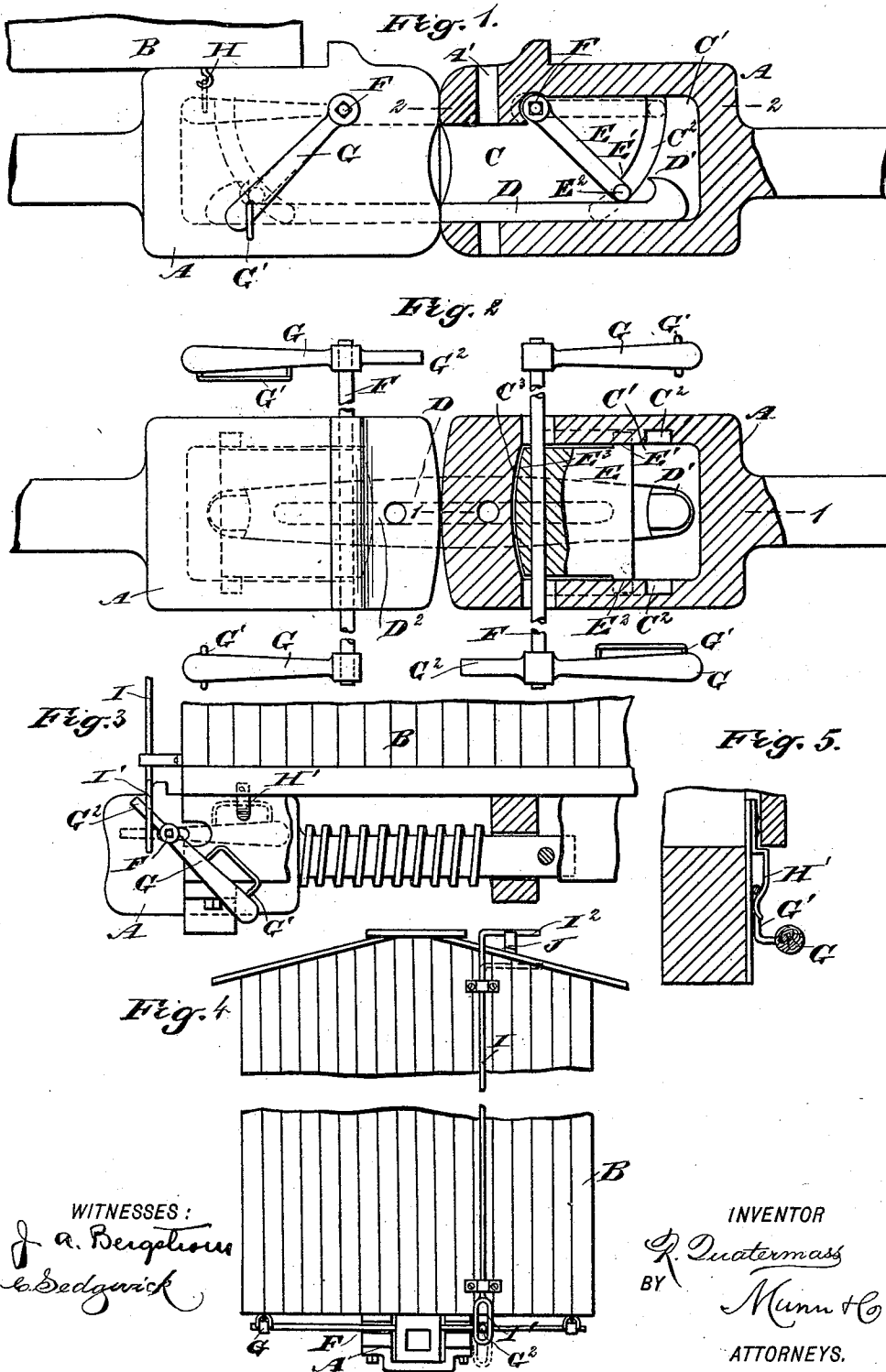


(No Model.)

R. QUATERMAS.
CAR COUPLING.

No. 478,463.

Patented July 5, 1892.



WITNESSES:
J. A. Bergstrom
C. Sedgwick

INVENTOR
R. Quatremass
BY Munn & Co
ATTORNEYS.

UNITED STATES PATENT OFFICE.

REUBEN QUATERMASS, OF MOLINE, KANSAS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 478,463, dated July 5, 1892.

