

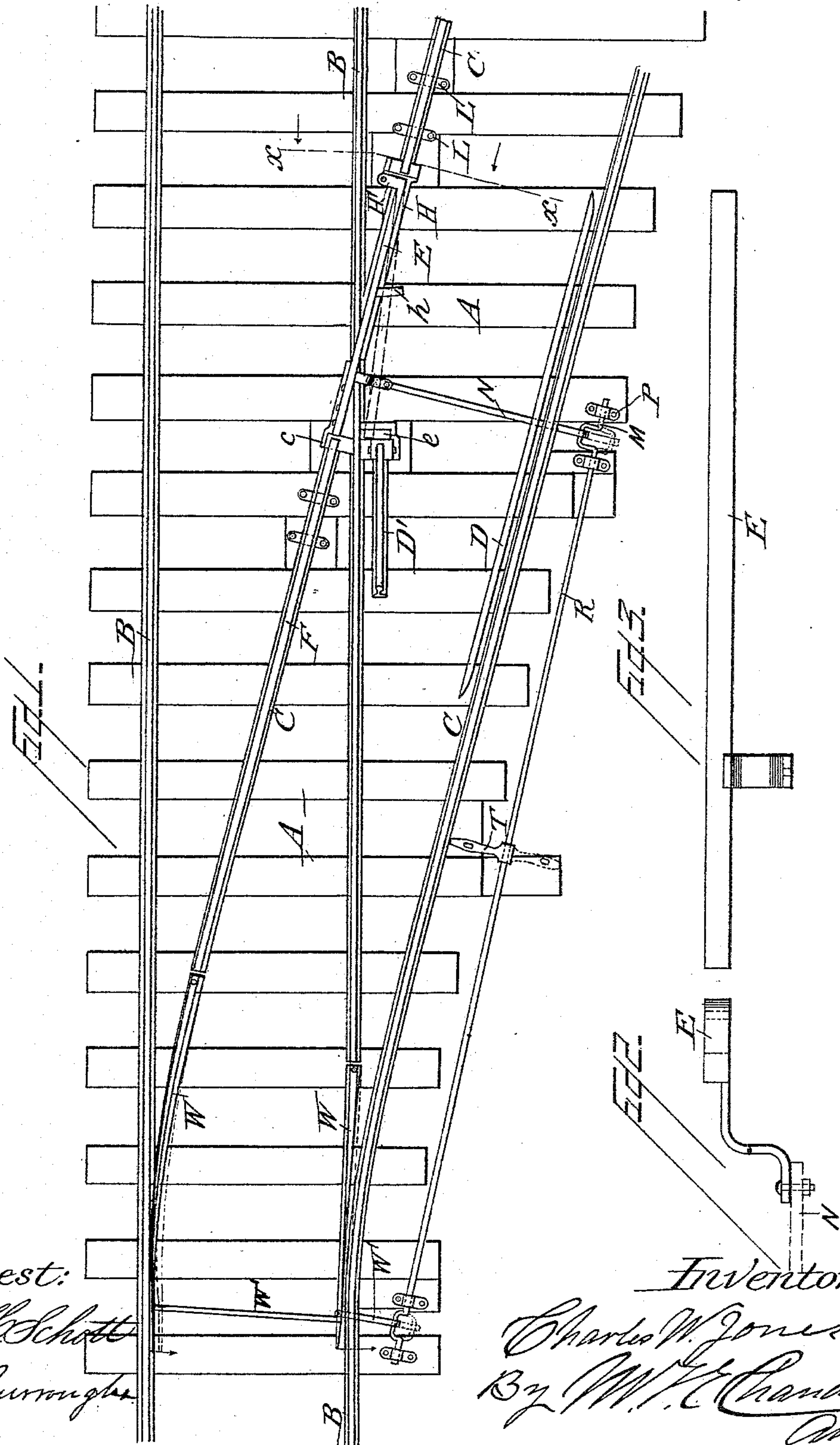
(No Model.)

3 Sheets—Sheet 1.

C. W. JONES.  
FROGLASS SWITCH.

No. 411,991.

Patented Oct. 1, 1889.



Attest:

H. H. Schott  
J. Burroughs

Inventor.

