No. 797,839. PATENTED AUG. 22, 1905.

C. J. CARLSON.
SWITCHING DEVICE.
APPLICATION FILED DEC. 9, 1904.

Fig. 1

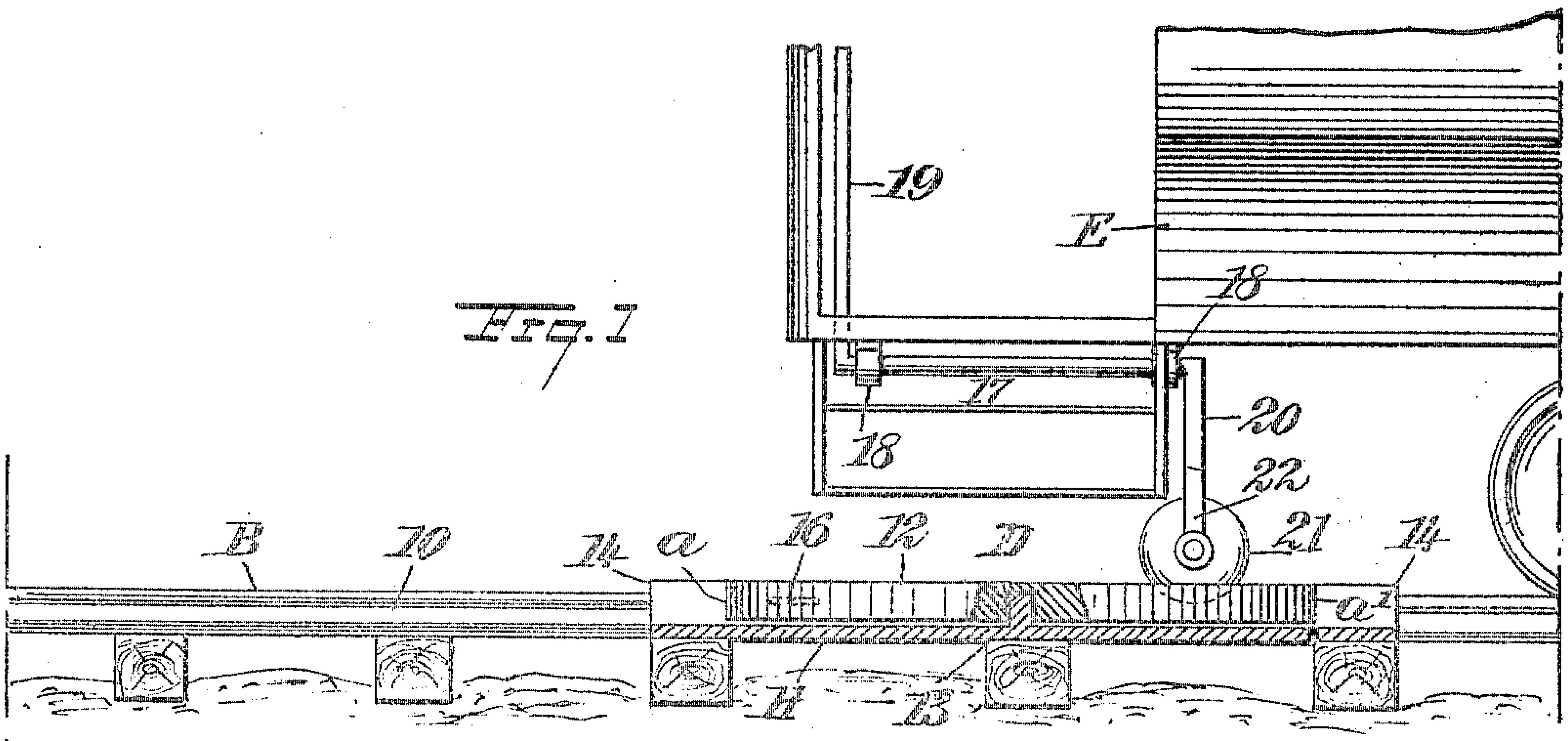


Fig. 2

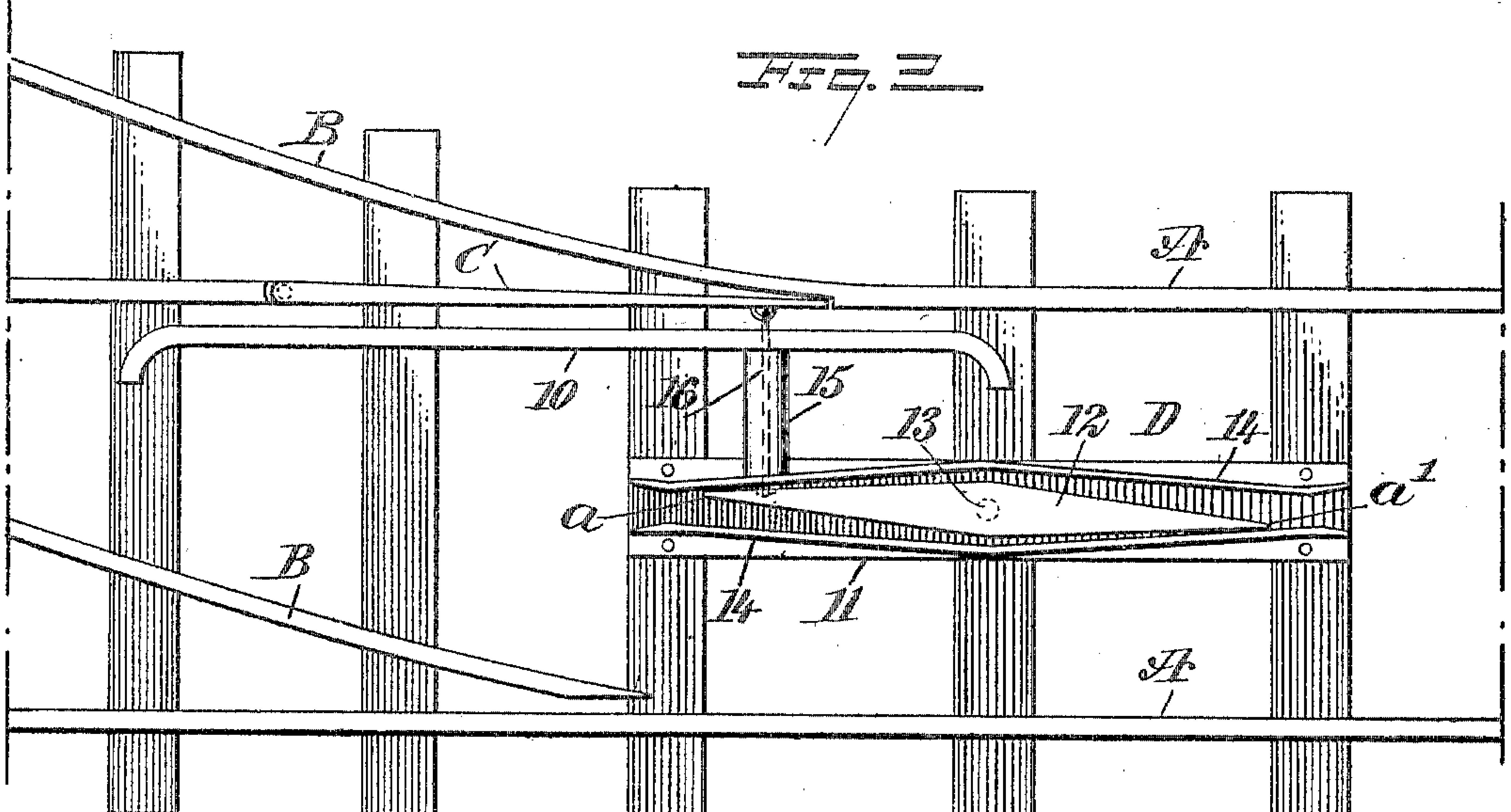
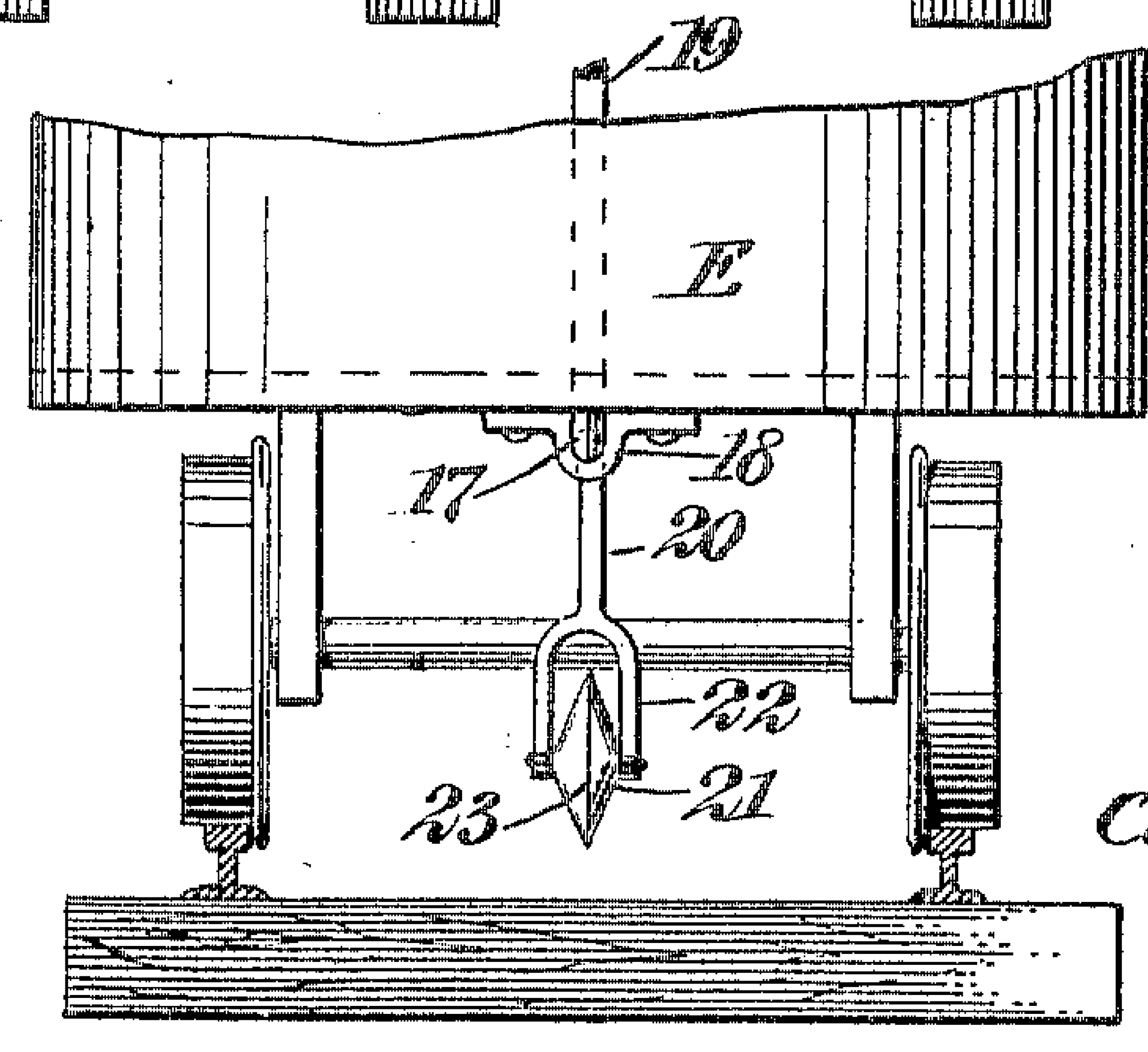


