

(No Model.)

M. J. COLBOURNE.
CAR COUPLING.

2 Sheets—Sheet 1.

No. 349,694.

Patented Sept. 28, 1886.

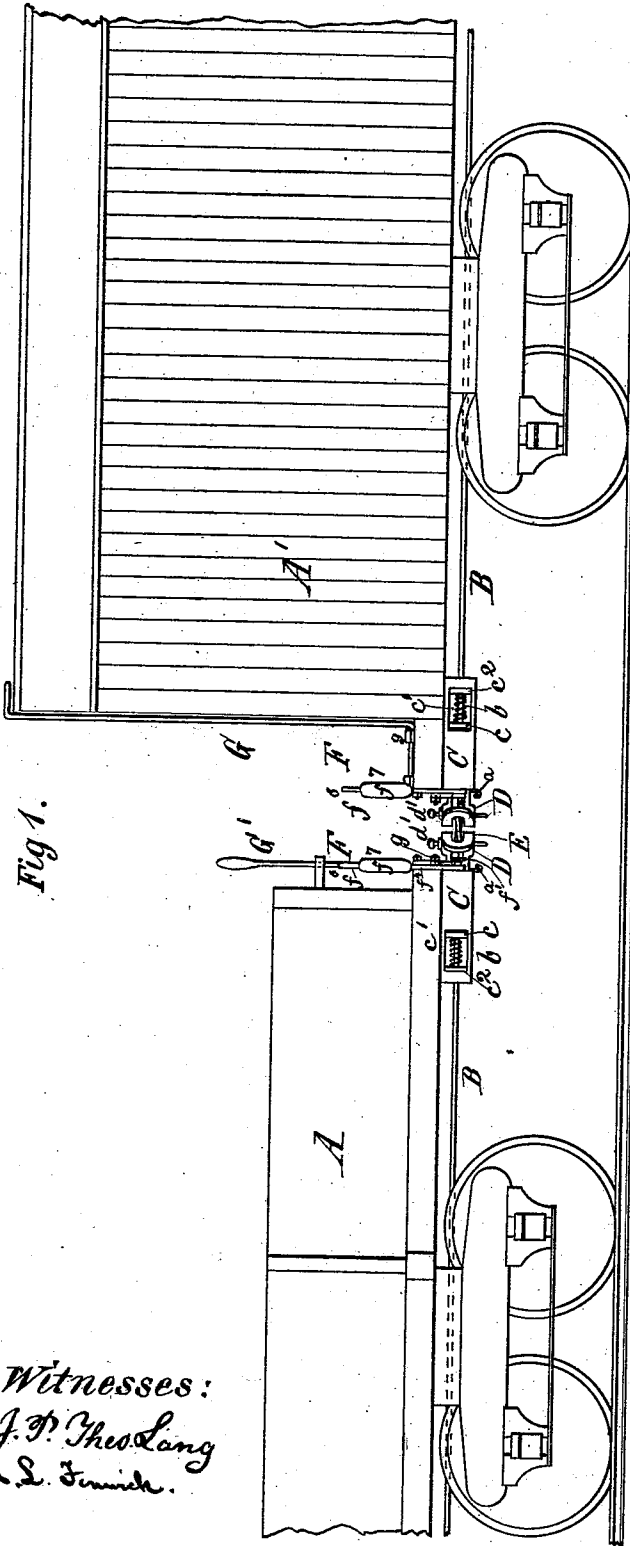


Fig 1.

