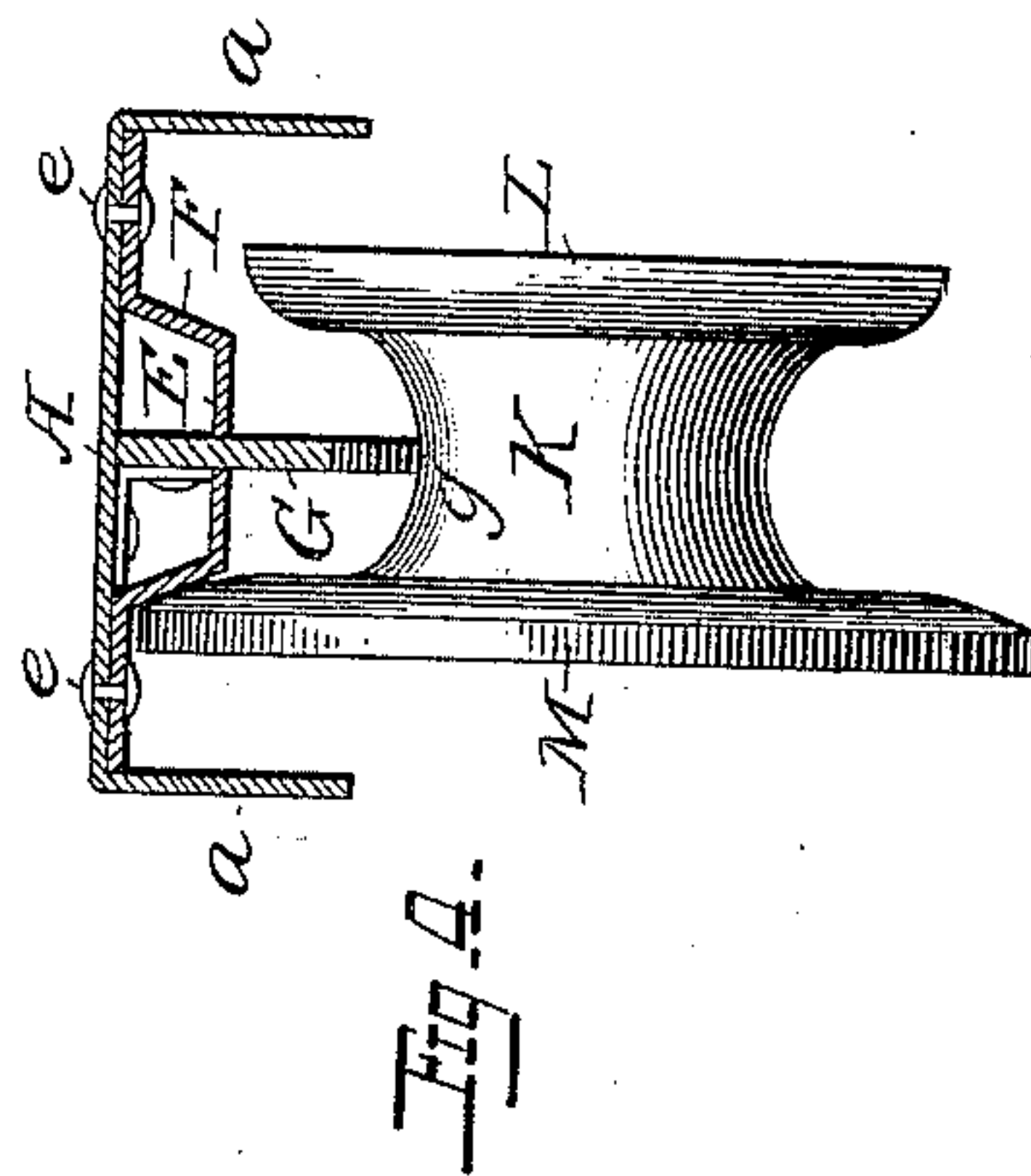
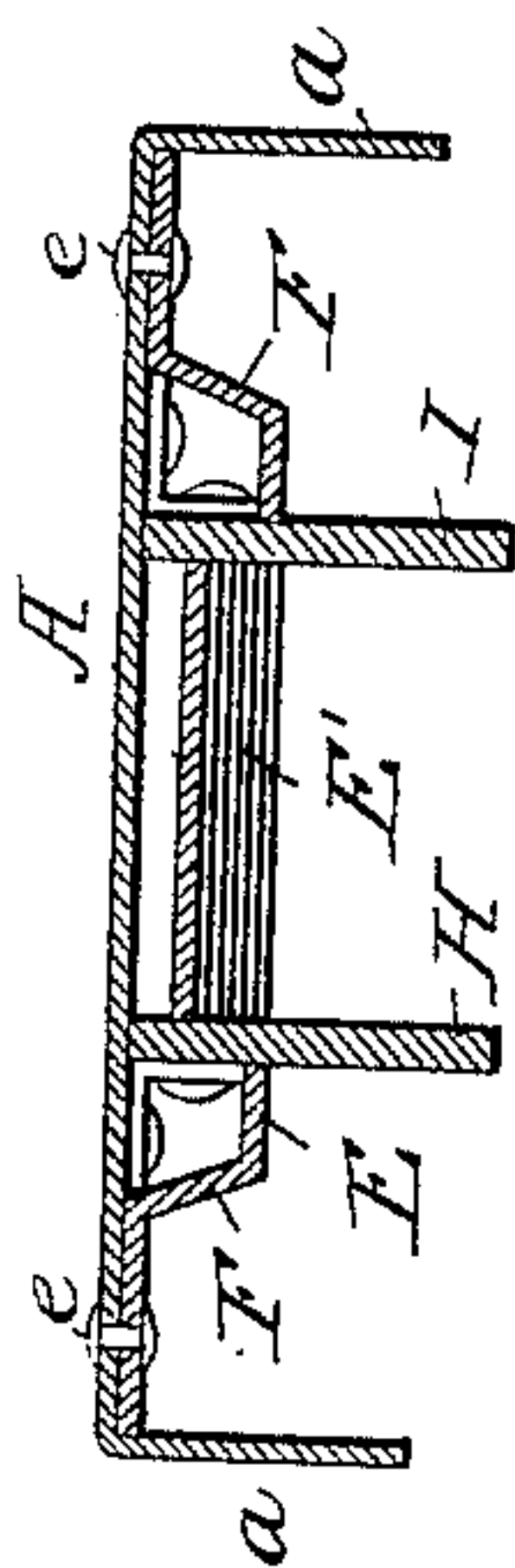


