PATENT SPECIFICATION

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737,213

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COMPLETE SPECIFICATION

Improvements in or Connected with Toy Railway Vehicles

We, TRIX LIMITED, of 11, Burlington Street, London, W.1, a British Company, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to a toy railway vehicle wherein a movable magnetic attractive metal plate on the vehicle is actuated by attraction of an electro-magnet in the track when the vehicle is over the magnet, the magnet being controlled from a remote point, and has for its object to construct same in an improved manner.

According to this invention, a vehicle for a toy railway incorporates a chassis having wheels running on a rack, a plate pivotally mounted intermediate of its length in the chassis, one end of the plate being turned up or provided with an upwardly directed end, an iron or other magnetic attractive metal plate below the pivoted plate, one end of the metal plate being suspended by a light spring and the other end connected by a link to the non-turned up end of the pivoted plate, and a hopper or other device pivoted on the chassis so that when the iron plate is attracted downwardly by a pair of electro-magnets located in a section of the track it rocks the pivoted plate for the turned-up end to rock the pivoted hopper or other device.

The invention will be clearly understood from the following description aided by the accompanying drawings, in which:—

Figure 1 is a side view partly in section of a track and part of a track. Figure 2 is a view showing the first movement of the actuating mechanism. Figure 3 is a view showing the completion of the movement for tipping the hopper. Figure 4 is a plan of a portion of the track, and Figure 5 is a sectional view from the end of Figure 1.

In the example shown in the figures of the accompanying drawings the truck comprises a chassis 1 with running wheels 2 and on the chassis 1 is hingedly connected a tipping body 3 which is of hopper shape pivotally connected on a pivot 4 at one lower side edge to one side of the chassis 1. The wall 5 on this side is separate and hingedly connected a the top of the end walls so that as the body 3 is tipped the lower end of the wall 5 swings outwards to assist in the tipping and reurn of the body 3, as shown in dot and dash lines in Figure 5. The body 3 is provided with a false bottom 6 near the top.

In the chassis 1 and under the body 3 is a frame 7 to which a plate 8 is pivotally supported at a point 9 intermediate of its ends, one end of the plate 8 being bent upwards at 8*a* towards the body 3. Under this plate 8 is another plate 10 of iron, preferably laminated, one end of which is supported by a light spring 11 and the other end is connected by a link 12 to the plain end of the upper plate 8 so that the iron plate 10 so to speak "floats."

In the section of the track 13 in which the tipping is to take place, the track 13 being of the known three rail type used with toy railways, a pair of electro-magnets is located in the portion between the outer rails 15 with the magnets 14 projecting upwards at a distance apart and the centre rail 16 is formed with a flat piece of metal 17 positioned over the magnets 14. The electro-magnets are controlled from a remote point.

Normally the floating plate 10 in the truck is held up by the spring 11 and the link 12 to the lighter end of the pivoted plate 8, the pivoted plate 8 being held in substantially a horizontal plane by the weight of the upturned end 8*a* balancing the weight of the floating plate 10 supported by the light spring 11 so that when the magnets 14 are de-energised, the floating plate 10 is in the raised position and just clears the flat plate 17 over the magnets 14 when the truck is passing over same so no operation takes place. The truck is preferably arranged to travel in the direction of the arrow and when the electro-

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magnets 14 are energised and the truck moves over the magnets 14, the first magnet 14 attracts the front end of the floating plate 10 rocking the floating plate 10 and stretching the spring 11, as in Figure 2. The rear magnet 14 then attracts the rear end of the floating plate 10 and pulls down the rear end of the floating plate 10 and through the link 12 rocks the pivoted plate 8 so that the turned-up end 8*a* engages with the false bottom 6 of the truck and rocks or tilts same and the contents are discharged at the side of the truck into a receiver or hopper. On de-energising the magnets 14 the plates 8, 10 and body return to normal position.

The track 13 and magnets 14 are controlled from a remote point so that when the truck arrives at the discharge point the current can be cut off to the locomotive and the electro-magnets 14 energised to tilt the body, or the speed of the train can be reduced to a point where the attraction of the magnets is sufficient to overcome the driving power of the motor and so cause the train to stop when the truck is over the magnets.

