(No Model.) 2 Sheets—Sheet 1.

A. J. CHAPEL.

CAR COUPLING.

No. 421,671. Patented Feb. 18, 1890.

Fig. 1.

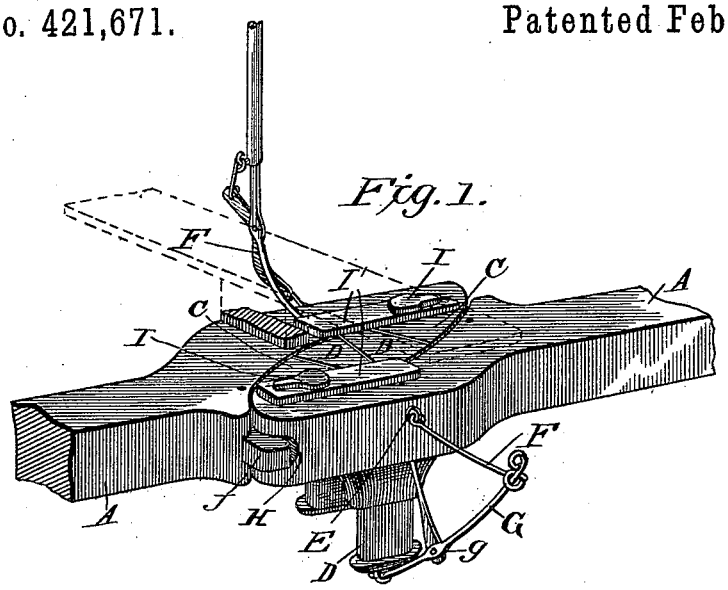


Fig. 2.

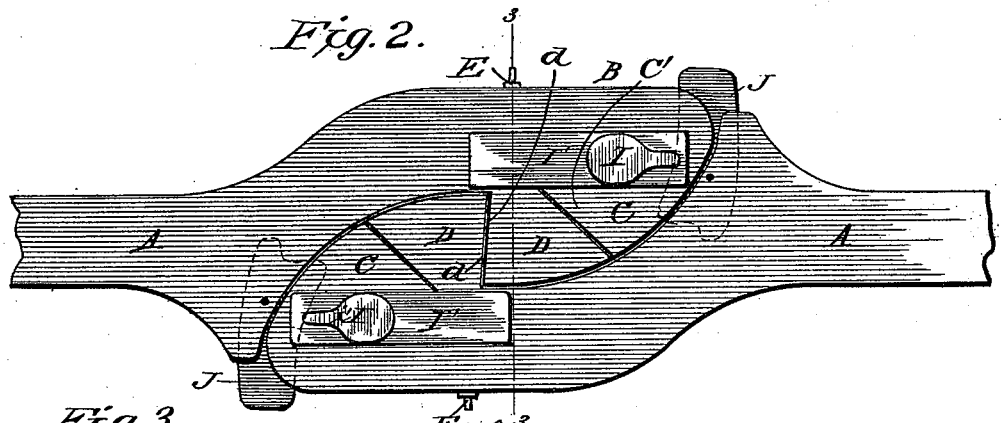


Fig. 3.

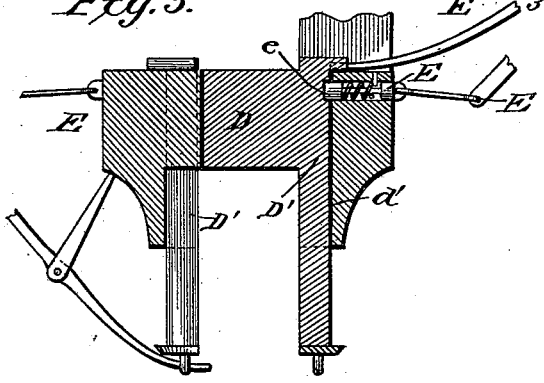
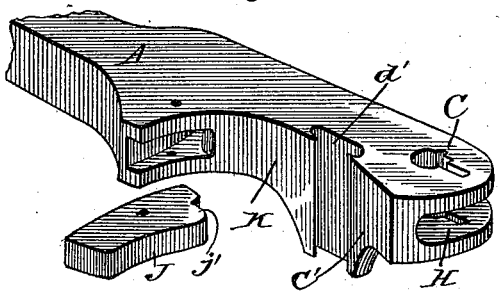


Fig. 4.



