(No Model.) 2 Sheets—Sheet 1.

D. O. BRUNNER.

RAILROAD SWITCH.

No. 580,677. Patented Apr. 13, 1897.

Fig. 1.

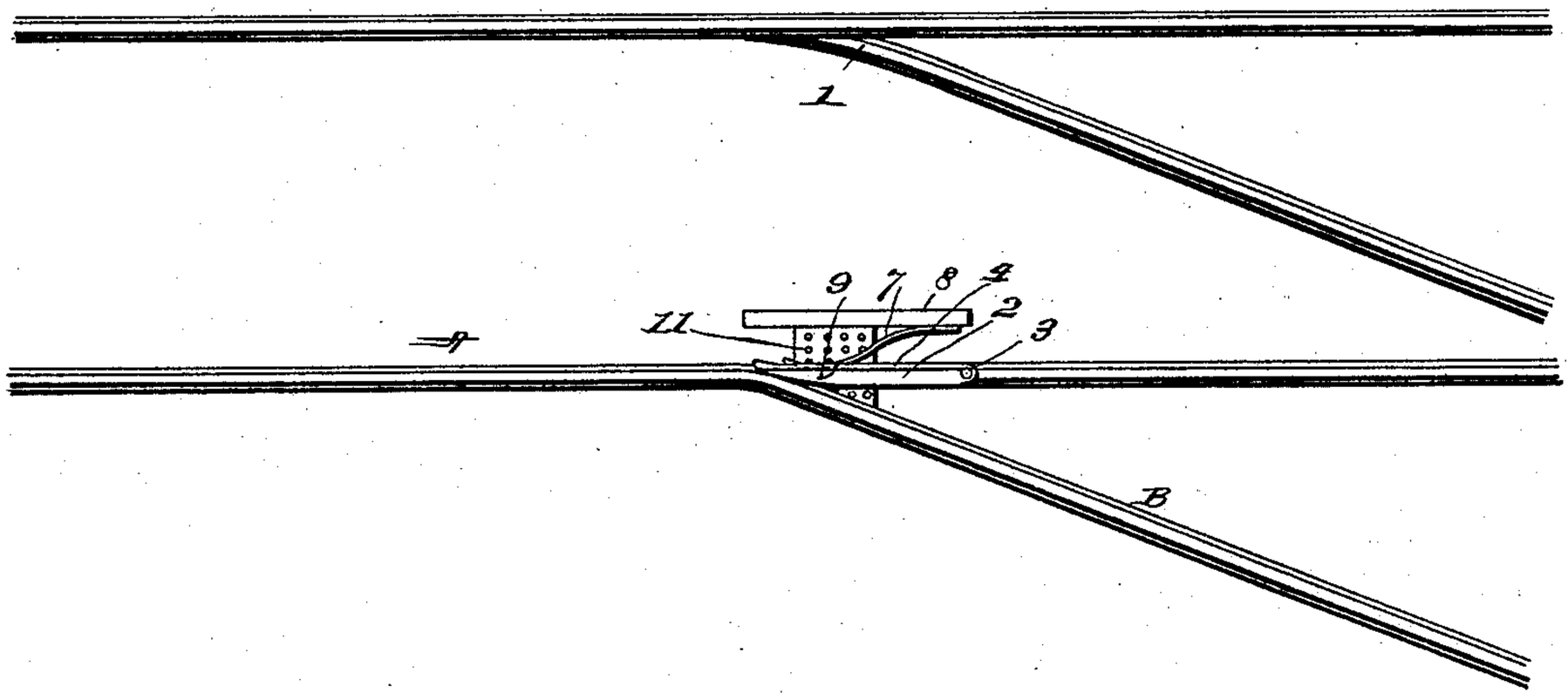


Fig. 2.

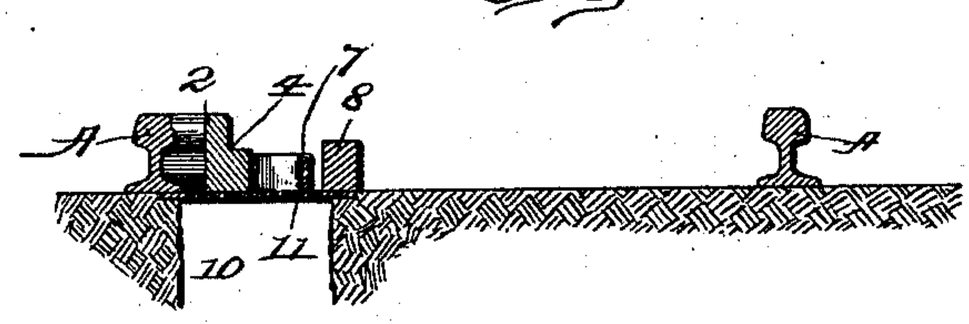


Fig. 6.

