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PATENT SPECIFICATION

235,855

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COMPLETE SPECIFICATION.

Improvements in Devices for Coupling Trailers to Motor Vehicles.

I, ADOLPHE KEGRESSE, of 48, rue du Theatre, Paris, France, a citizen of the Republic of France, 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 devices generally used to couple trailers to motor vehicles have their hitching point at the rear of the chassis. It is known, however, that it is advantageous to arrange the said hitching point between the carrying-axles of the vehicle and on the longitudinal centre line of the vehicle.

This arrangement has, however, among other drawbacks, the inconvenience of rendering impossible the provision of any sort of carriage body at the rear of the selected hitching point, in view of the necessity of allowing for a sufficient steering angle for the traction pole of the trailer.

The object of the present invention is to provide a coupling device which, while permitting any sort of body to be mounted on the chassis, will ensure the possibility of turning short, that is to say of taking very short radius curves.

In order that the invention may be clearly understood, an embodiment thereof will be described, by way of example, with reference to the accompanying drawing.

Figure 1 is an elevation of the general outline of a vehicle fitted with the coupling device.

Figure 2 is an elevation partly in section, on an enlarged scale, of the device.

Figure 3 is a plan view of the device.

Figure 4 is a section on the line A—B of Figure 3.

Figure 5 is a section on the line C—D of Figure 3.

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Figure 6 shows a bolt in elevation; and Figure 7 is an end view of the same bolt.

In all the figures the same numerals denote the same parts.

In Figures 1, 2 and 3, 1 denotes the chassis of the vehicle and 2 the pintle of the coupling device secured to the longitudinal bearers of the chassis by means of cross bars 3.

On the pintle 2 is freely mounted a traction rod 4 which terminates, at the extremity opposite the pintle in a head 5 (Figures 1, 2 and 4) provided with a vertical and rectangular opening (Figures 2 and 3) for two bolts 7 (Figures 2, 4, 6 and 7) which are disposed vertically opposite one another and which are kept spaced apart by springs 9 (Figures 2, 4, and 6).

The head 5 of the traction rod 4 is fitted with a part forming a cap 10 (Figures 1, 2, 3 and 4) and carrying two ears 11 (Figures 2 and 3) between which vertically engages the hitching ring 20 of the traction pole of the trailer (Figures 1, 2 and 3).

The removable trunnion 12 (Figures 2 and 3) serves as a connection between the ring 20 of the traction pole and the cap 10. The latter is adjusted on the head 5 and adapted to turn thereon by means of a spindle 13 (Figures 2 and 4).

The cap 10 has, on each of its faces, openings 14 (Figures 2 and 3) with which the head 15 of the bolts 7 (Figures 2, 3 and 6) is adapted to engage.

The portion 16 of the head 5 is adapted to slide between guides 17 (Figures 1, 2, 3 and 5) kept suitably spaced apart and rigidly secured to the longitudinal bearers 1 of the chassis, so that it can replace the usual rear cross-piece.

At both ends of the guides 17, stirrups

18 are fixed (Figures 3, 4 and 5) the limbs 19 of which are in the form of inclined planes (Figure 5).

The device operates as follows:—

5 For normal road running and when negotiating large radius curves the whole system turns round the pintle 2; as soon, however, as the radius of a curve becomes shorter, the traction rod 4 engages with the stirrups 18 (Figures 3, 4 and 5).

10 As the head 8 of the bolts 7 comes into contact with the inclined planes 19 of the stirrups 18, it forces the bolts 7 closer to one another, as shown in Figures 4 and 5.

15 The effect of such forcing of the bolts towards one another is to disengage their head 15 from the aperture 14 of the cap 10, thus rendering the latter free to pivot round the spindle 13 on the head 5 of the traction rod 4.

20 The cap 10 may thus assume any angle required by the steering angle of the vehicle, as indicated by dotted lines in Figure 3.

25 When the tractor tends to resume a straight direction, the cap 10 turns around the spindle 13 until the traction pole of the trailer is in alignment with the traction rod. From this moment and owing to the traction stress the pole tends to remain in alignment with the traction rod 4.

