

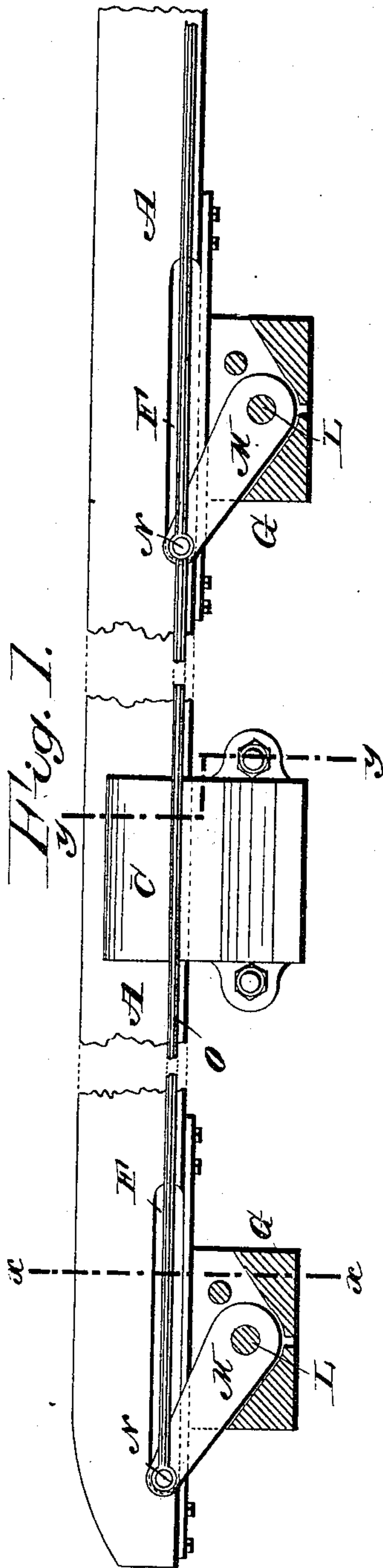
(No Model.)

J. A. BONNELL.

DETECTING BAR FOR RAILWAY SWITCHES.

