

ORIGINAL COPY

# PATENT SPECIFICATION



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**389,188**

Complete Left: Aug. 10, 1932.

Complete Accepted: March 16, 1933.

PROVISIONAL SPECIFICATION.

## Improvements in and relating to Ramps for Toy Railway Tracks.

I, FRANK HORNBY, of 236, Binns Road, Old Swan, Liverpool, British, do hereby declare the nature of this invention to be as follows:—

5 The usual type of ramp for use on toy railways is generally of the type movable laterally to the track rails, the ramp being brought from an inoperative to an operative position by such lateral movement.

10 Such an arrangement is however unsatisfactory as it tends to distort the alignment of the track. Pivotal ramps have been proposed in which a longitudinal bar was adapted to be raised to an operative

15 position by cranked rods interconnected with the signal controls. The present invention relates to an improvement in the pivotally mounted type of ramp for toy railway tracks.

20 According to this invention a ramp or ramps is or are pivoted on the track and either spring controlled or operating by gravity normally to fall clear to an inoperative position, the ramps being some-

25 what in the form of bell cranks having depending tails or lugs adapted to be engaged by a lever to raise the ramp or ramps when required into an operative position. Preferably the ramps are

30 mounted upon a pivotal axis in a sleeper element, the axis disposed transversely to the track rails and the operating lever is also, preferably, pivoted on the same

35 sleeper, the lever being movable in the plane of the sleeper and having horns or projections adapted to engage bevelled faces on the depending lugs of the ramps, so that when two such ramps are fitted

40 one or other may be raised to an operative position or both allowed to fall to an inoperative position.

In a suitable construction the ramp or ramps and their operating lever are all mounted on a sleeper element which thus

45 forms a self-contained unit capable of being readily positioned beneath the track rails, such unit comprising preferably a pair of ramps, each made somewhat in bell crank fashion having a flat blade

50 which normally rests when in its operative position on the sleeper plate. The ramps are pivoted on a rod or pin secured

in the sleeper plate and each ramp is provided with a depending tail having a bevelled face. The weight of the blades of the ramps is such that they fall normally by gravity to an inoperative position with their depending tails below the sleeper plate. Pivotaly mounted beneath the sleeper plate is an operating lever, the handle of which projects beyond the side of the sleeper and the lever, when required to operate one or other of two ramps, is fitted with two projections or horns either of which as the operating lever is rotated in one or other direction engages the bevelled face of the depending lug of one or other ramp and thus rotates that selected ramp about its pivot, raising the blade vertical to the track, in which position the ramp is adapted to actuate some element on a toy locomotive running on the rails.

Where two pivotal ramps are fitted, one may be arranged to actuate the brake mechanism of the toy locomotive and the other the reverse mechanism, and in this way according to the direction of rotation of the operating lever the brake may be applied on the toy loco or its direction of running reversed, while in the normal mid-position of the operating lever both ramps are free and fall to an inoperative position. The part of the sleeper from which the operating handle projects may be fitted with notches or other limiting abutments past which the handle may be moved with a click action, these notches or ridges forming partial stops to define the several required positions of the operating lever for ensuring actuation of the brake or reverse ramps.

By combining the ramps, operating lever and sleeper element upon which they are mounted, in one unit the device may be quickly and accurately positioned on a toy railway track.

Dated this 26th day of November, 1931.

A. J. DAVIES,  
Patent Agent,  
24, Moorfields, Liverpool.

[Price 1/-]

Price 4s 6d

## COMPLETE SPECIFICATION.

**Improvements in and relating to Ramps for Toy Railway Tracks.**

I, FRANK HORNBY, of 236, Binns Road, Old Swan, Liverpool, British, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The usual type of ramp for use on toy railways is generally of the type movable laterally to the track rails, the ramp being brought from an inoperative to an operative position by such lateral movement. Such an arrangement is however unsatisfactory as it tends to distort the alignment of the track. Pivotal ramps have been proposed in which a longitudinal bar was adapted to be raised to an operative position by cranked rods interconnected with the signal controls. The present invention relates to an improvement in the pivotally mounted type of ramp for toy railway tracks.

