(No Model.) 3 Sheets—Sheet 1.

# R. A. SHIPMAN.

## CAR COUPLING.

No. 489,765. Patented Jan. 10, 1893.

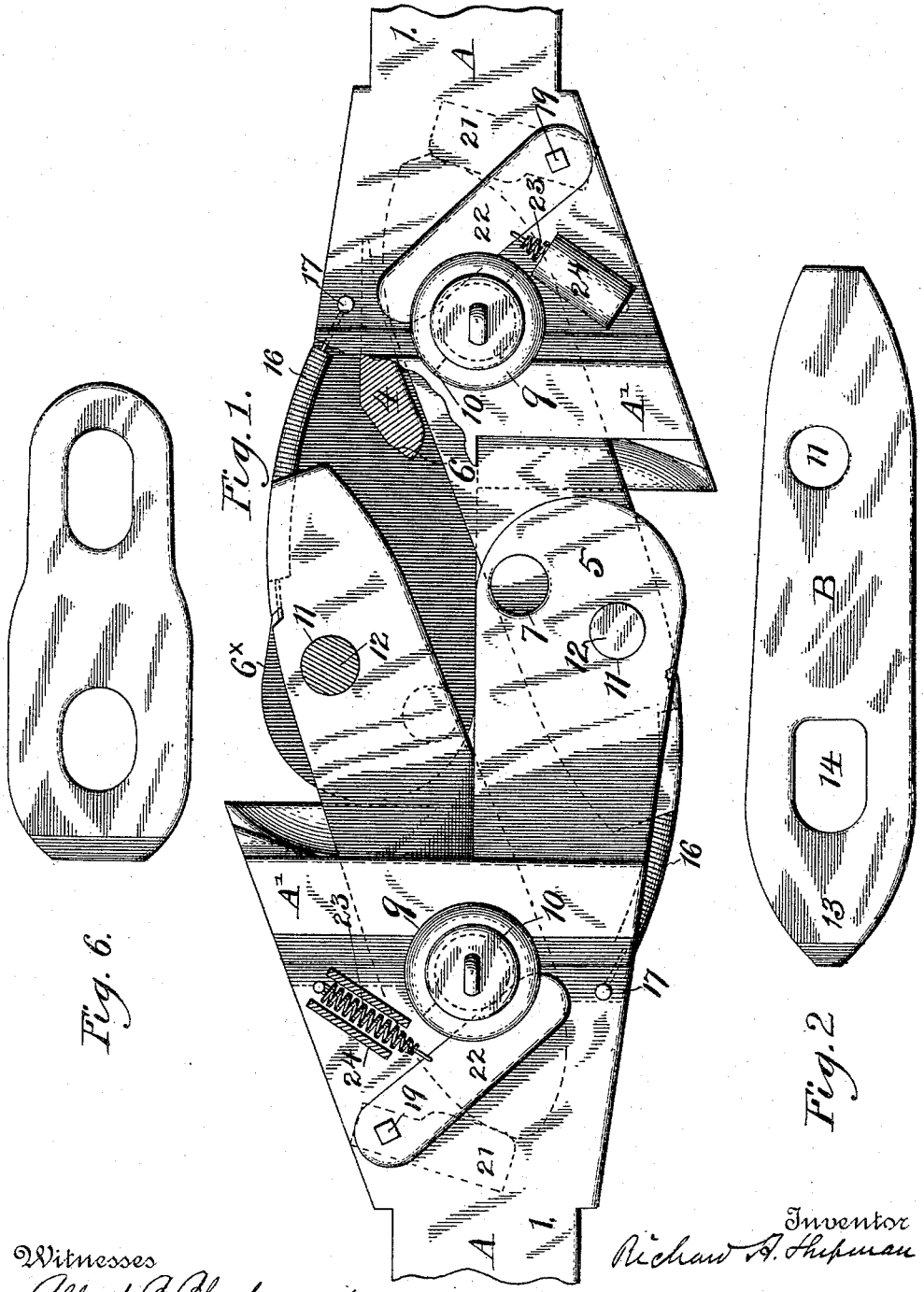


Fig. 1.