Although described as applied to a tipping truck it will be understood that the invention can be applied to other vehicles in which an upwards movement of a member can actuate some device on the vehicle.

What we claim is:—

1. A vehicle for a toy railway incorporating a chassis having wheels running on a track, a plate pivotally mounted intermediate of its length in the chassis, one end of the plate being turned-up or provided with an upwardly directed end, in iron or other magnetic attractive metal plate below the pivoted plate, one end of the metal plate being suspended by a light spring and the other end connected by a link to the non-turned up end of the pivoted plate, and a hopper or other device pivoted on the chassis so that when the iron plate is attracted downwardly by a pair of electro-magnets located in a section of the track it rocks the pivoted plate for the turned-up end to rock the pivoted hopper or other device.

2. A truck for a toy railway constructed substantially as described with reference to the accompanying drawings.

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PROVISIONAL SPECIFICATION

Improvements in or Connected with Toy Railway Vehicles

We, TRIX LIMITED, of 11, Old Burlington Street, London, W.1, a British Company, do hereby declare this invention to be described in the following statement:—

This invention relates to toy railway trucks or wagons, such as tipping wagons or other trucks in which an upward movement of a member on the truck is required for actuating some device, and has for its object to construct same in an improved manner.

According to this invention, a truck for a toy railway incorporates a plate pivotally mounted intermediate of its length in the chassis, one end of the plate being turned up or provided with an upwardly directed piece, an iron or other magnetic attractive metal plate below the pivoted plate, one end of the metal plate being suspended by a light spring and the other end connected by a link to the non-turned up end of the pivoted plate, a section of track in which is located an electro-magnet, preferably a double pole magnet, controlled from a remote point, so arranged that when the truck is over the magnet and the magnet is energised the floating iron plate is attracted to rock the pivoted plate for the turned-up end to operate a pivoted hopper or other device on the truck.

As one example of carrying the invention into effect, the truck comprises a chassis with running wheels and on the chassis is hingedly connected a tipping body which is of hopper shape pivotally connected at one lower side edge to one side of the chassis. The wall on this side is separate and hingedly connected to the top of the end walls so that as the body is tipped the lower end of the wall swings outwards to assist in the tipping and return of the body. The body is provided with a false bottom near the top.

In the chassis and under the body is a frame to which a plate or bar is pivotally supported at about its centre, one end of the plate being bent upwards towards the body. Under this plate is another plate or bar of iron, one end of which is supported by a light spring and the other end is connected by a link to the plain end of the upper plate so that the iron plate so to speak "floats."

In the section of the track in which the tipping is to take place, the track being of the known three rail track used with toy railways, a U-shaped electro-magnet is located in the section between the outer rails with the two poles of the magnet projecting upwards at a distance apart and the centre rail is formed

with a flat piece of metal positioned over the two poles. The electro-magnet is controlled from a remote point.

Normally the floating plate in the truck is held up by the spring and the link to the lighter end of the pivoted plate, the pivoted plate being held in substantially a horizontal plane by the weight of the up-turned end balancing the weight of the floating plate supported by the light spring so that when the magnet is de-energised, the floating plate is in the raised position and just clears the flat plate over the poles of the magnet when the truck is passing over same so no operation takes place. The truck is preferably arranged to travel in the direction that the spring supported end of the floating plate is forward and when the electro-magnet is energised and the truck moves over the magnet, the front pole of the magnet attracts the front end of the floating plate, rocking the floating plate and stretching the light spring. The rear pole of the magnet then attracts the rear end of the floating plate and pulls down the rear end of the floating plate and through the link rocks the pivoted plate so that the turned-up end engages with the body and rocks or tilts same and the contents are discharged at the side of the truck into a receiver or hopper. On de-energising the electro-magnet the plates and body return to normal position.

The track and electro-magnet are controlled from a remote point so that when the truck arrives at the discharging point the current can be cut off to the locomotive and the electromagnet energised to tilt the body, or the speed of the train can be reduced to a point where the magnetic attraction of the magnet is sufficient to overcome the driving power of the locomotive and so cause the train to stop when the truck is over the magnet.

