

WILLIAM E. LEWIS.

Improvement in Railway-Switches.

No. 126,310.

Patented April 30, 1872.

Fig. 1

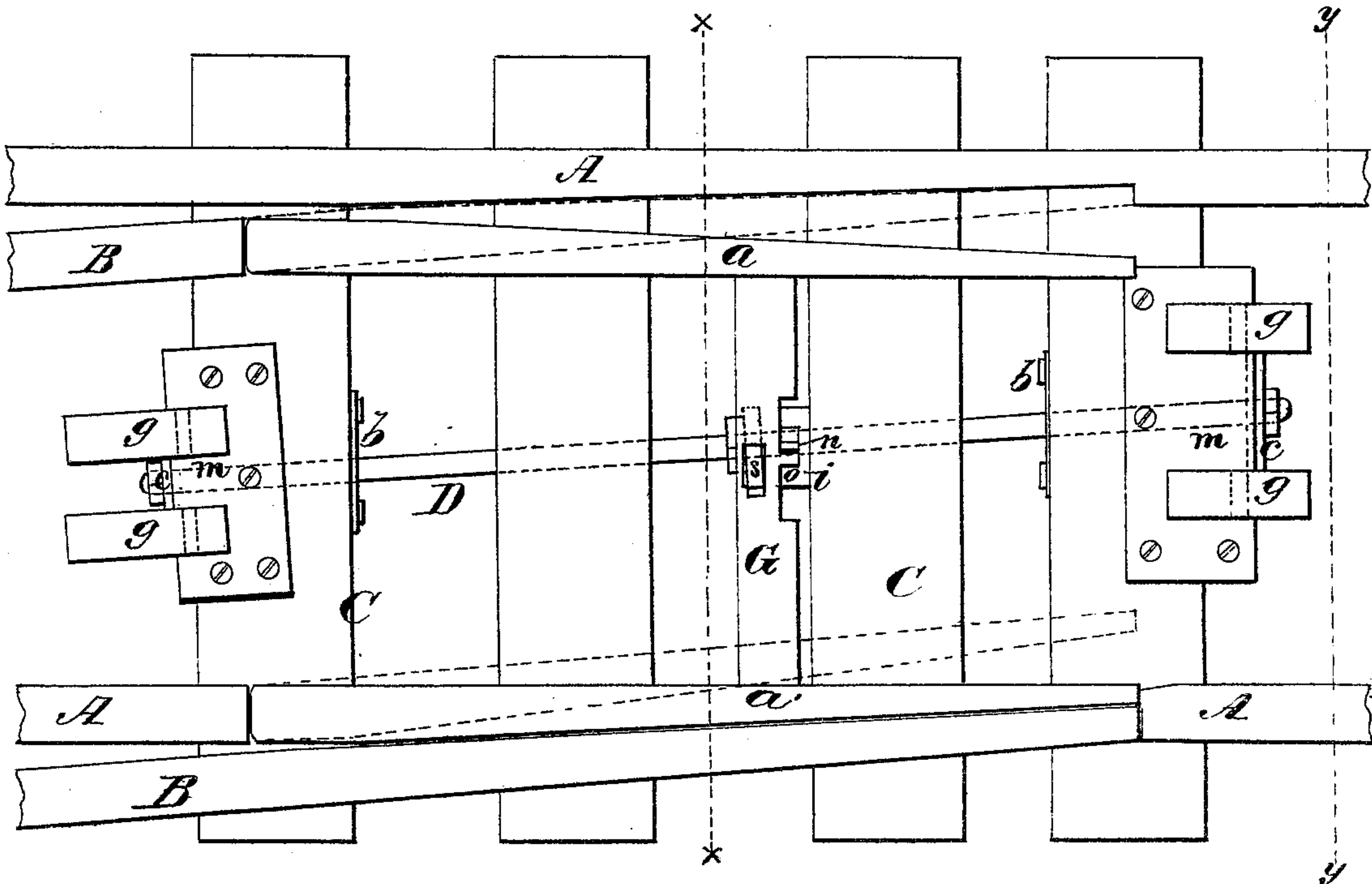
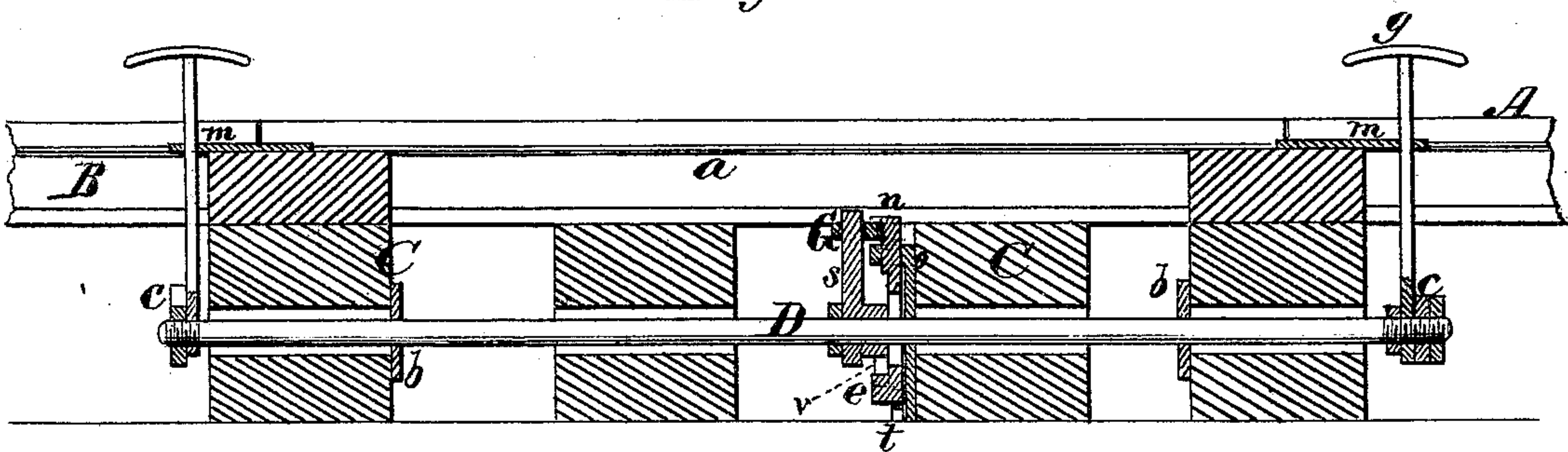