Fig. 6.

Fig. 2

Witnesses
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(No Model.) 3 Sheets—Sheet 2.

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## CAR COUPLING.

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Fig. 3.

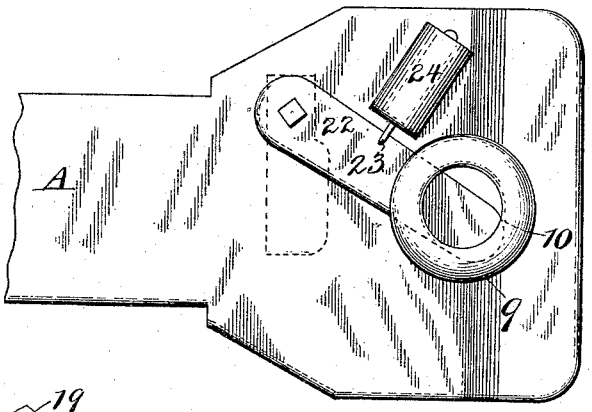



Fig. 4.

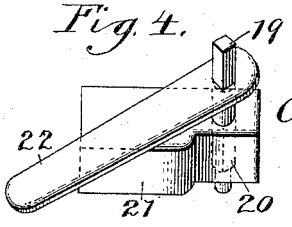



Fig. 10.

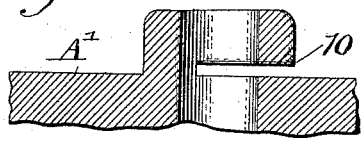
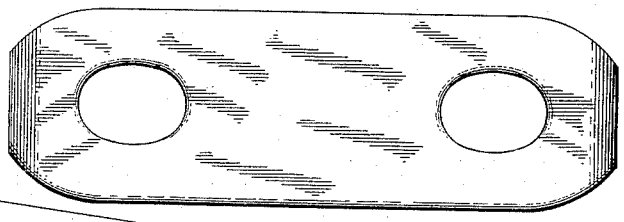



Fig. 5.



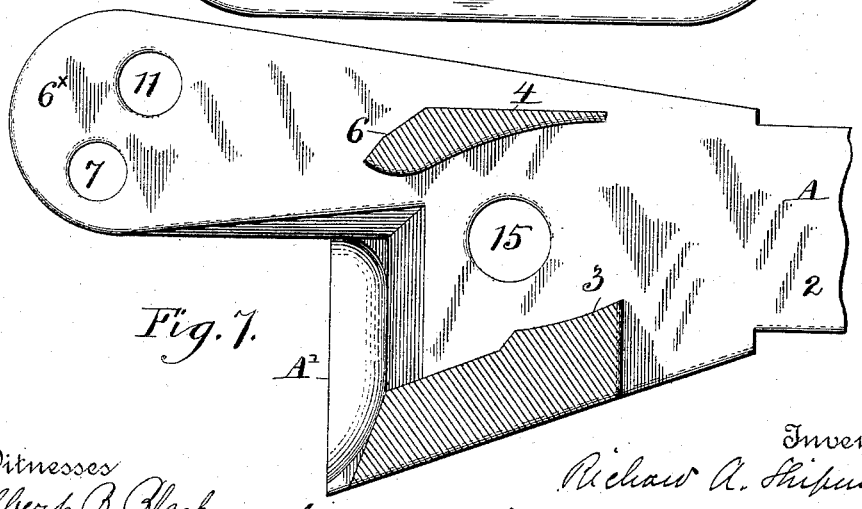



Fig. 7.

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(No Model.) 3 Sheets—Sheet 3.