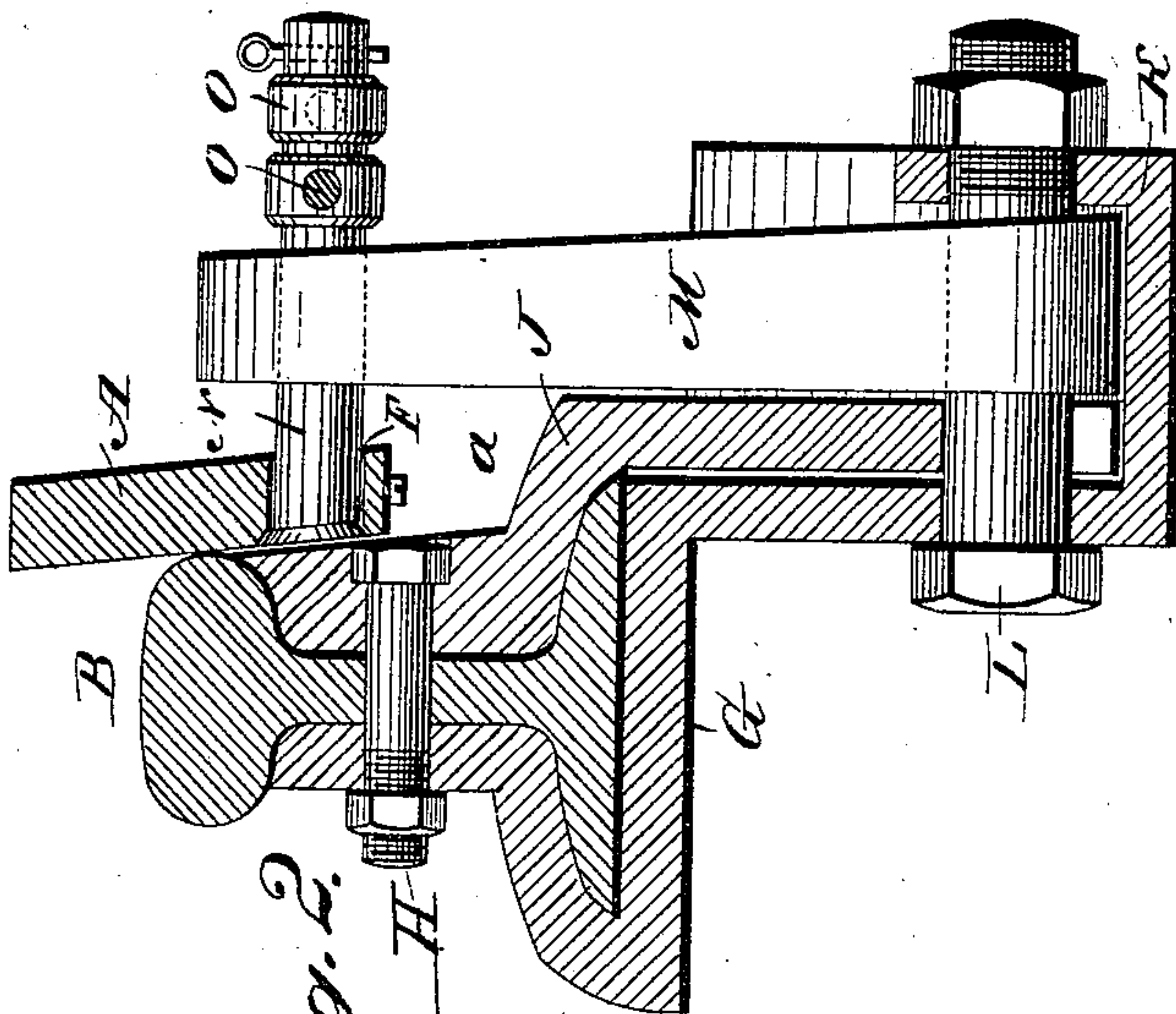
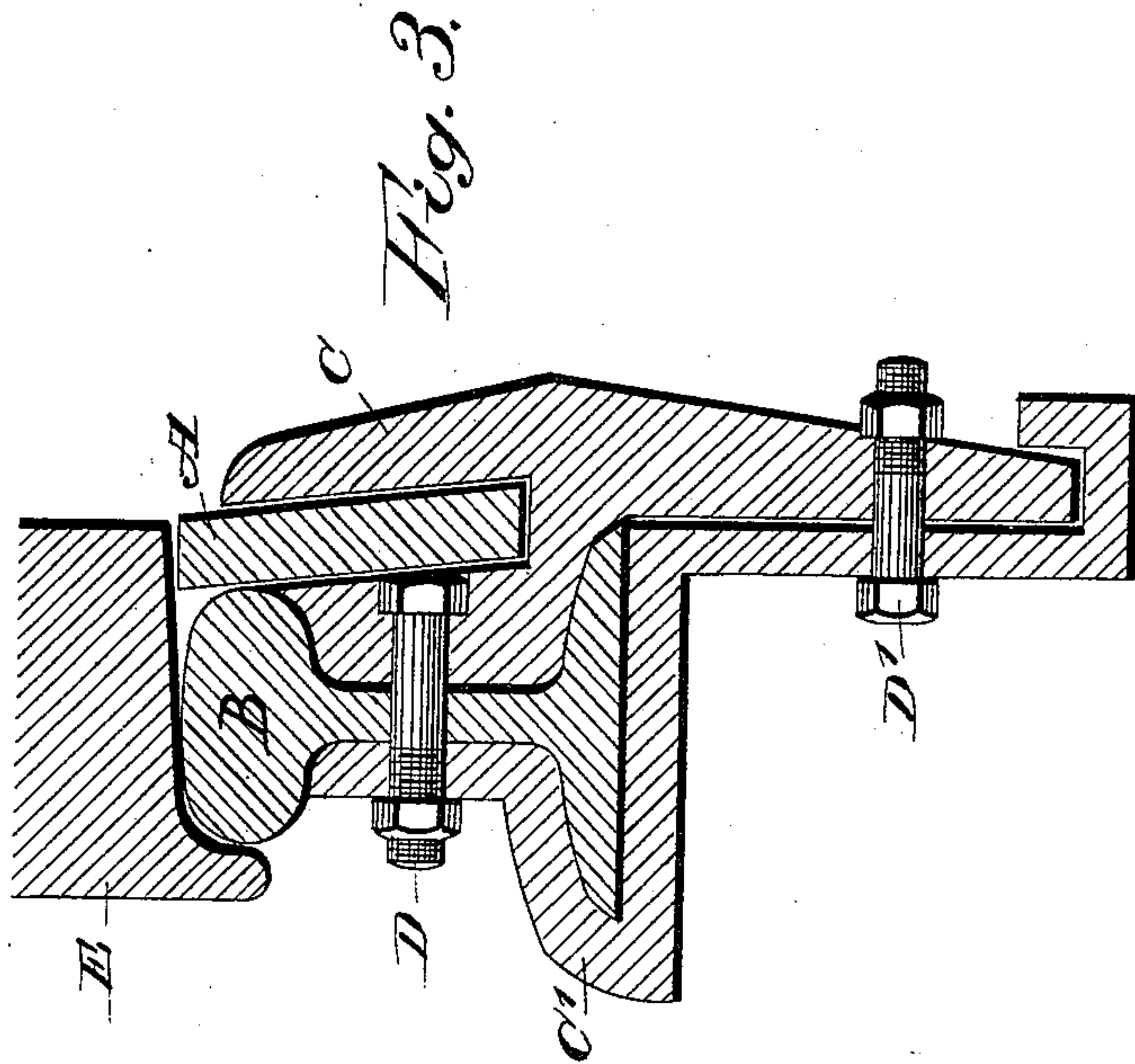
No. 291,868.

