

PATENT SPECIFICATION



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509,333

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PROVISIONAL SPECIFICATION

Improvements in Couplings for Toy Trains

We, DONALD ARTHUR RINGER SMITH, a British Subject, and MECCANO LIMITED, a British Company, both of 236, Binns Road, Old Swan, Liverpool, do hereby declare the nature of this invention to be as follows:—

The usual type of coupling for toy trains consists of pivotal and/or spring controlled hooked devices which inter-engage to connect the coaches. Such types of coupling are not economical to produce and further, owing to the pivotal nature of the hooks and the spring control of the elements, they are liable to become deranged. The object of the present invention is to provide a coupling for toy trains which may be very economically manufactured being of simple construction without pivotal or spring controlled parts, each element of the coupling being made up of single parts identical in shape and produced by a stamping operation.

According to this invention a coupling is formed by two identically shaped members one of which is fitted at each end of a coach of the toy railway. Each member is of thin strip sheet metal produced by stamping and has at its outer end an arcuate slot slightly wider than the strip and two opposed tongue pieces behind the slot which are stamped up from the sheet metal. These tongue pieces are preferably inclined one to the other and are adapted, when the two members of a coupling approach, to permit the outer wall of the arcuate slot to ride up the first inclined tongue, the resilient strip bending up or down slightly, and engage between the tongues to couple the coaches. The strip members are provided with means for attaching them to the toy rolling stock, such as by forming in the strips slots for engagement by tongue pieces on

the metal bodies of the stock. Owing to the strips being of thin sheet metal no other resilient control is required to enable them to interengage when two coaches are brought together, the outer walls of the arcuate slots of the members passing over one another to engage between the tongue pieces. The two relatively inclined tongue pieces may be formed at opposite ends of a longitudinal slot formed in the strip member.

By making the outer slots arcuate as described, sufficient play is provided whereby the coupling can accommodate itself to permit of the relative angular positions taken up by adjoining coaches in a train as they pass round a curve on the rail track, while owing to the reversed inclination of the tongue pieces the coupling is not liable accidentally to become disengaged during relatively approach movement of any two successive coaches when the train stops.

While the rearward inclination of the outer tongue piece permits the outer wall of the slot to ride over it and snap into engagement behind it, the forward inclination of the inner tongue piece acts as a stop for the wall limiting the coupling engagement, and as the members are identical in shape the slot outer walls of both members forming a coupling will each simultaneously engage between the tongues of the opposite members of the coupling, and the pull on the coupling is thus taken on the outer tongues and slot walls of both members.

The coupling is disconnected manually by lifting up the top strip member.

Dated this 8th day of February, 1938.

A. J. DAVIES,

Patent Agent,
24, Moorfields, Liverpool 2.

COMPLETE SPECIFICATION

Improvements in Couplings for Toy Trains

We, DONALD ARTHUR RINGER SMITH, British Nationality, and MECCANO LIMITED, a British Company, both of 236, Binns Road, Old Swan, Liverpool, do hereby declare the nature of this inven-

[Price 1/-]

tion 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 coupling for toy

trains consists of pivotal and/or spring controlled hooked devices which inter-engage to connect the coaches or other vehicles. Such types of coupling are not economical to produce and further, owing to the pivotal nature of the hooks and the spring control of the elements, they are liable to become deranged. The object of the present invention is to provide a coupling for toy trains which may be very economically manufactured, being of simple construction without pivotal or spring controlled parts, each element of the coupling being made up of single parts identical in shape and produced by a stamping operation.

The coupling according to the present invention comprises two members of resilient strip metal extending in substantially co-planar relation from the adjoining ends of two railway vehicles, each coupling member being provided with a projection and an aperture at its outer end, the projection on one member of the coupling being adapted to hook into the aperture of the other coupling member, when the outer ends of the two members mutually approach and overlap, in order to effect a coupled engagement. In the preferred embodiment of the invention, the two members of the coupling are of identical form and are each produced by a stamping operation, each member being made substantially of T-shape from thin resilient strip metal, and the head or outer end of the member is provided with an opening in the form of an elongated and arcuate slot radiused from the inner end of the member to be attached to a railway vehicle, while the stem of the member immediately behind the arcuate slot is formed with a longitudinal slot having at its ends wedge-shaped tongues projecting from one face of the member and inclined towards each other, the outer tongue serving as the coupling hook, and the inner tongue serving as a stop for the other member of the coupling.

