

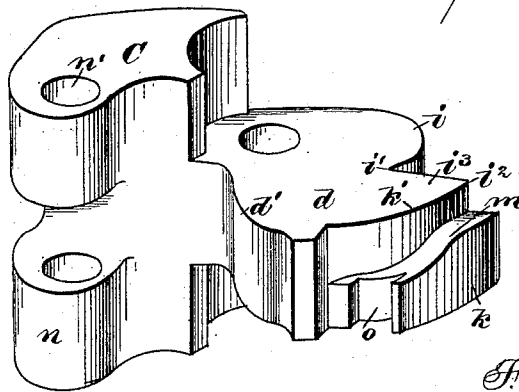
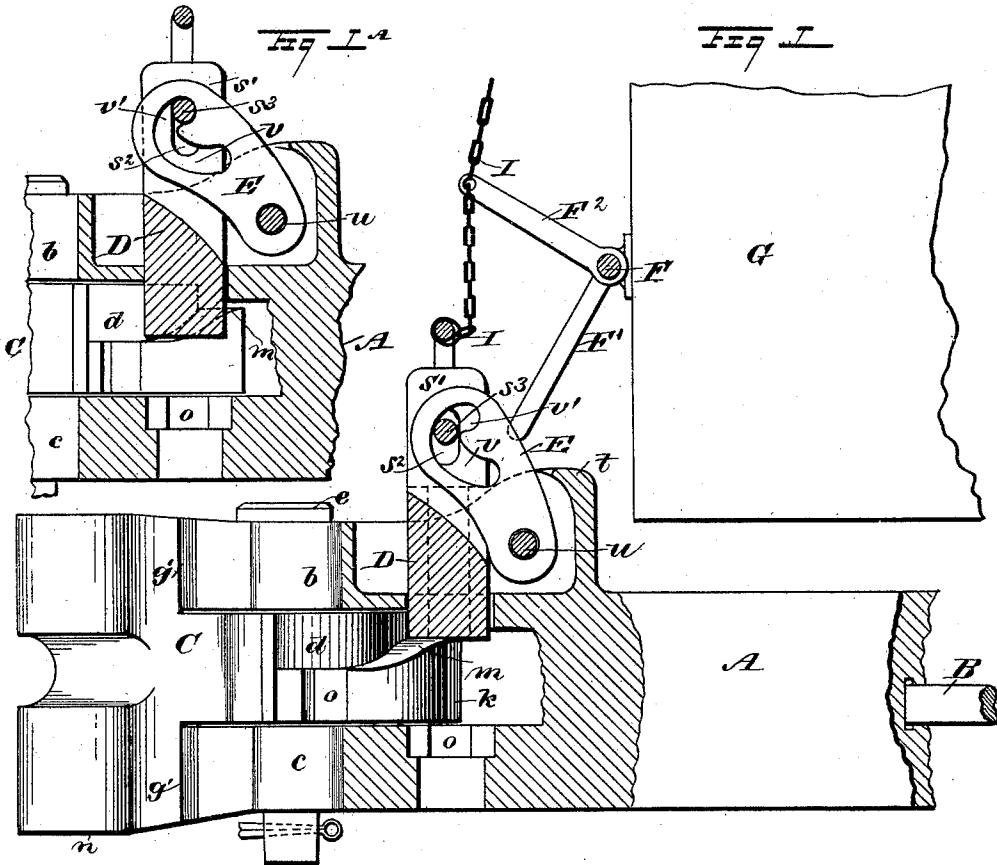
(No Model.)

2 Sheets—Sheet 1.

F. H. BROWN.
CAR COUPLING.

No. 468,739.

Patented Feb. 9, 1892.



WITNESSES.