Application filed March 10, 1892. Serial No. 424,425. (No model.)

To all whom it may concern:

Be it known that I, REUBEN QUATERMASS, of Moline, in the county of Elk and State of Kansas, have invented a new and Improved Car-Coupling, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved car-coupling, which is simple and durable in construction, very effective in operation, and easily manipulated both for coupling or uncoupling from either side of the car or the top.

The invention consists of certain parts and details and combinations of the same, as will be hereinafter described, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improvement with parts in section on the line 1 1 of Fig. 2, and showing the device coupled. Fig. 2 is a plan view of the same with parts in section on the line 2 2 of Fig. 1. Fig. 3 is a side elevation of the improvement with parts in section. Fig. 4 is a reduced front elevation of the improvement as applied, and Fig. 5 is a transverse section of a catch for holding the coupling-pin in an uppermost position.

The improved car-coupling is provided with a suitably-constructed draw-head A, mounted on the under side of the car B in the usual manner. The draw-head A is provided at its front end with the usual recess C for the entrance of the coupling-link D, made preferably in the shape of a flat bar provided at each end with an upwardly-extending projection or head D', forming a hook adapted to engage the rounded-off end E' of a plate E, secured on a transversely-extending shaft F, mounted to turn in suitable bearings in the sides of the draw-head A and near the outer end of the same, as plainly shown in the drawings.

The lower free end E' of the coupling-plate E is formed with pins E², fitting into segmental grooves C², formed on the inside of the sides of the draw-head, as plainly illustrated in Figs. 1 and 2, so as to guide the

plate E in its upward and downward swinging motion. When the plate E is in a horizontal position, as shown in dotted lines in Fig. 1, then the head D' of the link D is disengaged and the cars are uncoupled. When the plate E stands at an angle of about forty-five degrees, as illustrated in full lines in Fig. 1, then the lower or inner end E' of the plate is free to engage the head D', as shown, thus holding the said link in place and the cars are coupled.

In order to relieve the transversely-extending shaft F from all strain in case of a pull on the plate E by the head D of the coupling-link, the said shaft is mounted in elongated openings formed in the sides of the draw-head A. The outer end E³ of the plate E is curved, as plainly shown in Fig. 2, and abuts against a correspondingly-shaped wall C³, extending transversely from the under side of the top of the draw-head A in the enlarged recess C', arranged in the rear end of the draw-head A and into which the recess C opens. Now when a pull is exerted on the plate E by the link D, then the end E³ rests against the wall C³, while the shaft F is free in its elongated bearings, thus relieving the shaft of all strain. The shaft F extends transversely close to the sides of the cars, and on each outer end is secured a handle G, adapted to be taken hold of by the operator for conveniently turning the said shaft, so as to swing the coupling-plate E up or down, out of or in engagement with the head D' of the link D.

On each of the handles G is secured a link G', of which the link of the handle on one side of the car is adapted to engage an ordinary hook H, held on the car B, so as to lock the said handle G, the shaft F, and the plate E in position, the latter then being in an uppermost position, as shown in dotted lines in Fig. 1. The link G' on the opposite handle G is preferably rigid and is adapted to engage a spring-catch H', held on the side of the car and arranged so as to permit a convenient engagement or detachment of the link on swinging the handle G up or down.

In order to manipulate the shaft F from the top of the car, the front end of one of the handles G on the said shaft is provided with a forward extension G², engaged by the slot-

ted end I' of a rod I, mounted to slide vertically in suitable bearings on the front end of the car B, as plainly illustrated in Figs. 3 and 4. The end of the rod I, projecting above the roof of the car B, is formed with a handle I², adapted to be hung on or engaged with a suitable keeper J, held on the top of the car and serving to hold the said rod I in an uppermost position. When in this position, the end G² extends about midway through the slot of the end I' of the said rod, so that the handle G can be manipulated, being unobstructed by the said rod I.

