(No Model.)

R. H. STAPP.

CAR COUPLING.

No. 417,291. Patented Dec. 17, 1889.

Fig. 1.

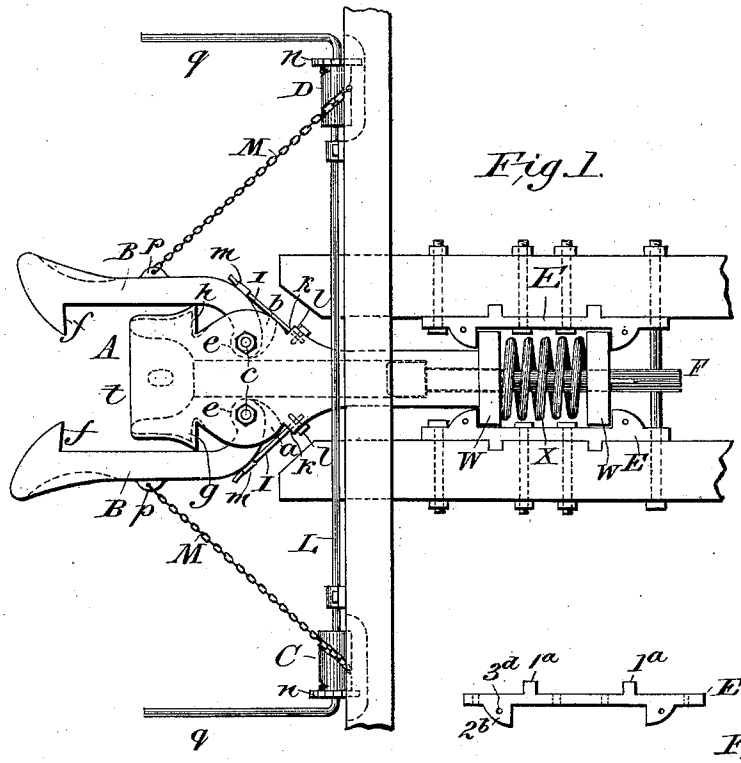


Fig. 8.

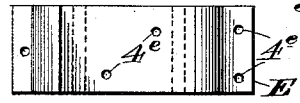


Fig. 4.

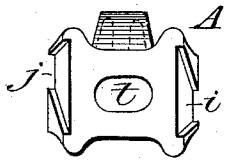


Fig. 3.

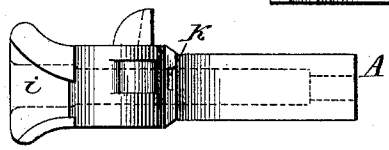


Fig. 7.

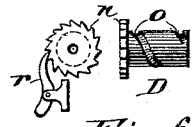


Fig. 2.

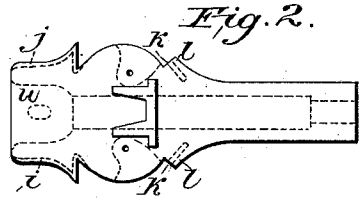
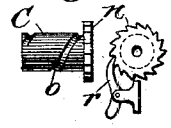


Fig. 6.



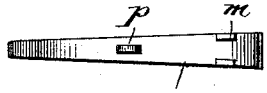
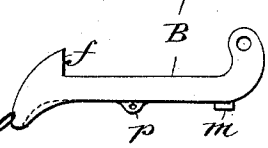


Fig. 5.



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ROBERT H. STAPP, OF WOODWARD, CHEROKEE OUTLET, INDIAN TERRITORY.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 417,291, dated December 17, 1889.

Application filed September 19, 1889. Serial No. 324,466. (No model.)

To all whom it may concern:

Be it known that I, ROBERT H. STAPP, a citizen of the United States, residing at Woodward, in the Cherokee Outlet, Indian Territory, have invented a new and useful Self-Coupling Safety Draw-Bar, of which the following is a specification.

My invention relates to improvements in self-coupling draw-bars in which coupling-arms are used and are attached to a draw-bar in such a manner as to give a straight draft on the draw-bar, and in which solid cast-iron draft-timber lugs are used to obtain uniform and sufficient strength. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of the entire draw-bar as applied to a car. Figs. 2, 3, and 4 are different views of the main casting or body of draw-bar; Fig. 5, a plan and elevation of the coupling-arms. Fig. 6 is the right-hand and Fig. 7 the left-hand release ratchet-cylinders, and Fig. 8 a view of draft-lugs.

Similar letters refer to similar parts throughout the several views.

