

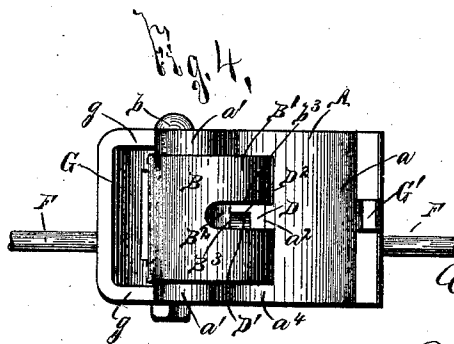
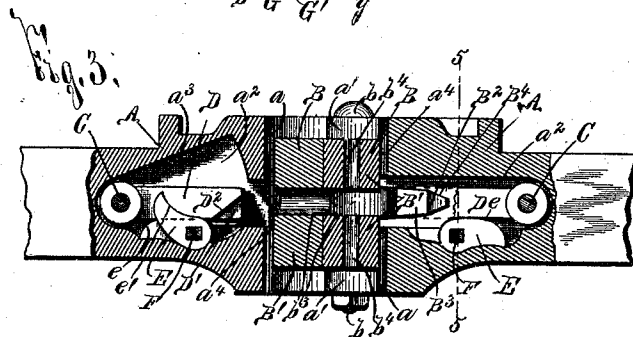
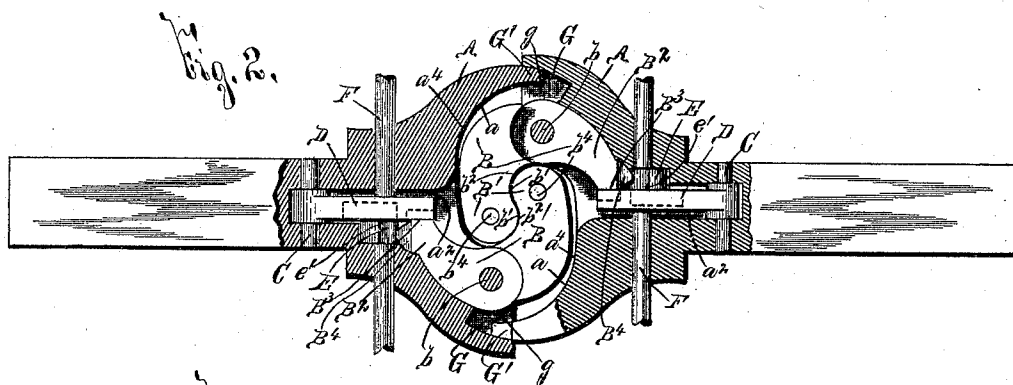
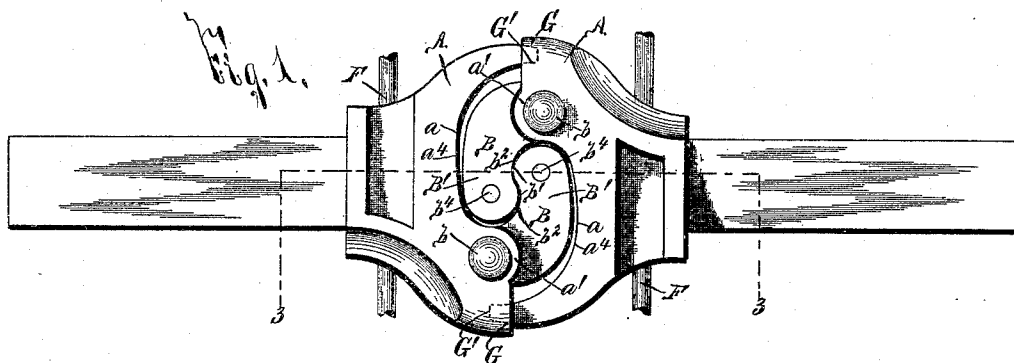
(No Model.)

3 Sheets—Sheet 1.

C. H. OLDS.
CAR COUPLING.

No. 473,951.

Patented May 3, 1892.



WITNESSES:

W. C. Chase,
W. H. Randall,

INVENTOR

Charles H. Olds

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ATTORNEYS.

(No Model.)