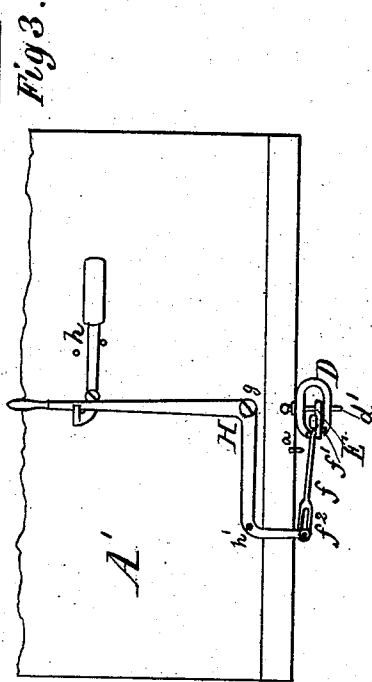
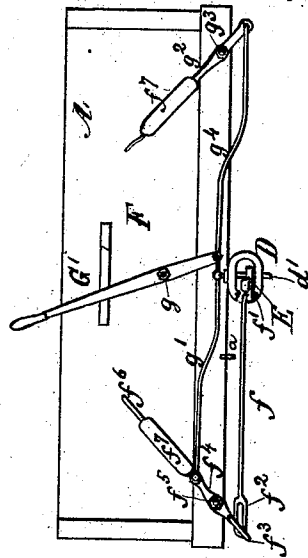


Fig 3.

Fig 2.



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Inventor:
Mark J. Colbourne
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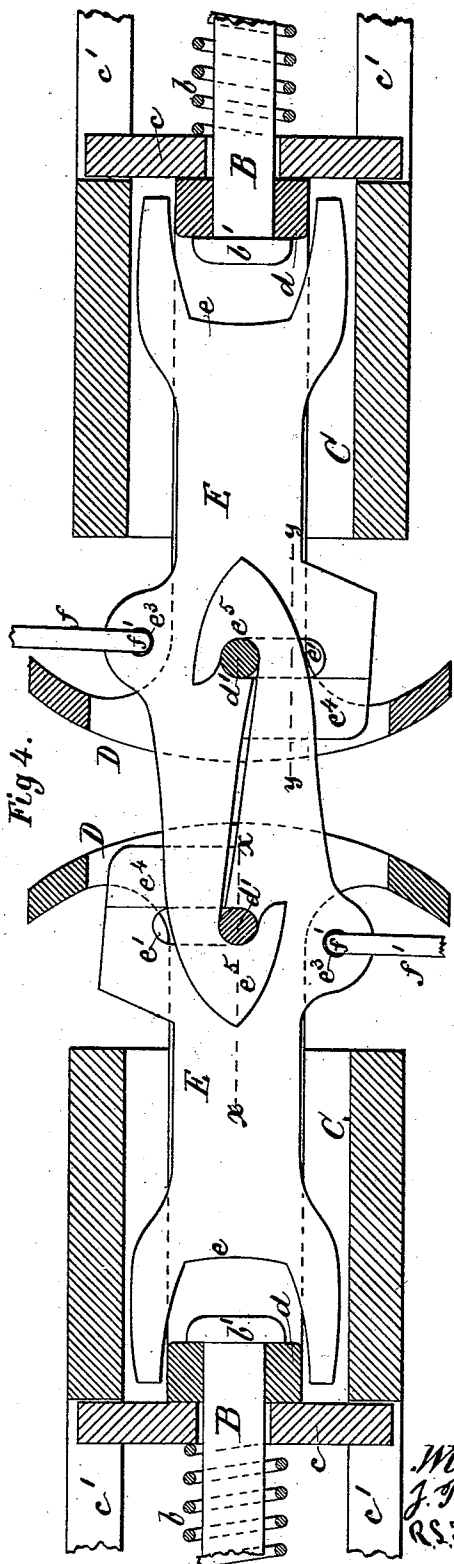


Fig. 4.