Charles W. Jones  
By W. H. Chandler  
Attorney

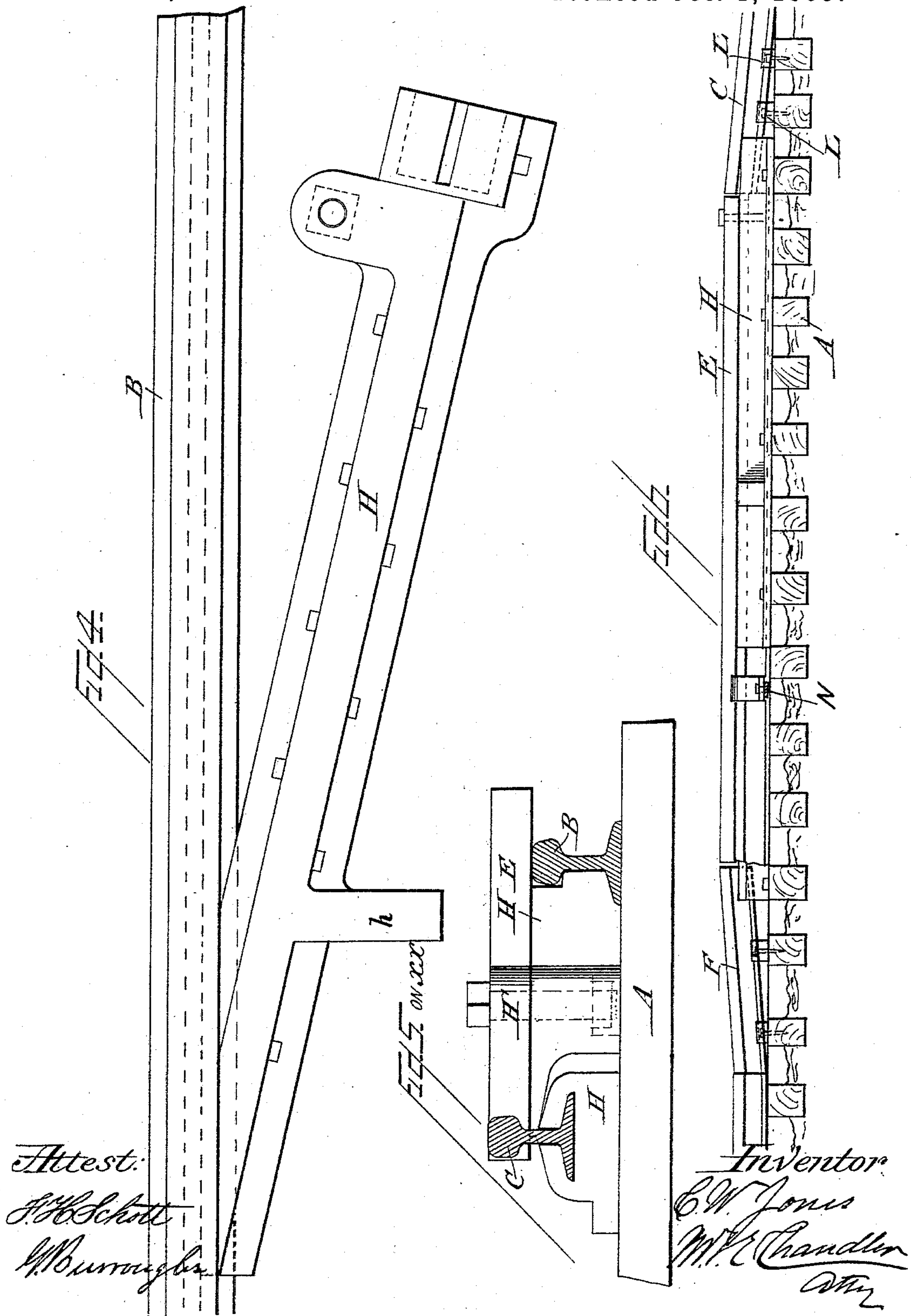
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