The invention is illustrated by way of example in the accompanying drawings, in which:—

Fig. 1 is an elevation of two toy railway wagons fitted with couplings according to the invention, one of the wagons being partly in section to show the manner of securing a coupling member;

Figs. 2 and 3 illustrate in elevation the coupling operation;

Fig. 4 illustrates another interengaged position of the coupling members;

Fig. 5 is an underside view of one end of a wagon, and

Fig. 6 is an end view thereof, partly in section;

Fig. 7 is a perspective view of a coupling member; and

Fig. 8 is a plan view of two members coupled together at an angle as occurs on a curved track.

The coupling is formed by two identical T-shaped members 2 one of which is fitted at each end of a wagon 3 or other vehicle of the toy railway. Each member is of thin strip resilient metal produced by stamping, and it has at its head or outer end 2a an arcuate slot 4 radiused from the inner end of the strip and slightly wider than the strip, and two opposed tongue pieces 5a, 5b behind the slot which are stamped and project from one face of the sheet metal.

The tongue pieces 5a, 5b are formed at opposite ends of a longitudinal slot 6 in the strip member 2; and they are made of wedge shape, and inclined towards one another, so that the outer tongue 5a extends rearwardly and the inner tongue 5b forwardly.

The coupling members 2 are fitted to the wagon ends in such manner that the tongues 5 all project either at the upper faces or (as shown) at the lower faces of the members. When the two members of a coupling approach, the heads 2a will over-ride, as shown in Fig. 1, and the outer wall 2b of the arcuate slot of the lower coupling member then rides down the ramp-like front tongue of the upper member (Fig. 2), the resilient strips bending slightly during the operation, until the part 2b passes beyond the tongue, when the heads are free resiliently to close together. The tongue 5a of the upper member will thus engage in the slot 4 of the lower member, and when the coupling members 2 are drawn in opposite directions, as in starting the train, the tongue 5a will hook round the front part 2a of the other member (Figs. 3, 8) and so provide a coupled engagement.

By making the outer slots 4 arcuate as described, sufficient play is provided whereby the coupling may accommodate itself to permit of the relative angular positions taken up by adjoining vehicles in a train as they pass round a curve on the rail-track, in the manner indicated in Fig. 8; while owing to the reversed inclination of the tongue pieces the coupling is not liable accidentally to become disengaged during relative approach movement of any two successive vehicles when the train stops.

While the rearward inclination of the outer tongue 5a permits the outer wall 2b of the slot to ride over it and snap into engagement behind it, the forward inclination of the inner tongue piece 5b, which projects somewhat further than the

outer tongue 5a, acts as a stop for the wall 2b limiting the coupling engagement.

The coupling is disconnected manually by lifting up the top strip member.

The inner end of each member is slotted at 8 for attachment beneath the wagon floor 9, where it is secured under a boss 9a integral with the vehicle body by means of bent-over lugs 10a presented by an inverted U-member 10 engaged through the boss and the slots 8, the U-member serving also to retain a yoke 11 carrying a wagon axle 12 and wheels 13.

Such a coupling requires no positional presetting of the coupling members, and a slight impact will effect coupling, while uncoupling is easily effected by lifting one of the members away from the other. As both members are identical and can be produced by a single stamping operation, they can thus be manufactured economically.

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

1. A coupling for toy railway vehicles, comprising two members of resilient strip metal extending in substantially co-planar relation from the adjoining ends of two railway vehicles, each coupling member being provided with a projection and an aperture at its outer end, the projection on one member of the coupling being adapted to hook into the aperture of the other coupling member when the outer ends of the members mutually approach and overlap in order to effect a coupled engagement.

2. A coupling according to Claim 1, in

which the outer end of the coupling member is provided with an opening in the form of an elongated and arcuate slot radiused from the inner end of the member.

3. A coupling according to Claims 1 and 2, in which the coupling is of substantially T-shape with the head thereof disposed at its outer end and containing the arcuate slot.

4. A coupling according to Claim 1, in which the coupling member is provided along its length with two tongues projecting from one face and inclined towards each other, the outer tongue serving as the coupling hook, and the inner tongue serving as a stop for the purpose described.

5. A coupling according to Claims 1 and 4, in which the two projecting tongues are of wedge shape and formed at opposite ends of a slot behind the aperture or slot at the outer end of the coupling member.

