

(No Model.)

G. W. SMILLIE.
CAR COUPLING.

No. 508,442.

Patented Nov. 14, 1893.

Fig. 1.

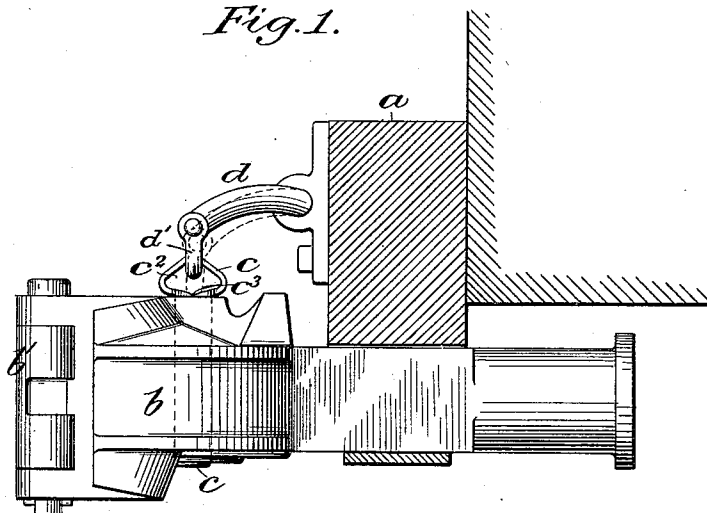


Fig. 2.

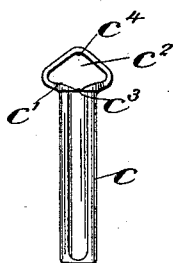


Fig. 3.



Witnesses:-

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Inventor:-

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UNITED STATES PATENT OFFICE.

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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 508,442, dated November 14, 1893.

Application filed January 24, 1893. Serial No. 459,566. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. SMILLIE, a citizen of the United States, and a resident of Newark, in the county of Essex and State of New Jersey, have invented new and useful Improvements in Car-Couplers, of which the following description, taken in connection with the drawings herewith accompanying, is a specification.

My invention relates to the class of car-couplers provided with a vertically operating pin or bolt as the device for adjustably locking the coupling knuckle or link (according to the character of the coupler) with which it is provided, in a closed position, and which said pin or bolt is operated or raised and lowered from or into engagement with the coupling knuckle or link, by means of an operating lever supported on the car which is provided with an arm projecting therefrom in a position over the said locking pin or bolt and connected with the latter through the medium of a connecting link. This locking pin or bolt is usually provided with a head piece having a longitudinal slot or opening therein to receive the link of the operating lever and allow for the required play or movement of the connecting parts; but it has been found in practice that on some classes of cars where it is necessary that the coupler be placed or located under projecting platforms or other surfaces and the space allowed for the vertical movement of the pin or bolt and the connecting arm of its operating lever is consequently limited, the proper vertical movement of the pin or bolt is interfered with or prevented by reason of the engagement or contact of the arm of its operating lever with such projecting platform or other surface before the pin or bolt has been raised sufficiently to disengage with the engaging knuckle or link; and it has been one of the objects of my invention to reduce the usual upward movement of the arm of the operating lever to operate or raise the locking pin or bolt, by having the drawing point or upper end of the slot or opening in nearer position to the end of the pin proper and without reducing the size of the slot or opening, thus allowing the locking-pin or bolt to be operated within a smaller space than heretofore.

It has also been the object of my invention

to have the slot or opening in the pin or bolt of such size and form as to provide for all undue movement of the draw-head of the coupler, caused by the pulling and coming together of the cars, without causing any strain or binding of the connecting parts; and also in such manner that the end of the lever connecting link is always caused to engage with the pin, to operate the same, at a central point in line with its movement, thus preventing any liability of the pin or bolt binding against the sides of the opening in which it operates.

These objects I secure by means of the construction and arrangement of parts as will hereinafter be set forth in detail and pointed out in the claims.

Referring to the drawings:—Figure 1, represents a portion of a car-body or part thereof, in section, with a car-coupler and its connecting operating lever supported thereon. Fig. 2, shows a side view of the locking-pin or bolt, detached from its position in the coupler; and Fig. 3, shows a top view of the locking-pin or bolt.

To explain in detail,—*a*, represents the car-body or part thereof, *b*, the draw-head of the coupler, *b'* the hinged coupling hook or knuckle, and *c* the locking-pin or bolt for engaging with the inner arm of the hook or knuckle to adjustably lock the same in a closed position in a manner as well understood by those skilled in the art.

d represents the arm of an operating lever (not shown in the drawings) which is loosely journaled in suitable bearings on the face of the car with one end projecting the side of the latter in a convenient position to be operated by the trainman or other person. The end of this arm *d* extends outward to a position over and in line with the pin or bolt *c* and has connection with the latter through the medium of a link *d'*, which latter is pivotally connected with the arm *d* and connects with the pin or bolt *c* through an opening *c'* in the head of the same as shown in the drawings. In the present instance and according to my invention, I have formed a groove or depression *c'* in the head *c'* in a central line with the pin proper, in such manner that in actual practice the distance between the upper drawing point of the head, represented at *c'*, and the end of the pin proper, may be

very materially reduced without decreasing the space for the vertical movement or play of the link d' . By this described construction whereby the height of the head of the locking-pin or bolt is reduced, I am enabled to adapt my coupler to platform or other style of cars having projecting ends, in the usual manner and without requiring any change in location or in the means of attaching the same on the car or part thereof. The opening c^2 in the head of the locking-pin is also formed of sufficient length or dimensions horizontally as to allow for longitudinal movement of the coupler in its relation to the car, which is caused by the pulling apart and coming together of the cars, without causing liability of any binding of the movable parts by the undue lateral strain upon the locking-pin by the link d' , as will be readily understood.

The walls of the opening c^2 are tapered from its opposite horizontal ends, which latter are located in a line between the opposite vertical ends c^3 and c^4 of the opening c^2 , toward the said vertical ends c^3 and c^4 in order that the engaging end of the link d' may be caused to move to either of said central points when engaging therewith to raise or lower the pin, as will be readily understood. The engaging end of the link d' being thus caused, by reason of the peculiar formation of the opening c^2 as described, to engage with the head of the locking-pin at a central point in line therewith, to operate the same; it is obvious that the draft upon the locking-pin will always be in a direct line and thus prevent any liability of the same binding against the sides of the opening in which it operates, as might be the case if the link engaged with the head c' at a point other than in a central line,

which latter would be apt to be the case if the coupler were moved slightly outward or inward from its normal position in relation to the car. Such liability however is obviated by my improved construction as described and will be readily understood.

Having thus set forth my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination in a car-coupler, of a vertically operating locking-pin or bolt provided with a head having an opening therein with a centrally located groove or depression in its lower wall, and an operating lever provided with an arm extending in a position in line above the said locking-pin and connected therewith through the medium of a connecting link, in a manner substantially as described and for the purpose set forth.

2. The combination in a car-coupler, of a vertically operating locking-pin or bolt provided with a head having an opening therein of substantially a diamond shape, and an operating lever having connection with the head of said locking-pin or bolt through the medium of a connecting link, substantially as described and for the purpose set forth.

3. The combination in a car-coupler, of a vertically operating locking-pin or bolt provided with a head having an opening therein with a centrally located groove or depression in its lower wall, and an operating lever connected with said locking-pin or bolt through the medium of a connecting link, in a manner substantially as described and for the purpose set forth.

GEO. W. SMILLIE.

Attest:

CHAS. F. DANE,
A. L. HAYES.