3 Sheets—Sheet 2.

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Fig. 5,

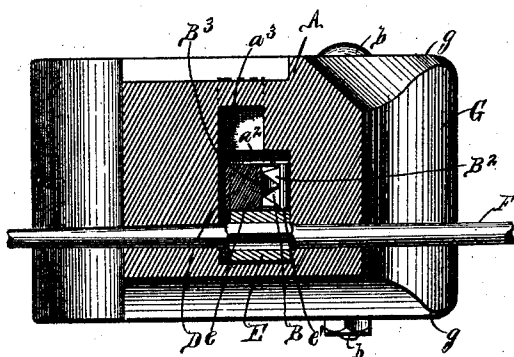


Fig. 6,

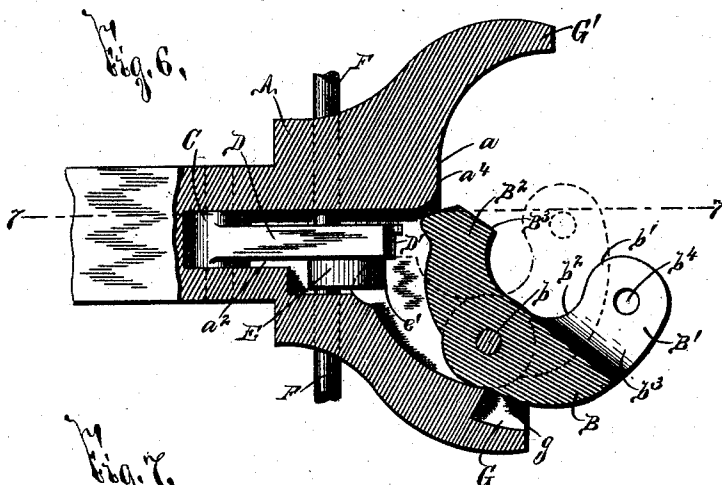
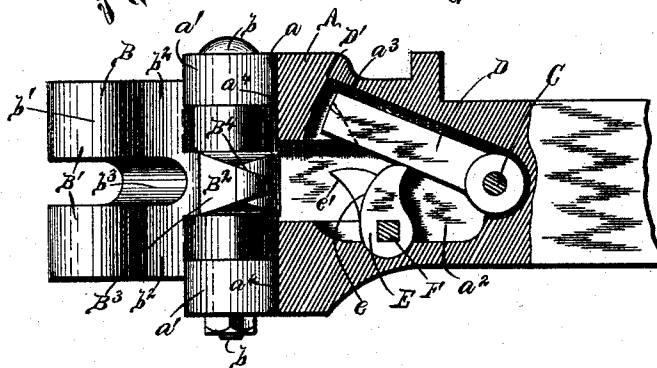


Fig. 7,



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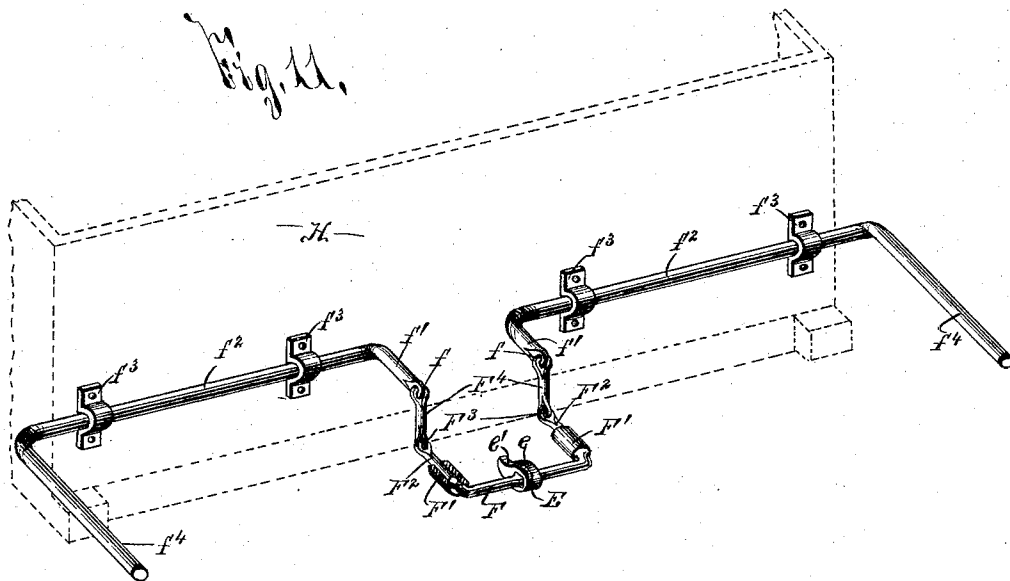
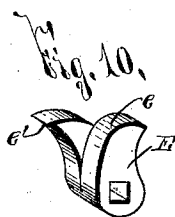
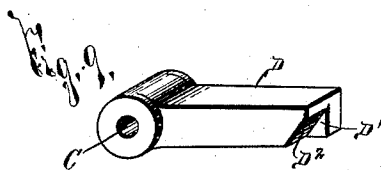
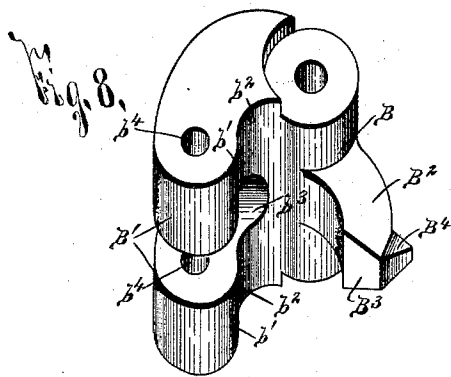
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3 Sheets—Sheet 3.

