26, 1919.

Application filed December 5, 1918. Serial No. 265,338.

To all whom it may concern:

Be it known that I, CLARENCE C. KORNS, a citizen of the United States, residing at Johnstown, Cambria county, Pennsylvania, have invented a new and useful Improvement in Switch-Throws, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 is a plan view partly broken away of a switch throw embodying my invention.

Fig. 2 is a section on the line II—II of Fig. 1, and

Fig. 3 is a detail perspective view of one of the parts.

My invention has relation to switch throws, and is designed to provide a simple and efficient device of this character by means of which the switch tongue cannot be thrown from one of its switching positions to the other except by the operation of the throw mechanism. A further object of my invention is to provide a device of this character which will permit the switch to be readily trailed after which the tongue will automatically return to its formerly set position. A still further object of the invention is to provide actuating or throwing connections of novel character.

The nature of my invention will be best understood by reference to the accompanying drawing, in which I have shown a preferred embodiment thereof, and which will now be described, it being premised, however, that various changes can be made in the details of construction, arrangement and combination of the several parts, without departing from the spirit and scope of my invention, as defined in the appended claims.

In the accompanying drawing, in which my invention is shown as applied to a tongue switch of a well-known type, the numeral 2 designates the switch structure having a tongue 3 movable on a fulcrum bearing or heel 4. 5 designates a rigid throw connection which is attached to a depending lug 6 of the tongue 3, and which extends laterally through an opening 7 in the switch structure into a switch box 8 fitted against one side of such structure. The throw 5 is shown as consisting of a two-part rod or bolt having threaded portions which are adjustably connected by a clamp nut 9, a spacing sleeve 9^a being placed between the lug 6 and said nut. The outer section terminates in a slotted head 10 which loosely engages a pin 11 carried by two members 12 and 12^a of a spring-toggle device. The members 12 and 12^a are pivoted in the switch box at 13 and are pivotally connected at their other ends by a pin 14 with the other member of the toggle. This other member comprises a spring bolt 15 pivoted to the box at 16, with a spring 17 seated between an adjustably fixed collar 18 and the head of a sleeve 19. The construction is such that as the toggle is moved across its center line, the spring 17 will be compressed. The slot 10^a in the head 10 is made of a length materially greater than the throw of the switch tongue 3.

22 designates a cover plate for the box 8 and 23 a beveled wall slot therethrough for the reception of a throw bar such as 21. The upper toggle member 12 is provided with an opening 20 for the reception of the throw bar 21, while the lower toggle member 12^a acts as a stop for the throw bar. The walls 20^a of the opening 20 are beveled to guide the end of the throw bar into the opening regardless of the position of the toggle.

In the drawings the switch tongue is shown in the position it occupies when cars are to run on the main track. If a car should trail the switch on the curved portion, the switch tongue would not be drawn a sufficient distance by the flanges of the wheels when trailing the switch to move the toggle member to its central position, so that immediately after the wheels have passed beyond the tongue, the tongue could be returned to the position shown in Fig. 1. For the same reason the tongue 3 cannot be thrown by a switch iron which engages the tongue directly, as the throw of the tongue is not sufficient to move the toggle member beyond its central position, regardless of whether the tongue is set in the position in Fig. 1 or in a position to cause the cars to take the curve.

When it is desired to throw the switch the throw iron 21 is inserted through the openings 23 and 20. As shown in Fig. 2 the upper portion thereof is then rocked to the right, the throw bar 21 fulcruming about the wall of the slot 23, and at the same time engages one wall of the slot 20 in the member 12. During the first movement of the toggle the pin 11 will move idly in the slot

10[a] of the head 10, and will not engage the other end of the slot until the toggle members have been moved to about their central positions. At about this time the pin 11 will engage the end of the slot 10[a] and shift the tongue 3 to the position to cause the cars to take the curve, and the spring of the toggle member will hold the pin 11 against the upper end of the slot 10[a] as viewed in Fig. 1.

It will be readily understood that my invention is not limited to the particular form of spring-toggle which I have herein shown and described, since various forms of toggle devices may be employed. It will also be obvious that I may employ other means besides that shown for effecting the throw of the toggle and thereby of the switch tongue.

I claim:

1. The combination with a laterally movable switch tongue, of an actuating connection therefor, a spring toggle device, and a lost motion connection between the toggle-device and the actuating connection, substantially as described.

2. The combination with a laterally movable switch tongue, of an actuating connection therefor, a spring toggle device, and a lost motion connection between the toggle device and the actuating connection, the extent of the lost motion in such connection being greater than the maximum throw of the switch tongue, substantially as described.

3. The combination with a switch tongue, of a laterally extending throw connection therefor, said connection having a slotted head, a switch box into which said head extends, and a spring toggle having one of its members loosely engaged by said slotted head, substantially as described.

4. In a switch throw, the combination with a movable switch tongue, having a laterally extending throw rod, a spring toggle device having a lost motion connection with the throw rod, one of the members of said toggle device having a socket formed with beveled walls for the reception of a throw bar, substantially as described.

5. In a switch throw, the combination with a switch tongue having a laterally extending throw rod, a switch box into which the throw rod extends, said rod having a slotted portion within said box, a spring toggle device, one member of which is provided with a socket for an actuating tool, and the box having a cover provided with a slot through which the tool may be engaged in said socket, substantially as described.

6. In a switch throw, the combination with a switch tongue having a laterally extending throw rod, a switch box into which the throw rod extends, said rod having a slotted portion within said box, a spring toggle device, one member of which is provided with a socket for an actuating tool, and the box having a cover provided with a slot through which the tool may be engaged in said socket, the slot in said slotted portion being of a length to provide a lost motion greater in extent than the throw of the switch tongue, substantially as described.

In testimony whereof, I have hereunto set my hand.

CLARENCE C. KORNS.