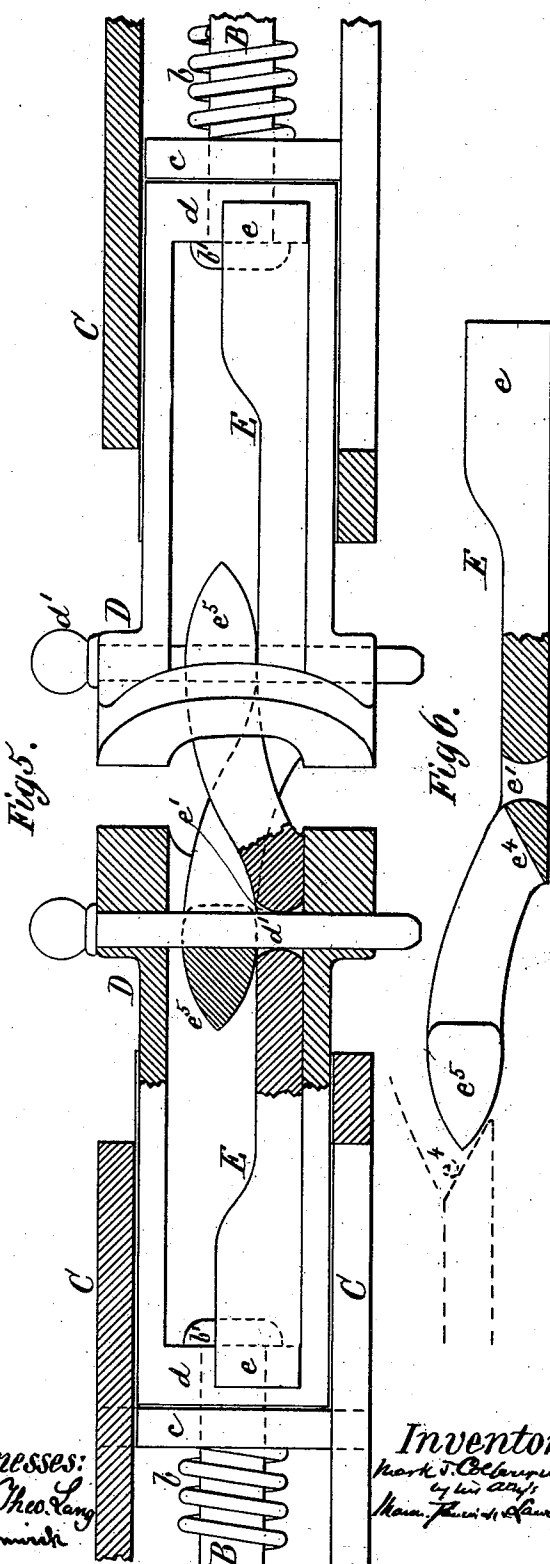


Fig. 5.

Fig. 6.

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UNITED STATES PATENT OFFICE.

MARK J. COLBOURNE, OF THREE RUNS, ASSIGNOR OF ONE-HALF TO JOSEPH W. MERREY, OF BEECH CREEK, PENNSYLVANIA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 349,694, dated September 23, 1886.

Application filed July 21, 1886. Serial No. 208,616. (No model.)

To all whom it may concern:

Be it known that I, MARK J. COLBOURNE, a citizen of the United States, residing at Three Runs, in the county of Clearfield and State of Pennsylvania, have invented certain new and useful Improvements in Automatic Car-Couplers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to automatic car-couplers which are uncoupled by hand from either side of the car, or at the center of its platform, or at the top, as in baggage-cars, and which are longitudinally held by the coupling-pins of the car, and can be very easily and quickly inserted into the coupling-heads or removed therefrom.

It relates also to a novel construction of weighted operating-levers, whereby the couplers are laterally moved and held apart for the purpose of uncoupling, and whereby they are also held toward each other when coupled, in order to prevent accidental uncoupling.