Although described as applied to a tipping truck it will be understood that the invention can be applied to other trucks or vehicles in which an upward movement of a member can actuate some device in the truck or vehicle.

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Fig. 1.

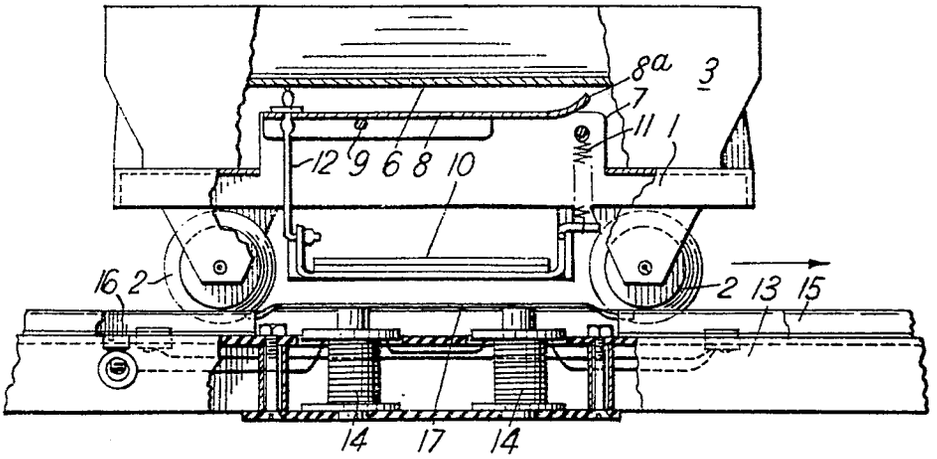
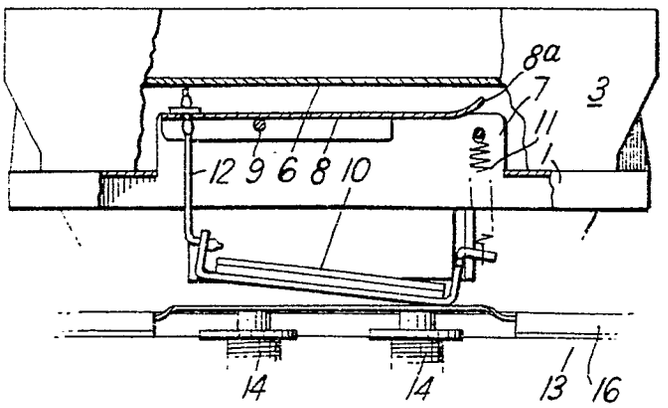


Fig. 2.



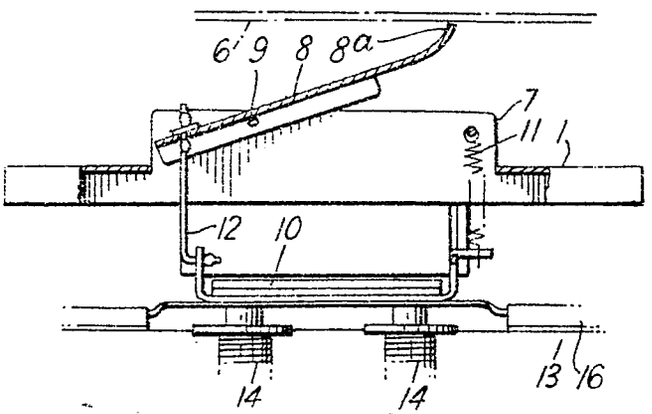


Fig. 3.

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2 SHEETS

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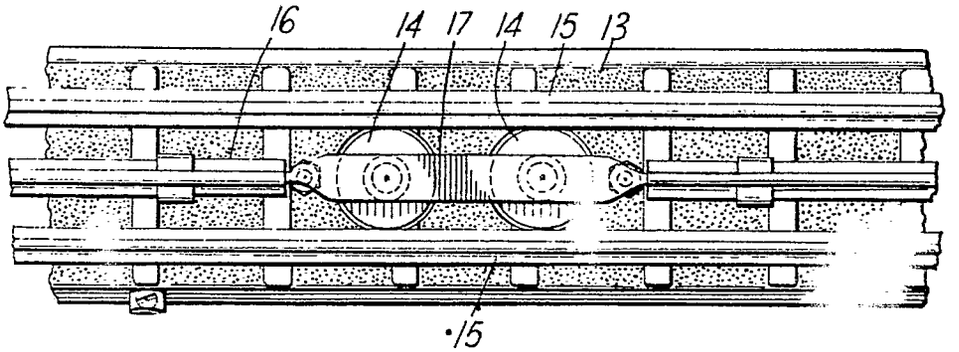
SHEETS 1 & 2

