

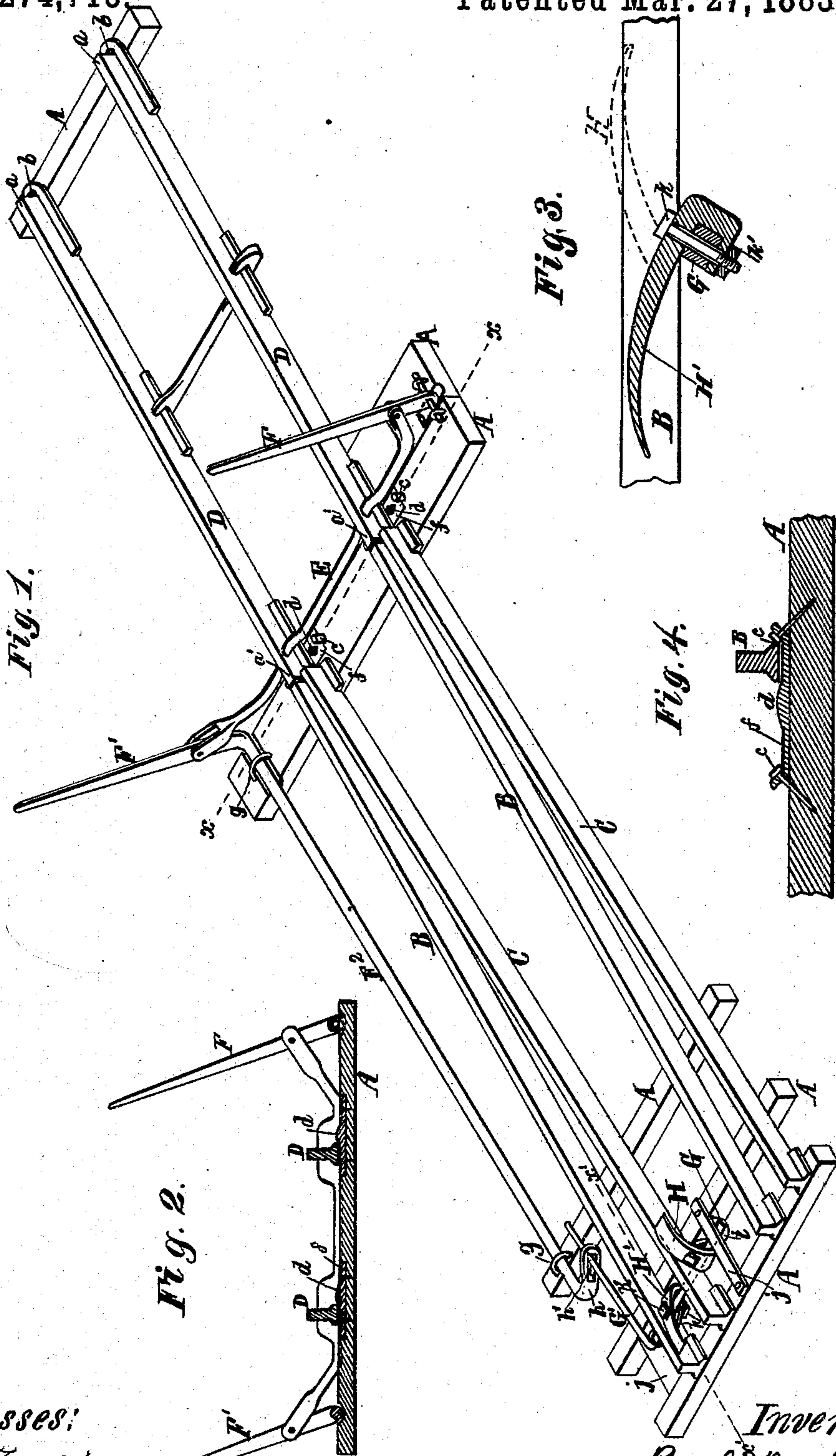
(No Model.)

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RAILROAD SWITCH ADJUSTING AND LOCKING DEVICE.

No. 274,713,

Patented Mar. 27, 1883.



Witnesses:

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RAILROAD-SWITCH ADJUSTING AND LOCKING DEVICE.

SPECIFICATION forming part of Letters Patent No. 274,713, dated March 27, 1883.

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

To all whom it may concern:

Be it known that I, REESE G. BROOKS, a citizen of the United States, residing at Scranton, in the county of Lackawanna and State of Pennsylvania, have invented a new and useful Improvement in Railroad-Switch Adjusting and Locking Devices, of which the following is a specification.

My invention relates to a switch-adjusting device which is adapted to be operated by the wheels of locomotive engines or cars, and may be operated by hand; and it consists, first, in a rocking bar arranged above the bed of the track and provided with two reversely-set switch trips or adjusters, the said bar having an arm which forms nearly a right angle with it and extends longitudinally of the rails, and is connected with a slotted rocking bar, to which the switch is connected, as will be hereinafter described; second, in a tapered locking projection or projections provided upon the chair, in combination with the mechanism for adjusting the switch, whereby the movement of the free end of the switch in an upward and downward direction in an arc of a circle enables the switch to become fastened by the projections in either of its adjusted positions, so as not to be liable to casual displacement.

By my mode of construction and application of the mechanism great simplicity is secured, and I avoid the heretofore necessity of forming chambers below the surface of the track-bed and of employing springs therein, together with various complicated mechanisms, which are liable to become clogged, disarranged, or broken, and thereby render the adjustment of the switch by the wheels of engine or cars uncertain. My locking device also renders the adjusting mechanism much safer.