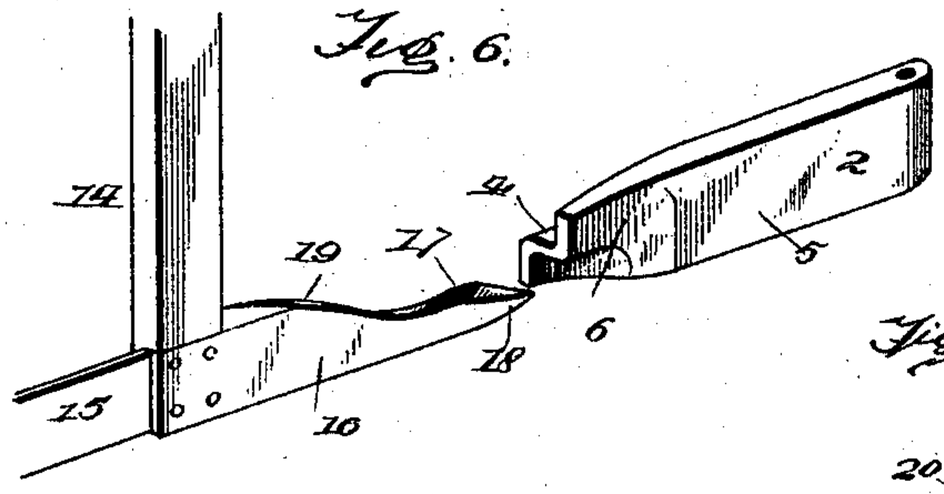
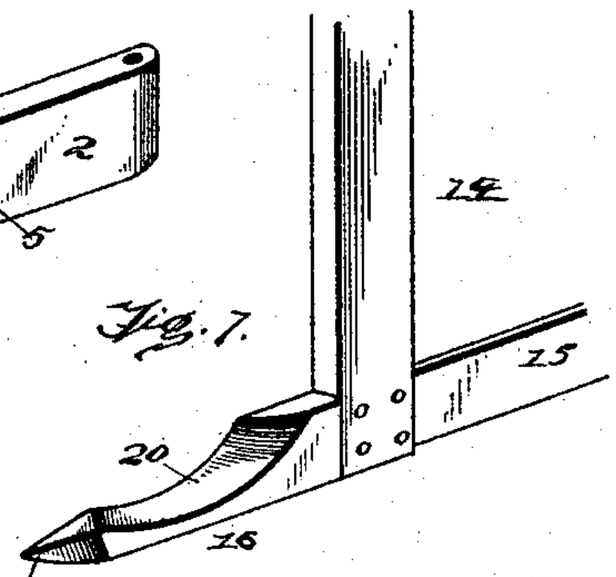


Fig. 7.



Witnesses

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(No Model.) 2 Sheets—Sheet 2.

D. O. BRUNNER.

RAILROAD SWITCH.

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Fig. 3.