According to this invention a ramp or ramps is or are pivoted about an axis transverse to the track rails, the said ramp or ramps being formed as bell crank levers and adapted to be raised to an operative position by direct engagement with a lever angularly movable in the plane of the track rails.

In a preferred form of construction two ramps are employed and either of these is adapted to be operated by the said lever according to the position thereof.

The pivoted bell crank shaped ramp or ramps may be so disposed that the operative arm is usually horizontal and is adapted to be raised to a substantially vertical operative position by the said lever through direct engagement of the lever with the other arm of the bell crank.

The ramp or ramps may be pivoted on a sleeper element of the rail track, the said operating lever being also pivoted on the said sleeper element so as to be angularly movable in the plane thereof, this form of the invention representing a self-contained unit easily attached as such to the rail track.

The construction is preferably such that the ramp or ramps are usually urged into their inoperative position by spring or gravity action.

A ramp mechanism in accordance with this invention is illustrated in the accompanying drawings in which Fig. 1 is a plan of a section of track rail, suitable for a toy railway with the ramp mech-

anism embodied on a sleeper. Fig. 2 is an elevation, Fig. 3 an end view and Fig. 4 an inverted plan of the sleeper element carrying the ramps. Fig. 5 is a cross section through the sleeper and Fig. 6 is a fragmentary perspective view showing the operating lever moved to raise one ramp.

In a suitable construction the ramp or ramps 1, 2, and their operating lever 3 are all mounted on a sleeper element 4 which thus forms a self-contained unit capable of being readily positioned beneath the track rails 5, such unit comprising preferably a pair of ramps 1, 2, each made somewhat in bell crank fashion having a flat blade *a* which normally rests when in its operative position on the sleeper plate 4. The ramps are pivoted on a rod or pin 6 secured in the sleeper plate and each ramp is provided with a depending tail *b* having a bevelled face *c*. The weight of the blades *a* of the ramps is such that they fall normally by gravity to an inoperative position with their tails *b* depending below the sleeper plate. Pivotaly mounted at 7 beneath the sleeper plate 4 is an operating lever 3, the handle of which projects beyond the side of the sleeper and the lever, when required to operate one or other of two ramps, is fitted with two projections or horns 8, 9, either of which as the operating lever is rotated in one or other direction engages the bevelled face of the depending tail *b* of one or other ramp and thus rotates that selected ramp about its pivot, raising the blade *a* vertical to the track as shown dotted in Fig. 5, in which position the ramp is adapted to actuate some element on a toy locomotive running on the rails.

Where two pivotal ramps are fitted, as shown, one may be arranged to actuate the brake mechanism of the toy locomotive and the other the reverse mechanism, and in this way according to the direction of rotation of the operating lever 3 the brake may be applied on the toy loco or its direction of running reversed, while in the normal mid-position of the operating lever both ramps are free and fall to an inoperative position. For instance in Figs. 1 and 4 the operating lever is shown in full lines in the middle position 3*a*, its horns 8, 9, being clear of the tails *b* of both ramps which thus lie flat on the sleeper in an inoperative position. If the lever be moved to the position 3*b* the horn 8 engages the tail of the ramp 1 which is

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raised as in Fig. 6 the ramp 2 remaining down while if the lever be moved to the position 3c the ramp 2 is raised, the ramp 1 remaining down. An aperture 11 is cut in the sleeper plate for the movement of the tails b.

The part of the sleeper from which the operating handle projects may be fitted with notches 10 or other limiting abutments past which the handle may be moved with a click action, these notches or ridges forming partial stops to define the several required positions of the operating lever for ensuring actuation of the brake or reverse ramps.

By combining the ramps, operating lever and sleeper element upon which they are mounted, in one self-contained unit the device may be quickly and accurately positioned on a toy railway track.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A ramp mechanism for toy railway tracks having a ramp or ramps pivoted about an axis transverse to the track rails, characterized in that the said ramp or ramps are formed as bell crank levers and are adapted to be raised to an operative position by direct engagement with a lever

angularly movable in the plane of the track rails.