30 The tractor continuing to straighten, the angle formed by the traction rod with the axis of the tractor will decrease thereby releasing the head 5 of the traction rod 4 from the stirrup 18. Then,

under the influence of the springs 9, the bolts 7 will move away from the head 15 and penetrate into the aperture 14 of the cap 10, thus locking the latter on the head 5 of the traction rod 4.

The whole system thereupon becomes rigid and pivots round the pintle 2.

Having now particularly described and 45 ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

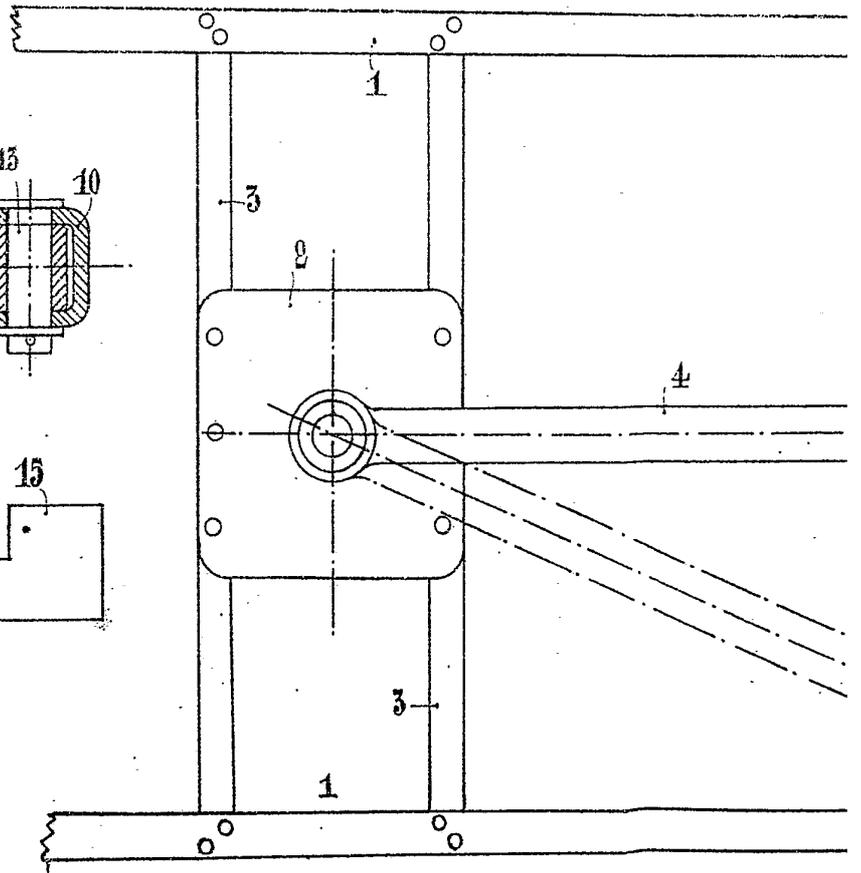
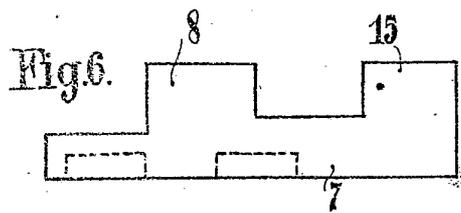
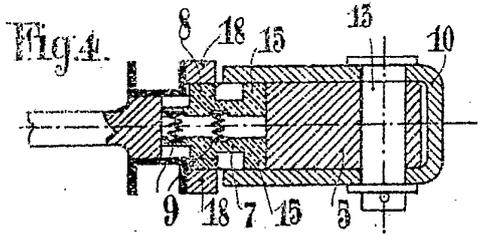
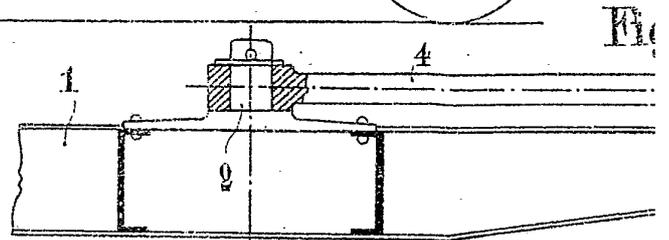
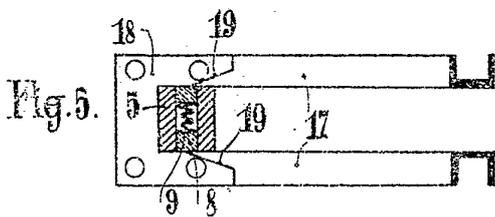
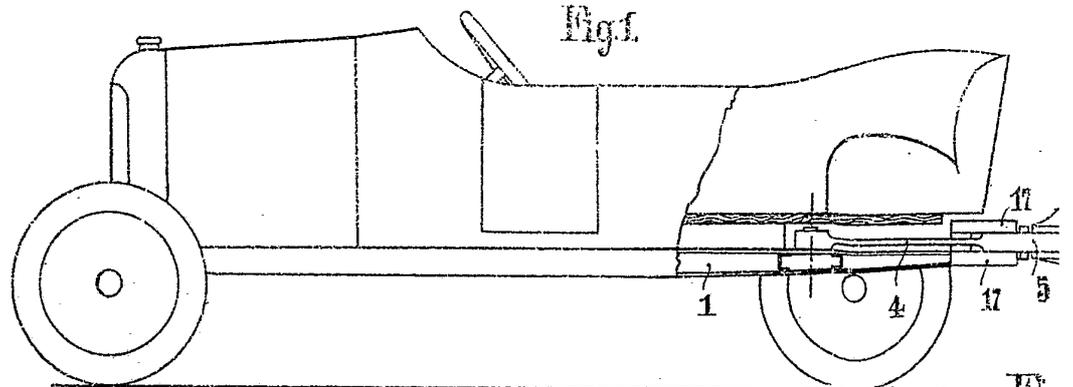
1. A trailer and motor vehicle coupling device constituted by a rod, one end of which pivots round a rigid pintle within the chassis and the other end, which is adapted to slide between two guides, carries a hinged head adapted to be automatically locked or released and to which the pole of the trailer is hitched.

