W. V. PULLIAM.

Car Coupling.

No. 95,835. Patented Oct. 12, 1869.

Fig. 1

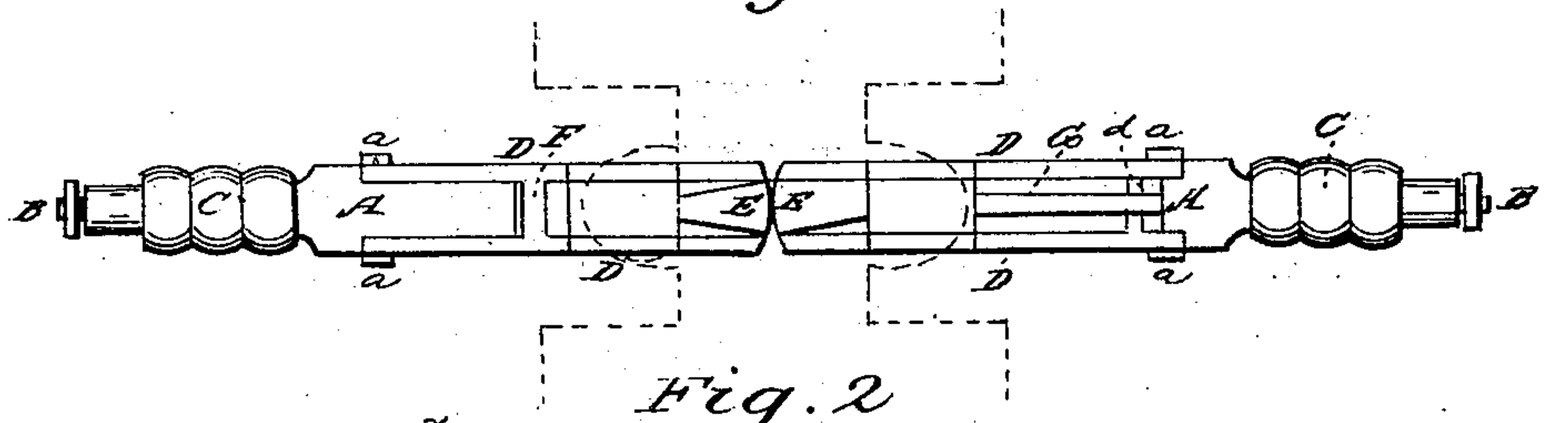


Fig. 2

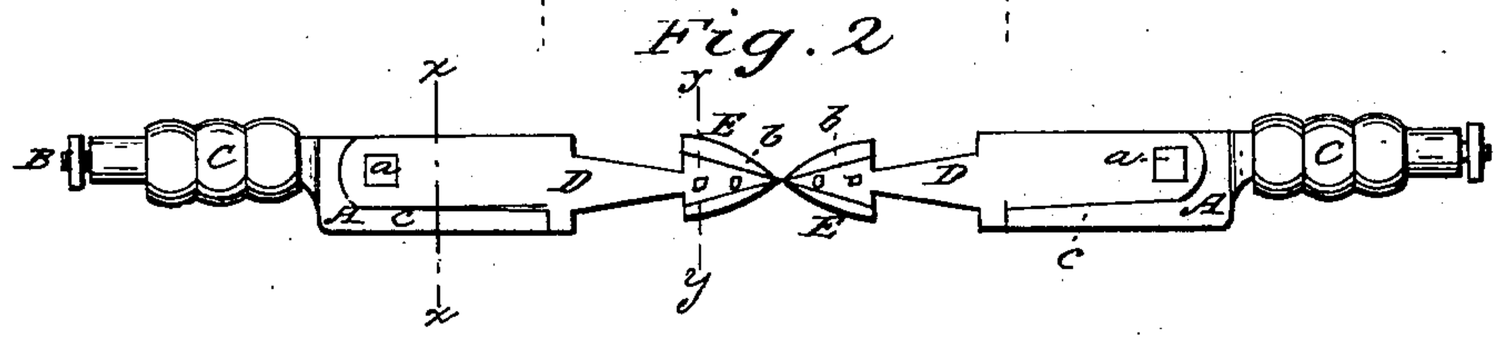


Fig. 3

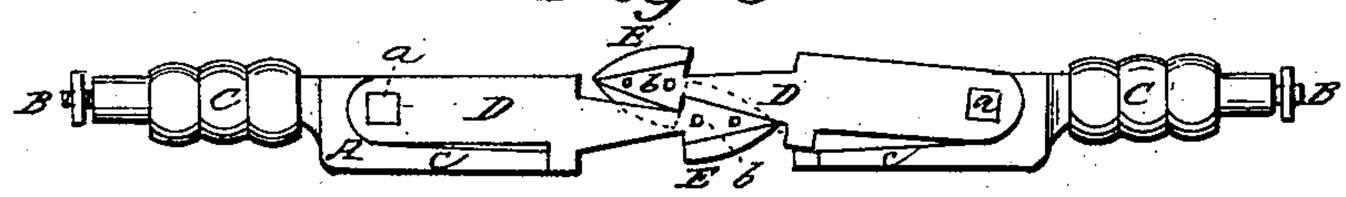


Fig. 4

Fig. 5

Fig. 6