# R. A. SHIPMAN.

## CAR COUPLING.

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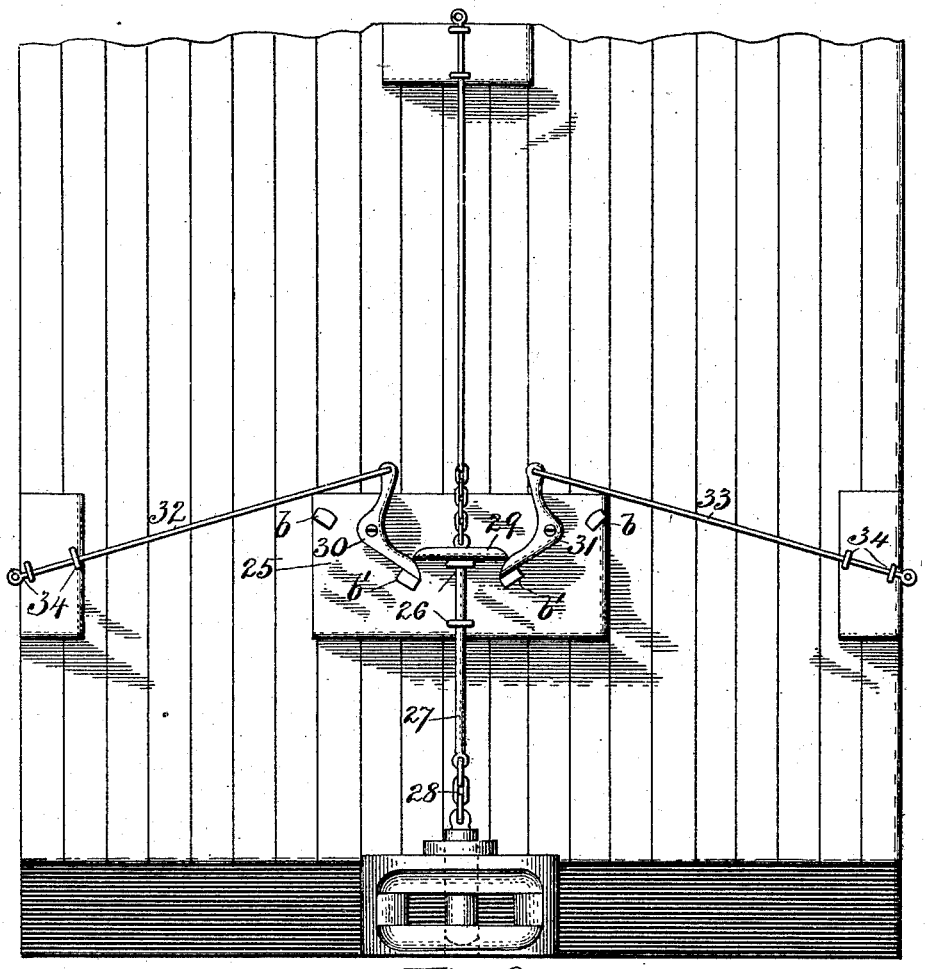
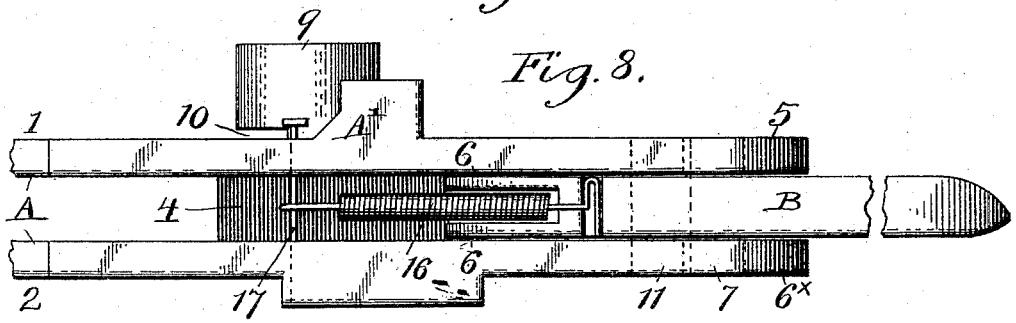



Fig. 9.

