(No Model.)

E. J. ILL.

SWITCH WORKING MECHANISM.

No. 536,875. Patented Apr. 2, 1895.

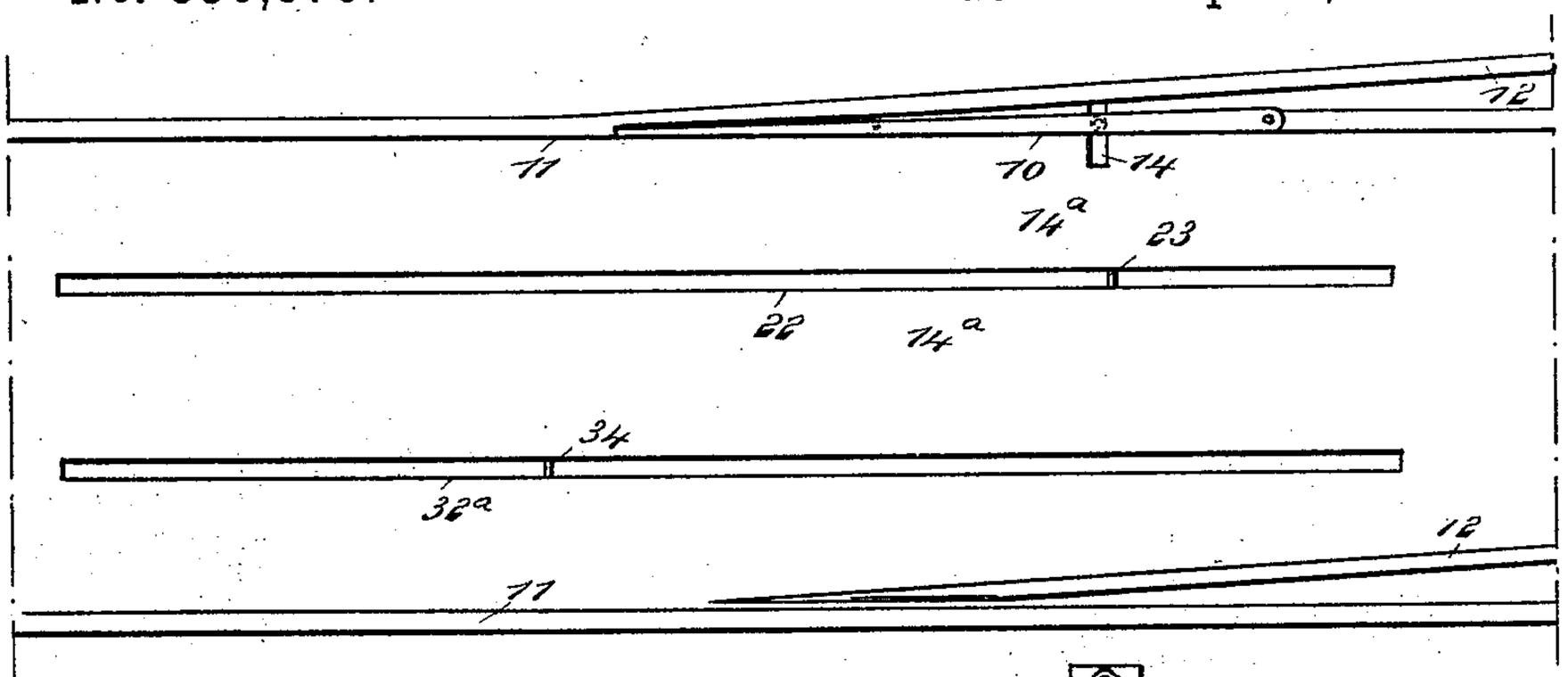

Fig. 1

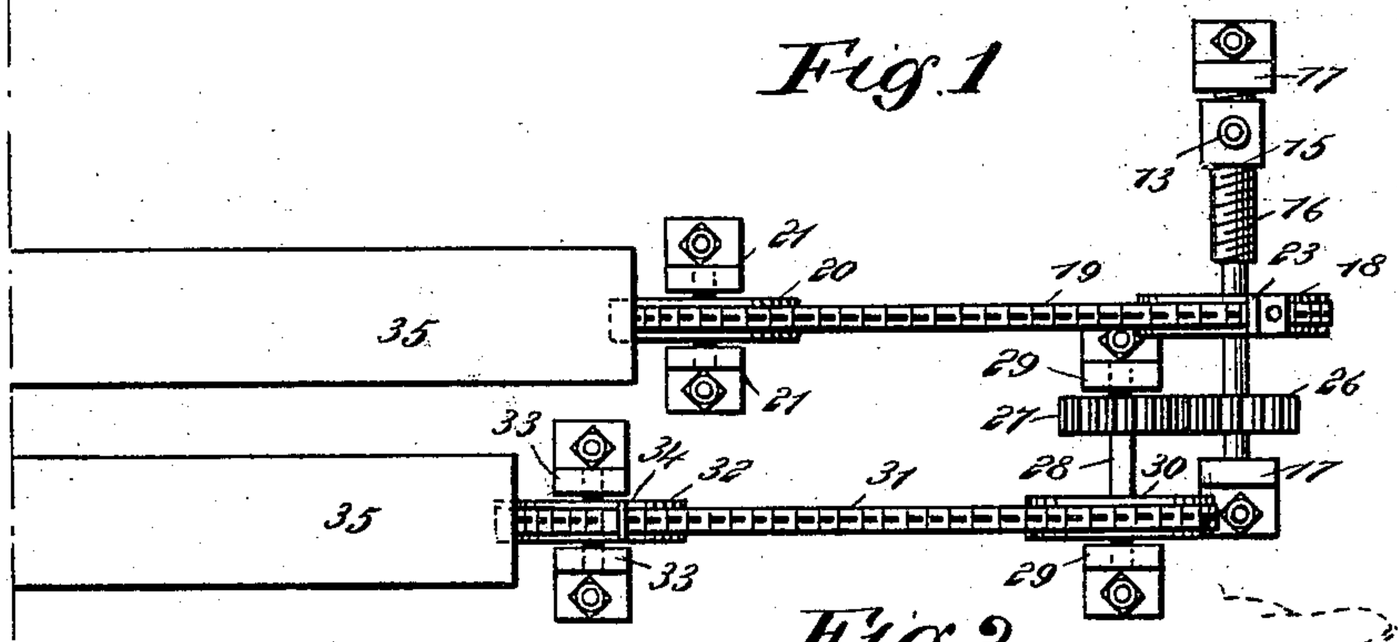

Fig. 2

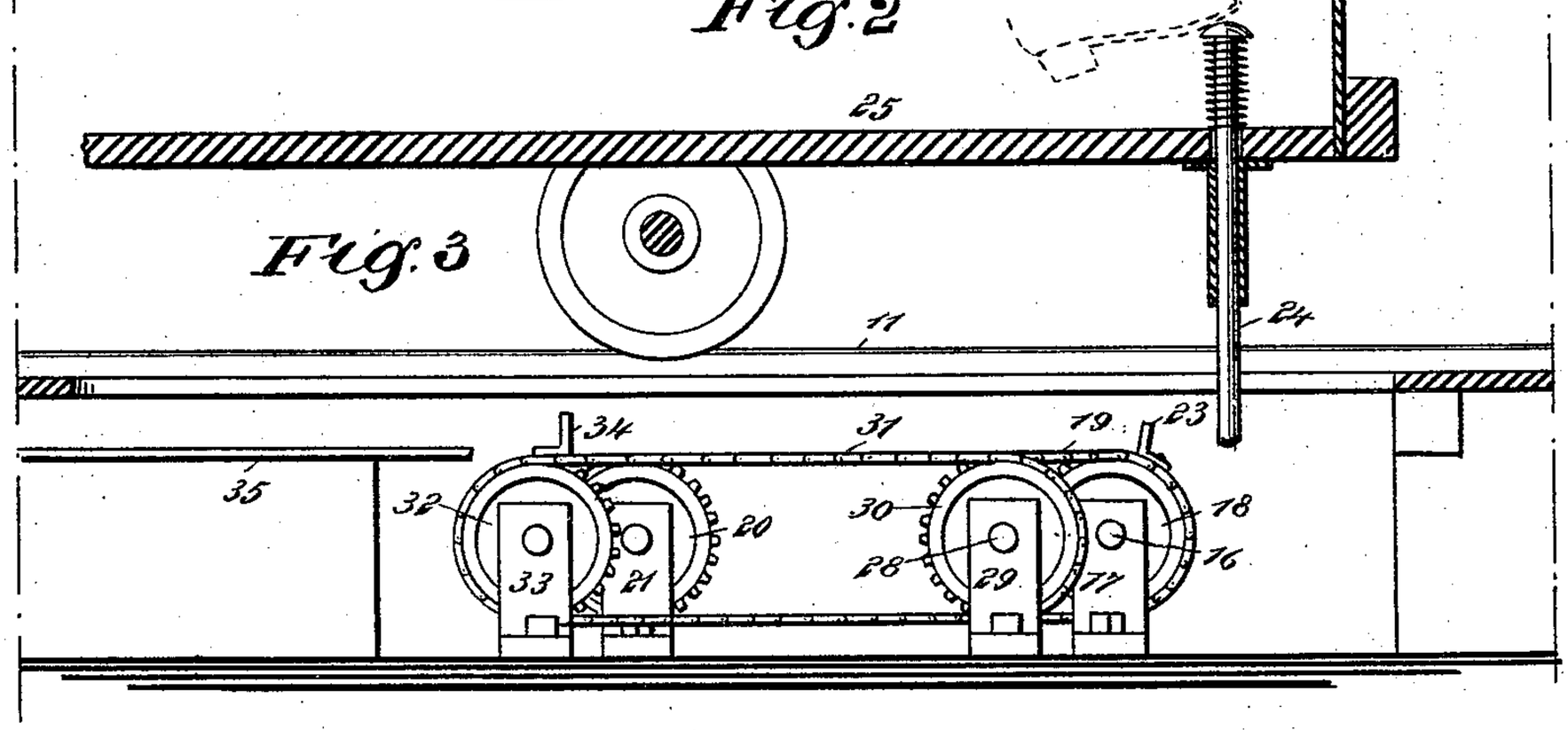

Fig. 3

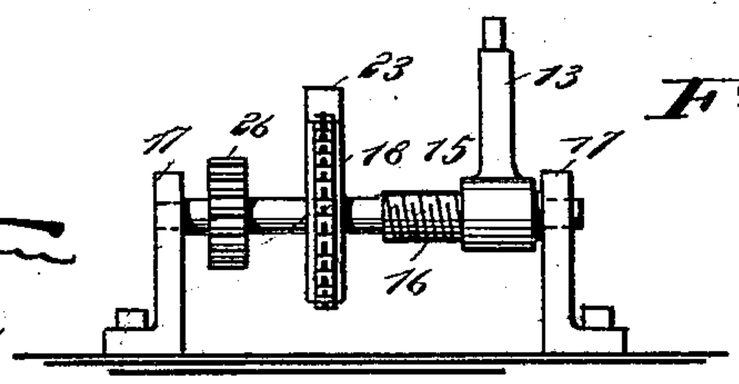

Fig. 4

WITNESSES:

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SWITCH-WORKING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 536,875, dated April 2, 1895.

Application filed February 2, 1895. Serial No. 537,053. (No model.)

To all whom it may concern:

Be it known that I, EDWARD J. ILL, of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and Improved Switch-Working Mechanism, of which the following is a full, clear, and exact description.

My invention relates to improvements in railroad switches and mechanism for working such switches; and the object of my invention is to produce a simple apparatus which may be used in connection with an ordinary switch point, which is adapted to be operated by mechanism on a passing car so as to open or close the switch, which has a screw mechanism adapted to positively move the switch point, and which has the mechanism for turning the screw arranged in a very convenient and practical manner to enable the screw to be turned in either direction.