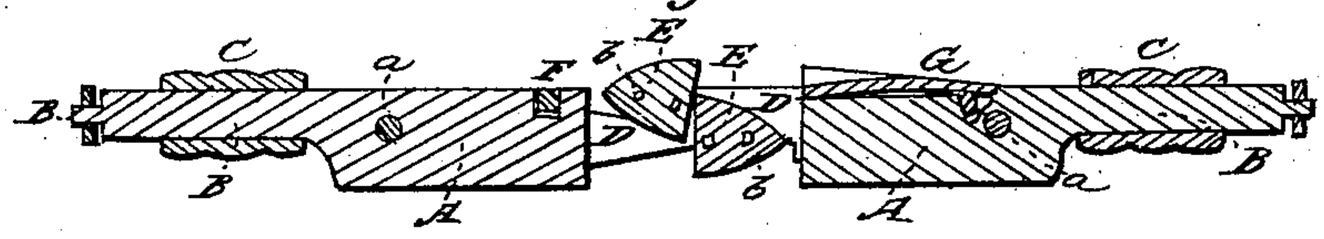


Fig. 7

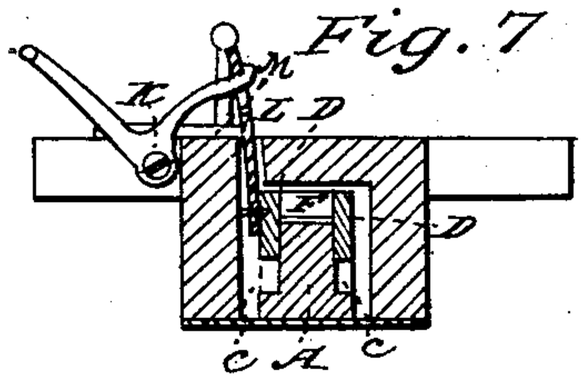
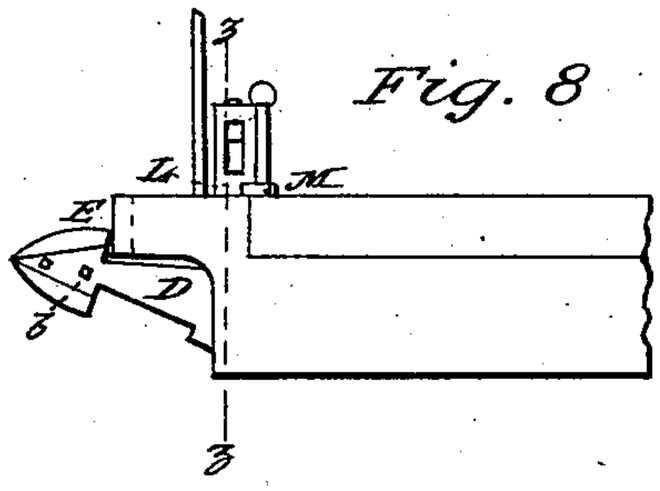


Fig. 8



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WALKER V. PULLIAM, OF KANSAS CITY, MISSOURI.

