

PATENT SPECIFICATION

1.132.982



DRAWINGS ATTACHED

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COMPLETE SPECIFICATION

Coupling device for Powered Vehicle and Trailer

We, MECCANO LIMITED, 236 Binns Road, Liverpool 13, 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:—

The present invention relates to model vehicles and is more particularly concerned with coupling devices for use with such vehicles.

Many models now on the market consist of a powered vehicle and a trailer, arrangements being provided for coupling the trailer to the powered vehicle. In order to keep down to the lowest possible value the cost of such a combination, one of the requirements is that the coupling device should be as simple as possible and further that the method of operation of the device should also be simple.

It is the object of the present invention to provide a coupling device having these characteristics.

According to the invention, the coupling device comprises a manually operable latch member on one vehicle spring-biased to latch on to a stud on the second vehicle and a release member for disengaging the latch member from the stud, the release member having an operating portion shaped to represent a vehicle part such as an air-brake reservoir external, to the body casting of said one vehicle.

Preferably the latch member comprises a pivoted arm biased to the latching position by means of a spring and provided with a hooked end so positioned as to enable engagement with the stem of the stud provided on the second vehicle to be effected.

The invention will be better understood from the following description of a preferred embodiment taken in conjunction with the accompanying drawings comprising Figs. 1 to 3.

In the drawings:

Fig. 1 shows an underside view of the body casting of a model vehicle incorporating the invention.

Fig. 2 shows a topside view of the body casting, and Fig. 3 shows a partial cross-sectional view along the line X—X of Fig. 1 of a detail of the release member.

Referring to the drawing, the latch member 10 consists of an arm 11 pivotally mounted on the pin 12 on the underside of the body casting 13 of the model vehicle. The arm 11 is provided with a hooked end 14 having a shaped nose 15 and is biased to the latching position shown in the drawing by a flat spring 16 of hairpin form. The spring is mounted on the pin 17 and one free end of the spring engages with a projection 18 on the body casting 13 whereas the other free end engages with the arm 11. A release member 19 consists of a stem 20 having an operating head 21 which is located outside the body casting and which is shaped as an air brake reservoir. A slot is formed in the downwardly extending edge of the body casting to accommodate the stem 20 which is stabilised by the downwardly extending walls 22. Two transverse projections 23 on the stem are provided to limit the outward movement of the release member by engagement with the inner edges of the walls 22. As seen in Fig. 3, the inner-facing portion of the operating head 21 is cut away at 24, the depth of the cut-out being such that in the extreme outward position of the release member, the top edge 25 of the cut-out just overlaps the edge of the body casting. In assembly, the release member is snapped into position and is maintained in position by the overlap between the two edges.

Referring to Fig. 2, the body casting is provided with an inwardly directed triangular depression 26, the apex of which is cut away and the hooked end 14 of the arm 11 projects through the cut-out 27. A projecting portion 28 is formed at one end of the other vehicle and is provided with a stud 29.

In order to couple the two vehicles, one vehicle is presented to the other so that the stud on the one is located within the triangular

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depression 26 on the other. As the two vehicles are advanced towards one another, the stud 29 engages with the nose 15 of the hooked end 14 of the latch member 10. The nose 15 is so shaped that this engagement causes the latch member to be moved in a anti-clockwise direction (Fig. 2) until the stud passes into the hook portion whereupon the latch member snaps back over the stud and the two vehicles are coupled together. The two vehicles are uncoupled by pressing inwardly the operating head 21 of the release member 19 whereupon the latch member is rotated against the tension of the spring and the stud 29 can be withdrawn from engagement with the hooked end of the arm 11.

The latch member and the release member are preferably formed of a suitable plastics material but could be made of other materials, for instance, metal.

In a preferred embodiment of the invention the stud is secured to the underside of the floor of the trailer whereas the latch member is secured on the underside of the body casting of the powered vehicle. The rear of the body casting is provided with an inwardly directed triangular depression and the apex of the depression is cut away, the latch member projecting through the cut-out. In order to couple the powered vehicle and the trailer, the trailer is presented to the rear of the powered vehicle so that the stud on the trailer is located within the triangular depression. The trailer is then advanced towards the powered vehicle until the stud engages with and is held by the hooked end of the latch member.

The trailer is uncoupled from the forward vehicle by the operation of a release member which engages with and rotates the latch member against the tension of the spring so that the latch member is disengaged from the stud. The operating portion of the release member is shaped to represent a vehicle part external to the body casting and in one embodiment the operating portion of the release member is shaped to represent the air brake reservoir. The latch member and release member are preferably formed of a suitable plastics material and/or metal.

It will be seen from the preceding description that the coupling device is extremely simple in character, easy to manufacture and simple to operate.

WHAT WE CLAIM IS:—

1. A coupling arrangement for coupling two model vehicles comprising a manually operable latch member on one vehicle spring-biased to latch on to a stud on the second vehicle and a release member for disengaging the latch member from the stud, the release member having an operating portion shaped to represent a vehicle part such as an air-brake reservoir, external to the body casting of said one vehicle.

2. A coupling arrangement as claimed in claim 1, wherein the latch member comprises a pivoted arm biased to the latching position by a spring and provided with a hooked end so positioned as to enable engagement with the stem of the stud on the second vehicle to be effected.

3. A coupling arrangement as claimed in claim 1, wherein one end of the body casting of said one vehicle is provided with an inwardly directed triangular depression and the apex of the depression is cut away to enable the latch member to project through the cut-out and engage with the stud on the second vehicle which stud enters the depression when the vehicles are to be coupled.

4. A coupling arrangement as claimed in claim 1, wherein the biasing of the latch member is effected by a flat spring or hair pin shape mounted on a pin on the underside of the floor of the body casting, one free end of the spring engaging with a projection on the body casting whereas the other engages with the latching member.

5. A coupling arrangement substantially as described with reference to the accompanying drawing.

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Fig. 1.

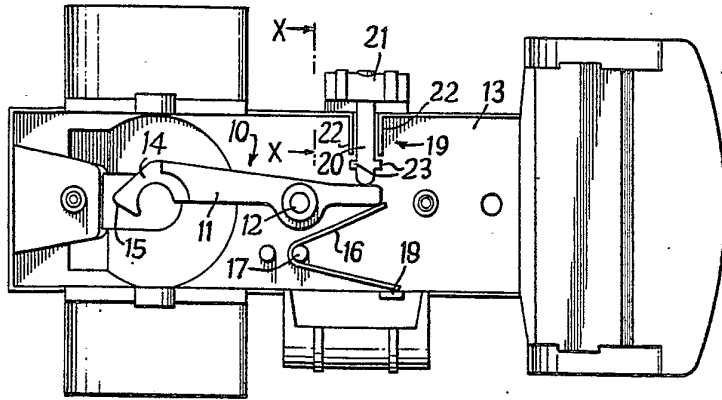


Fig. 2.

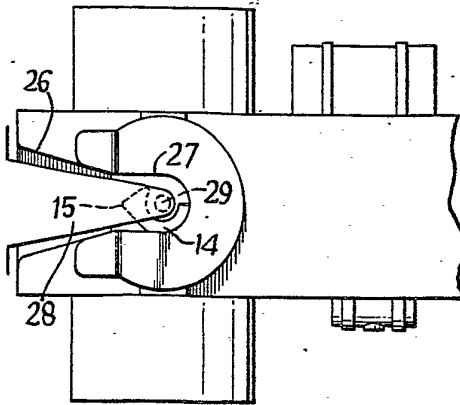


Fig. 3.