Fig. 3



WITNESSES:

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UNITED STATES PATENT OFFICE.

CARL JOHN CARLSON, OF SPOKANE, WASHINGTON, ASSIGNOR TO HIMSELF AND HIRAM JESSE TABER, OF SPOKANE, WASHINGTON.

SWITCHING DEVICE.

No. 797,839. Specification of Letters Patent. Patented Aug. 22, 1905.

Application filed December 9, 1904. Serial No. 236,129.

To all whom it may concern:

Be it known that I, CARL JOHN CARLSON, a citizen of the United States, and a resident of Spokane, in the county of Spokane and State of Washington, have invented a new and Improved Switching Device, of which the following is a full, clear, and exact description.

The purpose of the invention is to provide a switch mechanism whereby the engineer, motorman, driver, or operator of a car or train of cars without leaving his station can direct the rolling-stock from the main line to a siding or from the siding to the main line, the movement of the switch being automatically accomplished through the medium of a device carried by the car and which is under the complete control of the operator and may be brought instantly into operation.

Another purpose of the invention is to provide a very simple and readily-applied mechanism for accomplishing all the results mentioned.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

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

Figure 1 is a side elevation of a car and accompanying switching device and a sectional side elevation of the switch-operating mechanism adapted to be acted upon by the said shifting device. Fig. 2 is a plan view of a portion of a main track and siding, the switch-rail, and mechanism for directly operating the switch-rail; and Fig. 3 is a partial front elevation of a car and the shifting device carried thereby.

The device is particularly adapted for use in connection with tracks for tram or street cars, and in the drawings A represents the rails of the main track, B the rails of the siding, and C the switch-point, which is provided with the customary guard-rail 10.