C. H. OLDS.
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No. 473,951.

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UNITED STATES PATENT OFFICE.

CHARLES H. OLDS, OF SAYRE, PENNSYLVANIA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 473,951, dated May 3, 1892.

Application filed August 4, 1891. Serial No. 401,679. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. OLDS, of Sayre, in the county of Bradford, in the State of Pennsylvania, have invented new and useful Improvements in Car-Couplings, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to improvements in car-couplers, and has for its object the production of a simple and effective device which is strong and durable in operation and extremely practical in use.

To this end it consists, essentially, in locking-dogs mounted on the respective draw-heads and formed with vertical engaging faces and inwardly-extending arms, catch-levers pivoted at one end to the draw-heads, with their opposite extremities adapted to engage the inwardly-extending arms of the locking-dogs, and cams having engaging faces for engaging and rocking the catch-levers and locking-dogs.

The invention furthermore consists in spindles for operating said cams, formed with a socket, and actuating-spindles journaled on the car and loosely connected to said sockets for permitting disengagement of the cam-operating shafts should the draw-head become disengaged from its fastener.

The invention still furthermore consists in a horizontal shoulder on one of said sockets and a projection on the other adapted to engage said shoulder and prevent vertical disengagement of the couplers, and in the detail construction and arrangement of the parts, all as hereinafter more particularly described, and pointed out in the claims.

In describing this invention reference is had to the accompanying drawings, forming a part of this specification, in which like letters indicate corresponding parts in all the views.

Figure 1 is a top plan view of the sections of my improved coupler shown as locked together. Fig. 2 is a similar view, partly in section, representing the internal parts of the coupler. Fig. 3 is a longitudinal vertical sectional view taken on line 3 3, Fig. 1. Fig. 4 is a face view of one of the detached sections of the coupler. Fig. 5 is a transverse vertical sectional view taken on line 5 5, Fig. 3.

Fig. 6 is a longitudinal sectional view of one of the coupler-sections, showing the locking-dog as in its outward inoperative position. Fig. 7 is a longitudinal vertical sectional view taken on line 7 7, Fig. 6. Figs. 8, 9, and 10 are respectively isometric perspectives of the locking-dog, the catch-lever, and the cam for forcing the catch-lever out of operative position; and Fig. 11 is an isometric perspective of the actuating-shafts secured to the car, shown herein by dotted lines, and the cam-operating shaft, illustrating the detachable connection of the cam-shaft and its actuating-shaft.

A A represent the draw-heads, which may be of any desirable form, size, and construction, providing their outer extremities are suitably formed for the reception and operation of the locking-dogs B, the catch-levers D, and their operating-cams E. As here shown, the draw-heads are formed with a vertically-arranged recess or groove a , the projecting shoulders a' , the internal chamber a^2 , and its offset a^3 . The locking-dog B is pivoted by a pin b to the shoulders a' and is formed with the engaging arm B' and the inwardly-extending arm B², movable in the recess a^2 . As preferably constructed, the dog B is formed on its inner vertical face with the rounded projection b' and the rounded depression b^2 , adapted to engage a corresponding projection and depression on the opposite locking-dog, which, as best shown at Fig. 1, is interposed between said locking-dog B and the adjacent face a^4 of the recess a , formed upon said draw-head and adapted to receive the locking-dog of the opposite draw-head. By this construction the dogs are firmly interlocked and are permitted to have a rolling vertical movement when passing around curves, thus greatly increasing the efficiency and durability of my coupler. In order to attach the coupler for use with the ordinary link and pin, the extremities of the locking-dogs are slotted at b^3 and formed with a pin-hole b^4 . The catch-lever D is mounted within the central chamber a^2 of the coupler, its rear extremity being pivoted at C and its forward end adapted to be brought by gravity into engagement with the inner face B³ of the inwardly-extending arm B² of the dog B. Formed at the extremity of said dog upon its face adjacent to the arm B²