Letters Patent No. 95,835, *dated October* 12, 1869.

IMPROVED RAILWAY-CAR COUPLING.

The Schedule referred to in these Letters Patent and making part of the same.

I, WALKER V. PULLIAM, of Kansas City, in the county of Jackson, and State of Missouri, have invented certain Improvement in Self-Adjusting Car-Couplers, of which the following is a specification.

The first part of my invention relates to an improvement in the construction of self-adjusting couplers. This improvement consists in securing to the front end of the draw-rod a metallic supporting-block, to the sides of which, near the rear end thereof, are pivoted the rear ends of two side-plates, whose forward ends, projecting a suitable distance beyond the front end of the block, are bolted together upon a suitable double or wedge-shaped head, constituting the coupling-hook, and which are furthermore strengthened by means of a cross-bar riveted to their upper edges, so as to extend across and rest upon the top of the block near its front end; the object of this part of my invention being to obtain a self-acting coupler, whose parts may, at small expense, be readily removed and replaced when broken or injured, and which shall not only possess great strength, but be so compact as to admit of being employed in the place of any of the ordinary couplers.

The second part of my invention relates to the combination, with the double-plate coupling-bar and hook just described, of a link and lever, so arranged and pivoted to the platform of the car as that, when operated, it shall readily elevate the coupling-bar, and disengage its hook if coupled; the object sought being to facilitate the uncoupling of the cars without danger to the attendant.

In the accompanying drawings—

Figure 1 is a plan view of two of my self-adjusting couplers, with the coupling-hooks or heads disengaged.

Figure 2, a side view of the same.

Figure 3, a side view thereof, with the hooks engaged or coupled.

Figure 4, a transverse section in the line *x x* of fig. 2.

Figure 5, a similar section in line *y y* of fig. 2.

Figure 6, a longitudinal vertical section, taken in a central line through the two couplers, in an engaged position, as illustrated in fig. 3.

Figure 7, a vertical section, taken in the line *z z* of fig. 8; said

Figure 8 being a side elevation of the platform of a car detached, illustrating the attachment thereto of the operating-lever, for elevating the coupling-bar and hook.

A is the metallic rectangular block, constituting the body or support of my improved coupling-device.

B, an extension thereof, forming a draw-bar or rod, to be attached to the cross-beam of the car-truck in the usual manner.

C C, spiral or rubber springs, placed as usual upon the draw-bar, to relieve the coupling from sudden shocks.

D D, coupling-plates, securely pivoted on opposite sides of the block A, near the rear end thereof, by means of a bolt or pin, *a*, fastened by a nut or key, and which extend forward, and project beyond the forward end of the block, as illustrated in the drawings. The sides of the body-block A are recessed, to receive the coupling-plates D D, and to leave an extended offset, *c*, on each side of the block, along the lower edge thereof, to support the lower edges of said plates, and prevent their movement in that direction without obstruction to their upward movement.

E, the wedged-shaped head of the coupling-bar, interposed between the forward ends of the coupling-plates D, which are firmly secured thereto, by means of two or more bolts, *b b*, passing entirely through the plates and head. This coupler-head E is recessed laterally, to receive and partially embrace the ends of the coupling-plates D D, as illustrated in the sectional fig. 5, and thus form a stronger joint between the coupling-plates and their head.

F, a cross-bar or plate, extending across from one coupling-plate to the other, over the forward end of the body-block A, and riveted at either end to the upper edges of said plate. A groove or recess is formed across the upper side of the block, to receive the cross-bar when it is resting thereon, as illustrated in the sectional fig. 6. The weight of the head of each coupler is such as that the coupling-plates D, moving freely upon their pivots, will, by the action of gravitation alone, always tend to a horizontal position with sufficient force to secure an effective operation of the device. To obtain, however, still greater certainty in the operation of the couplers, and additional security as to their engagement, I combine springs therewith.