H. Walker
W. Sedgwick

INVENTOR

F. H. Brown

BY

Munn & Co.
ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

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Fig 3

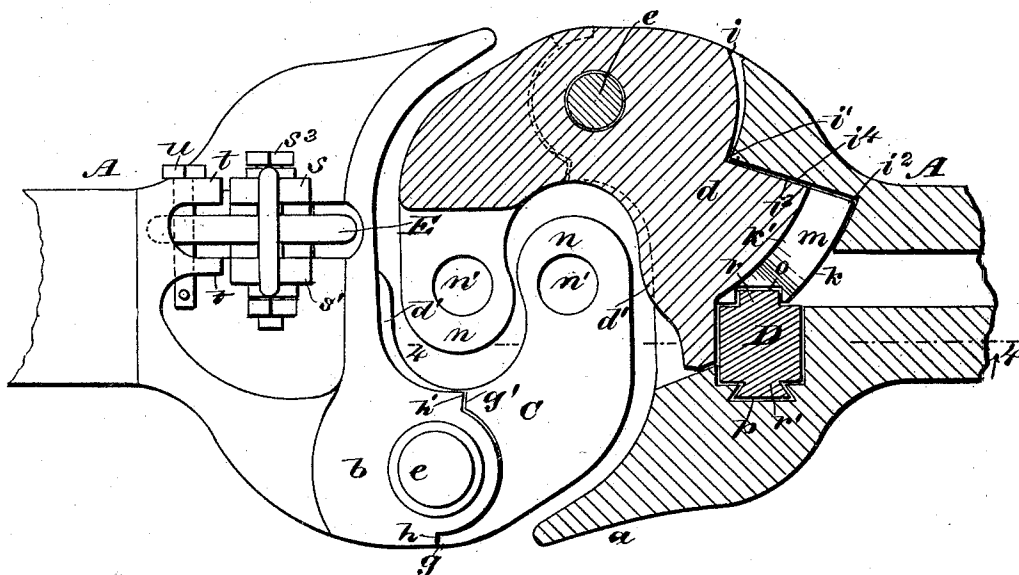
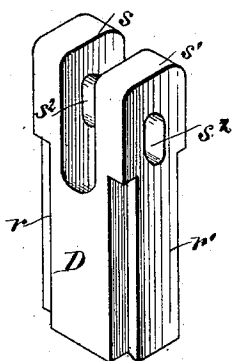


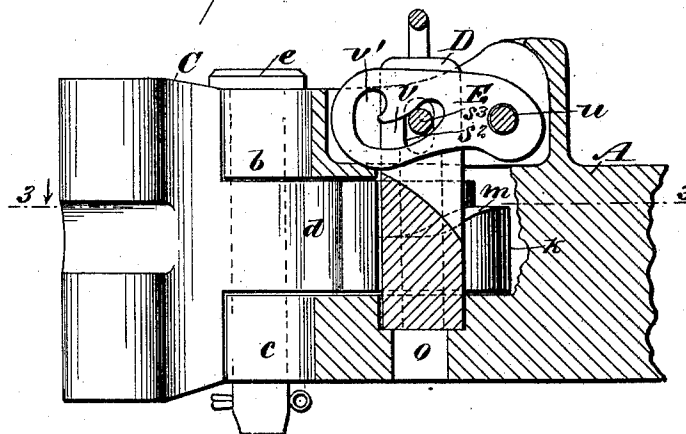
Fig 5



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Fig 4



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UNITED STATES PATENT OFFICE.

FREDRICK H. BROWN, OF WEST PITSTON, PENNSYLVANIA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 468,739, dated February 9, 1892.

Application filed October 6, 1891. Serial No. 407,825. (No model.)

To all whom it may concern:

Be it known that I, FREDRICK H. BROWN, of West Pittston, in the county of Luzerne and State of Pennsylvania, have invented a new and useful Improvement in Car-Couplings, of which the following is a full, clear, and exact description.

This invention relates to an improvement in car-couplings of a type wherein a hinged jaw is provided to interlock by a lateral movement with a similar jaw on another coupling, and has for its object to provide such a car-coupling with an improved locking-pin, improved means to retain said pin in elevated adjustment until the vibratile coupling-jaw is rocked by the impact of a mating coupling-jaw with which it becomes interlocked automatically, and improved means to lock the jaw in a coupled condition.

To these ends my invention consists in the peculiar construction and combination of parts, as is hereinafter described, and indicated in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side view of the coupling, partly broken away and in section, a car-body in part, and the device for moving the pin of the coupling. Fig. 1^a is a broken sectional side view showing the locking-pin for the swinging jaw in raised position and secured by a link-plate and a cross-bolt that loosely engages slots in the pin and link-plate. Fig. 2 is a perspective view of the coupling-jaw detached from the draw-head. Fig. 3 is a broken plan view of two of the improved couplings in coupled condition, parts being removed, one coupling appearing in horizontal section on the line 3 3 in Fig. 4. Fig. 4 is a side view of the coupling, partly in section, on the line 4 4 in Fig. 3, the parts removed in Fig. 3 being restored; and Fig. 5 is a detached perspective view of the coupling-pin.

The draw-head A is apertured longitudinally of its body to admit a coupling-bolt B, as usual, shown in part in Fig. 1, the ordinary approved means for support and spring cushioning of the draw-head being connected with the rear portion, and as this does not

embody the invention it is omitted from the drawings.