2. A coupling device as claimed in Claim 1 characterised by stirrups so formed as to constitute thrust surfaces and which, when they come into action, free the coupling piece of the pole of the trailer and enable it to swivel round a spindle set in the traction rod.

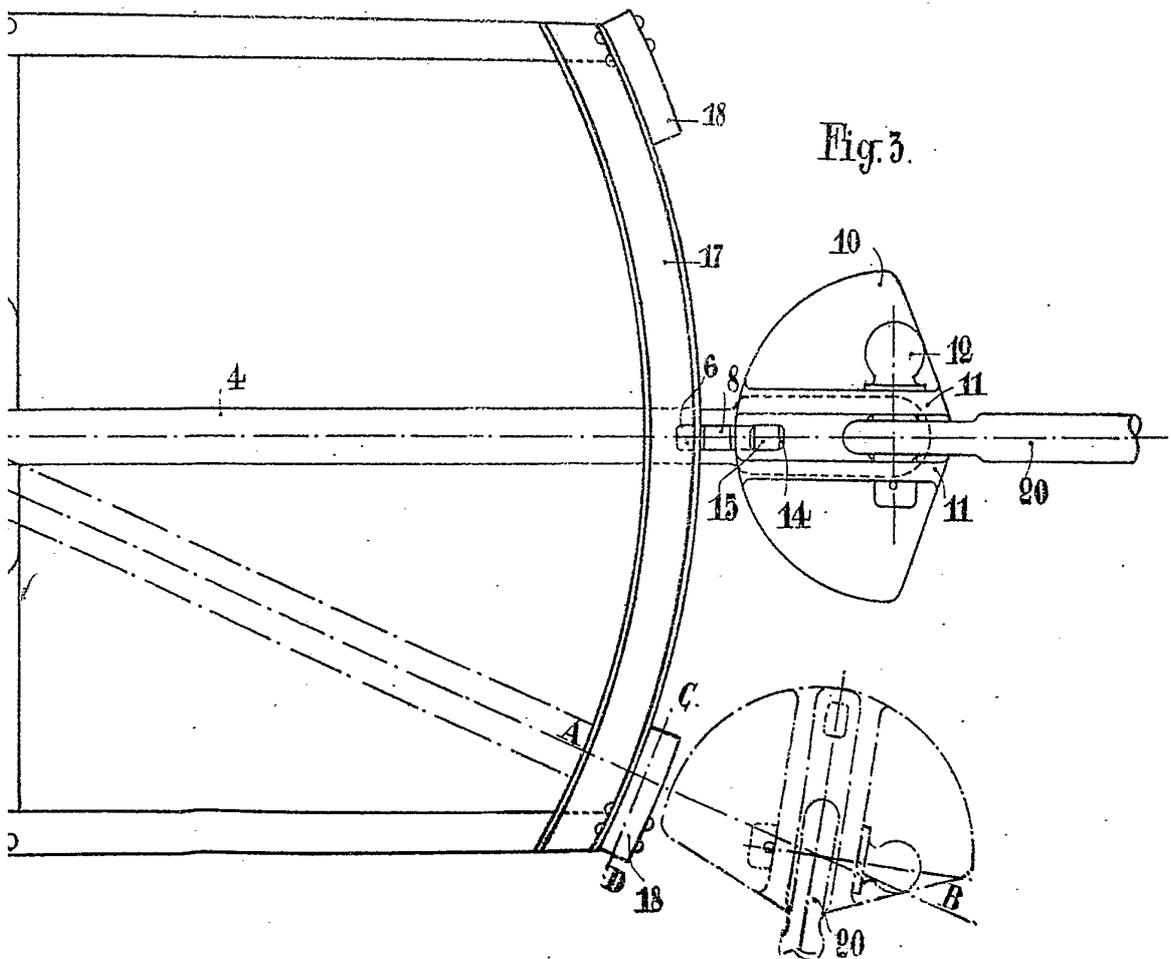
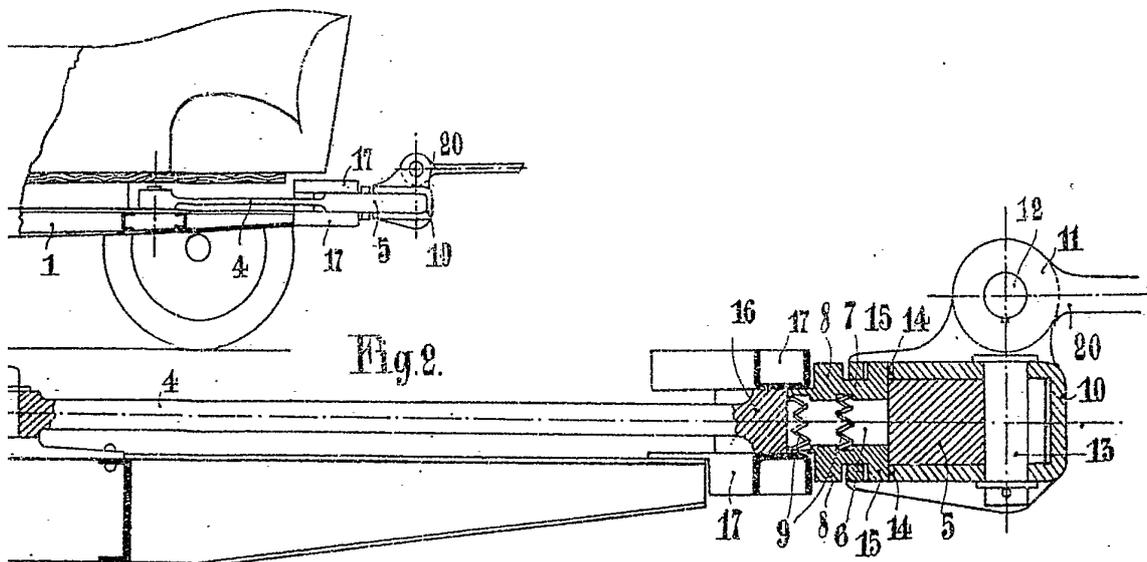
3. A device for coupling trailers to motor vehicles substantially as described or substantially as illustrated in the accompanying drawing.