Fig. 4



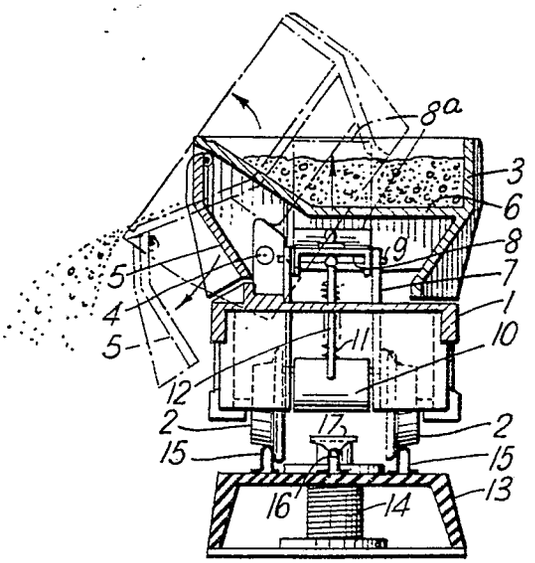


Fig. 5.

737,213 COMPLETE SPECIFICATION
2 SHEETS This drawing is a reproduction of the Original on a reduced scale.
SHEETS 1 & 2

Fig. 1.

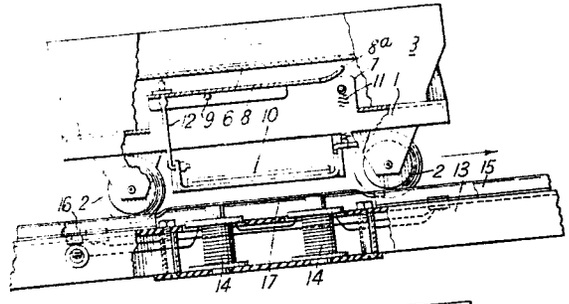
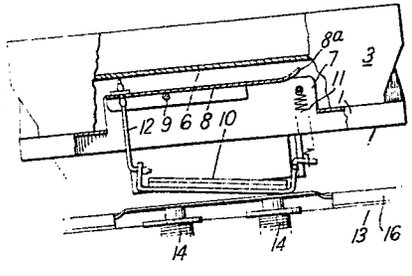


Fig. 2.



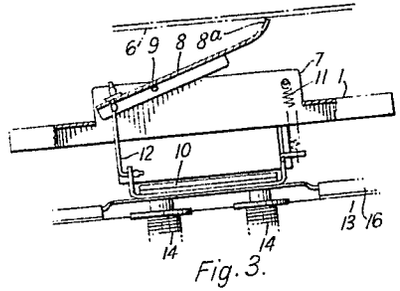
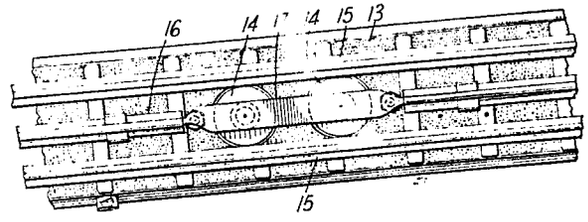


Fig. 3.

Fig. 4



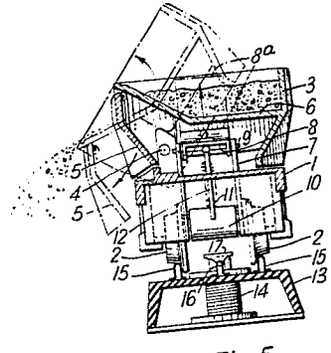


Fig. 5.