Forwardly the draw-head A is widened and furnished on one side with a guard-flange *a*, as is usual in this style of coupling, and opposite the flange *a* there is a knuckle-joint formation consisting of two leaves *b c*, that are separated by a central horizontal slot provided to receive a joint-leaf *d*, that projects from the coupling-jaw C. Aligning perforations are made in the leaves *b c d* for the introduction of a joint-bolt *e*, which, when in place, retains the jaw C free to vibrate laterally a limited degree, which is determined by the shoulders *g g' h h'*, formed on the coupling-jaw and draw-head, as shown in Fig. 3.

The joint-leaf *d* on the coupling-jaw C is cut away at the rear from the outer edge inwardly on a curved line between the points *i i'*, said curved edge being an arc of a circle, of which the axis of the joint-bolt *e* is the center, and a corresponding curve is given to the adjacent rear wall of the slot in the draw-head, thus permitting the rocking movement of the coupling-jaw. From the point *i'* the edge of the joint-leaf *d* is extended rearward to *i²*, tangentially to the curved edge just described, said straight portion *i²* of the leaf-edge substantially aligning with the axial center of the joint-bolt *e*. A similar straight wall *i⁴* is formed in the draw-head that will be impinged upon by the straight edge *i²* when the jaw C is in closed adjustment. The extreme rear edge *k* of the joint-leaf *d* on the coupling-jaw C is curvilinear, the radial center of the circle that it is a part of being the axis of the joint-bolt *e*.

A portion of the joint-leaf *d* is cut away from the upper side between the extreme rear edge *k* and a curved line *k'* concentric therewith, the remaining portion having an undulating incline or cam-slope formed on it, as at *m* in Figs. 1, 2, and 4.

The extreme rear wall of the horizontal slot in the draw-head wherein the leaf *d* is inserted corresponds in curvature with the rear edge *k* on the latter-named part, so that these parts will be in close contact at any point of vibratory movement given to the coupling-jaw C.

The locking-limb *n* of the coupling-jaw C

is curved edgewise to adapt it for effective service, and its free end is slotted horizontally a proper distance at the center of thickness to admit the insertion of an ordinary coupling-link that may be secured thereto by a common pin, a suitable perforation n' being made in the limb to receive said pin, which hole extends through both flanges of the bifurcated jaw.

A vertical aperture is formed in the draw-head near the base of the guard-flange a at a point that will cause the slot to lie partly across the extreme rear curved wall of the horizontal slot wherein the leaf d is located.

As shown in Fig. 3, on the draw-head that is in section the vertical slot therein is substantially rectangular in cross-section, having a narrow channel cut in one side, as at o , and a dovetail groove p in the opposite side of the slot. There is a notch cut out of the leaf d of a proper shape to correspond with the channel o in the draw-head slot-wall, and also to conform with the parts of the slot-walls that extend in the path of the joint-leaf d , the notch mentioned being formed in the curved rear edge of the joint-leaf d at a point where the cam-slope m thereon is the lowest, which will allow the slot and notch to register with each other and produce a continuous passage for a locking-pin D when the coupling-jaw C is in closed adjustment.

The locking-pin D is substantially rectangular in cross-section and is shaped to fit loosely within the slot formed for its reception, there being suitable projections r and r' on opposite sides of the pin which respectively fit within the channel o and dovetail groove p . The upper end portion of the locking-pin D is centrally and longitudinally slotted, producing parallel flanges s s' , that align with the projections r r' , said flanges having opposite vertical slots s^2 cut therein to receive a cross-bolt s^3 .

Upon the upper side of the draw-head A two parallel ears t are formed that are perforated in alignment transversely for the pivotal connection of a link-plate E , that has its perforated rear end located between the ears and secured in place by a bolt u . There is a curved slot v cut in the link-plate E to receive the cross-bolt s^3 , the main portion of which slot extends from a point near the forward end of the link-plate rearward and toward its top edge, and at the front the slot is curved abruptly toward the upper edge of the plate of sufficient length to receive the body of the cross-bolt, as at v' . The longer portion of the slot v , in conjunction with the slots s^2 in the locking-pin D , causes the latter to rise when the link-plate E is upwardly vibrated, and when this plate is rocked upwardly, while the coupling-jaw C is in closed adjustment, the weight of the plate will cause its upper end to fall into the position shown in Fig. 1^a and lock the pin D from falling back into the notch in the joint-leaf d on the coupling-jaw C . This support of the pin D is effected by

the cross-bolt s^3 entering the slot portion v' , whereby the lower end of the locking-pin D will be sustained in a position at the lowest part of the cam-slope m free to be elevated by contact therewith when the coupling-jaw is swung outwardly.

