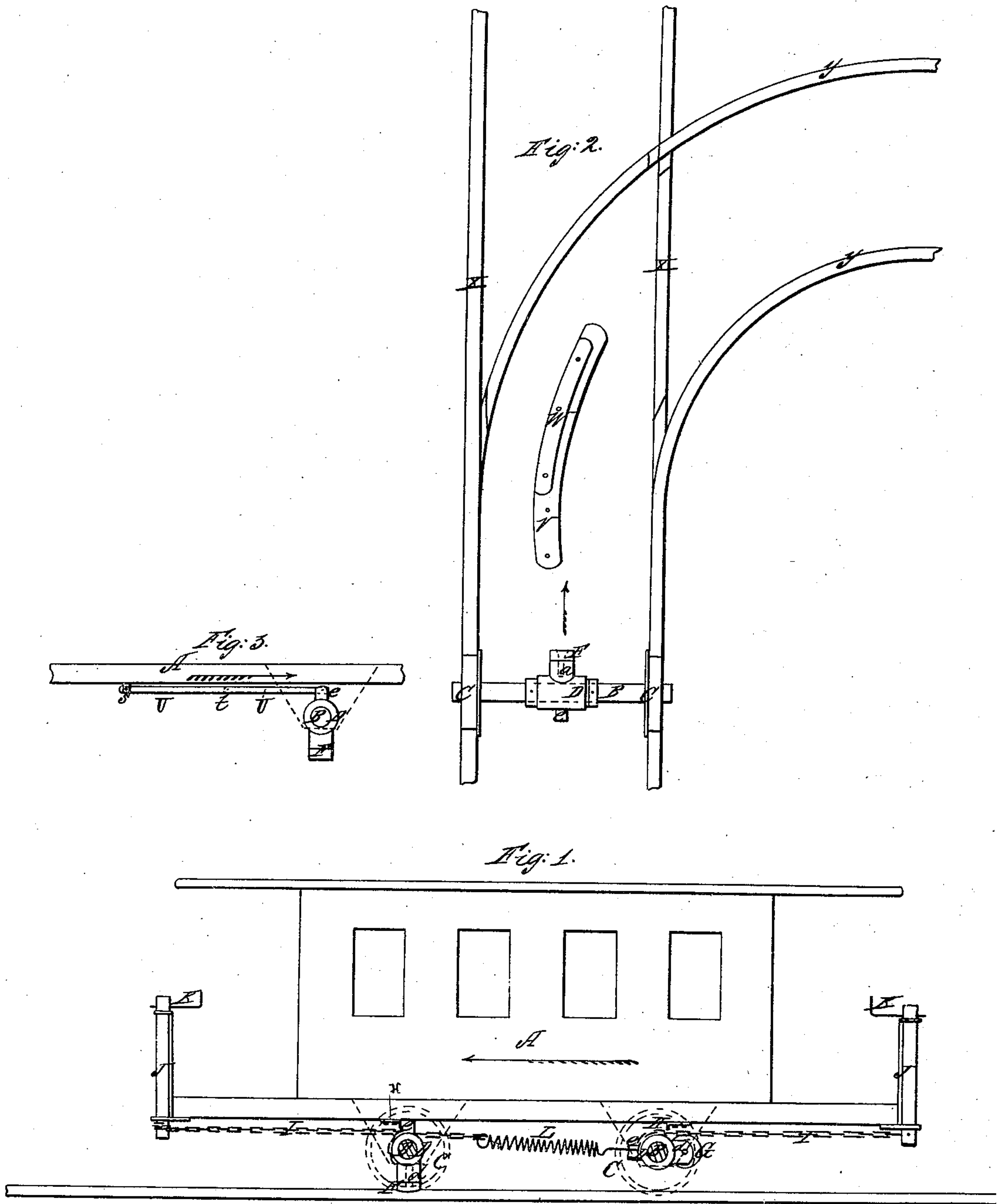


*J. P. Woodbury*

*Railroad Switch.*

*N<sup>o</sup> 41,883.*

*Patented Mar. 8, 1864.*



*Witnesses:*  
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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN AUTOMATIC RAILROAD-SWITCHES.

Specification forming part of Letters Patent No. 41,883, dated March 8, 1864.

*To all whom it may concern:*

Be it known that we, JOSEPH P. WOODBURY and NATHAN AMES, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Automatic Railroad-Switch; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side view of a horse railroad-car with our improvements attached, representing one of the pendent arms depressed, so as to act upon the central rail or guide, W. Fig. 2 is a plan of two tracks—a straight track, *x x*, and a turn-out, *y y*. Fig. 3 is a section representing another method of confining the pendent arms in a perpendicular position.

Like parts are indicated by the same letters in all the drawings.

