(No Model.)

J. B. WILLAMAN, C. STRATTON & H. S. LYNCH.

CAR COUPLING.

No. 301,194. Patented July 1, 1884.

Fig. 1.

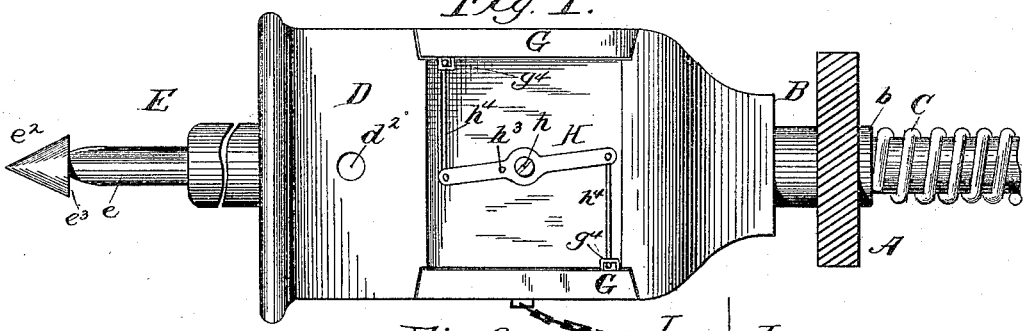
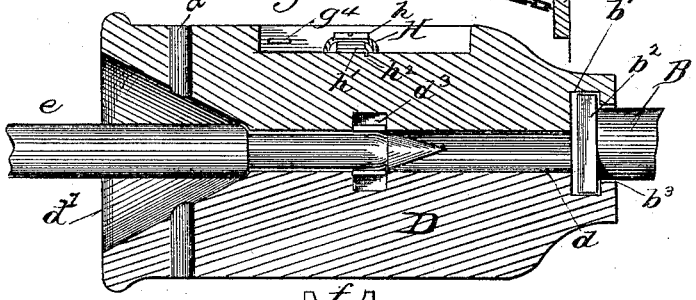


Fig. 2.



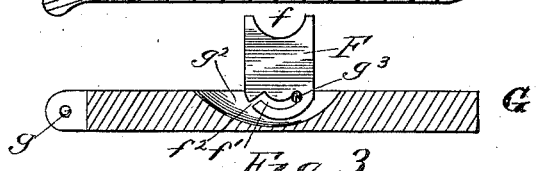


Fig. 3.

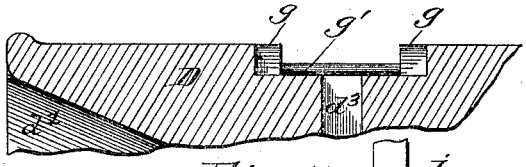


Fig. 4.

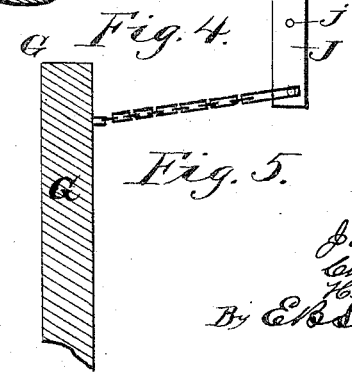


Fig. 5.

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UNITED STATES PATENT OFFICE.

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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 301,194, dated July 1, 1884.

Application filed April 29, 1884. (No model.)

To all whom it may concern:

Be it known that we, JOSEPH B. WILLAMAN, CHARLES STRATTON, and HENRY S. LYNCH, citizens of the United States, residing at Salem, in the county of Columbiana and State of Ohio, have invented certain new and useful Improvements in Car-Couplers, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 is a plan of a car-coupler constructed in accordance with our invention. Fig. 2 is a central vertical longitudinal section, and Figs. 3, 4, and 5 are details partly in section.

Like letters refer to like parts in all the figures.

The object of our invention is to provide means for coupling cars and uncoupling the same, which can be operated without the necessity of standing between the cars to be coupled; and our invention consists of certain features of construction, hereinafter described, and specifically set forth in the claims.

In any suitable brackets depending from or forming a part of the frame-work of a car—such as the part designated as A—is passed a draw-bar, B, about which is a coil-spring, C, which is designed to abut against a shoulder, *b*, on the draw-bar, and against another bracket similar to the bracket A, so that there may be longitudinal movement of the draw-bar resisted by the spring, as is usual in car-couplers. The draw-bar B is connected to the draw-head D by means of a recess, *b'*, formed centrally in the rear end of the head, to receive an enlargement, b^2, of the bar, the body of which passes through an aperture, b^3, communicating with the recess. The draw-head D may be formed in one piece, and conveniently so, by casting the same from or after a pattern divided longitudinally and transversely through the center of the head, when, by the use of a suitable core, the recess *b'* can be made partly in each half of the casting, as can also the remaining passages, apertures, and recesses within the head, which are hereinafter to be mentioned. Extending through the upper head is a cylindrical passage or bore, *d*, terminating at the front in an outwardly-flaring mouth, *d'*, which is conical in contour, and serves to guide any suitable coupling-link of the usual construction, in connection with the usual coupling-pin, inserted in the vertical pin-hole d^2, and also to guide the particular pin or bar E herein shown. The coupling-bar E consists of a central portion, *e*, of suitable outline in cross-section, in this instance cylindrical, and having a reduced portion, *e'*, terminating in a conical point, e^2, having its base or rear wall, e^3, projecting from the body of the bar, and at right angles to its axis. The opposite ends of the bar are similar to each other, so that when presented to the guiding-mouth of the draw-head the conical pin, coming in contact with its conical walls, is directed into the bore *d*.