6. A coupling according to Claim 1, in which the inner end of the coupling member is slotted for attachment to the railway vehicle, a slot or slots being engaged by bent-over lugs serving also to retain a yoke carrying a wheel-and-axle assembly for the vehicle.

7. A coupling for toy railway vehicles comprising two coupling members each substantially of the form illustrated in Fig. 7.

8. Couplings for toy railway vehicles constructed and attached substantially as described with reference to the figures of the accompanying drawings.

Dated this 14th day of January, 1939.

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

FIG. 4.

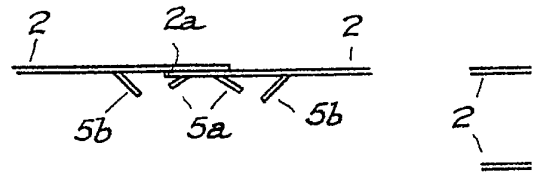


FIG. 1.

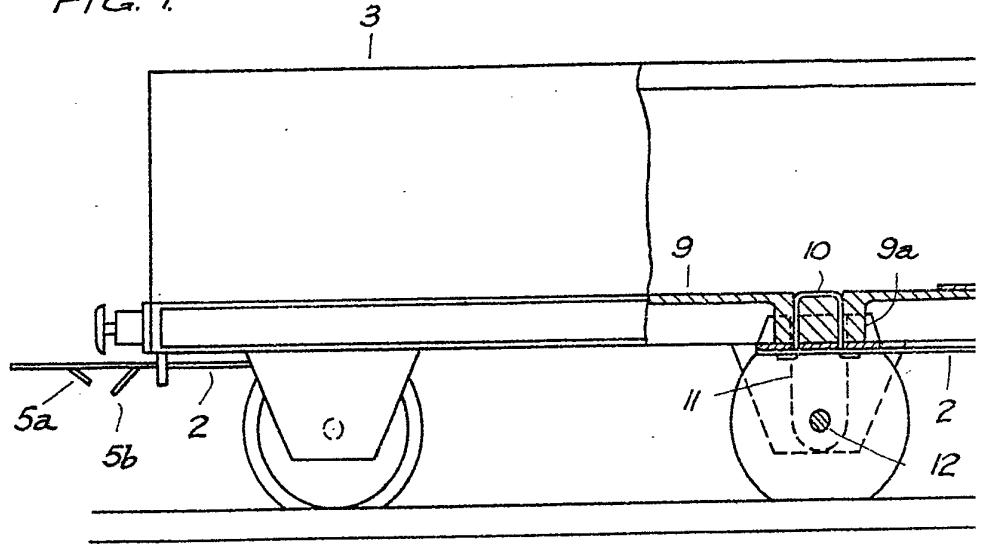


FIG. 7.

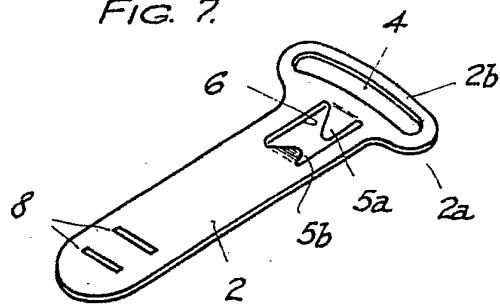


FIG. 5.

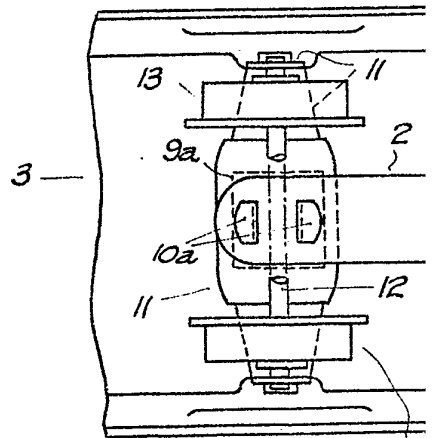
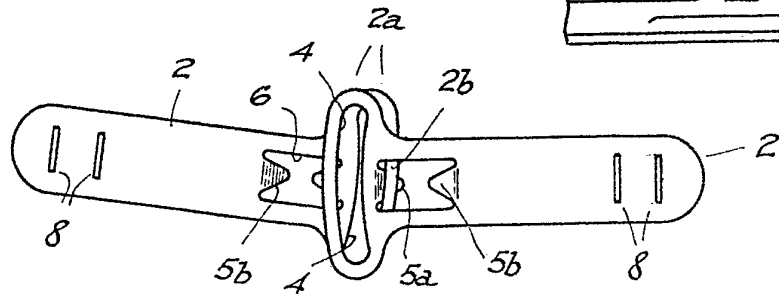


FIG. 8.