WITNESSES:

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P. B. Turpin.

INVENTOR:

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BY Munn & Co

ATTORNEYS

(No Model.) 2 Sheets—Sheet 2.

A. J. CHAPEL.

CAR COUPLING.

No. 421,671. Patented Feb. 18, 1890.

Fig. 5.

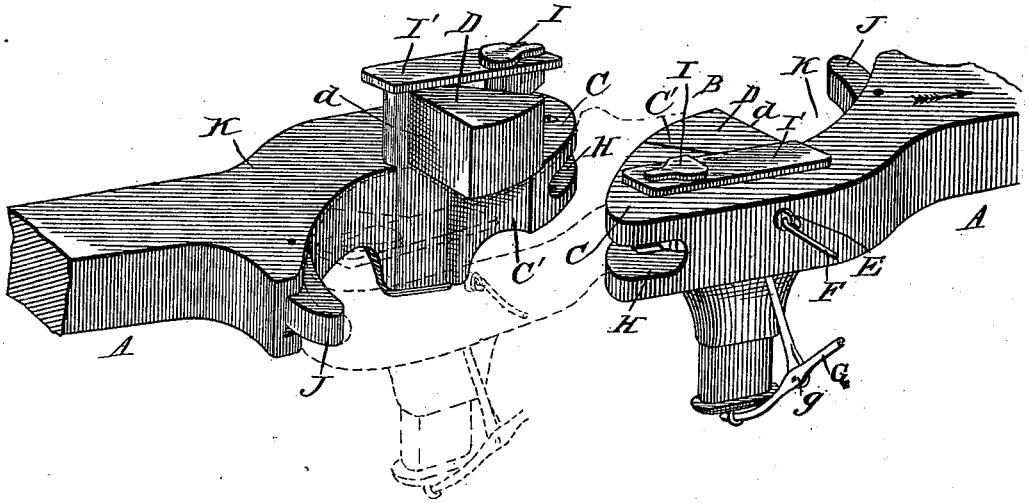
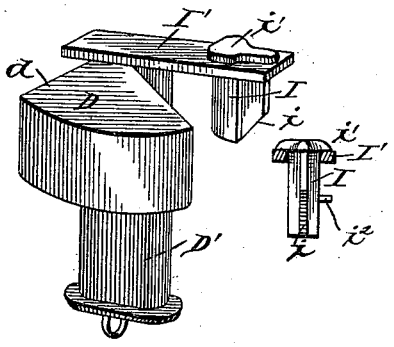


Fig. 6.



WITNESSES:
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UNITED STATES PATENT OFFICE.

ADONIRAM JUDSON CHAPEL, OF ARKANSAS CITY, KANSAS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 421,671, dated February 18, 1890.

Application filed November 13, 1889. Serial No. 330,231. (No model.)

To all whom it may concern:

Be it known that I, ADONIRAM JUDSON CHAPEL, of Arkansas City, in the county of Cowley and State of Kansas, have invented a new and useful Improvement in Car-Couplings, of which the following is a specification.

This invention is an improvement in car-couplings, and especially in that class of such devices commonly known as "twin-jaw couplings;" and the invention consists in certain features of construction and novel combinations of parts, as will be hereinafter described and claimed.

In the drawings, Figure 1 is a perspective view, and Fig. 2 is a plan view, of two draw-bars coupled according to my invention. Fig. 3 is a cross-section on about line 3 3 of Fig. 2. Fig. 4 is a detail view showing a portion of the draw-bar. Fig. 5 is a perspective view showing one coupling with its shoulder-section lifted and the other coupling moved to uncoupled position. Fig. 6 is a detail view of the shoulder-section, coupling-pin, and the arm supporting such pin.