At a point in the bore *d* opposite or directly behind the square shoulders e^3 of the coupling-bar is formed a transverse passage, d^3, extending completely through the head. In this passage locking-bolts F are located, and are adapted, by means hereinafter described, to be reciprocated inwardly, so as to be projected in front of and withdrawn from in front of the vertical walls e^3 of the coupling-bar, in order to connect the same with the head or disconnect it from the head. Now, it will be seen that if these bolts—one upon each side of the coupling-bar—are spring-seated the conical head will act to separate said bolts, and they will immediately, as the head passes them, be forced inwardly and catch against the walls e^3 of the bar, so as to automatically secure the same within the head; and it will be further seen that by connecting suitable devices to the bolts they may be forcibly withdrawn from the bar, whereby it is permitted to move longitudinally outward from the head.

The means employed for operating the bolts in the manner described consists of hinged flaps G, located one at each side of the head D, and pivoted by means of a hinge-joint, *g*, formed at the lower edges of the flaps, and at or near the lower edges of the sides of the heads. Recesses *g'* are formed in the sides of the head to receive the flaps, in order that their outer surfaces shall be flush with the outer surface of the side of the head. The passages d^3 communicate with the recesses *g'*.

Within the inner surfaces of the flaps G are

formed cavities or depressions g^2, having extended within and across the same a pintle, bar, or rod, g^3, for the purpose of connecting the bolts F to the flaps. Each of the bolts consists of a bar of suitable material, having a substantially semicircular recess, f, formed in its end, whereby that end is adapted to embrace the reduced portion e of the connecting-bar. At its opposite end each of the bolts is convexed in contour, to agree substantially with the outline of the depression g^2, formed in the flap, and a curved slot, f', is formed near the said convexed end of the bolt, which communicates with the straight slot f^2, passing through the end of the bolt, whereby the bolt may be connected with the pintle or rod g^3 by inserting it into the straight slot and subsequently into the curved slot. Now, it will be observed that when the flaps are pivotally connected to the sides of the head, and the upper or free end of the flaps are swung, the bolts F being in the recesses d^3, their movement is in a straight line, while the movement of the pintle g^3 is in a curved line agreeing with the curvature of the slot f'. In this manner the swinging curved motion of the flap and its pintle is made to subserve the purpose of giving a straight movement or reciprocation to the bolt F connected therewith.

Upon the inner surface of each of the hinged flaps G is a staple or eye or other suitable well-known device, g^4, arranged the one diagonally opposite the other.

Within a recess formed in the top of the head is a swinging lever, H, pivoted to the head by a screw or bolt, h.

About the screw h, and within a recess formed in the bar, is a coiled spring, h', one end of which is secured to the head, as at h^2, and the opposite end of which is secured to the bar, as at h^3, the tendency of the coil-spring being to throw the opposite ends of the bar in opposite directions, so that when said ends are connected by the rods h^4 to the flaps by means of the eye g^4 said spring has a tendency to keep the flaps snugly against the sides of the head within the recesses formed to receive them, and therefore to constantly or normally hold the bolts F projected inwardly against each other, or against the reduced portion e of the connecting-bar when it is inserted in the head.

It now remains to provide means for swinging the flaps outwardly in opposite directions from each side of the head in order to spread the bolts, so that a connecting-bar held by them may be withdrawn from the head. In performing this function the swinging lever and the diagonally-opposite connecting means perform an important and advantageous portion of the operation, in that by drawing either one of the flaps away from the side the opposite flap is forced from the opposite side of the head by reason of the manner of connection described. Therefore by any suitable chain, as I, connected to any suitable lever, as J, pivotally supported, as at j, to any suitable part of the car, whether the platform, the framework, the end of said car, or the roof of the same, a suitable movement of said lever J tightens the chain I and withdraws the flap G from the head, and this motion is communicated, through the links h^4 and the lever H, to the opposite flap, producing therein an opposite motion, whereby the bolts are removed from the head of the connecting-bar, and it, while being retained within a similar head mounted upon a companion car, is removed thereby as the cars are separated.

Having described our invention and its operation, what we claim, and desire to secure by Letters Patent, is—

1. The combination of the head D, having the recesses g', bore d, and passages d^3, and the recess b' of the draw-bar B, having the enlargement b^2 the bolts F, and the flanges G, with the lever H, links h^4, and with means for operating one of the flaps, substantially as specified.

2. The combination of the flaps G, lever H, screw or bolt h, spring h', connecting-links h^4, and the head D, substantially as specified.

3. The combination of the flap G, having the depression g^2 and pintle g^3, with the bolt F, having the slots f' f^2, substantially as shown and described.

4. The combination of the connecting-link E, constructed as described, with the head D, having the conical mouth d', the central bore, d, the transverse passage d^3, and the recess b', with the draw-bar B, having the enlargement b^2, the flaps G, having the depressions g^2, pintles g^3, bolts F, having the concavities f and curved slots f', the links h^4, lever H, chain I, and lever J, substantially as shown and described.

In testimony whereof we affix our signatures in presence of two witnesses.

JOSEPH B. WILLAMAN.
CHARLES STRATTON.
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Witnesses:
GEO. W. FRONT,
W. W. HALE.