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J. ROCKINGER, JR
AUTOMATIC TRAILER COUPLING

1,939,463

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Fig. 1

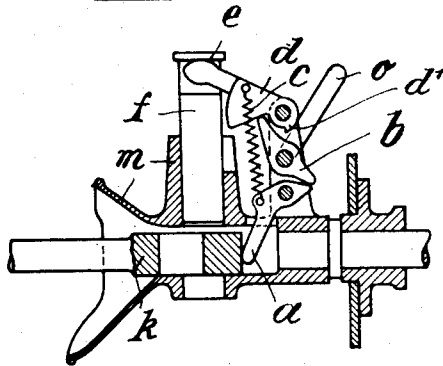


Fig. 2

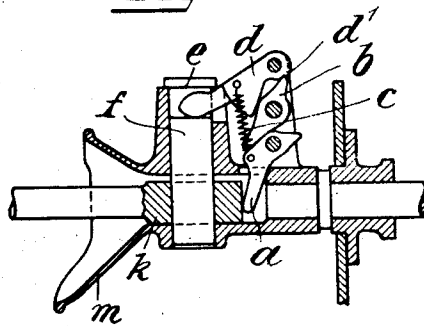
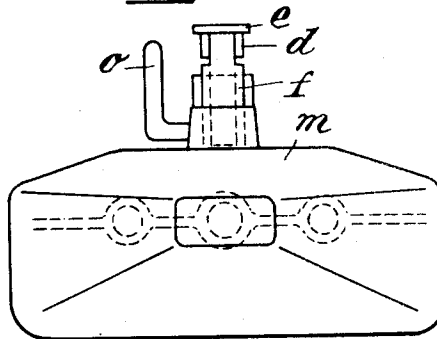


Fig. 3



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UNITED STATES PATENT OFFICE

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AUTOMATIC TRAILER COUPLING

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2 Claims. (Cl. 280—33.15)

The invention relates to an automatic trailer-coupling, especially for motor-vehicles, the coupling-member being provided with a clutch-bolt guided vertically and adapted to be lifted from the driver's seat. The clutch-bolt is kept in the lifted position by a locking device adapted to be disengaged when both vehicles are coupled, and consisting of a lever-arrangement.

Known automatic trailer-couplings of this kind have the disadvantage of the clutch-bolt not being secured in the locking position, which may easily lead to an unintentional uncoupling. A further disadvantage of these automatic trailer-couplings consists in the use of springs, which interferes with their safe working. The present invention eliminates these disadvantages.

The present invention consists substantially in the usual (lower) disengaging lever of the locking device and the upper lever gripping the clutch-bolt being connected one with another by a spring, and by a third lever provided with a regulating handle being arranged between these two levers, the one arm of the third lever being laid against a notch of the upper lever engaging the clutch-bolt, when the lower position of the clutch-bolt is reached, whereby the clutch-bolt is secured in its coupling position. The upper lever is conveniently constructed as a fork and grips by means of its fork the clutch-bolt in lateral indentations below a head appertaining to it.

A form of construction of such an automatic trailer-coupling is represented in

Fig. 1 in vertical section with the coupling opened,

Fig. 2 in vertical section with the coupling locked,

Fig. 3 in front view.

In this form of construction *m* is a funnel-shaped box, which serves the coupling eye *k* of the trailer fork as bearing or guide. At the back end of the box there penetrates into same through a slit the one arm of a two-armed lever *a*, the other arm of which engages the lower arm of a two-armed lever *b*. The shaft of the latter extends on one side beyond the bearing and is provided here with a handle *o* (Fig. 1 and Fig. 3). The lever *b* rests above on the fork-shaped single-arm lever *d*, the fork of which grips round the clutch-bolt *f*. For this purpose the latter is indented on both sides below the head *e* and flattened. The clutch-bolt *f* glides in a long guide, which prevents it from canting. The levers *a* and *b* are connected with each other by a coiled-spring *c* and a similar safety spring insures a firm mutual tension.

Now, when in coupling the coupling eye *k* pushes against the arm of the lever *a* extending into the box *m*, said lever presses with its other arm on the lever *b*, so that the latter is swung from the position of Fig. 1 into the position of Fig. 2, whereby the lever *d* loses its support and jumps downwards owing to the action of spring *c*, carrying with it the clutch-bolt *f* and guiding it into the coupling eye *k*. The coupling is locked. The swinging of the lever *a* gives the spring *c* an additional tension which leads to a strong upward movement of the clutch-bolt *f*. When the latter reaches its lower (coupling) position, the lever *b* engages a notch *d*¹ of the lever *d*, whereby the bolt *f* is secured in its coupling position.

The uncoupling is effected by turning the handle *o*, whereby the lever *b* fastened to its shaft is turned back to its original position, pressing the lever *d* into the position seen in Fig. 1, lifting at the same time the clutch-bolt *f* from the coupling eye *k* and keeping it in its lifted position under the tension of spring *c*.

What I claim is:

1. In an automatic trailer coupling, a coupling member, a clutch bolt, a vertical guide for said bolt, a locking device for said bolt, a first and a second lever forming part of said locking device, said second lever engaging said clutch bolt, a spring interconnecting said levers, a third lever interposed between said first and second levers, having an arm engaging a notch in said second lever in the actuated position of the clutch bolt, and a regulating handle for said third lever.

2. An automatic trailer coupling according to claim 1 and in which the clutch bolt is provided with lateral indentations below its head and the end of said second lever is in the form of a fork engaging the clutch bolt indentations.

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