G is a spring applied to one of the couplers. This spring-plate is firmly secured at one end to the forward end of the body-block A, on its upper side, and extending thence back, bears upon a cross-bar, *d*, extending across the block A, in a groove therein, and which is secured to the coupling-plates D D, on either side thereof, so that a tension of the spring is produced by an elevation of the plates, as shown in fig. 3. The arrangement of the spring G, in combination with the block A, may be reversed, and its fixed end be secured at the rear end of the block, leaving its free end to rest upon the cross-bar F, fig. 1, at the forward end thereof; but in such case a more extended play or movement of the spring is involved, tending to impair its efficiency, and increase the liability of a fracture thereof.

In operation, when the two wedge-shaped heads, which form the coupling-hooks, are pushed together, they will glide, the one over the other, the uppermost one being gradually lifted until its rear face passes the

rear face of the under head, when it will drop down behind the same, and the two will thus become securely engaged, as illustrated in figs. 3 and 4. When thus engaged, each head E passes or enters between the coupling-plates D D of the opposite head. Hence the engaging-surfaces of the hooks or heads E, projecting between the plates D D, may be increased to any desired extent found desirable.

As the heads E E, when engaged or coupled, are not in any manner locked or confined otherwise than by the simple action of gravity or the yielding pressure of their springs, if such are used, it follows that in the event of the overturning of either car thus coupled, or its precipitation through an opening in the track-way, the coupling-heads or hooks will at once disengage or separate, and thus immediately uncouple and disconnect the cars.

My invention is, therefore, not only a "self-coupler," but, in cases of accident, a "self-uncoupler."

To uncouple at pleasure, under ordinary circumstances, without exposing the attendant to the danger of passing, for the purpose, in between the cars, I hinge to the platform of each car, near the railing, a bent lever, K, fig. 7, the shorter arm of which engages a slot in a rod, L, passing down through the platform, and pivoted at its lower end to one of the coupling-plates of the coupler beneath.

By simply bearing down the longer arm of the lever K with the foot, the shorter arm will be so far elevated as to draw up the coupler, by means of the rod L, sufficiently to disengage its coupling-hook from the opposite coupling-hook in the manner illustrated in figs. 7 and 8 of the drawings.

When thus elevated, the coupling-hook may be locked, and secured from dropping again, by means of a simple catch, M, pivoted to the platform, so as to swing horizontally into a notch in the rod L, as shown in fig. 8.

If either of the coupling-plates D D or the coupling-hooks or heads E becomes injured or broken, it is only necessary to withdraw the pivot-bolt *a* and head-bolts *b b*, in order to separate these parts, remove that which is defective, and replace it with a duplicate, and this can readily be done in comparatively a few minutes.

The body-block A gives a firm support to the coupling-plates D D, and the peculiar combination of the two affords unusual compactness in the device, without sacrifice of strength in any of the parts, so that this coupler does not require, for its attachment to cars, a greater space than that required for the ordinary draw-bars and couplers now in use.

I do not claim as new, coupling-bars having double or wedge-shaped heads, so arranged as that when pushed, one upon the other, they will engage by the simple effect of gravitation.

I claim, as my invention—

1. As an improvement in self-adjusting car-couplers, the double plates D D, pivoted on either side of a metallic block or support, A, at one end, and secured to an interposed wedge-shaped head, B, at the other, substantially as herein described.

2. The combination of the spring G, or its equivalent, with the supporting-block A and cross-bar F of the plates D D, carrying the coupling-head of my improved car-coupler, substantially as herein described.

3. The combination of the bent lever K, pivoted to or upon the platform of a car, with the rod L pivoted to one of the plates D of an automatic car-coupler, constructed substantially as herein described.

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