In the accompanying drawings, Figure 1 is an elevation of the end portions of two cars coupled by means of my invention. Fig. 2 is an end view of one of said cars removed from its truck. Fig. 3 is a partial end view of a car-body provided with a modified construction of my coupler-operating mechanism. Fig. 4 is a horizontal central section of the two tunnel-shaped housings for the bumper and coupling-heads and buffer-springs, and a top view of the couplers. Fig. 5 is a vertical central section of the tunnel-shaped heads, and also a section in the line xx of Fig. 1, of the couplers and one of the coupling-heads. Fig. 6 is a side elevation of one of the couplers sectioned along the line yy of Fig. 5, the inclined guide-surface of its fellow coupler being shown in dotted lines.

The letters A A' in the drawings represent end portions of two car-bodies; B, draft-bars; C, tunnel-shaped heads; D, coupling and bumper heads; E, couplers, and F coupling mechanism for operating the couplers.

The car-bodies A A', draft-bars B, tunnel-shaped housings or heads C, and coupling and bumper heads D are of the construction shown, and of the class used for the well-known "link-couplers," the coupling-heads being preferably made of wrought metal.

The rear end portions, d , of the coupling-heads are held by the draft-bars B and buffer-springs b to a guide-plate, e , of the tunnel-head, which guide-plate is made to slide in slots e' of the tunnel-shaped housing or head. At the rear ends of the slots e' a counter-plate, e'' , is transversely fastened in the tunnel-shaped housing or head, and between the two plates e and e'' the buffer-spring b is inserted. The draft-bar B passes freely through the plates e and e'' and spring b , and is by means of a head, b' , attached to the end portions, d , of the coupling-head. This end portion, d , is loosely clasped by a forked head, e , of the coupler E, so that the coupler may freely swing about said end portion.

The center portion of the coupler is flat and is provided with a transverse slot, e' , a hole, e'' , and a forwardly-down slope, e''' . The slot e' is occupied by the coupling-pin d' of the car. The hole e'' is the means of connection with the coupling-operating mechanism, as will be seen, and the slope e''' serves as a vertical guide to the front portion of a corresponding coupler of another car, as will be seen. The front portion, e , of my coupler is hooked and pointed, and is, as shown in the drawings, elevated above the center portion or body of the coupler. This special construction, which is very convenient for ordinary cases, is not adapted in all cases, as the couplings will work very well when constructed with front portions, e'' , in line with the center portion of the coupler, and, again, when cars and their coupling-heads are of different heights one coupler with an elevated and one with a straight front portion may be used advantageously without altering the principle of my invention.

It will be understood that with my construction of car-coupling the hook proper of one coupler will always occupy a position above the body portion of the other coupler,

and thus the hooks of the respective couplers will stand in position for receiving the coupling-pins, and this is one of the main features of my invention. The coupler E is moved by means of a connecting-rod, f , of the coupling-operating mechanism F into or out of range of the coupling-pin of the opposite car. This connecting-rod f has a vertical end portion, f' , which occupies the hole e^3 of the coupler, and slotted end portion, f^2 , connected with a T-shaped head-pin, f^3 , of a hand-lever, f^4 . This hand-lever is pivoted at f^5 to the front portion of the car, near its side, so as to be easily reached by the brakeman without going between the cars. The upper or handle portion, f^6 , of said lever is weighted at f^7 , whereby it is held down when thrown out of its equilibrium, and by merely throwing it in or outward the coupler E is moved and held in or out of range of the coupling-pin of the opposite car.

In order to couple two cars their levers f^4 are thrown outward, thus causing the front portions, e^5 , of the couplers to be moved toward the center line of the cars. The cars are then pushed together, the hooks e^5 passing by the coupling-pins d' and slightly pushing back the levers f^4 , and then engaging with the coupling-pins d' by being pushed against them through the weight of the levers f^4 . The cars thus coupled are drawn by their coupling-pins, and as the respective couplers E engage with both coupling-pins it will be seen that the breakage of one coupler would not cause the cars to become uncoupled, as the other coupler would still hold them together.