Fig. 2



Witnesses.
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Inventor
Wm E. Lewis
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Fig. 3.

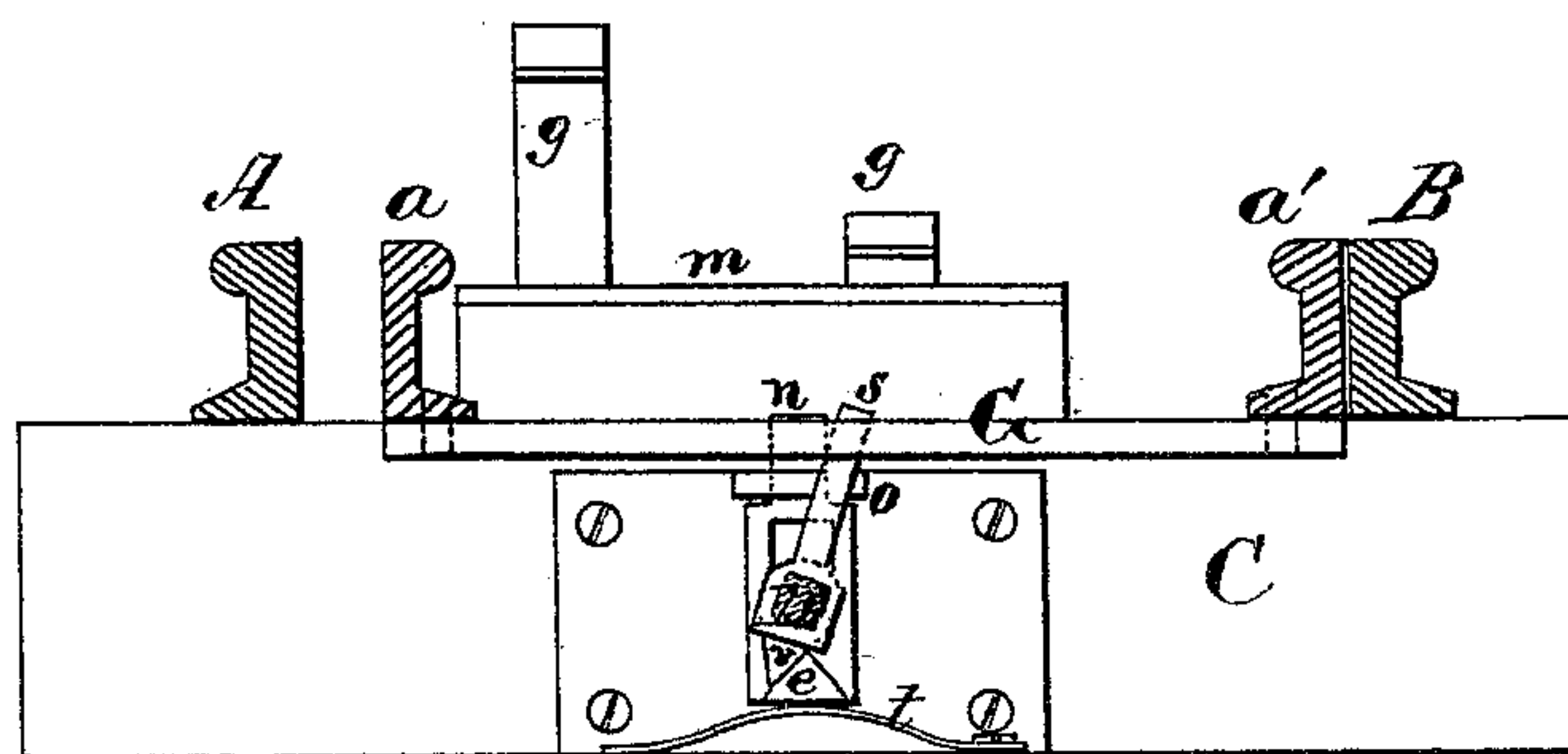
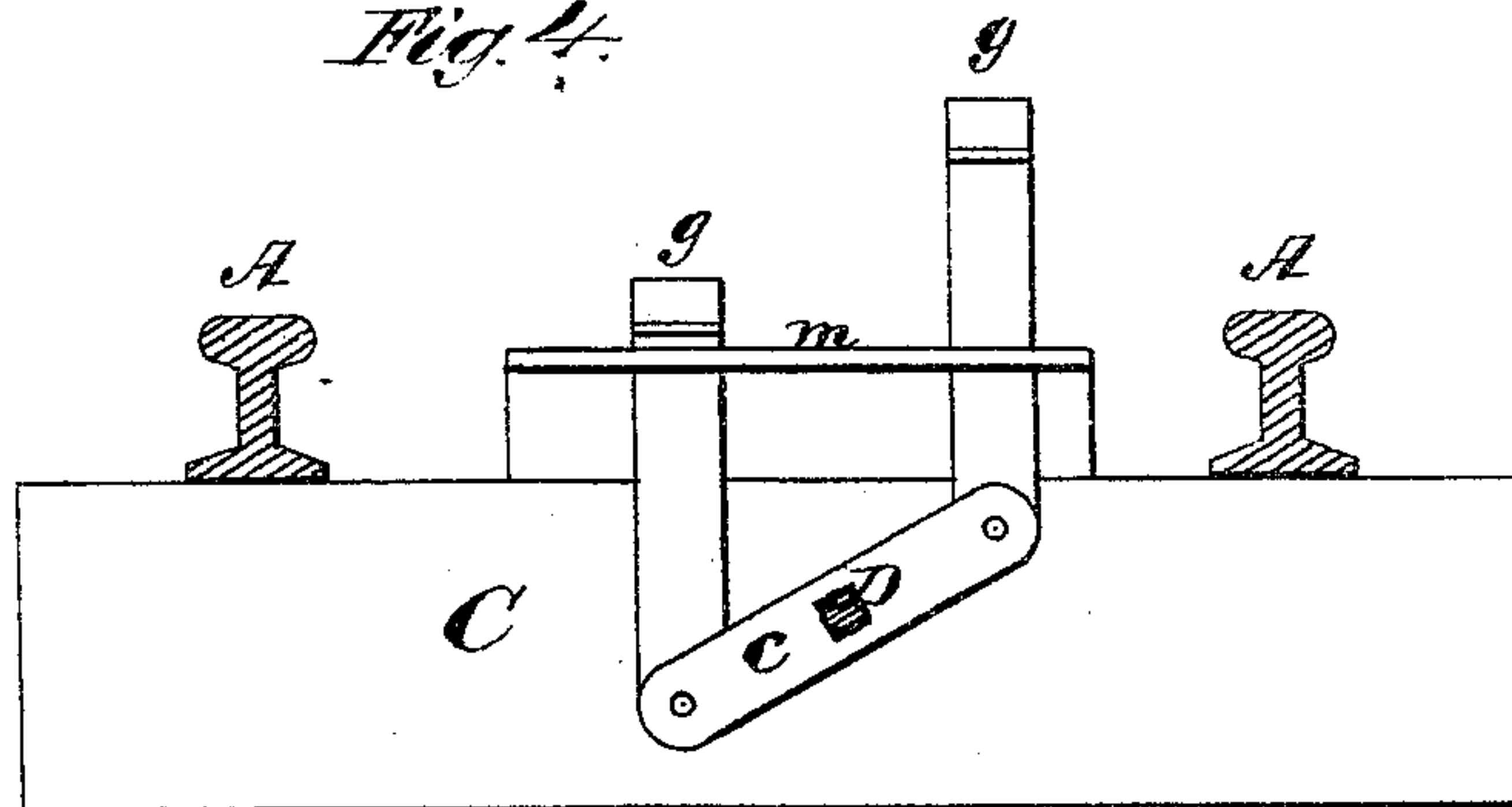