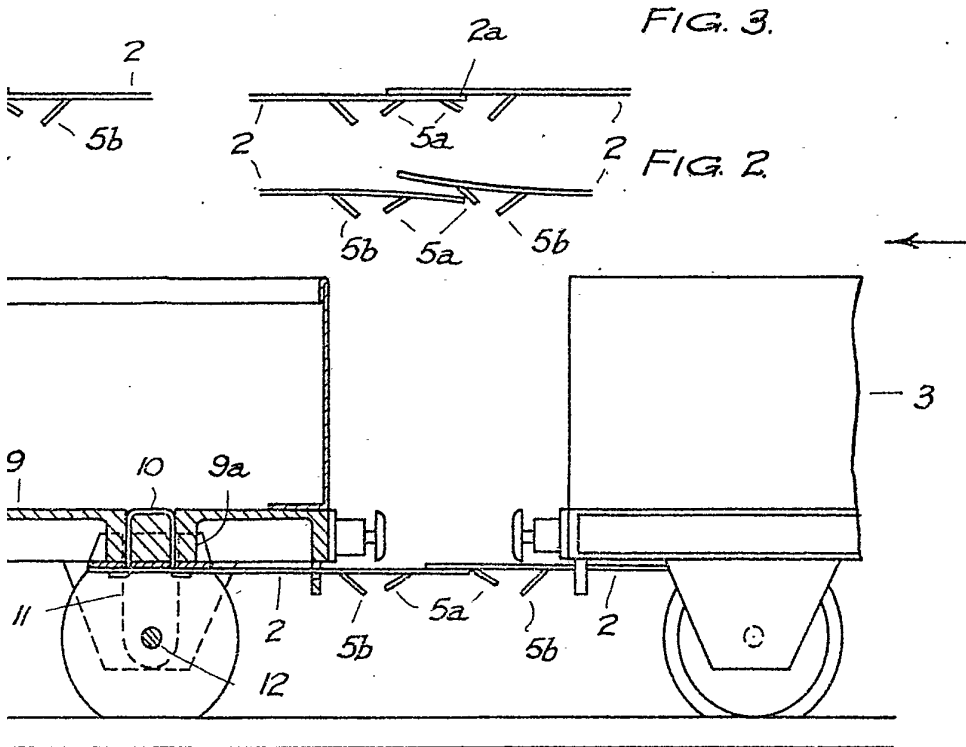


FIG. 5.