is a cut-out D' , having an inclined face D^2 , that when the draw-heads are brought together is engaged by the inclined shoulder B^4 at the extreme end of the locking-dog arm B^2 , thus elevating the free extremity of the dog D , which, after the passage of the arm B^2 , falls downward into its operative position and automatically locks the locking-dog in engagement with the corresponding locking-dog.

The cam E for disengaging the catch-lever D from the locking-dog is mounted in the lower face of the internal chamber a^2 of the draw-head and is arranged with its forward extremity rigidly secured to a shaft F and its rear extremity adapted to be moved up and down.

e is a face of the cam E , adapted to engage the under side of the catch-lever D for elevating the same and permitting the locking-dog B to swing out of operative position and for permitting said catch-lever to then assume its normal horizontal position,

e' is an engaging face arranged in a different plane from the face e and adapted to encounter the rear extremity of the arm B^2 of the locking-dog when the cam E has released said dog from engagement by the catch-lever, thereby forcing said dog from its operative position at the same time that it is freed from engagement by said catch-lever.

G represents a socket at one side of the draw-head formed with horizontal walls g , adapted to engage projections G' upon the adjacent side of the opposite draw-head, and thus prevent said locking-dogs from vertical disengagement, which would otherwise take place should one of the dogs become loosened from its fastening. As shown in the drawings, the projections G' are of considerably less cross-sectional area than the sockets G , for permitting a horizontal rolling movement of the couplers when the cars carrying the same are rounding a curve. This latter feature of my invention is a vital importance.

Although car-couplers having vertically-arranged locking-dogs are particularly applicable for automatic coupling, it is well known that should one of the couplers become disengaged from its fastening to the car the entire coupling or one extremity thereof falls by gravity and frequently directly upon the track, thus derailing the cars and causing great damage both to life and property. By my invention, however, it is impossible for the locking-dogs to have sufficient vertical movement to permit disengagement of the couplers.

The shaft F extends to the outside of the draw-heads either at one or both extremities and is provided with a socket F' , in which is detachably mounted a pin F^2 , pivoted at F^3 to a link F^4 . Pivoted at f to this link F^4 is one arm f' of the actuating-shaft f^2 , journaled in brackets f^3 , secured to the car H , (shown by dotted lines,) and provided with the hand-engaging portion f^4 for rocking the shafts f^2 and F to operate the cam E .

Upon disengagement of one of the draw-heads from its fastening to the car it will readily be apparent that its forward end is carried by the draw-head with which it is interlocked, and that, by reason of the detachable connection of the pin F^2 , which is free to slide from the socket F' , the rear extremity of said draw-head is entirely freed from the car without bending or breakage of the shaft carrying the movable catch for the locking-dog or the actuating-shaft and its connections for operating said cam-shaft. This construction is of vital importance, since when the rear end of one of the sections or draw-heads of my coupling is disengaged from its fastening there is not the slightest liability of derailment of the cars, as the draw-head is prevented from falling, as previously stated, nor of injury to the actuating mechanism of the locking-dog, because the rear end of said section or draw-head is readily detached therefrom. Consequently a great saving is occasioned in the loss of life and property and in the running expenses of the railroad, and couplings having vertically arranged locking-dogs are rendered practical for use.

The operation of my invention will be readily perceived from the foregoing description and upon reference to the drawings, and it is evident that my coupler is extremely practical, and when through undue strain or imperfection in the parts one of its sections become disengaged from the car all liability of its derailment is entirely obviated. It is also evident that the parts are strong and durable, that no springs are used, and consequently its operation is positive and certain.

As the detail construction and arrangement of the parts of my invention may be somewhat changed from that shown and described, I do not limit myself to such precise detail construction and arrangement thereof.

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

1. In combination, a draw-head adapted to carry one member of a car-coupler, a shaft journaled in the draw-head and provided with a socket, an arm or pin removably mounted in said socket, and an actuating-shaft mounted on the car and connected to the arm or pin removably mounted in the socket in the shaft journaled in the draw-head, substantially as and for the purpose set forth.