Fig. 8.




Witnesses
Albert B Blackwood
Joe H Blackwood

Inventor
Richard A. Shipman
By his Attorney A. G. Hopkins

# UNITED STATES PATENT OFFICE.

RICHARD A. SHIPMAN, OF CHICAGO, ILLINOIS.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 489,765, dated January 10, 1893.

Application filed April 5, 1892. Serial No. 427,857. (No model.)

*To all whom it may concern:*

Be it known that I, RICHARD A. SHIPMAN, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Car-Coupling, of which the following is a specification.

My invention has relation to improvements in car-couplings, and the object is to provide means for automatically coupling or connecting the abutting-ends of cars, as they are brought together in making up a train of two or more.

The invention consists in the novel construction of parts, and in the combination and operative agroupment thereof as hereinafter specified, and particularly pointed out and claimed.

In the accompanying drawings, illustrating my invention: Figure 1, is a plan view of united coupling sections showing the relative arrangement of the mechanism when coupled; the interior parts being indicated by dotted lines; and one of the top plates of one section being broken away to show the coupling-plate and interior construction and spring connection. Fig. 2, is a view in detail of the coupling-plate. Fig. 3, is a plan view of the automatic mechanism attached to a link and pin draw-head. Fig. 4, is a detail perspective of the stop and holding-plate and the lever block or arm by which it is turned when the coupling-plate enters the draw-head. Fig. 5 is a plan view of a coupling plate for the single draw-bars. Fig. 6 is a detail plan view of a coupling-plate for connecting common draw-bars and my improved coupling. Fig. 7 is a horizontal longitudinal section of the draw-head. Fig. 8 is a side view of my improved coupling. Fig. 9 is a front view in elevation of the mechanism for lifting the coupling-pins. Fig. 10 is a sectional view showing the slot at the base of the collar on the draw-head.

The united couplings being duplicates, the description of one will apply with equal correctness to the other, and referring to the drawings, wherein similar elements or parts appearing in the different figures, are designated by the same notations of reference, A designates the draw-bar. This is of peculiar and novel construction, consisting of an upper plate 1, and the lower plate 2, having the same general configuration or shape, and arranged in relation to each other, with the proper space or opening between them to take and hold the coupling plates. In advance of the stem of the draw-bar, the draw-head widens outward or flares, as at A′, the flanges of the mouth being at substantially right angles to the line of the draft, and the part beginning substantially at a point on the line with the line of the center of the pin-hole in the draw-head, as seen in the drawings.

The plates 1, and 2, of the draw head and bar are united by a side-wall 3, inclining inward from the mouth and constituting a guide for the end of the opposing coupling-plate when entering the mouth of the draw-head, as shown in Fig. 7 of the drawings. Opposite to the side-wall 3 is a partition-block 4, also forming a connection between the plates, and arranged longitudinally of the draw-head with its inner face directed outward from front to rear and its outer face staight with inclined or rounded end, 6, constituting an abutting block for the inner side of the rear end of the coupling-plate carried by that draw-head, as shown in Fig. 1 of the drawings. The upper and lower plates of the draw-head are extended frontward as at 5, and $6^{\times}$, between which the coupling-plates lie, as shown in the drawings, and have the ends rounded, and formed so that when two couplings or a set of couplings are united, the inner edges are brought close together in relative arrangement as seen in Fig. 1 of the drawings; and through these extensions 5 and $6^{\times}$ are formed registering-coupling pin-holes 7 in which a coupling-pin fits. About the coupling-pin hole on the face of the upper plate 5 is formed an annular collar 9, having a slot 10, at its base extending substantially half-way across the diameter of the collar as seen in Fig. 10, in order that the pin-holding plate may move through the slot across the pin-hole as indicated in the drawings.