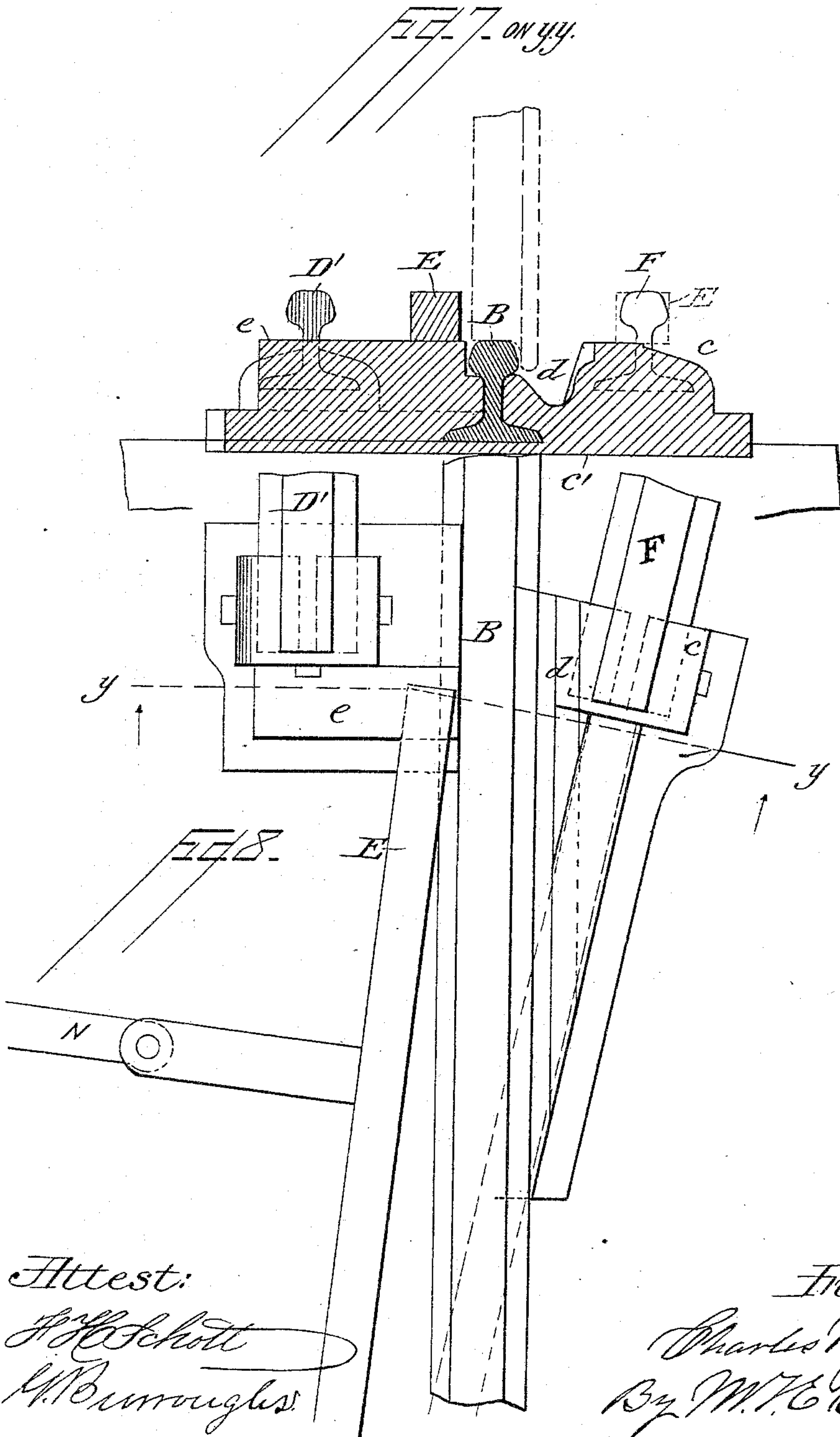
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# UNITED STATES PATENT OFFICE.