To these ends my invention consists of certain features of construction and combinations of parts, which will be hereinafter described and claimed.

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

Figure 1 is a plan view of a railway provided with a switch arranged to be operated by my improved switch working mechanism. Fig. 2 is a plan view of the mechanism proper which is contained beneath the roadbed and is adapted to work the switch point. Fig. 3 is a sectional elevation of the device, showing the means for operating it from a passing car; and Fig. 4 is a detail end view of the mechanism which works the switch point.

The drawings show the ordinary arrangement of main rails 11 and siding rails 12, at the junction of which is placed the usual switch point 10, which is pivoted in the ordinary manner and is connected with an arm 13 which is adapted to swing through a slot 14 in the bed 14^a of the road, which bed is formed at this point by a suitable plate in order that the recess beneath the road may be properly covered, and to enable the mechanism to be conveniently arranged beneath the bed. The arm 13 is carried by a nut 15 which travels on a screw 16 arranged transversely beneath the track and journaled in supports 17. It will be seen then that as the screw is turned first in one direction and then in the other, the nut 15 will be correspondingly moved and the desired lateral motion given to the switch point 10. The screw is provided with a sprocket wheel 18 which is driven by a chain 19 extending over a second sprocket wheel 20 which is journaled in suitable supports 21, and the chain is thus brought longitudinally beneath a slot 22 in the bed 14^a and it is provided with a striking plate 23 which is adapted to be struck by a depressible foot rod 24 or an equivalent device on the car 25. The screw shaft 16 is also provided with a gear wheel 26 which engages a gear wheel 27 on a countershaft 28 which is journaled in suitable supports 29, and the countershaft is also provided with a sprocket wheel 30 carrying a chain 31 which is held parallel with the chain 19 and is supported on a sprocket wheel 32 which is journaled in supports 33. The chain 31 carries on its upper side a striking plate 34, like the striking plate 23 referred to above, and the striking plate 34 is arranged beneath a slot 32^a which is parallel with the slot 22. The striking plate 34 is also adapted to be engaged by a foot rod 24 to move the chain 31, and the car should be provided with two of these foot rods, one to enter the slot 22 and the other to enter the slot 32^a. In order that the foot rods may strike properly on the chain and striking plates without hitting the sprocket wheels 20 and 32, guide plates 35 are arranged beneath the slots 22 and 32^a at the ends of the chains and at about the same level as the upper members of the chains.

It will be seen that when the striking plate 23 is struck and moved forward the screw shaft 26 will be turned in one direction and the switch point 10 closed, but when the striking plate 34 is struck the screw shaft will be turned in the opposite direction owing to the connecting gears 26 and 27 and the switch point will be opened while the striking plate 23 will be carried back to its original position. It follows then that one striking plate will always move back when the other moves forward, and that the switch may be either opened or closed by depressing the proper foot rod 24.

Having thus described my invention, I

claim as new and desire to secure by Letters Patent—

1. The combination, with the switch point, of the revoluble screw shaft to move it, a sprocket wheel and chain mechanism to turn the screw shaft first in one direction and then in another, and means for actuating the sprocket wheel and chain mechanism from a passing car, substantially as described.

2. The combination, with the slotted track bed, the switch point and the screw shaft to move the switch point, of the oppositely moving striking plates arranged beneath the slots in the track bed, and means for turning the screw shaft by the movement of the striking plates, substantially as described.

3. The combination, with the switch point and the revoluble screw shaft for moving it, of the traveling chain provided with a striking plate and connected directly with the screw shaft, and a second traveling chain provided with a striking plate and connecting by a gear mechanism with the screw shaft, substantially as described.

4. The combination, with the switch point, the slotted track bed, the traveling chains having striking plates thereon, and means for moving the switch point from the chains, of the guide plate arranged beneath the slots and substantially level with the chain tops, substantially as described.

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Witnesses:
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