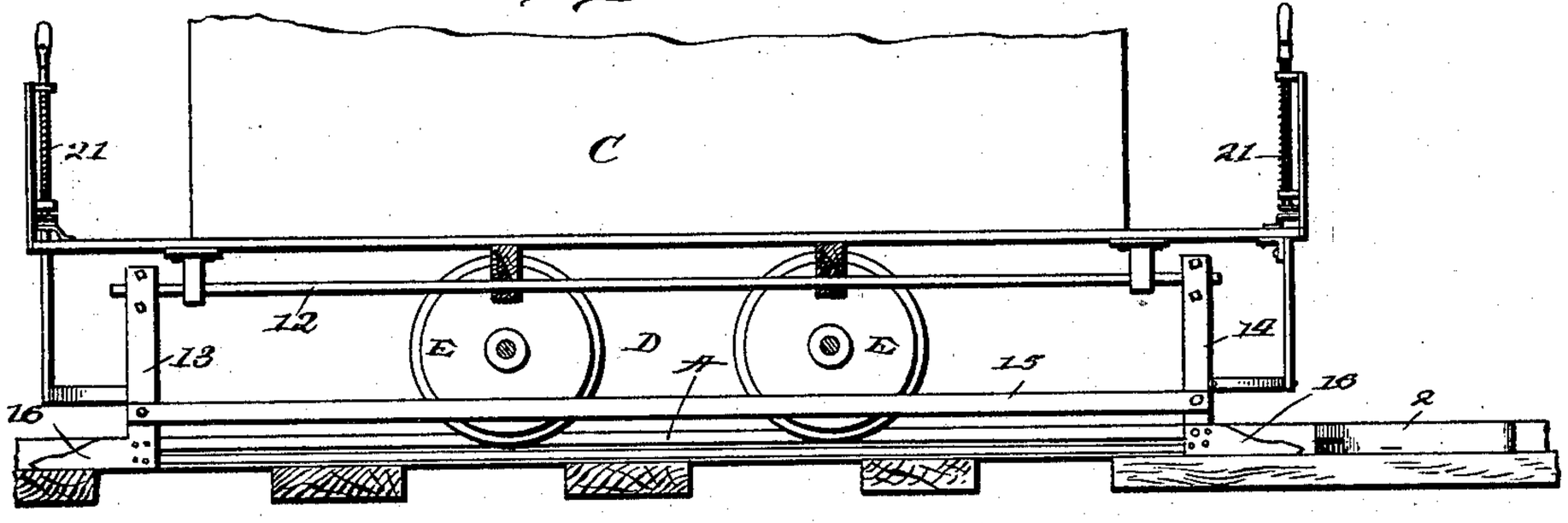


Fig. 4.

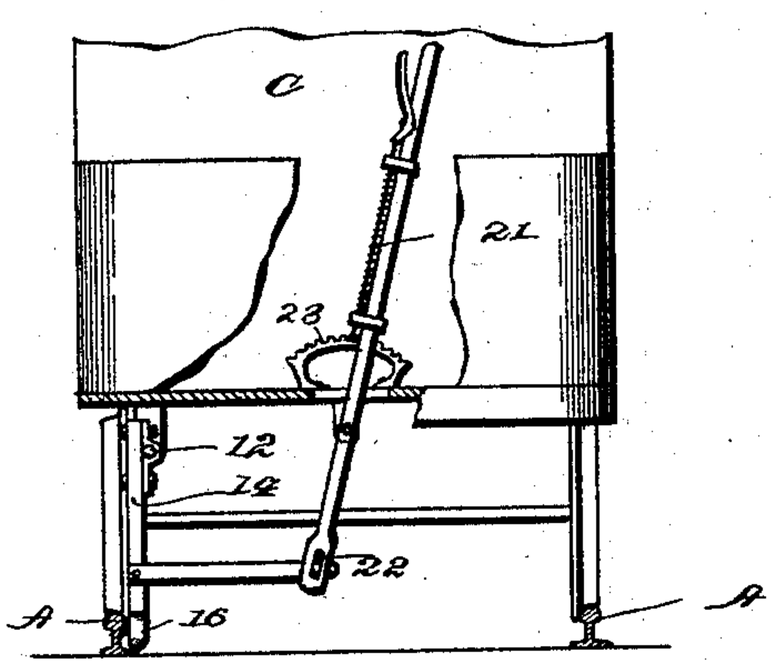
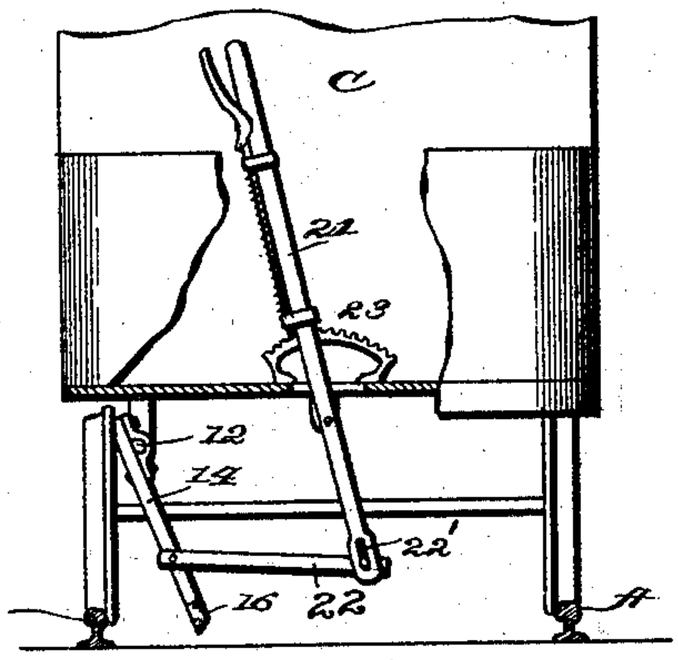


Fig. 5.



Witnesses
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UNITED STATES PATENT OFFICE.

DANTON O. BRUNNER, OF SOMERSET, OHIO.

RAILROAD-SWITCH.

SPECIFICATION forming part of Letters Patent No. 580,677, dated April 13, 1897.

Application filed June 22, 1896. Serial No. 596,455. (No model.)