The casting A constitutes the main body of the draw-bar. The arms B B are the coupling-arms, and are fastened in the main body by a regular curved bearing *e e* in sockets *a* and *b* in main casting, and are made secure by bolts *c* and *d*. These arms are tapered from the back to front, and are wide near the jaws *f*, Fig. 5, to maintain uniform strength, and are provided with jaws *f f*, Figs. 1 and 5, which couple into lugs *g* and *h* (see Figs. 1, 2, and 3) on the head of the opposite draw-bar, both draw-bars being alike. The socket *a* is near the top and *b* is near the bottom, to allow the arms to pass each other in coupling. The lugs *g* and *h* extend from the top to the bottom on the sides of draw-bar. There is a groove *i* and *j*, Figs. 3 and 4, in the sides of the head of draw-bar, which are wide in front and narrow as they near the lugs *g* and *h*, which act as guides for the coupling-arms when coupling. The groove *i* is near the bottom in casting A, so that the arm that fits in socket *a* will come directly over it, and the groove *j* is near the top, so that the arm that works in socket *b* will be under groove *j* to allow the arms to pass one above the other. There is also a slight groove in the back of lugs communicating with the grooves *i* and *j*, into which the jaws *f* of the coupling-arms B B of opposite draw-bars seat themselves. The springs I I are flat steel springs, and are to adjust the coupling-arms B B when released after being opened for uncoupling the draw-bars or detaching one car from another. The springs are fitted in casting A, back of the sockets *a* *b*, in a cavity *k* in shoulder *l*, Figs. 1 and 2, and are held secure by a set-screw passing through a hole in the spring and screwed into the casting A. The springs are held in place on arms B B by guides *m m*.

The release-cylinder C, Figs. 1 and 6, is the right-hand, and D, Figs. 1 and 7, is the left-hand release-cylinder. They have a groove *o* running from the ratchet *n* once around the cylinder, over and toward the left in C, and over and toward the right in D, in which the release-chains M M, Fig. 1, are wound. The cylinders C and D are fastened on a rod L by a key. The levers *q q* are to give leverage to revolve the release-cylinders, and are a part of the rod L, bent to right angles. The chains M M are fastened to set-screws on cylinders and to projecting eyes *p p* on coupling-arms.

To couple the draw-bars, bring them into contact with one another and the pressure on the jaws *f f* of the coupling-arms against the sides of draw-bar head will spread the arms B B apart, and as they come together the jaws will travel along the grooves *i* and *j* until the jaws *f f* pass the lugs *g* and *h*, when the pressure from the springs I I will close the coupling-arms, and they will catch on the lugs *g* and *h* when pulled in opposite directions, as in pulling a train.

To release or uncouple the draw-bars, raise the levers *q* and the pawl or dog *r*, Figs. 6 and 7, until it comes in contact with the ratchet on release-cylinders. Then let the lever loose, and the pressure from the springs and the weight of chains M M will cause the pawl *r* to stay up and hold the coupling-arms open. To adjust the arms for coupling, raise the lever *q* enough to let the pawl *r* clear of the teeth on ratchet, and the overbalance on pawls will throw the pawl *r* down; let the levers *q* down,

and the adjusting-springs will close the arms ready for coupling.

To couple onto any link-and-pin draw-bar, the arms B B should be opened in the manner as described, and a link and pin used, as in common draw-bars. The link is inserted in the cavity *t*, Figs. 1 and 4, and a pin through the hole *u*, Fig. 1. The coupling-arms being open, the jaws *f f* will pass on each side of the draw-bar and draft-timbers to allow the heads of draw-bars to come in contact with one another.

The draw-bar is attached to the car by a bolt F, Fig. 1, which passes through the draw-bar A and through the follower-plates *w* and spring *x*. The bolt is fastened by a key back of the follower-plates.

The plates *w w* are held in position or from being pulled out by solid cast-iron draft-timber lugs E. (See Figs. 1 and 8.) These lugs are made with a projecting stud 1^a, Fig. 8, near each end on the back of lug, which extends the width of the lugs. They are to be set into the draft-timbers, and are also provided with projecting studs or ears 2^b on the front, near each end, that extend the width of the lug. On these the following irons bear. The ears have a hole 3^d through them for a bolt that holds a strap that extends from one ear to the other. (Strap not shown.) The pocket-strap is to hold the follower-irons from falling down out of the draft-timber lugs. The lugs also have five holes 4^e, through which four lug-bolts and one span-bolt are passed into the draft-timber, to hold the lugs to place and keep the draft-timbers from spreading apart. A lug of this construction adds to the strength of timber, and will not twist nor shear the bolts when coming in sudden contact with other cars.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, in a self-coupling safety draw-bar, of a main casting A, having coupling-lugs and grooved guides on the sides of casting, the coupling-arms B B, which have a regular curved bearing in the casting A, and coupling-jaws *f f*, all substantially as set forth.

2. In a self-coupling safety draw-bar, the combination of the release-cylinders and lever-rod attachment with the adjusting-springs I I, for the adjustment of the coupling-arms, the chains, and the coupling-arms, substantially as described.

ROBERT H. STAPP.

Witnesses:
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