Jan. 13, 1925.

1,523,309

J. B. STEWARDSON

COUPLER

Filed June 6, 1923

Fig. 1.

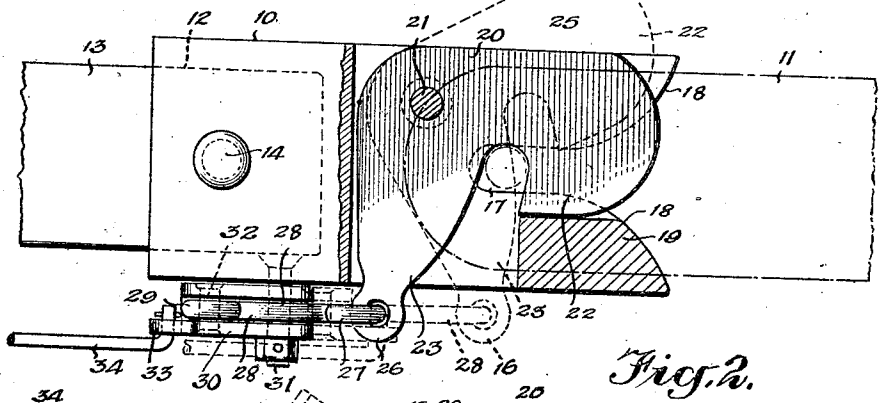
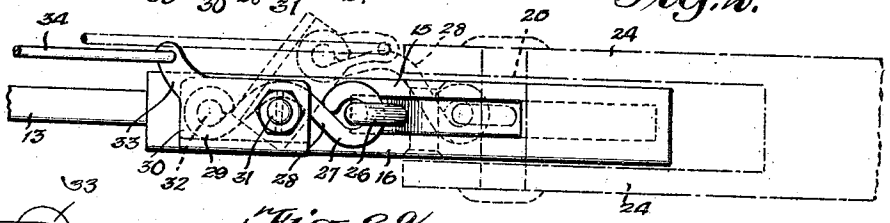


Fig. 2.



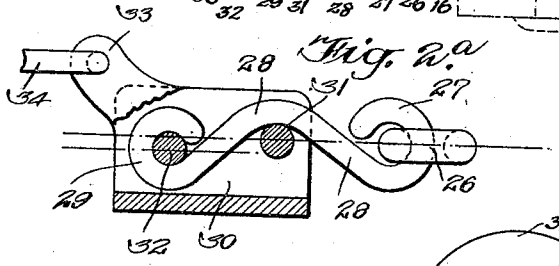
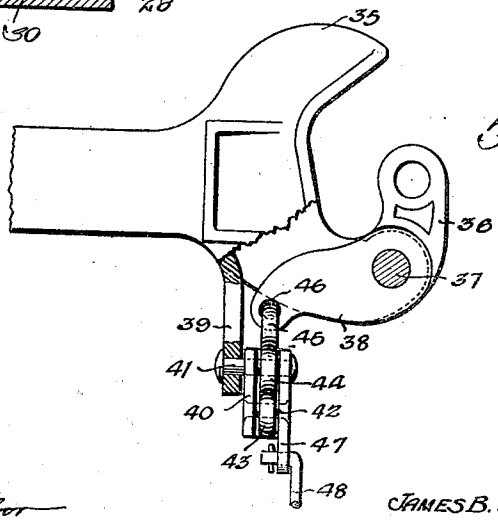


Fig. 2.a

Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

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COUPLER.

Application filed June 6, 1923. Serial No. 643,724.

To all whom it may concern:

Be it known that I, JAMES B. STEWARDSON, a citizen of the United States, and a resident of Colby, in the county of Thomas and State of Kansas, have invented a new and Improved Coupler, of which the following is a full, clear, and exact description.

This invention has relation to couplers and has particular reference to a coupler for detachably connecting one or more vehicles, machines, or devices with each other or with a means for moving the same.

One of the principal objects of the present invention resides in the provision of a coupler which affords means for readily releasing or uncoupling the same while the strain or stress of the load is impinged thereon, thereby eliminating the necessity of producing a slack in the coupling as is now the general practice.

Another object in view resides in a novel form of means for retaining the pivoted coupler element in either a locked or unlocked condition against casual or accidental movement, which means is so constructed and arranged as to be free of any binding action when the strain or stress of the load is on the coupler.

As a still further object the invention contemplates a coupler which is extremely simple in its construction and mode of operation, strong and durable, inexpensive to manufacture and produce and which is thoroughly reliable and highly efficient in its purpose.

With the above recited and other objects in view, the invention resides in the novel construction set forth in the following specification, particularly pointed out in the appended claim and illustrated in the accompanying drawings, it being understood that the right is reserved to embodiments other than those actually illustrated herein to the full extent indicated by the general meaning of the terms in which the claim is expressed.

In the drawings—

Figure 1 is a fragmentary plan view of a coupling constructed in accordance with the invention, parts being broken away to disclose the underlying structure.

Fig. 2 is a side view thereof.