The operation is as follows: When the plate E is in a lowermost position, its laterally-projecting pins E² rest in the bottom of the grooves C², the plate E then effectually closing the rear enlarged recess C' of the draw-head A. Now when the link D enters the recess C of the said draw-head, then the head E' strikes the front under side of the plate E, thus swinging the latter upward until the head D' has passed the lower end E' of the said plate and the latter swings in front of the head, thus engaging the said head, as plainly illustrated in Fig. 1. When the plate E is in a lowermost position, then the pull or strain is taken up by projecting pins E² at the bottom or shoulder of the groove. Only when plate E is in an uppermost position (when on a pull, which may be caused by one draw-bar being lower than the other) or pins E² should become broken, then the pull or strain is taken up by the wall C³. It will be seen that when the link D has thus entered the draw-head and is engaged by the plate E the two cars are coupled. The pull or strain exerted by the head D' of the link D on the plate E is taken up by the pins E² or the wall C³, as previously explained. Now when it is desired to uncouple the cars, the latter are backed up in the usual manner, so that the head D' of the link slides to the rear end of the enlarged recess C' to disengage the lower end E' of the plate E, and then the operator turns one of the handles G, either from the side of the car or from the top, by means of the rod I to rotate the shaft F, in order to swing the plate E upward into the position shown in dotted lines in Fig. 1. By swinging the handles G upward the fixed link G' engages the spring-catch H', as plainly shown in Fig. 5, so as to hold the plate E in an uppermost position. Now when the two cars are pulled apart, the link with its head D' leaves the draw-head and the cars are uncoupled. The ends of the link D are preferably somewhat narrower than the middle portion, so that in case the link is turned to one side the plate E will swing upward and disengage the head D', whereby the two cars can be uncoupled. Now this operation takes place in case one of the cars leaves the track and is upset. Thus by this arrangement the other car still on the track is not affected at all, as the link disengages the draw-head of this car as soon as the car leaves the track. In the

front part of the draw-head A is arranged the usual vertical opening A' for the insertion of an ordinary coupling-pin adapted to pass through the longitudinal slot D² in the link D to lock the latter in place, or the pin is adapted to engage an ordinary link carried by a car having the usual pin-and-link coupling.

As shown in Fig. 1, the handles G extend in line with the plate E, so that when the latter is in a lowermost position the handles add weight to the plate to hold the same in position when engaging the head E' of the link, as above described.

It will further be seen that the entire arrangement is located below the car, and consequently not exposed to the inclemency of the weather, and is hence not liable to be rendered useless by snow or ice. The greater portion of the draw-head A extends under the car and only a small part projects at the end of the same, so that the cars may be run closer together, thereby rendering it less dangerous to persons stepping from one car to another.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A car-coupling comprising a shaft mounted to turn, a plate held thereon, and a coupling-link provided with a head and adapted to engage the free end of the said plate, a handle for turning the said shaft to swing the said plate up or down and provided with a link or projection, and a suitable catch adapted to be secured on the side of the car to engage said link or projection and hold the handle raised, substantially as set forth.

2. In a car-coupling, the combination, with a draw-head, of a shaft mounted to turn in the sides of the said draw-head, a plate secured to the said shaft and extending in a recess in the said draw-head, and pins projecting from the free ends of the said plate and engaging segmental slots or grooves arranged in the sides of the said draw-head, substantially as shown and described.

3. In a car-coupling, the combination, with a draw-head, of a shaft mounted to turn in the sides of the said draw-head, a plate secured to the said shaft and extending in a recess in the said draw-head, pins projecting from the free ends of the said plate and engaging segmental slots or grooves arranged in the sides of the said draw-head, and handles held on the outer ends of the said shaft to turn the latter to swing the said plate up and down, substantially as shown and described.

4. In a car-coupling, the combination, with a draw-head, of a shaft mounted to turn in the sides of the said draw-head, a plate secured to the said shaft and extending in a recess in the said draw-head, pins projecting from the free ends of the said plate and engaging segmental slots or grooves arranged in the sides of the said draw-head, handles held on the outer ends of the said shaft to turn the

latter to swing the said plate up and down, and a spring-catch held on the side of the car and adapted to be engaged by a link on one of the said handles, as set forth.

- 5 5. In a car-coupling, the combination, with a draw-head, of a shaft mounted to turn in the sides of the said draw-head, a plate secured to the said shaft and extending in a recess in the said draw-head, pins projecting
10 from the free ends of the said plate and engaging segmental slots or grooves arranged in the sides of the said draw-head, handles

held on the outer ends of the said shaft to turn the latter to swing the said plate up and down, a spring-catch held on the side of the 15 car and adapted to be engaged by a link on one of the said handles, and means, substantially as described, for operating the said handles from the top of the car, as set forth.

REUBEN QUATERMASS.

Witnesses:

W. C. GOODWIN,
J. MARTIN.