Patented Jan. 15, 1884.



WITNESSES:

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INVENTOR:

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UNITED STATES PATENT OFFICE.

JAMES A. BONNELL, OF NEW YORK, N. Y., ASSIGNOR TO THE NATIONAL INTERLOCKING SWITCH AND SIGNAL COMPANY, OF SAME PLACE.

DETECTING-BAR FOR RAILWAY-SWITCHES.

SPECIFICATION forming part of Letters Patent No. 291,868, dated January 15, 1884.

Application filed February 9, 1883. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. BONNELL, of the city, county, and State of New York, have invented certain new and useful Improvements in Detecting-Bars for Railway-Switches, of which the following is a full, clear, and exact description.

The object of my invention is to provide certain new and useful improvements in the detecting-bars used at night or during fogs to ascertain if a train is on a switch before throwing or setting the switch.

This invention, which is an improvement on the detecting-bar described and claimed in United States Patent No. 243,841, issued to myself as inventor and to Samuel McIlroy as assignee on the 5th day of July, 1881, consists of a bar held to the side of a rail at an inclination to the plane of the rail, which bar is provided with longitudinal slots through which pintles pass, which also pass through swinging arms pivoted in chairs held to the rail, which pintles are connected by rods, whereby by moving the rods longitudinally the arms will be swung and the bar raised and lowered again, whereby the presence of a train on the switch can be detected at night or during fogs, all as will be fully explained and set forth hereinafter.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal elevation of my improved detecting-bar, parts being broken out and others shown in section. Fig. 2 is a cross-sectional elevation of the same on the line $x x$, Fig. 1, showing the detecting-bar raised. Fig. 3 is a cross-sectional elevation of the same on the line $y y$, Fig. 1, showing the detecting-bar lowered.