2. A ramp mechanism for toy railway tracks as in Claim 1, comprising a series of pivoted ramps any one of which is adapted to be operated by said operating lever according to the position thereof.

3. A ramp mechanism for toy railways as in Claim 1 or 2, comprising a pivoted bell crank shaped ramp so disposed that the operative arm of same is usually horizontal, and is adapted to be raised to a substantially vertical operative position by a lever directly engaging the other arm and angularly movable in the plane of the track rails.

4. A ramp mechanism for toy railways as in any of the preceding claims, the said mechanism being mounted upon a sleeper element of the rail track to form a self-contained unit, and comprising one or more ramps pivoted on the sleeper and adapted to be controlled by a lever pivoted on the sleeper and angularly movable in the plane thereof.

5. The improved ramp mechanism for toy railways, substantially as described and shown in the accompanying drawings.

Dated this 9th day of August, 1932.

A. J. DAVIES,

Patent Agent,

24, Moorfields, Liverpool.

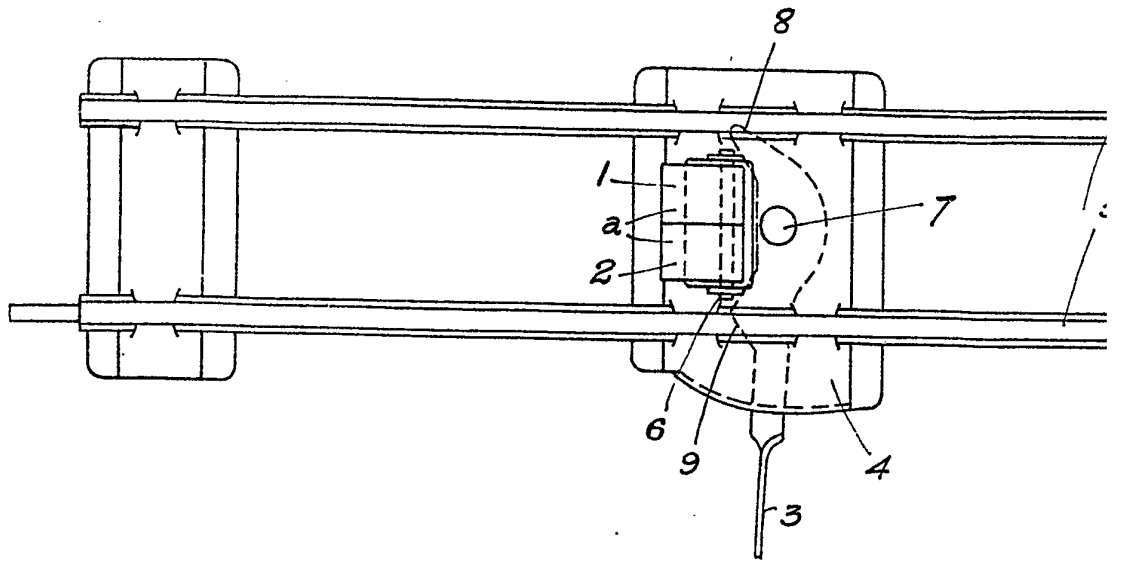


FIG. 1.