The shifting mechanism D consists of a plate 11, which is secured in any suitable or approved manner to the ties, and on the said plate 11 a shifting-tongue 12 is centrally pivoted by means of a suitable pivot-pin 13. This shifting-tongue 12 tapers in direction of its ends, the ends being sharp, and, in fact, the sides of the switch-tongue 12 are oppositely inclined from the central point, rendering the said tongue more or less lozenge-shaped in plan view. The points on the said shifting-tongue are designated as *a* and *a'*, the point *a* being that which is nearest the switch-rail C. Guard-rails 14 extend upward from the upper face of the plate 11 at its side edges, and the guard-rails 14 are shaped correspondingly to the shape of the sides of the shifting-tongue 12—that is to say, the said guard-rails incline inwardly in opposite directions from a central point.

A guard 15, preferably in the form of a tube, is made to extend from the guard-rail 10 to the opposing guide-rail 14 of the shifting mechanism, and a connecting-rod 16 is attached to the switch rail or point C at its free end, which connecting-rod passes through the guard-rail 10 and through the guard 15 and is connected to the shifting-tongue 12, near the point *a* thereof, as is shown in Fig. 2.

A shaft 17 is mounted to rock beneath the platform of a car E, the said shaft being journaled in suitable bearings 18, and the shaft at one end is provided with an arm 19, which extends upward to be operated by the operator of the car, and at the other end of the said shaft 17 a downwardly-extending arm 20 is provided, having a fork 22 at its lower end, and between the members of the said fork 22, as is shown in Fig. 3, a shifting-wheel 21 is mounted to turn, the said wheel having conical side portions, so that it is provided with a sharp peripheral section 23.

In Fig. 2 the shifting-tongue 12 is shown set for the main track. In the event a car approaches the switch from the main track and it is necessary for the car to pass onto the siding B the shifting-wheel 21 is made to enter the space between the point *a'* of the shifting-tongue facing the approaching car and the opposing guide-rail 14, whereupon the wheel will pass in engagement with the side edges of the shifting-tongue next to the switch-point C, and after the wheel has passed the central portion of the shifting-tongue it will force the opposite point *a* of the shifting-tongue away from the guard-rail 14 with which it was in engagement to an engagement with the opposite guard-rail 14, and thus the switch-point C will be drawn inward or carried to a position to conduct a car onto the siding. In the event another car approaches the switch on the main line and it is neces-

sary for it to continue along the main line the shifting-wheel on that car is made to engage with the shifting-tongue 12 in such manner as to turn it on its pivot and restore the shifting-tongue to the position shown in Fig. 2 and consequently the switch-point C to a position to connect with a rail of the main track. In the event a switch is properly set for an approaching car the shifting-wheel 21 is moved so far sidewise and upward as not to operate on the shifting-tongue 12.

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

1. In switch devices, the combination with the main and siding rails of a track, and the switch-point, of a switch-operating mechanism consisting of a shifting-tongue pivoted at its longitudinal center, and inclined on each side from its pivotal point inward to its ends, guide-rails located opposite to the sides of the shifting-tongue and inclining inwardly in opposite directions from a central point to correspond with the shape of the sides of the shifting-tongue, a connection between one end of the switch-point and an end portion of the shifting-tongue, and a wheel carried by a car and having conical side faces, the said wheel being adapted to engage with and move the shifting-tongue.

2. In switch devices, the combination with the main and siding rails of the track and the switch-point, of a switch-operating mechanism consisting of a pivoted shifting-tongue, guide-rails between which the tongue has movement, a connection between the switch-point and the shifting-tongue, a car, a horizontally-arranged rock-shaft journaled beneath the platform of the car, and provided at one end with an upwardly-extending arm for operating the said rock-shaft, a downwardly-extending arm at the other end of said rock-shaft, and a wheel carried by said arm and adapted to engage with and move the shifting-tongue.

3. In switch devices, the combination with the main and siding rails of a track and the switch-point, of a switch-operating mechanism consisting of a pivoted shifting-tongue inclined on each side from its pivotal point inward to its ends, guide-rails corresponding to the inclination of and located opposite to the sides of the shifting-tongue, a connection between the front end of the switch-point and an end portion of the shifting-tongue, a car, a rock-shaft journaled beneath the car, means for operating the rock-shaft, a downwardly-extending arm attached to the shaft, and a wheel carried by said arm, having a sharp peripheral surface and conical side faces, which wheel is adapted to engage with and move the shifting-tongue, as described.

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

CARL JOHN CARLSON.

Witnesses:

M. F. MENDENHALL,

STELLA E. REA.