

(No Model.)

2 Sheets—Sheet 1.

W. C. WOOD.
SWITCH FOR STREET RAILWAYS.

No. 359,987.

Patented Mar. 22, 1887.

Fig. 1.

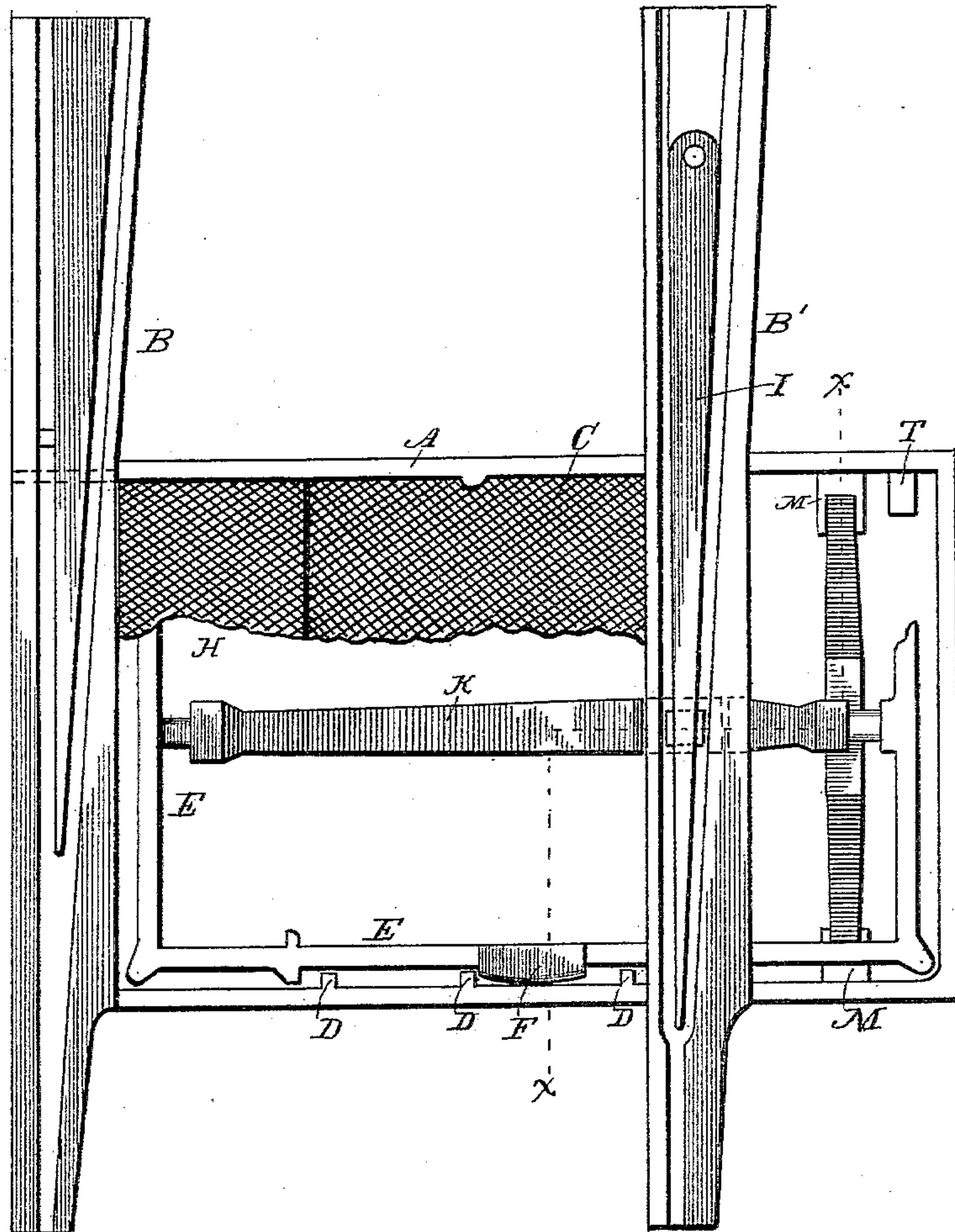


Fig. 2.