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM E. LEWIS, OF CLEVELAND, OHIO.

IMPROVEMENT IN RAILWAY SWITCHES.

Specification forming part of Letters Patent No. 126,310, dated April 30, 1872.

To all whom it may concern:

Be it known that I, WILLIAM E. LEWIS, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and Improved Railroad Switch; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1, Sheet 1, is a plan view of the improved switch. Fig. 2, Sheet 1, is a section taken longitudinally and centrally through Fig. 1. Fig. 3, Sheet 2, is a section taken transversely through the switch in the plane indicated by dotted line *x x*, Fig. 1. Fig. 4, Sheet 2, is a similar section in the plane *y y*. Fig. 5, Sheet 3, is a view similar to Fig. 4, indicating the sliding wheel for actuating the switch-rails.

Similar letters of reference indicate corresponding parts in the several figures.

The object of this invention is to enable an engineer on a railroad train to change switch-rails, as he may desire, while the train is in motion, and to lock the rails in such position, as will be hereinafter described.

The following description will enable others skilled in the art to understand my invention.

In the accompanying drawing, Sheet 1, *A A* represent the main-track rails, and *B B* the siding rails. The switch-rails *a a'* are suitably pivoted to the cross-tie *C* at the ends of the two rails *B C*, Fig. 1, so that the opposite ends of these rails *a a'* are free to vibrate laterally in order that they may be adjusted for the main-track rails or for the siding. The switch-rail *a* is properly a siding rail, while the switch-rail *a'* is properly a main-track rail. The inner side of the main-track rail *A*, next the rail *a*, is cut away so as to receive the tapered rail *a*, as indicated in dotted lines, Fig. 1, when this rail is adjusted for the siding. The inner side of the siding-rail *B*, next the tapered switch-rail *a'*, is also cut away to allow this rail *a'* to be adjusted in line with the main-track rail, as indicated in Fig. 1 is full lines.

It will be seen from the above description that on one side of the track the car-wheels will pass directly from the main-track rail upon the siding-rail, when the switch-rails *a a'* are adjusted, as indicated in dotted lines, Fig. 1, while on the opposite side of the track the car-

wheels will pass over the switch-rail *a* on leaving the main-track rail.

The two switch-rails *a a'* are connected together by a cross-tie, *G*, which is slotted to receive through it an arm, *s*, which is fast on an oscillating shaft, *D*. This cross-tie *G* is also notched or recessed to receive the upper end of a vertically-sliding bolt, *n*, which locks the the swivel-rails in the two positions which they can be made to assume. The shaft *D* extends lengthwise through the cross-ties *C* for a considerable distance beyond the ends of the switch-rails, and has its bearings in plates *b b*, as shown in Fig. 2. To the extremities of the shaft *D* levers *c c* are secured, and to the ends of this shaft vertically-movable treadles *g* are pivoted. These treadles are guided by plates *m* on the cross-tie *C*, and on their upper ends shoes are applied which present convex upper surfaces. On the axle of the front pilot-wheels I place loosely a wheel, *J*, which is free to rotate and also to be moved laterally. The hub *j* of this wheel has an annular groove in it, as shown in Fig. 5, which groove receives the end of a laterally-vibrating lever, *P*, the fulcrum of which is in a standard, *p*, or otherwise suitably arranged so that the lever can be worked by a person on the train. By vibrating lever *P* the wheel *J* can be moved into line with the treadles *g* on either side of the shaft *D*; or, if desirable, this wheel can be moved at an intermediate point between the treadles, so as not to act upon them when the train passes the switch. The switch-rails are automatically locked when they are adjusted for the main track or for the siding. This is effected by means of the vertically-movable bolt *n*, which is vertically slotted to receive through it the shaft *D*, shown in Fig. 3. The upper end of this bolt *n* plays through a bracket, *o*, while on one side of this bracket, near its lower end, is a V-shaped cam, *e*, which is acted on by a cam, *v*, on the shaft *D*. Beneath the slotted bolt *n* is a spring, *t*, which acts to force the bolt upward into one or the other recesses made into the cross-tie *G*. Instead of the spring *t* a loaded lever may be used, which I prefer in lieu of the spring, as it is more positive in its action.

It will be seen from the above description that there is one treadle on each side of the shaft *D* at each end of this shaft, and that there

is a wheel on the axle of the front pilot-wheels, which can be adjusted in line with any one of the said treadles, so as to depress the same, and thus, by oscillating the shaft D, change the position of the switch-rails, as may be desired. It will also be seen that the bolt *n*, which is acted on by a cam on the shaft D, will engage with the cross-tie G and lock the switch-rails in the position which it may be desired to have them.

The drawing represents the shaft D too short for practice. It should be considerably longer, and the two pairs of treadles should be further apart.

Having described my invention, what I claim as new is—

1. The bar *c*, treadles *g g*, rocking shaft D, in combination with the arm *s*, cross-tie G, and switch-rails *a a'* whereby the use of gears are dispensed with for operating the switch-rails, and the mechanism simplified, all as set forth.

2. The locking-bolt *n*, cross-tie G, and switch-rails *a a'*, in combination with the arm *s* and oscillating shaft D, substantially as described.

WILLIAM E. LEWIS.

Witnesses:

H. O. MACKRES,
C. M. DEWEY.