A bar, A, is held to a rail, B, by means of recessed blocks C, which are held by bolts D D' to the outer side of the rail A and to chairs C' held to the bottom and opposite inner side of the rail by the bolts D. The recesses in the blocks C are inclined toward the head of the rail, so that the bar A will be inclined to the vertical plane of the rail. The bar is arranged in this manner so that in raising it its

upper edge will be projected over the outer edge of the head of the rail and will more certainly encounter the tread of the wheels if a train be on the switch. The bar A is provided at or near its bottom edge with a series of longitudinal slots, F, suitably spaced according to the length of the bar. At the said slots chairs G are held to the bottom and inner surface of the rail by bolts H, and blocks J are held to the outer surface of the rail by the same bolts H, which blocks J have the outer surface of the upper parts flush with the surface of the inner sides of the recesses in the blocks C. The blocks J are provided with shoulders a , upon which the bar A can rest when lowered. At the lower ends of the chairs G outwardly-projecting pockets K are formed, through which pintles L pass, which are at right angles to the length of the rail, and on the said pintles arms M are mounted, which are adapted to swing in the vertical plane parallel with the length of the rail. The inner sides of the pockets K are beveled, and against the said beveled sides the arms M rest when the bar A is lowered to either side, as shown in Fig. 1. Pintles N pass through the upper ends of the arms M and through the slots F in the bar A. The arms M can be rigidly mounted on the pintles L and the pintles mounted to turn; or the pintles can be fixed and the arms M mounted loosely to turn, or both the pintles and the arms can be mounted loosely. Likewise the pintles N can be fixed on the arms or be held loosely therein. The several pintles are connected by connecting-rods O, which are connected with levers or other devices for moving them in the direction of their length from the switch-house or switch-stand. The bar A is held to the rail at the switch.

The operation is as follows: If the connecting-rods O are moved in the direction of their length the arms M will be moving on their pintles L, and the pintles N in the upper ends of the arms M will pass longitudinally through the slots F, and thereby the bar A will be raised and lowered again. If a train is on the rail B at the switch, the bar A cannot be raised as its upper edge strikes against the tread of the wheel, and thus the operator is

informed that a train is on or at the switch by his inability to throw the lever connected with the rods O. Splitting of trains at night or during fogs—that is, turning a switch while a train is on the main line at the switch or partly on the main line at the switch—is thus avoided, even if the operator cannot see the signals. The blocks C hold the detecting-bar A in the proper position and guide its movements.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with a railroad-rail, of a detecting-bar held to the side of the same at an inclination to the vertical plane of the rail, substantially as herein shown and described, and for the purpose set forth.

2. The combination, with a railroad-rail, of blocks held to the rail, which blocks are each provided in its top with a groove parallel with the rail, and a detecting-bar held in the grooves of said blocks, substantially as described, and for the purpose set forth.

3. The combination, with a railroad-rail, of a bar held to the side of the rail, swinging arms pivoted to chairs held to the rail, pintles passing through the free ends of the said arms and through slots in the bar, and of rods for swinging the arms, substantially as herein

shown and described, and for the purpose set forth.

4. The combination, with a railroad-rail, of the bar A, provided with longitudinal slots F, the swinging arms M, pivoted to chairs held to the rails, the pintles N, passing through the arms M and through the slots F in the bar A, and the connecting-rods O, substantially as herein shown and described, and for the purpose set forth.

5. The combination, with a railroad-rail, B, of a bar, A, provided with slots F, of the slotted blocks C, the chairs G, provided with pockets K, having beveled inner sides, the arms M, pivoted in the said pockets, and the pintles N, passing through arms M and through the slots in the bar A, substantially as herein shown and described, and for the purpose set forth.

6. The combination, with a railroad-rail, B, of a bar, A, provided with slots F, of the recessed blocks C, the blocks J, the chairs G, the arms M, pivoted in the chairs G, the pintles N, passing through the arms M and through the slots F in the bar A, and of the rods O, substantially as herein shown and described, and for the purpose set forth.

JAMES A. BONNELL.

Witnesses:

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