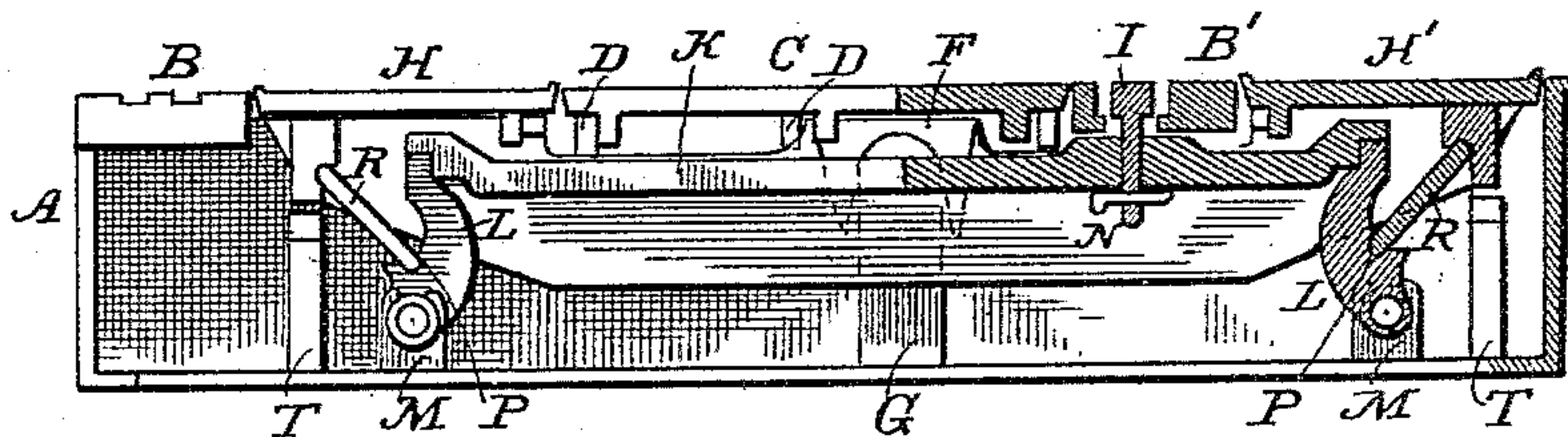
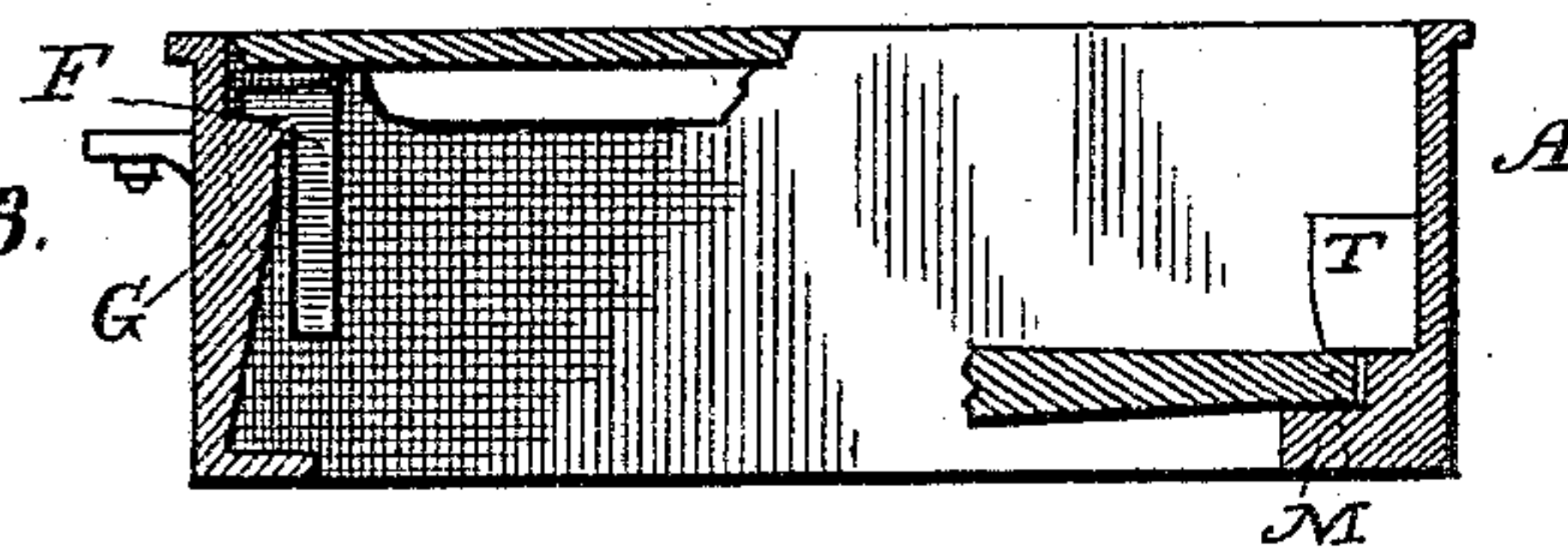


Fig. 3.



Witnesses.