To enable the manager to operate the couplings from the top of the car a centrally-located lever, G, is pivoted at g to the front portion of the car, and connected by means of a connecting-rod, g' , with the lever f^4 , as shown in Figs. 1 and 2. To enable the manager to operate the coupling mechanism at either side of the car, I provide a lever, g^2 , pivoted at g^3 to the front portion of the car, and having an upper weighted portion, f^7 , and connected to the central lever, G, by a connecting-rod, g^4 , as shown in Fig. 2. This construction may be modified, as shown in Fig. 3, by omitting the side levers and using a central crank-lever, H, in place of lever f^4 , and locking the same by a hooked lever, h , weighted at one end. In place of lever G a short lever, G', will be used, as seen in Figs. 1 and 2, when the car has a low body.

When the cars are to be uncoupled, they are pushed together far enough to clear the hooks from the pins, and the levers f^4 or g^2 are thrown outward, whereby the couplers E are swung horizontally away from the coupling-pins d' , and the cars can be moved apart.

The construction of the couplers is in all respects such that they have a full freedom to play horizontally and vertically to the extent required, and consequently they will operate perfectly on short curves and rough roads,

and with coupling-heads of different heights. Thus, while the coupling-heads may yield laterally while rounding curves, the weighted operating-levers always prevent the coupling-hooks from parting with the coupling-pins, although the couplings may not stand in line with their respective cars; or, when one coupling-head is lower than the other, the couplers may be held more or less inclined without losing their hold on the coupling-pins.

If it should be necessary to apply a new coupler for one already in use, the connecting-rod f can be lifted out of the hole e^3 of the coupler, and the coupling-pin d' removed from the coupling-head, whereupon the coupler can be removed by hand and the new coupler inserted, and then the coupling-pin inserted into the coupling-head and passed through the slot e' of the new coupler, and the connecting-rod connected with the coupler by being inserted in the hole e^3 of the same. My couplers are attachable and detachable from the cars in almost as ready a manner as ordinary coupling-links are manipulated. A hook, a , is provided on each car, into which the angular end portion of the connecting-rod f is placed, in order to keep it from dangling about the car when disconnected from its respective coupler E.

I will here state that I make the couplers of different lengths, and provide the crooked couplers with front portions of different heights, so as to make them answer for coupling cars with differently-constructed coupling-heads and of a great variety of heights; also, that the described levers of the coupling mechanism may be more crooked than shown, in order to perfectly serve their purposes in cases where the construction of the car-platforms makes it desirable; also, that the coupling mechanism may be modified by providing the lever H with a hole, h' , which, whenever desirable, may be used as the fulcrum in place of that described by removing the bolt from fulcrum g and placing it into the hole h' and attaching it suitably to the car.

What I claim is—

1. In combination with cars having coupling-heads D and coupling-pins d' , the coupler E, having a slotted end portion, e , transverse slot e' , and hooked front portion, e^5 , substantially as and for the purpose described.
2. The detachable coupling E, having a slotted end portion, e , transverse slot e' , hooked front portion, e^5 , and a sloped guide, e^4 , substantially as and for the purpose described.
3. The swinging coupling E, having an end portion, e , transverse slot e' , and hooked front portion, e^5 , coupling-head D, and coupling-pin d' , in combination with the connecting-rod f and weighted lever f^4 , substantially as and for the purpose described.
4. The swinging coupling E, having an end portion, e , transverse slot e' , and front hooking portion, e^5 , coupling-head D, and coup-

ling-pin d' , in combination with the levers f'
 g' G' , and suitable connecting-rods, substan-
tially as and for the purpose described.

5 The combination, with two cars having
coupling-heads D and coupling-pins d' , of two
couplings, E, having hooked front portions,
 e' , the hooked portion of one coupling stand-
ing above the central or body portion of the

other coupling when the cars are coupled, sub-
stantially as and for the purpose described. 10

In testimony whereof I affix my signature in
presence of two witnesses.

MARK J. COLBOURNE.

Witnesses:

JOSEPH W. MERREY,
ROGER L. POTTER.