2. In combination, a draw-head adapted to carry one member of a car-coupler, a shaft journaled in the draw-head and provided with a socket, a pin loosely mounted in said socket and removable therefrom, a link pivoted to the pin, an actuating-spindle having a hand-engaging portion, and a crank pivoted to said link, substantially as and for the purpose set forth.

3. In combination, a pair of draw-heads, locking members on the opposite draw-heads

having vertically-arranged locking-surfaces, a socket on one of the draw-heads, and a projection on the other draw-head of considerably less cross-sectional area than the socket and adapted to enter said socket for preventing vertical disengagement of the locking members, substantially as and for the purpose set forth.

4. In combination, a draw-head having a central chamber, a dog pivoted to the draw-head and provided with two arms, one being adapted to engage a corresponding locking member and the other extending within the recess in the draw-head and formed with the inclined face B⁴ and the vertically-arranged engaging face B³, and a catch-lever having one end pivoted to the draw-head and the other provided with the cut-out D' and the inclined face D³ and adapted to be forced by gravity into engagement with the inwardly-extending arm of the locking-dog for retaining said dog in its operative position, substantially as and for the purpose specified.

5. In combination, a draw-head having a central chamber, a dog pivoted to the draw-head and provided with two arms, one being adapted to engage a corresponding locking member and the other extending within the recess in the draw-head, a catch-lever having one end pivoted to the draw-head and the other adapted to be forced by gravity into engagement with the inwardly-extending arm of the locking-dog for retaining said dog in its operative position, and a cam adapted to rock said catch-lever out of engagement with the dog for permitting its movement, substantially as and for the purpose set forth.

6. In combination, a draw-head having a central chamber, a dog pivoted to the draw-head and provided with two arms, one being adapted to engage a corresponding locking member and the other extending within the recess in the draw-head, a catch-lever having one end pivoted to the draw-head and the other adapted to be forced into engagement with the inwardly-extending arm of the locking-dog for retaining said dog in its operative position, and a cam having a face for engaging said dog and forcing the same out of its operative position, substantially as and for the purpose specified.

7. In combination, a draw-head having a central chamber, a dog pivoted to the draw-head and provided with two arms, one being adapted to engage a corresponding locking member and the other extending within the recess in the draw-head, a catch-lever having one end pivoted to the draw-head and the other adapted to be forced into engagement with the inwardly-extending arm of the locking-dog for retaining said dog in its opera-

tive position, a cam having an actuating-face adapted to engage said actuating-lever and lock the same from engagement with the dog for permitting movement of the dog, and a second actuating-face on said lever adapted to force the locking-dog from operative position, substantially as and for the purpose set forth.

8. In combination, a draw-head, a horizontally-swinging dog having a vertically-arranged engaging face and an inwardly-extending arm, a vertically-movable lever having one extremity pivoted to the draw-head and the other movable toward and away from said inwardly-extending arm of the locking-dog, and a cam having two engaging faces, one being adapted to rock the lever and the other adapted to engage the locking-dog and force the same from operative position, substantially as and for the purpose specified.

9. In combination, a draw-head, a horizontally-swinging dog having a vertically-arranged engaging face and an inwardly-extending arm, a vertically-movable lever having one extremity pivoted to the draw-head and the other movable toward and away from said inwardly-extending arm of the locking-dog, and a cam having two engaging faces, one being adapted to elevate the lever and the other adapted to engage the locking-dog and force the same from operative position, a spindle for operating the cam, and an actuating-spindle journaled on the car with one extremity loosely connected to the cam-operating spindle, whereby the two are automatically separated should the coupler become disengaged from the car and fall to the ground, substantially as and for the purpose set forth.

10. In combination, a pair of draw-heads, horizontally-moving locking-dogs pivoted to the draw-heads and formed with vertically-arranged engaging faces and inwardly-extending arms, catch-levers having one extremity pivoted to the draw-heads and the other adapted to engage said inwardly-extending arms, cams for engaging said catch-levers, a horizontal stop-face on one of the draw-heads, and a projection on the opposite draw-head for engaging said shoulder and preventing vertical disengagement of the draw-heads, substantially as and for the purpose specified.

In testimony whereof I have hereunto signed my name, in the presence of two attesting witnesses, at Sayre, in the county of Bradford, in the State of Pennsylvania, this 23d day of June, 1891.

CHARLES H. OLDS.

Witnesses:

R. M. HOVEY,
B. P. FLORY.