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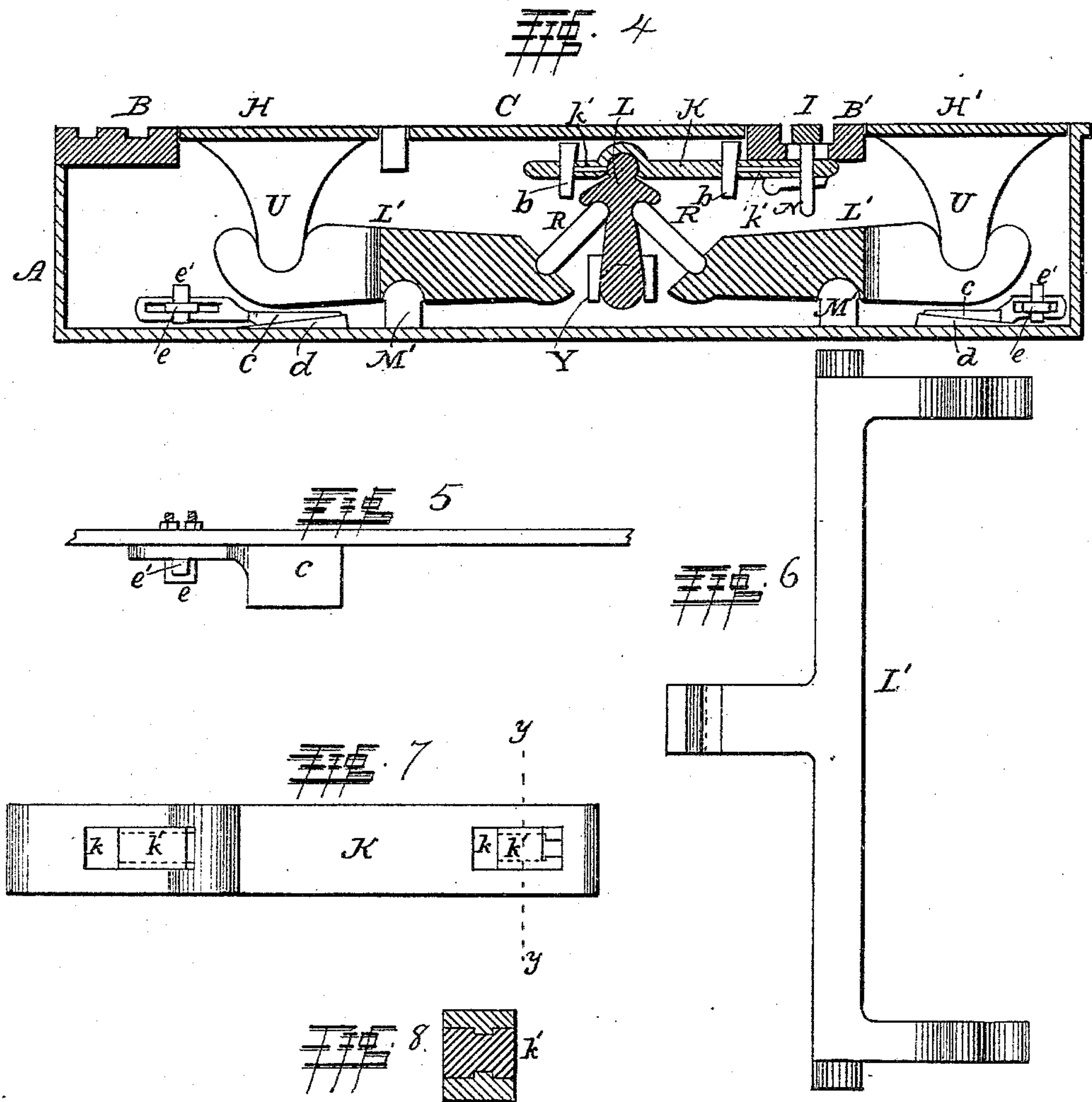
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2 Sheets—Sheet 2.

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SWITCH FOR STREET RAILWAYS.

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Witnesses.

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UNITED STATES PATENT OFFICE.

WILLIAM CLARK WOOD, OF NEW YORK, N. Y.

SWITCH FOR STREET-RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 359,987, dated March 22, 1887.

Application filed November 26, 1886. Serial No. 219,973. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM CLARK WOOD, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Switches for Street-Railways; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to certain improvements in that class of switches for street railroads or tramways that are automatically operated by the weight of the horses or other draft-animals under the direction and control of the driver; and it has for its objects to simplify and so construct the parts of the switch mechanism that they will be ready to be put together when removed from the mold in which they are cast, with little or no subsequent and expensive finishing. These objects I attain in the construction illustrated in the accompanying drawings, which form a part of this application, and in which—

Figure 1 represents a plan view of a street-railroad track with my improved switch-operating mechanism in position, the platforms being broken away. Fig. 2 represents the switch-operating mechanism, partly in section and partly in side elevation. Fig. 3 represents a vertical section on the line xx in Fig. 1. Fig. 4 represents a vertical sectional view of a modification; Fig. 5, a detached view of a portion of the side of the box or casing, showing one of the adjustable stops for limiting the movement of the parts; Fig. 6, a plan view of one of the platform-supporting levers; Fig. 7, a plan view of the shifting-bar, and Fig. 8 a sectional view on the line yy in Fig. 7.