W. H. S. WRIGHT.  
GROOVED SWITCH.

Patented Sept. 23, 1890.



INVENTOR

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# UNITED STATES PATENT OFFICE.

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## GROOVED SWITCH.

SPECIFICATION forming part of Letters Patent No. 436,944, dated September 23, 1890.

Application filed June 3, 1890. Serial No. 354,154. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM HENRY SEWARD WRIGHT, a citizen of the United States, residing at Elkhart, Elkhart county, State of Indiana, have invented certain new and useful Improvements in Grooved Switches, of which the following is a specification.

My invention relates to electrical railways, and more especially to that class of railways in which the current is supplied to a suspended electric conductor or conductors and carried therefrom to the motor upon the traveling vehicle by means of a contact or trolley-wheel which presses upwardly against the conductor; and it has for its object to provide means whereby the trolley can be diverted onto a branch or turn-out line, or may be allowed to pass from the branch or turn-out line to the main line; and to these ends my invention consists in a switch constructed, arranged, and operating substantially as hereinafter pointed out.

In the accompanying drawings, Figure 1 is an inverted plan view of a switch embodying my present invention. Fig. 2 is a longitudinal sectional view thereof. Fig. 3 is a transverse section on the line *x x*, Fig. 1; and Fig. 4 is a transverse section on the line *y y*, Fig. 1.

The switch consists of a plate A, which is preferably of conducting material or covered with conducting material on its under side, and the edges *a a* are preferably turned down at right angles to the body portion for the purpose of strengthening the same, protecting the parts from the elements, and, further, preventing the possible derailment of the trolley or contact-piece traveling thereon. This body is widened at its ends, one end receiving or being connected to one or the main conductor B, and the other receiving or being connected to the other terminal of the main conductor C or to a branch conductor D. Centrally mounted on the under side of the plate is a block or frame E, extending longitudinally through the switch, and I have shown this as consisting of a plate of metal secured to the plate A by rivets *e* or otherwise, although it may be a solid block, if desired. This block or frame projects downward at the center, and the edges or sides F are preferably beveled or inclined, as shown, and they follow substantially the contour or outline of

the switch-frame, being practically parallel to the edges thereof. The ends are preferably extended a short distance beyond the frame E and inclined or beveled to insure the flange of the trolley-wheel passing onto the block properly.