The nature of our invention consists, first, in attaching a pendent depressible arm permanently to the longitudinal center of the car-wheel axle, so that the latter may revolve in the former, as a shaft in its bearings; second, in combining with said arm, permanently attached to the axle, either a horizontal roller, F, or a vertical roller, G, to operate on the concave side of a central guide-rail, W, whereby the car may be guided or switched from one track to another by a person standing on the platform; third, holding said arm in a perpendicular position by means of a start, *e*, operating in combination with links U U, or a cleat, H, attached to the bottom of the car by bolts so small that in case the foot of the arm should come in contact with any immovable or insurmountable obstruction said bolts will break, and thereby prevent the axle or other parts of the car from being seriously injured; fourth, connecting together and raising said pendent arms by means of a single spring, L; fifth, placing the central guide-rail on a metallic or wooden platform or bed, extending some distance beyond it at either end and on the concave side, so that the rollers on the depressible arm may slide or roll over it, instead of touching the ground, and, sixth, in the combination of a windlass, J, and chain I with said pendent arm, whereby the latter is de-

pressed by a person standing on the platform of a moving car.

To enable others skilled in the art to make and use our invention, we will now describe its construction and operation.

A is a car resting on the axles B B of the wheels (shown in dotted lines) in the usual manner.

D is a cast-iron box, (either round or made in halves bolted together,) in which the axle B revolves, said box being kept in the center of the axle (see Fig. 2) by means of pins, collars held with set-screws, or their equivalents.

*d* is a round arm or continuation of the box D.

F is a horizontal roller which turns on an axle fast in the arm *d*, as represented by the dotted line in Figs. 1 and 2; or said roller may be provided with a fixed shank, axle, or continuation, which may revolve in the arm *d*.

G is a vertical roller or wheel which turns on a pin or axle in the arm *d*, as represented in Fig. 1. The same style of rollers should be used on both ends of the car, or the width of the vertical roller should be the same as the diameter of the horizontal one. On some railroads the horizontal wheel will be preferable, and on others the vertical, owing to peculiar construction and location.

*e* is a start on the box D directly opposite the arm *d*, the object of said start being to hold the pendent arm *d* in a perpendicular position, which it does by bearing on the cleat H, as shown in Fig. 1. The cleat H is a bar of iron bent at right angles, and is intended to be attached to the bottom of the car by means of bolts (for an ordinary car) about three-eighths of an inch in diameter, or so small as to be cut off or broken by any unusual obstruction, as and for the purpose described above in setting forth the nature of our invention.

In place of the cleat H, two links, U U, may be used—one attached to a stud, S, on the bottom of the car and the other to the start *e*, as represented in Fig. 3. When the arm *d* is in a horizontal position, the contiguous ends of the links U U will be depressed. The links are united by small pins, so as to break when required.

I is a chain or its equivalent, one end of which is fast to the box D and the other at-



tached to the windlass J, as represented in Fig. 1.

K is the handle of the windlass J, by turning which a person standing on the platform of the car can instantly depress and bring the arm *d* into a perpendicular position, as shown in Fig. 1 at F.

L is a spiral spring stretched between the boxes D D or the starts *e e*, as shown in Fig. 1, the object of said spring being to hold the arms *d d* in a horizontal position when not depressed by the chain and windlass, for the purpose of bringing the rollers F and G to bear upon the concave side of the central guide-rail, W. The guide-rail W is placed the semi-diameter of the wheel F, to one side of the center of the track, as shown in Fig. 2, and its concave side is parallel with the turn-out rails Y Y. The top of this rail W is intended to be about one inch and a half above the other rails of the track, and is confined to the top of the bed-piece V, of wood or iron, smooth or corrugated, which extends beyond it, (W,) as shown in Fig. 2, and for the purpose specified above.

The drawing Fig. 2 represents a right-hand turn-out. It is obvious, however, that the central rail, W, may be curved in the opposite direction and applied equally well to a left-hand turn-out.

The tendency of a car is always to move in a straight line; but when it is required to be switched from the straight track to the turn-out it is only necessary for the driver or a person on the platform to turn the windlass J at the proper time, so as to bring the arm *d* into

a perpendicular position, when it is obvious that the wheel F, (Fig. 1, for instance,) rolling on the concave side of W, will direct the car onto the turn-out Y Y, thus obviating the necessity of employing a switchman, stationed to operate each separate switch.

Having thus described the construction and operation of our invention, what we claim as new, and desire to secure by Letters Patent, is —

1. Attaching a pendent or depressible arm permanently to the longitudinal center of the axle, substantially as set forth, and for the purpose described.

2. Combining with the arm *d*, permanently attached to the longitudinal center of the axle, either a horizontal or vertical roller, F and G, substantially as and for the purpose described.

3. Holding the arm *d* in a perpendicular position by means of the start *e* or its equivalent, in combination with links or a cleat attached to the bottom of the car by bolts so small as to break when required, substantially as described.

4. Connecting and raising the two arms *d* and *d* by means of a single spring, substantially as described.

5. The combination of the windlass J, chain I, and box D, substantially as and for the purpose set forth.

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