The draw-bars A may be of ordinary construction, and may be secured to the cars in any suitable manner. At their outer or forward ends the draw-bars are provided with the hooks or jaws B, which are formed each of front section C, which is fixed with the draw-bar, and a movable section D, the latter section being for convenience of reference termed the "shoulder-section," it forming the engaging-shoulder *d* of the hook or jaw. This section D is movable transversely to the direction of length of the coupling, and preferably vertically, as shown, it being movable up to release the coupling and down to position to form a part of the hook or jaw. The rear side C′ of the front section C is inclined forward, serving to facilitate the detachment of the coupling when the shoulder-section is moved out of its normal position. As before stated, the section is preferably moved vertically. This may be effected by moving it downward from its normal position, springs being arranged to press it upward; but to avoid such springs it is preferred to make the section D to move upward from its normal position. To conveniently secure the movable shoulder-section, I provide it with a dovetail rib D′, which fits in a dovetail groove *d′* in the coupling draw-bar, such construction serving to hold the shoulder-section so it may be moved up and down. The rib D′ is extended longitudinally, forming a handle-like extension, which facilitates the connection of the operating devices. To hold the shoulder-section in coupled position—that is to say, in a common plane with the front section—a latch or lock E is provided consisting of a rod or bar operating through the draw-bar and arranged to project at its inner end into a notch or socket *e* in the shoulder-section D, when the latter is down in coupled position, said rod E being preferably spring-actuated, so it will move automatically into engagement with the shoulder-section. To release this lock E there is provided a rod F, connected at one end with the rod F and having a sliding connection with the lever G, which is a hand-lever pivoted at *g* and connected with the shoulder-section to operate the same when desired, the lever G enabling the operator to move section D upward, and such section dropping by gravity, as will be understood.

At the right, in Fig. 1, I show the lever G, arranged, as described, on freight-cars, it being pivoted to an arm or bracket projecting from the draw-bars and connecting with or engaging the shoulder-section at the lower end thereof. At the left, in said Fig. 1, the lever G is shown pivoted to the platform and engaging the upper portion of the shoulder-section, and the lock-operating rod F is a lever connected at one end with the lock E and connected at its other end with a tube sliding on the lever G. It is manifest, however, that the arrangement of the levers may be modified without departing from my invention.

The lock E for holding the shoulder-section in coupled position is an important feature of my invention, inasmuch as when one shoulder-section is unlocked and lifted to uncouple the other shoulder-section is prevented from being lifted by frictional contact with the moved section.

In the forward end of the hook is provided a mortise H, adapted to receive an ordinary coupling link, a pin I being provided to secure the said link. This pin I is movable vertically, and has on its front face an in-

clined edge or bearing *i* for engagement by an entering link, which will raise and pass under the pin, the latter falling through and securing the link. Consequently the improved coupling may be used to couple with an ordinary link-and-pin coupling. It will be noticed that the link-mortise H opens laterally, as well as out of the end of the hook, the lateral opening thereof enabling its movement into engagement with the lock of the meeting draw-bar, presently described.

To enable the operation of the coupling-pin by the same operating devices as the movable shoulder-section, it is preferred to connect said pin and section, to which end it is preferred to provide the shoulder-section with an arm or bar I′, which projects over the pin-opening in the draw-bar and has an opening to receive the pin I, such pin being movable vertically in said opening and having at its upper end a cap-plate or flange *i′*, projecting over the opening in the arm or bar I′ and operating to exclude rain, snow, and the like. It will be seen that the coupling-pin is movable independently of and also with the arm of the shoulder-section, so it may be lifted by an entering-link without disturbing the shoulder-section, and yet may be lifted by the same operating devices as such section to enable the releasing of a link held by such pin without requiring the brakeman to go between the cars. To limit the upward movement of the pin I in the arm I′, it is provided with a lateral pin i^2, which engages the under side of the arm I′ when the pin is in its uppermost position and stops the movement of such pin.

A lock portion J is provided on the draw-bars to enter the link-mortise of the meeting draw-bar and prevent the hooks or jaws when coupled from moving up or down out of such couple or engagement. This lock J is by preference arranged at the rear end of the hook-cavity K, and is pivoted on a vertical pivot at *j*, between its ends, so it may tilt to permit the hook of the meeting draw-bar to move into such cavity K and will operate to secure it therein when the two hooks are properly engaged, as will be understood from the drawings, so that the hooks cannot become disengaged except by the movement of one of the sliding shoulder-sections transversely, when the two draw-bars will slide longitudinally out of engagement, the inclined rear face of the front hook-section facilitating such detachment, as will be understood from the drawings. These locks J are important features, inasmuch as they prevent the breaking of the train. It will be noticed from the drawings that each lock J is movable on a central pivot *j*, and that as the front end of the draw-head moves into the hook-cavity K it strikes the outer edge of the outer end of the lock and presses it in out of the way until the inner wall of the link-mortise of such draw-head passes the pivot *j*. After the pivot *j* is passed the entering hook presses the inner end of the hook in and its outer end out until the inner wall of the link-mortise passes the outer edge of the inner end of the lock, when the outer wall of such mortise will engage upon the outer end of the lock and press its inner end out so it will engage at *j′* with the inner wall of the link-slot, as will be understood from Fig. 2.