Fig. 2ª is a detail enlarged side view, parts being broken away and shown in section.

Fig. 3 is a fragmentary plan view of a modified form of coupler with parts broken away and shown in section.

Referring to the drawings in detail, Figs. 1 and 2 illustrate a coupler which is particularly designed for use in connection with tractors, while Fig. 3 illustrates a railway car coupler of the general design equipped with a coupler actuating and locking means constructed in accordance with the invention.

Referring particularly to Figs. 1 and 2, 10 and 11 designate generally a pair of coupler members which are attached respectively to a tractor and a machine or implement which is to be drawn thereby. The coupling member 10 includes a body or housing which is built up from several pieces of material or cast from a single piece of material to provide at one end a socket 12 within which a suitable draw bar 13 is inserted and secured in place by a bolt or rivet 14. The opposite end is longitudinally and horizontally slotted to provide superposed arms 15 and 16, each of which are longitudinally and vertically slotted from their outer free ends as at 17, the slots 17 having flared entering mouths 18. One of the forks or furcations of the arm 15 is attached to the underlying fork or furcation of the arm 16 by a web 19. A coupling element 20 is pivoted between the arms 15 and 16 by a pivot bolt 21 and one extremity thereof is provided with a hook 22 while the opposite extremity 23 projects from the side of the coupling member 10 and is movable between the inner socketed end 12 and the web 19 for throwing the hooked terminal 22 respectively across the slot 17 and into engagement with the web 19 or to one side of the slot 17, as illustrated in dotted lines in Fig. 1. The coupling member 11 is provided with a bifurcated end through the furcations 24 of which a pin 25 extends. The extremity 23 of the coupling element 20 is provided with an eye 26 which engages an eye 27 of a link 28, the opposite end of which link is formed with an eye 29. A channel shaped arm 30 is pivoted to the side of the member 10 on a stud bolt 31 and the rear end thereof has extending therethrough a pivot bolt or rivet 32 which also extends through the eye 29. When the arm 30 is swung rearwardly to a horizontal position the axial centers of the eyes 29 and 27 are below the axial center of the pivot bolt 31 while the hooked terminal 22 is disposed across the slot 17, thus the coupling element 20 is gravitationally maintained in the past-center

locked position illustrated in full lines in Fig. 1. It, therefore, follows that the insertion of the pin 25 of the member 11 into the slots 17 and the engagement of said pin behind the hooked terminal 22 couples the coupling members 10 and 11 whereby a relative pull in opposite directions thereon will not set up a sufficient binding action on the gravity past-center locking means, to preclude ready manipulation of said means for the purpose of unlocking the coupling element from the pin to effect the uncoupling of the members 10 and 11 even though the stress or strain of the load is applied to the coupling. The pin 25 of the member 11 further functions to engage and coact with the extremity 23 of the coupling element 20 when the same is in open position as illustrated in dotted lines in Fig. 1 whereby to swing the element 20 into closed position and at the same time operate the gravity past-center locking means for maintaining the element 20 in its locked position. The arm 30 is provided adjacent its free extremity with an apertured lug 33 with which a manipulating rod 34 is connected for the purpose of manually actuating the arm 30 from a point remote from the coupling to effect the release of the coupling.

In the modified adaptation of the invention illustrated in Fig. 3 the coupler head 35 which is of well known railroad car type is provided with a hinged knuckle 36 pivoted as at 37 to the coupler head 35 and provided with an actuating arm 38. The coupler head is provided with a bearing lug 39 extending laterally therefrom to which a channel shaped arm 40 corresponding to the arm 30 of the first form is pivoted on a pivot 41. At its opposite free end a transverse pivot pin 42 extends through the arm 40 and through the eye 43 of a link 44, the opposite end of which is provided with an eye 45 engaged in an aperture 46 in the free end of the actuating arm 38. An apertured lug 47 is provided adjacent the free extremity of the arm 40 for receiving a manipulating rod 48 which permits of the manipulation of the coupler knuckle from a point remote from the coupler. The operation and advantages of the gravity past-center knuckle actuating and locking means is identical with that of the preferred embodiment and it is through that for this reason further description of the same is omitted.

I claim:

A coupler including a male member horizontally bifurcated at one end and having a vertical coupling pin extending through the furcations thereof, and a female member having a horizontally and vertically slotted end defining laterally spaced pairs of superposed furcations, between the vertical pairs of which the coupling pin of the male member is adapted to be received, a coupling hook pivoted between the vertical furcations of the female member for lateral swinging movement to respectively lock or release the pin, an arm on said coupling hook extending from one side of the female member, and a past-center locking and actuating means carried by the female member and operatively connected with the arm of said coupling hook, said past-center locking and actuating means comprising a U-shaped member pivoted to the female member at one end, a link respectively pivoted within the U-shaped member at its opposite end and pivotally connected to the free end of the arm of the coupling hook, the points of connection of the link with the arm and with the U-shaped member being disposed in a plane below the pivotal point of the U-shaped member to the female coupling member.

JAMES BERNARD STEWARDSON.