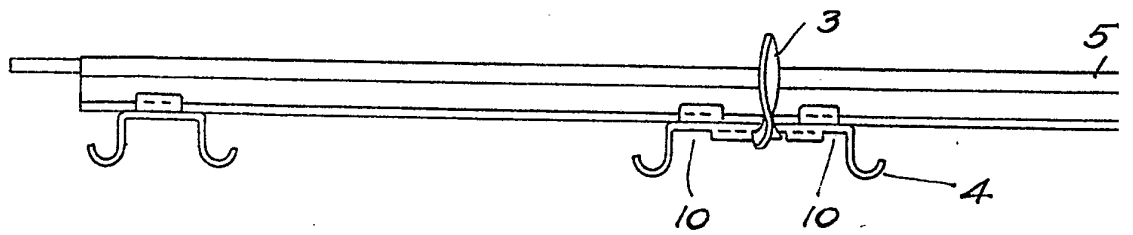
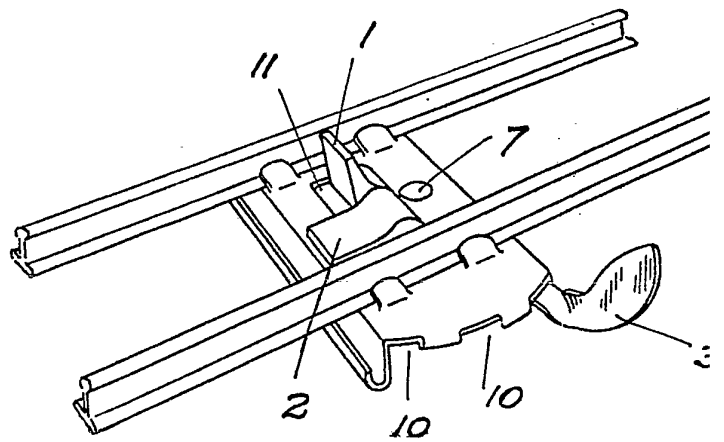
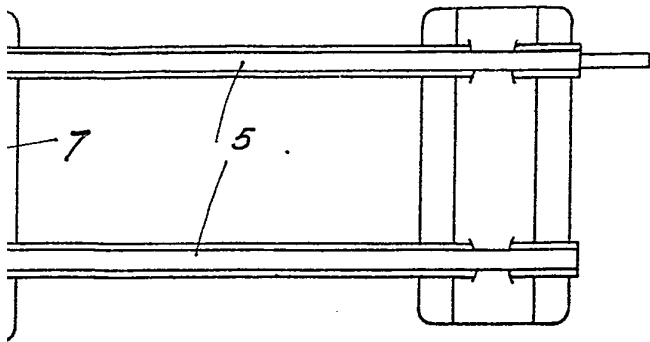


FIG. 2.

FIG. 6.





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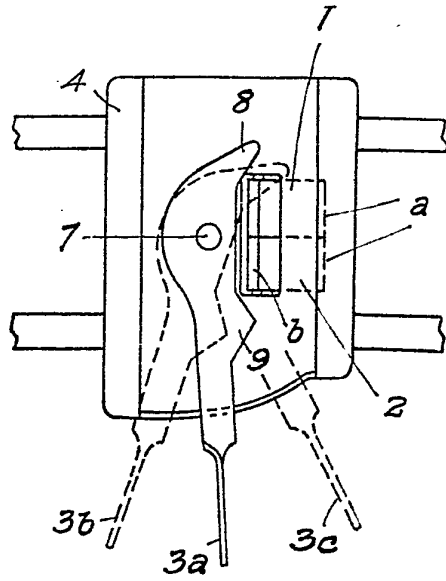


FIG. 4.

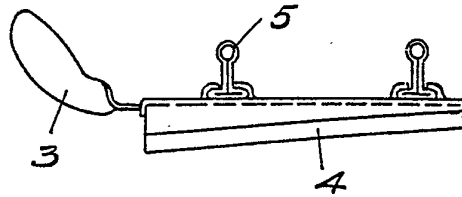
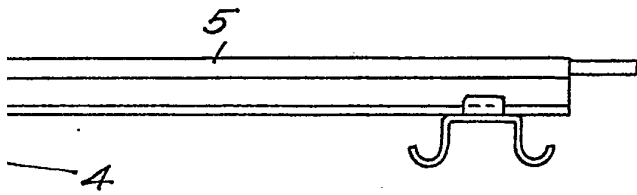


FIG. 3.