The main conductor B is shown as attached to a plate G by suitable clips *b*, and this plate is inclined or tapering at its end, and is secured to the plate E in any suitable way, and it forms a guide or way for the trolley to pass from the main conductor B onto the switch-plate or frame. The conductors C and D are similarly connected to the plates H and I, respectively, by clips *c d*, and these plates are also shown as tapering at one end, while the other may be made with parallel edges, as shown, and they serve as guides or ways for the trolley to pass to or from the switch to the conductor C or D, as the case may be.

I preferably make the plate E tapering or inclined at a portion E', commencing at or about the terminals of the plates H or I, so that the trolley-wheel will be free to bear at its axle or central portion upon the guide plate or way before it passes off from the switch, or to be thus supported by said plate before it enters the switch.

In connection with this switch I make use of a trolley K, preferably in the form shown, having a central portion which normally runs upon the conductor or connecting-plates, and provided with two flanges L and M, one of which is of greater diameter than the other, as clearly shown in Figs. 1 and 4. In this construction it will be apparent that the trolley-wheel normally bears upon the conductor at its central portion, and when it approaches the switch it passes from the conductor down the incline, as of the plate G, until it reaches its widest part, as at *g*, which is preferably adjacent the end of the switch, and as it passes onto the switch the flange M will pass between the central plate or block E and the outside edge *a* of the plate A, and this block or plate will form a guide for the trolley-wheel or contact device. The other flange L, being of less diameter, will ride over or upon the face of the block or plate E until the trolley-wheel reaches one of the plates H or I, depending of course upon which the wider flange of the wheel is placed. Thence it will pass onto the



plate H or I, and if the block or plate E is inclined, as at E', the trolley-wheel will soon bear upon the plate H or I at its central portion, and thus be positively guided and led  
 5 onto the upper conductor C or D. Of course it will be seen that a trolley passing from the conductor C or D will be properly guided by the plate E so as to pass onto the plate G and thence to the main conductor B, the wider  
 10 flange of the wheel acting as a guide and traveling along the inclined edge F of the plate or block E.

It will thus be seen that the switch is provided with two grooves or channels, forming  
 15 guides for the trolley and extending longitudinally through the switch, being formed, practically, by the central block or plate, and the extension-plates G, H, and I, which form connections between the switch and the con-  
 20 ductors, prevent any jarring, jolting, or knocking of the trolley-wheel against the switch, furnishing inclined ways to cause the trolley-wheel to pass easily from the conductors onto the switch. In some instances the conductors  
 25 themselves may be secured directly to the under side of the central block or frame and the trolley pass from the conductors onto the switch; but I preferably use the interposed plates between the conductors and switch, for  
 30 the reasons before stated.

While I have thus described one simple application of my improvement in switches, it will be understood that the same principle of operation may be applied to many and various  
 35 other forms of switches without departing from the spirit of my invention, and I therefore do not limit myself to the precise construction and arrangements of parts shown.

What I claim is—

40 1. An electric switch consisting of a plate connected to the conductors and having a central longitudinal guide-block extending throughout the length of the plate, substantially as described.

2. An electric switch consisting of a plate 45 of conducting material connected to the conductors and provided with a central longitudinal block having inclined sides parallel to the edges of the switch and forming guides for the trolley, substantially as described. 50

3. An electric switch consisting of a plate having a central longitudinal block, and plates connected to said block and to the conductors, the said plates being provided with inclined ends, substantially as described. 55

4. An electric switch consisting of a plate and a central block consisting of a frame connected thereto and forming a guide for the trolley-plates connected to the central block and to the conductors, the central block being 60 inclined at the end, substantially as described.

5. The combination, with a switch consisting of a plate having a central longitudinal guide-block and connected to the conductors, of a trolley having flanges of varying diameters, one of the flanges being adapted to run on the guide-block, substantially as described. 65

6. The combination, with an electric switch having longitudinal grooves serving as guides to the trolley, of a trolley-wheel having flanges 70 of varying diameters, one of the flanges being adapted to move in the grooves of the switch, substantially as described.

7. The combination, with an electric switch having a central longitudinal block forming 75 grooves, of a trolley having three bearing-surfaces, a central bearing-surface to run on the conductor, and two flanges of varying diameters to run on the switch and its block, substantially as described. 80

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM HENRY SEWARD WRIGHT,

Witnesses:

D. N. LEIB,

W. M. GEORGE.