CHARLES W. JONES, OF JUNCTION, VIRGINIA.

## FROGLESS SWITCH.

SPECIFICATION forming part of Letters Patent No. 411,991, dated October 1, 1889.

Application filed June 6, 1889. Serial No. 313,331. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES W. JONES, a citizen of the United States, residing at Junction, in the county of Hanover and State of Virginia, have invented certain new and useful Improvements in Railroad-Switches; and I do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to certain improvements upon the automatic switch for which Letters Patent No. 394,118 were granted to me on the 4th day of December, 1888, the object of the present invention being to simplify the construction and operation of the switch therein shown by reducing the number of parts, at the same time retaining its efficiency in all respects, also by certain changes in the construction, adding greatly to its durability; and the invention consists in the novel construction and combination of parts hereinafter described, illustrated in the drawings, and specifically pointed out in the claims.

Figure 1 is a plan view of the switch complete. Fig. 2 is an end view of the shifting rail. Fig. 3 is a side elevation of the same. Fig. 4 is a plan of the shifting-rail support and a part of one of the main rails on an enlarged scale. Fig. 5 is a cross-section on the line  $xx$  of Fig. 1. Fig. 6 is an inner side view of the frog-rail. Fig. 7 is a cross-section on the line  $yy$ , Fig. 8. Fig. 8 is a plan view of the shifting rail and main rail, the switch being open to the main line.

In the several figures, A A represent the ties upon which both the main line and siding are supported.

B B are the rails of the main line, C C the rails of the siding, and D' a guard-rail placed adjacent to and within the inner rail of the siding to act as a support to the movable frog-rail E and prevent derailment should any slight misadjustment of the same occur. An intermediate rail F is also secured to the ties between the main rails and at an angle

thereto equal to the divergence of the siding from the main line. At one end of this intermediate rail is pivoted the shifting rail W. The other end rests upon blocks of cast-iron, which gradually increase in thickness as it approaches the main track, so that the top of the intermediate rail F is raised at this end about two and a quarter inches above the top of the main track. The block  $c$  under the end of the intermediate rail F continues in the direction of the inner rail of the side track and rises flush with the top of the main rail. This block has a projection  $c'$ , which extends under the main track, the tie being cut away deep enough to allow its passage, part of it forming a seat for an end of the guard D'. On the other part of it is formed the projection  $e$ , having its upper surface level, so that where it abuts the main rail it is flush with the same. In the top of this cast-iron block and parallel to the inner side of the main rail, which rests upon it, is formed the groove  $d$ , for the flange of the car-wheel to pass through when running upon the main track.

The connection between the intermediate rail F and the inner side rail is made by the frog-rail E. This rail rests, when open to the side track, upon a cast-iron block H, secured to the ties. The block H has its upper surface flush with the top of the main rail, against which it abuts, and has flush with it the bearings or projections  $h$ , upon which the switch-rail moves when thrown out of connection with the siding. The frog-rail has a side projection H' upon its outer side, through which it is pivoted to the cast-iron block upon which it rests, and is made of a bar of iron rectangular in cross-section, as shown in Fig. 7. Beneath the end of the inner side rail to which the frog-rail is joined the cast-iron blocks L are placed to give it a slight elevation. A rod N connects the frog-rail with the crank M on one end of the crank-shaft R. This shaft is fastened to the ties by the cast-iron boxes P, spiked to the ties. The other end of the crank-shaft is connected with the switch-rails W by the rods W'. The lever T operates the crank-shaft to open or close the siding, as desired, in the manner ordinarily used. When the lever is thrown in the direction to open



the main track to the side track, the switch-rails are in the position shown in Fig. 1 and the frog-rail is moved upon the supports and forms a continuous rail with the inner rail of the side track and the intermediate rail, passing over the inner one of the main-track rails, thus avoiding the use of a rigid frog or breaking the continuity of the main track. A small space is left between the pivoted end of the frog-rail and the rail of the side track, which it adjoins, to allow a free movement of said frog-rail. If by accident the main track is left open to the siding and the wheel of an engine coming in the opposite direction from that which it should to run upon the siding, its tread striking the side of the frog-rail would force the rail back and thus avoid derailing the train.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent, the following:

1. As an improvement in railroad-switches, the block H, forming a support for the frog-rail, in combination with said frog-rail pivoted to the plate on the outer side of the said rail, substantially as and for the purpose set forth.

2. As an improvement in railroad-switches, the combination of the main-line rail, the supporting-block c, secured to the ties and channeled for the passage of the wheel-flange, the block H, also secured to the ties, and frog-rail pivoted to said plate, all arranged substantially as and for the purpose specified.

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

CHARLES W. JONES.

Witnesses:

G. BURROUGHS,  
F. H. SCHOTT.