Dated the 21st day of May, 1925.

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



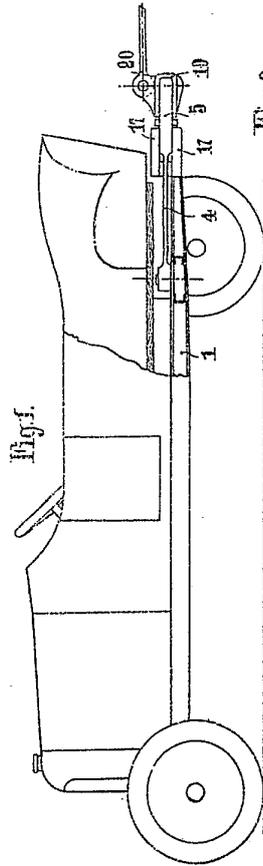


Fig. 1.

Fig. 2.

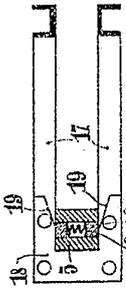


Fig. 3.

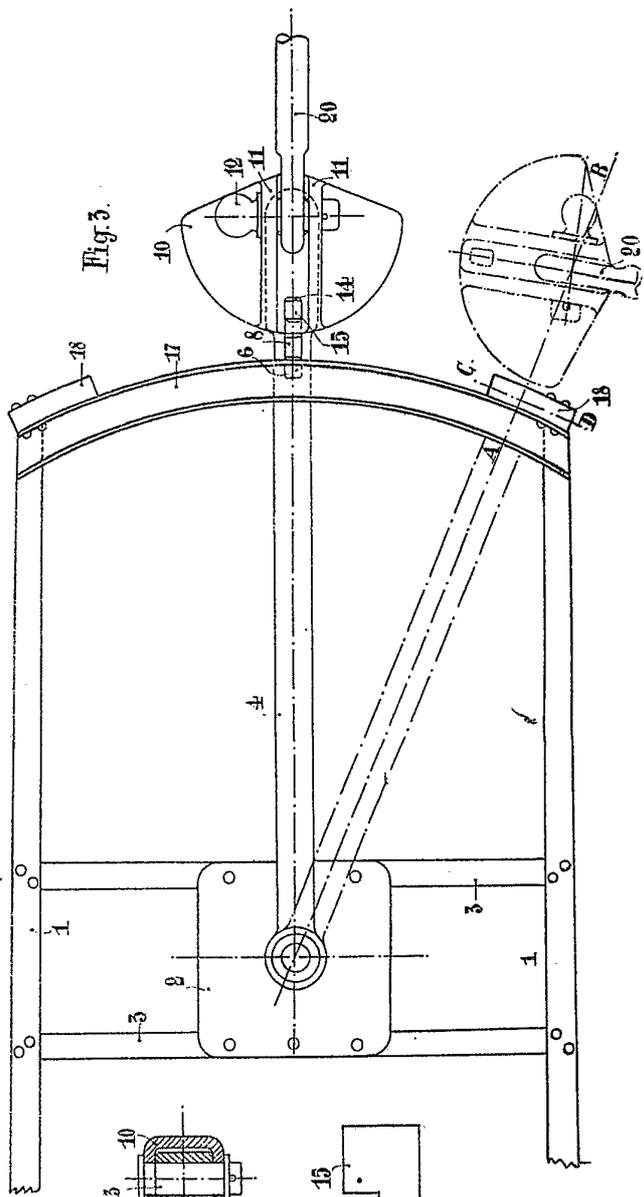


Fig. 4.

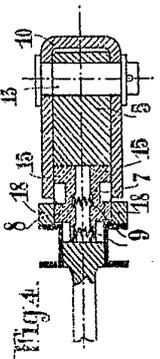


Fig. 5.

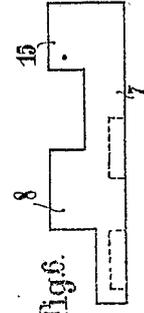


Fig. 6.



Fig. 7.

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