Having thus described my invention, what I claim as new is—

1. A hook or jaw coupler, substantially as described, having its hook formed with a front section and with a transversely-movable section arranged in rear of the front section, the outer side or face of the front section being curved or inclined to the direction of length of the coupler, substantially as set forth.

2. A hook or jaw coupler having a front section the rear face of which is inclined forward, and a vertically-movable shoulder-section arranged in rear of the front section and having its front face conformed to the rear face of such front section, substantially as set forth.

3. A hook or jaw coupling having a front hook-section the rear face of which is inclined forward, having in rear of such front section a dovetail groove, and the movable shoulder-section having a dovetail rib sliding in such groove and having its front face conformed to and fitting snugly against the rear inclined face of the front section, all substantially as set forth.

4. A hook or jaw coupler having a shoulder-section which is movable out of the plane of the jaw and provided in advance of such section with a forwardly-inclined face, substantially as described.

5. An improved hook or jaw coupling adapted to co-operate with a meeting coupler having in rear of its coupling-shoulder a lock by which to prevent the couplings from independent vertical movement, such lock being pivoted substantially as described, and for the purposes set forth.

6. A hook-coupler, substantially as described, having a shoulder-section movable in a line transversely the direction of length of the coupling and provided with a lock for such shoulder-section, substantially as set forth.

7. A hook-coupler having a shoulder-section movable in a line transversely the direction of length of the coupling, a lock for securing such section in coupled position, the lever for operating such shoulder-section, and a connection between such operating-lever and the lock for the shoulder-section, all combined substantially as set forth.

8. A hook or jaw coupler having its hook divided, forming a front section and a transversely-movable shoulder-section, arranged in rear of the said front section, substantially as set forth.

9. A hook or jaw coupler, substantially as

described, having its hook divided, forming a front section, the rear face of which is inclined forward, the shoulder-section movable transversely and having its forward edge coinciding with the rear edge of the front section, and the lock for securing such shoulder-section in coupled position, substantially as set forth.

10. A hook or jaw coupler comprising the draw-bar having a dovetail groove, the shoulder-section having a dovetail rib sliding in said groove, and having such rib extended longitudinally to facilitate the connection of the operating devices therefor, and the operating devices engaging such extension of the rib, substantially as set forth.

11. A hook or jaw coupler having a link-mortise and a coupling-pin entering the same and constructed to co-operate with a twin jaw and provided with a movable shoulder-section, the shoulder-section and coupling-pin being connected, whereby the same operating devices may operate both the shoulder-section and pin to effect the uncoupling, substantially as set forth.

12. The coupling substantially as described, comprising the hook having a front section and provided with a link-mortise, the transversely-movable shoulder-section, an arm or bar extended from such shoulder-section over the front section, and the coupling-pin movably supported on said arm or bar, all substantially as set forth.

13. In a car-coupling, a hook or jaw coupling, substantially as described, having in rear of its coupling hook or shoulder a laterally-opening cavity and provided at the rear outer edge of such cavity with a lock J, pivoted between its ends at *j*, and having at its inner end a part arranged to engage in the link slot of a meeting coupling, the hook or jaw coupling being provided with a movable shoulder-section, substantially as set forth.

14. An improved hook or jaw-coupler having in rear of its coupling-jaw a hook-cavity and provided at the rear outer edge of such cavity with a locking-bar pivoted between its ends and arranged to operate substantially as and for the purposes set forth.

15. The combination, in a car-coupling, of the transversely-movable shoulder-section, the lock for such section, the hand-lever arranged to engage and operate said lever, the pivoted lever by which to operate the said lock, and a sliding connection between the said lever and the hand-lever, substantially as set forth.

A. JUDSON CHAPEL.

Witnesses:
P. J. CONDON,
C. H. HOLLAWAY.