In the drawings, A indicates a rectangular box, which is preferably cast in one piece, of suitable dimensions, having supports or bearings for the various working parts of the switch-operating mechanism. This box A, when in position, sets in an excavation beneath the rails B B', and extends to one side of the track, for the purpose hereinafter explained. The upper edge of the box is provided with a permanent platform, C, which is supported by lugs D.

E indicates a rectangular frame, which has

bearings F at opposite sides, which rest upon standards or shoulders G within the box, so as to permit the frame to have a rocking or oscillating movement. The frame is provided with platforms H H', which rise slightly above the upper edge of the box, one between the permanent platform C and the rail B and the other outside of the rail B'. The rails B and B' are similar to the ordinary switch-rails the rail B having the usual stationary frog, and the rail B' the movable switch or tongue I.

K indicates a bar, shouldered at its ends and resting upon the ends of vertical levers L, which are fulcrumed in pillow-blocks or bearings M at the bottom of the box A. The bar K is connected with the switch I by a pin, N, which depends from said switch and passes through a transverse slot in the rail B', where by the movement of the bar shifts the switch. The levers L have shoulders or recesses P, which receive the lower ends of the inclined struts R, the upper ends of which rest in recesses or bearings formed in the ends of the rocking oscillating frame E, so that the oscillation of the frame, which is produced by the weight of the horses on the platforms H H', will vibrate the levers L, reciprocate the shifting-bar, and thereby effect the movement of the switch I.

Below the ends of the rocking or oscillating frame E are stops T, which limit the movement of the frame to just what is necessary to shift the switch, so as to prevent injury to the parts and avoid, as far as possible, giving alarm to the horses.

In the modification shown in Fig. 4 of the drawings the general construction and arrangement of the box, platforms, and tracks are the same as above described; but the shifting mechanism is somewhat different.

Instead of two levers L, as in the construction above described, I use a single lever with laterally-extending arms, which rest in inverted bearings Y at the sides of the box, and the rocking or oscillating frame is divided into two parts, E' E', each of which is fulcrumed in suitable pillow-blocks or bearings, G', and upon the outer ends of which rest the platforms H H', the said platforms in this case having depending legs U, which have bearings in the arms of said rocking frames E' E', as clearly shown in Fig. 4. The struts R in this case

are placed between the lever L and the inner ends of the rocking frames.

To compensate for the wear of the parts the shifting-bar K is formed with openings *k*, adjacent to the points of connection with the lever L and the pin N, and in these openings are located sliding blocks *k'*, which bear against the lever L and the pin N, respectively, and are held against these parts by wedges *b*, which automatically settle down and move the blocks along as the parts wear, thus keeping the joints always tight.

Underneath the rocking frames E' are arranged stationary inclined bearings *d* and movable wedges *c*, the latter having slotted extensions or arms, which are adjustably secured over tongues *e* and are fastened by keys or wedges *c'*, which pass through said tongues. These wedges *c* form adjustable bearings to compensate for wear and to regulate the movement of the platforms. It is to be understood that although they are not shown in Fig. 2, they are equally applicable to the construction therein illustrated, and in practice I intend to apply them thereto.

It is to be observed that by my construction I dispense with the connecting pins, bolts, and screws usually employed in mechanisms of this character, and cheapen and simplify the construction by avoiding the finishing and fitting, which form a material item of expense in the construction of switch-operating mechanisms as heretofore usually constructed.

Having thus described my invention, I claim as new—

1. In a switch-operating mechanism, the combination of a vibrating lever connected

with the switch, a rocking frame supporting a vertically-movable platform, and a strut between said lever and frame, whereby the movement of the platform shifts the switch, substantially as shown and described.

2. In a switch-operating mechanism, the combination of a rocking frame, E, carrying platforms H H', two vertically-vibrating levers, L L, a shifting-bar, K, connecting the upper ends of said levers, and struts R between the rocking frame and levers, substantially as shown and described.

3. The combination, with the switch and shifting-bar, of a rocking frame mounted on suitable bearings in an inclosing-box, A, one or more vibrating levers connected with the shifting-bar, and struts R between the rocking frame and levers, substantially as shown and described.

4. In a switch-operating mechanism, the combination, with the rocking frame and platforms, of an adjustable stop mechanism for limiting and adjusting the movement of the parts, substantially as shown and described.

5. The combination, with the vibrating lever L, the switch, and the connecting shifting-bar K, of the adjustable blocks *k'*, fitted to slide in openings in the shifting-bar, and wedges *b*, to move and hold said blocks against the connections between the bar and the lever and switch, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM CLARK WOOD.

Witnesses:

A. R. FRYER,

WILLIAM H. CLARKSON.