To all whom it may concern:

Be it known that I, DANTON O. BRUNNER, a citizen of the United States, residing at Somerset, in the county of Perry and State of Ohio, have invented certain new and useful Improvements in Railroad-Switches; 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 switch-tongues and switch-throwers.

My object is to provide an improved switch-tongue for street and other railways, and, further, to provide improved and highly-efficient mechanism on the street-car which will be adapted for throwing said switch while the car is in motion.

The invention consists of those novel features and combinations appearing more in detail hereinafter.

In the accompanying drawings, Figure 1 is a top view of the road-bed; Fig. 2, a cross-sectional view of the road-bed, showing the switch-tongue closed; Fig. 3, a side view of the car, showing my improved switch-throwing mechanism; Fig. 4, a front elevation of the car, showing the switch-throwing mechanism in position to throw the switch; Fig. 5, a like view showing the switch-throwing shoe in normal position; Fig. 6, a detail view of the opening-shoe and switch-tongue immediately prior to engagement with each other, and Fig. 7 a detail view of the opening-shoe.

I will first describe the switch mechanism.

A designates the rails of the main line of a street-railway track, and B the rails of a branch line.

The numeral 1 designates the usual frog, and 2 my improved switch-tongue, which is pivoted at 3. This tongue is suitably grooved at 4 to allow the passage of the wheel-flanges. Its side 5, which lies next the main rail, is preferably curved somewhat, as shown. The toe of the tongue is cut away obliquely, as at 6, for the reception of the switch-throwing shoe, described later on.

A flat spring 7, having one end connected to the guard-rail 8, has its free end resting in a groove 9 in the inside face of the switch-tongue. This spring tends to keep the toe of the switch-tongue against the branch rail.

The numeral 10 designates a drain-trap which leads to a sewer, and this trap is covered by a perforated grating 11, which is located immediately under the switch-tongue. The trap receives all light refuse and water which would tend to clog the action of the switch-tongue.

I will now describe my improved switch-throwing mechanism, which is especially adapted for use in connection with the switch-tongue just described.

C designates a street-car which is mounted on a truck D, provided with the usual wheels E.

The numeral 12 represents a shaft which is mounted for rotation in the car-truck and extends longitudinally thereof. Two arms 13 and 14 are connected to the opposite ends of the shaft and depend therefrom, so as to extend down close to the road-bed. The lower ends of these arms are connected by a flexible steel band 15. The switch-opening shoe 16 is connected to the front arm 14. The outer face of this shoe is flat, but its inner face is irregular. The front upper portion of the shoe is curved downwardly at 17 to form a point 18. The upper inside face of the shoe is curved upwardly at 19, while the inner face of the point is beveled at 20.

The numeral 21 designates a lever which passes through and is pivoted to the front platform of the car within easy reach of the motorman or driver. The lower end of the lever is connected by a slot-and-stop joint 22′ to a link 22, which is pivoted to arm 14. Hence when the lever is rocked the whole frame just described is thrown in or out, as the case may be. Suitable pawl-and-ratchet mechanism 23 is used for the purpose of locking the lever to hold the frame in or out of use.

The operation is as follows: Assume that the switch-throwing mechanism is raised and that the car is approaching the switch. Should it be desired to take the main line, the mechanism is not used. If, however, it is necessary to take the branch line, this is accomplished in the following manner: The motorman operates the lever and throws the movable frame outward. When the point of the shoe reaches the switch-tongue, it enters the recess formed in the toe thereof, and as the car advances the tongue is thrown open against

the action of the spring, allowing the shoe to slide between the tongue and the branch rail. The steel band prevents the switch-tongue from closing until the last wheel of the car has passed onto the branch rail. The tongue then springs back in position and the main line is again "through." The mechanism on the car can then be raised.

It is to be understood that I do not limit myself to the precise construction herein shown and described, as many immaterial changes might be made without affecting the operation of the device, and hence I consider myself entitled to all such variations as come within the spirit and scope of the invention.

Having thus described the invention, what is claimed as new is—

1. The combination with main and branch tracks, of a pivoted spring-actuated switch-tongue normally completing one track and having its toe undercut obliquely, a moving car, and a shoe carried by said car and having a pointed end adapted to enter the undercut of the switch-tongue and push said switch-tongue aside, substantially as described.

2. The combination with main and branch tracks, of a pivoted spring-actuated switch-tongue, a moving car, a swinging frame connected to the car, said frame having a shoe for opening the switch-tongue and provided with a longitudinally-extending band for holding the switch-tongue open until the car is switched, and means for moving said frame into and out of operative engagement with the switch-tongue, substantially as described.

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

DANTON O. BRUNNER.

Witnesses:

OWEN YOST,

J. R. FUNDABERG.