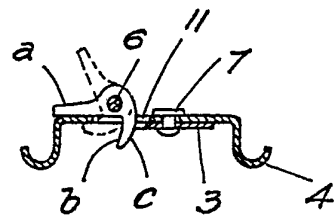
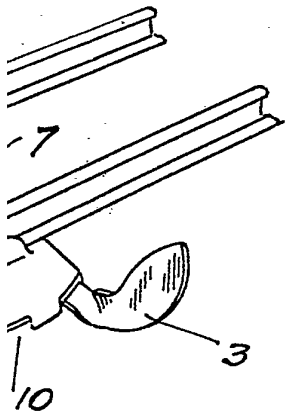


FIG. 5.

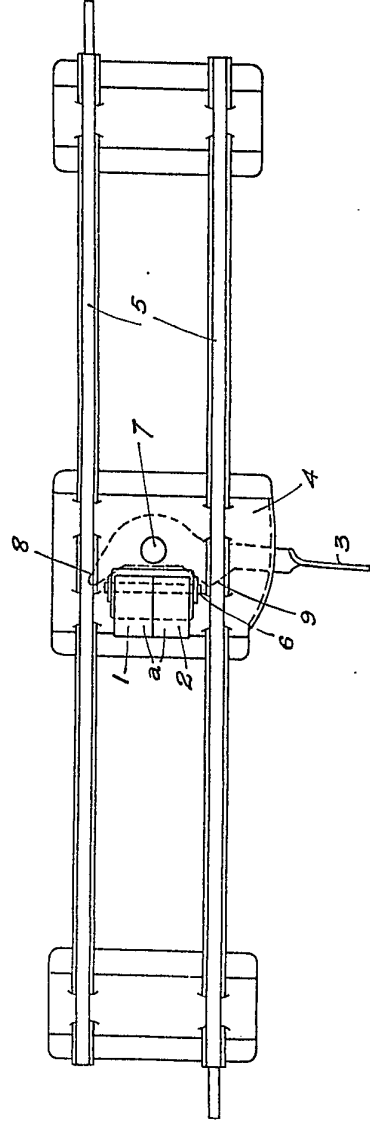


FIG. 1.

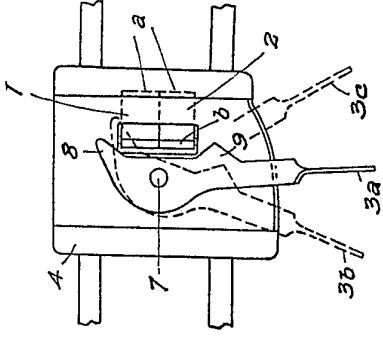


FIG. 4.

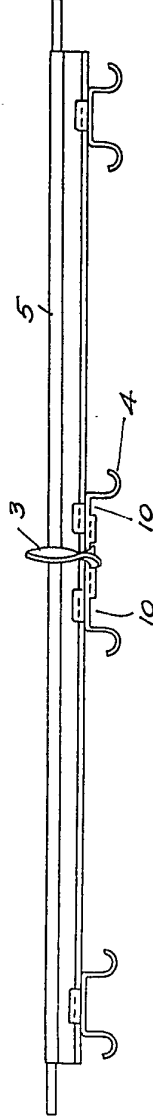


FIG. 2.

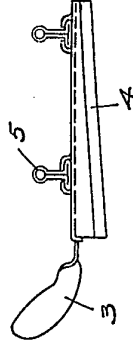


FIG. 3.

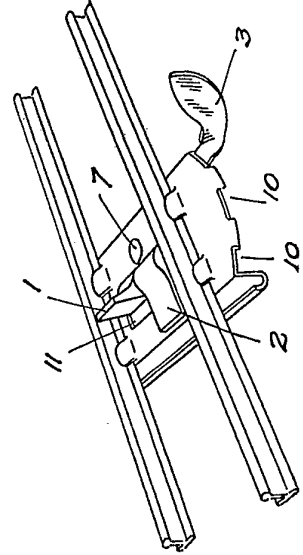


FIG. 6.

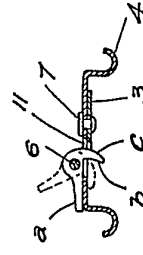


FIG. 5.

[This Drawing is a reproduction of the Original on a reduced scale.]