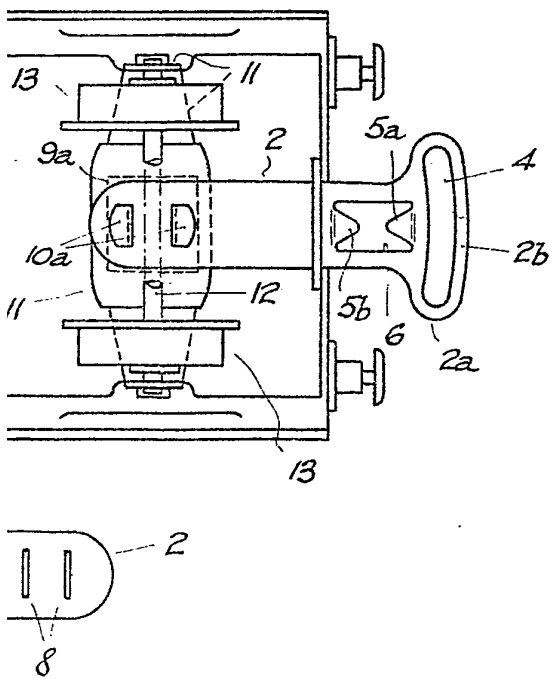
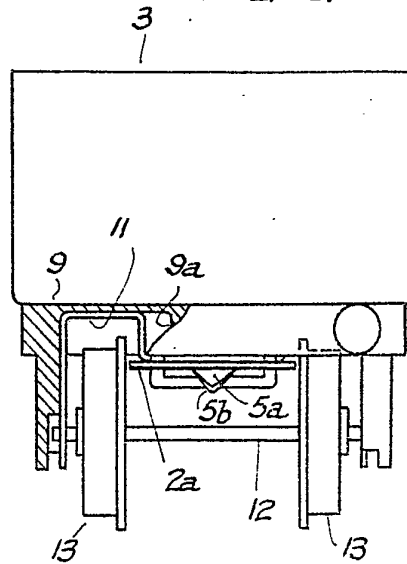
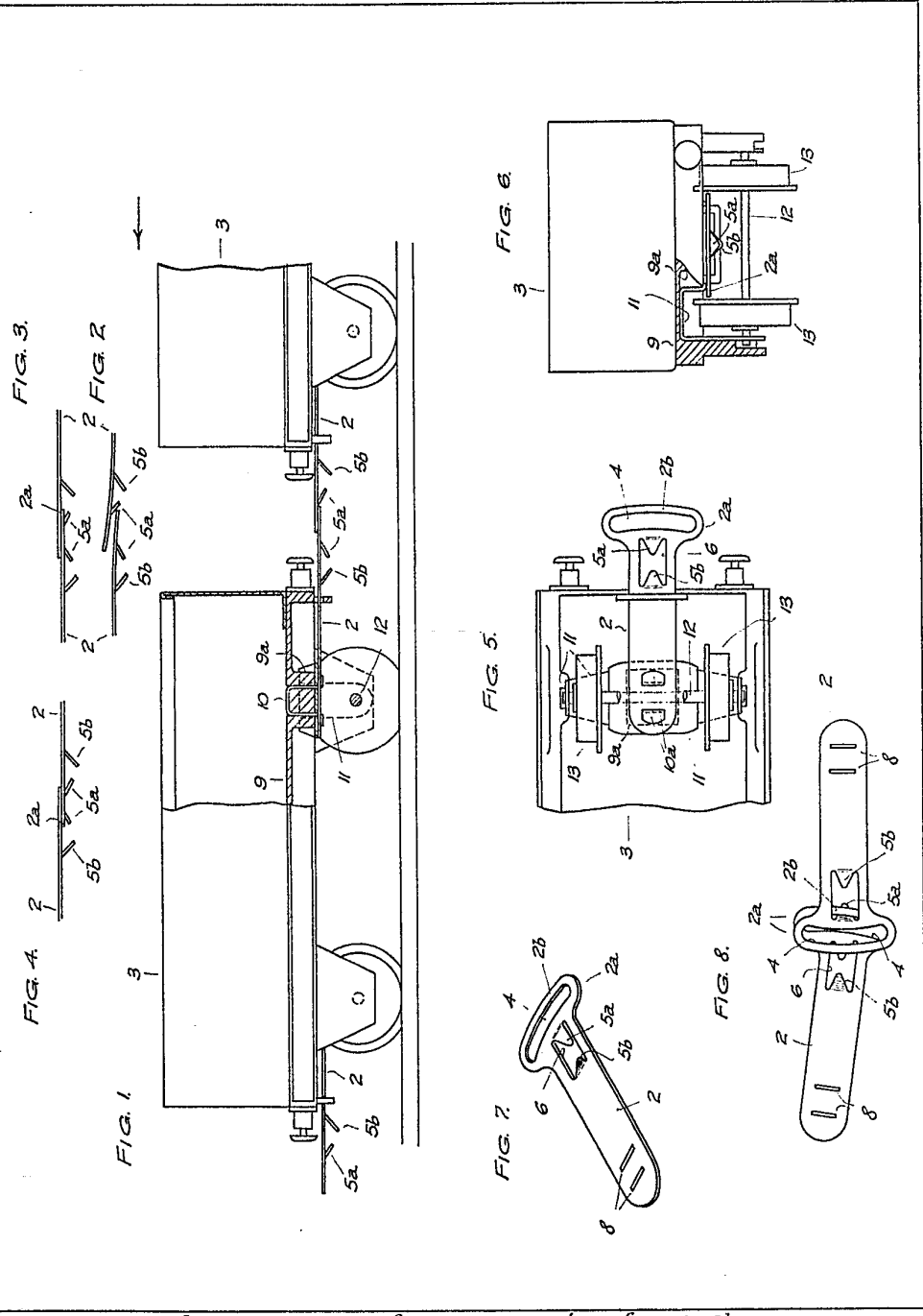


FIG. 6.





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