In the accompanying drawings, Figure 1 represents my invention applied to a switch which at one end is in line with a main single track and can be adjusted at its other or free end in line with either the main rails of a track or in line with the rails of another or diverging track. Fig. 2 is a vertical transverse section through a sleeper, showing the switch, switch-bar, hand-levers, and chair-plate with locking-stops, (see line xx ;) and Fig. 3 is a detail section in the line $x'x'$ of Fig. 1, through the switch-trip of the main track, and showing by

dotted lines the switch-trip of the side track, which trip in this section is cut away and would not be seen.

A A in the drawings designate sills, B B main rails, and C C diverging or siding rails.

D D is the switch, having its end $a a$ fastened by the pivots $b b$, so that its end $a' a'$ can be swung horizontally in line with either the main-track rails B B or the side or diverging track rails C C, as usual.

E is the switch-operating bar, connected with pivoted vibrating levers F F'. The levers F F' are so limited in their movement inward and outward by stops $c c$, against which the rails strike, that they stand slightly inclined to the horizon when the switch has been adjusted in either of its positions, and by this means they act as partial locks to the switch. If they rested in vertical positions, the switch would be liable to be moved by the slightest action on the levers, whereas when they rest incliningly considerable force is necessary to lift the levers past the "dead-center," in order to move the switch. In connection with this arrangement of the levers I form a stop projection, d , on each of the chair-plates f , and taper these stop projections downward from their middle to their ends, as in Figs. 2 and 4. These stop projections are so located, as shown, with respect to the inner and outer edges of the base portions of the switch-rail that either the inner or the outer edges of these rails bear against these projections when the respective adjustments of the switch are made. These projections serve to lock the switch against casual displacement in either of its adjusted positions. It will be understood that the switch, while being moved by either of the levers F F', is caused to rise in the arc of a circle, and, owing to this, can ride over the tapered projections, and when the levers by their movement pass beyond vertical lines then the switch drops down to its normal position and bears against the projections d , and cannot be moved laterally until the levers are again moved to vertical positions. In operating the switch by hand either one of the levers can be used; but of course both will move to like positions.

By referring to the drawings, Fig. 1, it will be seen that the axis of the lever F' consists of a long rocking bar, F², fitted in bearings g

of the sills, and that this bar is terminated in a right or nearly right angular arm, h , in which an oblong slot, h' , is formed. In connection with this slotted angular rocking bar a rock-shaft, G , is employed. This shaft is applied transversely under the rails in suitable bearings, i , of supports j , and upon square portions thereof tapering switch-trips or devices H H' are fastened by bolts k and nuts k' , as shown in Figs. 1 and 3. The bevel of the trip H is just the reverse of that of the trip H' , as illustrated in the drawings. The trip H is placed alongside a diverging rail, C , while the trip H' is placed alongside a main rail, B , as shown. The arrangement of the two trips upon the rock-shaft G is such that when the free portion of trip H is on a horizontal plane with the top of a diverging rail, or a little above the same, the trip H' will lie below the top of a main rail, as illustrated by full and dotted lines in Fig. 3. The rock-shaft G is provided with an angular arm, G' , which extends longitudinally with the rails, preferably with a slight upward inclination, and its end extends through the oblong slot h' of the rocking bar F^2 , and by this means the rock-shaft G and the rocking bar F^2 , as well as the switch-bar E , are coupled together, as shown.

It will be observed that all the mechanism is arranged above the road-bed, and is readily accessible for clearing away obstructions or for repairs; also, that the combination of parts is very simple and without springs, and therefore not liable to get out of order.

The operation is as follows: The switch having been adjusted with the main-track rails, the trip H will be turned up to the position shown in Fig. 1, and the wheels of the engine in passing over the side track at the trip H will depress the trip, and thereby rock the shaft G and cause it to turn up the trip H' to the position shown in dotted lines in Fig. 3, and simultaneously move down the arm G' , rock the bar F^2 , move the switch-bar sidewise, and adjust the switch-rails in line with the siding or divergent track rails, and thereby connect said side-track rails with the main track at the pivoted end of the switch. Again, if an engine is coming in on the main-track rails B B and the switch is adjusted as just described, the wheels of the engine will depress the trip H' of the main rails, raise the trip of the divergent track rails, and adjust the switch

back to the position shown in Fig. 1. In each adjustment of the switch, as described, it becomes locked by the teat-like projections against casual displacement.

My invention is especially designed for controlling trains in passing from double or intersecting tracks to a single track; but it might be used in connection with known switch-shifting contrivances which enable engines to pass from single to double or intersecting or side tracks.

I am aware that many plans have been devised for automatically shifting and locking the switches of railroads. I also am aware that trips which are connected, and one of which is depressed while the other is elevated, are not new; also, that beveled locking projections on chairs are old; but I am not aware that the mechanical appliances constructed, arranged, and combined in the simple manner herein described and shown have before been devised. Therefore,

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The longitudinal rocking rod F^2 , having angular arm h , with oblong slot h' in it, in combination with the switch-shifting bar E , switch-rails D , and rocking shaft G , provided with angular arm G' , and the reversely-set trips H H' , all applied above the foundation, and constructed and operated substantially as herein described.

2. The longitudinal rocking rod F^2 , applied as shown, and provided with angular slotted arm h and hand-lever F' , for operating the rocking shaft and its trips, and also the switch-rails, either by hand or the wheels of the engine, substantially as described.

3. The combination, with the chairs having beveled locking projections d , of the switch-rails D , switch-shifting bar E , rocking rod F^2 , and rock-shaft G , carrying trips H H' , all arranged as shown, whereby the switch bar and rails are raised above the projections as they move in the arc of a circle, and are allowed to fall below said projections on either side, and the switch-rails locked by the combined action of the projections and the inclination of the lever F' of rocking rod F^2 , substantially as described.

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Witnesses:

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