As it is desirable to manipulate the pin D from the sides and roof of a car, a transverse shaft F is secured across the end wall of the car-body G at a proper point so as to rock, and is provided with a lever F' at each side and an arm F^2 above the pin named, to which a chain I is attached, having its lower terminal shackled to the upper end of the locking-pin D , and thence extended upwardly to the car-roof, so that a draft on the chain or rocking of the levers will elevate the pin.

In service the peculiar construction of the link-plate slots v v' , coacting with the locking-pin slots s^2 , will permit the pin D to be set in elevated adjustment, and it will so remain until the coupling-jaw C is rocked to effect an attachment with another similar jaw by impact of the latter on the projecting edge d' of the joint-leaf d , when the parts will be thrown into the position shown in Fig. 4, the relative adjustment of the same, when the coupling-jaw is rocked outwardly, being represented in Fig. 1, where the pin is shown resting on the cam-slope m and the cross-bolt s^3 released from the locking-slot v' , so that it will traverse the main slot v when the pin D is dropped.

The provision of the dovetail groove p and corresponding projection r' on the coupling-pin D is made to prevent the pin from lopping over and binding in the slotted passage when released to fall and lock the jaw C .

It will be seen that the projection r on the side of the locking-pin D nearest the cam-slope m on the joint-leaf d , when in the channel o cut through the latter, will coact with the tangential edge v^3 on the joint-leaf and mating wall v^4 on the draw-head A , so as to form a lock for the coupling-jaw C , which will prevent it from uncoupling if the joint-bolt e should be displaced, as will appear on inspection of Fig. 3.

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

1. In a car-coupling having a laterally-swinging jaw and a joint-leaf thereon, a cam-slope formed on the inner edge of the joint-leaf to sustain a locking-pin adapted to drop through a notch in the cam-slope at its lowest point, substantially as described.

2. In a car-coupling having a laterally-swinging jaw that is pivoted in a horizontal slot in the coupling draw-head, a cam-slope on the inner edge of a joint-leaf on the coupling-jaw that is notched at its lowest point to mate with a vertical slot in the draw-head, and a locking-pin adapted to be held elevated by the cam-slope, substantially as described.

3. The combination, with a draw-head that is horizontally slotted forwardly to provide

two knuckle-joint leaves, a hook-shaped coupling-jaw having a joint-leaf that engages said slot, and a joint-bolt engaging aligning perforations in the leaves, of a cam-slope on the inner edge of the coupling-jaw leaf that is notched at its lowest point and a locking-pin adapted to slide in a vertical slot in the draw-head, with which slot the notch in the joint-leaf of the coupling-jaw is adapted to align, substantially as described.

4. In a car-coupling having a laterally-swinging jaw, a vertically-sliding locking-pin therefor having a dovetail projection on one side engaging a mating slot in the draw-head, substantially as described.

5. In a car-coupling having a laterally-swinging jaw, a vertically-sliding locking-pin having a dovetail projection on one side engaging a similar slot in the draw-head, and a flat rib on the opposite side of the pin adapted to enter a mating notch in a joint-leaf on the swinging jaw when the notch is opposite the dovetail slot in the draw-head, substantially as described.

6. In a car-coupling having a laterally-swinging jaw, a vertically-sliding locking-pin having aligning transverse slots and movable in a slot in the coupling draw-head and adapted to engage its lower end with a cam-slope on a joint-leaf of the coupling-jaw and to pass through a notch at the foot of the cam-slope, and a link-plate formed with a curved

slot having a lateral extension and pivoted by one end on the draw-head and at its other end engaging the forked upper end of the locking-pin and loosely secured therein by a cross-bolt adapted to traverse the slots in the pin-walls and the curved slot in the link-plate and to lodge in the lateral extension of the curved slot and hold the pin elevated, substantially as described.

7. In a car-coupling, the combination, with a draw-head having parallel forwardly-projecting hinge-leaves and a laterally-swinging coupling-jaw provided with a rearwardly-projecting joint-leaf pivoted between the parallel hinge-leaves and provided with a cam-slope on its inner curved edge, of a locking-pin adapted to slide loosely in a vertical slot and mating notch in the draw-head and joint-leaf and having aligning transverse slots, a link-plate pivoted by one end to ears on the draw-head and having a curved slot and a lateral extension of said slot, the other end of said plate being loosely secured in the forked upper end of the locking-pin by a cross-bolt in the slots of the pin and the curved slot of the plate, and a device for lifting the pin from the sides or roof of the car, substantially as described.

FREDRICK H. BROWN.

Witnesses:

GEO. L. HOUSER,
CHAS. L. WEIKHEISER.