B designates, (see Fig. 2.) the coupling-plate applicable to the coupling shown in Fig. 1. This plate consists of a substantial metal-plate fulcrumed eccentrically in the extensions of the draw-head, as 11, by a pin or bolt

12, and formed with a pointed front end 13, and gradually tapering sides to the rear as shown in the drawings. In the front portion of this coupling-plate is a coupling pin-hole 14, elongated to provide "give-and-take" space when the train is moved or coupled; and when in motion to accommodate the usual irregularities attending the progress of the cars.

It will be perceived by reference to Fig. 1 of the drawings that the coupling-pin holes 15 are located on the line of the draw-bar and with the force applied, and that the coupling-plates are fulcrumed or supported on pins outside of this straight line so that when the set of couplings are untied or coupled, the draft will be in the line of the draw-bar, and the tendency is to hold the parts strongly together. To hold the coupling-plates from swinging inward too far, and to always keep them in direction of the mouth of the adjacent draw-head, for entering therein when the cars are approaching, I attach one end of a spring 16, to a stay 17, and fasten the other end to the outside of the coupling-plate, so that the force of the spring will bear on the coupling-plate and keep the plate always in the desired direction for coupling. In the extensions of the draw-head is a coupling pin-hole 7, for use when a car with a common link-and-pin coupling is coupled to my improved device.

C, designates the device for holding the coupling pin free above the plate-space in the draw-head. This consists of a vertically arranged arbor or shaft 19, having its bearings in the plates of the draw-head, and having mounted on the part 20, extending between the plates, an arm 21, which lies normally across the path traveled by the coupling-plate when entering the draw-head, as shown in the drawings. And on the upper portion of the arbor on the top plate of the draw-head is mounted the stop-plate 22, arranged with its front portion in the slot 10, of the annular collar around the coupling-pin hole. To draw the stop-plate 22, in the slot 10, and hold it across the pin-hole, a spring 23, is arranged on the draw-head, with one end attached to the stop-plate and the other fastened on the draw-head. I prefer to inclose this spring 23, in a sleeve 24, on the draw-head, and fasten the end in the outer end of the sleeve, as shown in the drawings. It will be perceived that the force of this spring draws the stop-plate in the slot of the collar across the pin-hole and that when the arm 21, is pushed back by the ingress of the coupling-plate the stop plate will be moved from across the pin-hole, and leave it open and free for the pin to drop down and couple the parts together.

In Fig. 3 of the drawings, I have illustrated the automatic operating device C, applied to a straight draw-head formed or constructed to take straight coupling-plates or links. The coupling-plate adapted to couple with draw-heads of my improved construction, as shown in Fig. 3, is illustrated in Fig. 5, of the drawings, and consists of a plate with parallel sides and rounded ends; and in Fig. 6, I have illustrated a coupling-plate having one portion made narrower than the other for the purpose of coupling the common draw-heads; that part made narrower being adapted to enter the mouth of the common draw-head.

In Fig. 9, of the drawings, I have illustrated my improved means for lifting the coupling-pins from their engagement, and thus uncouple the cars: On the end of the car is fitted a support 25, extending with its outer surface substantially in a line with the coupling-pin. On the face of this support are sleeves or keepers 26, in which is disposed a lifting-bar 27, having its lower end connected to the coupling-pin by a chain 28, and on the upper end of the bar 27, is a cross-bar 29. On the support are fulcrumed elbow-levers 30, 31, the upper faces of their lower arms being cam-shaped and arranged to engage and support the cross-head on the bar. To the upper arms of these elbow-levers are attached rods 32, 33, held at their outer ends in keepers 34, as shown in the drawings. Thus it will be seen that by pulling on one of the rods 32, 33, the lever connected thereto will raise the cross-head and bar and lift the coupling-pin. To lift the pin from the top of the car I attach a bar 35, held in keepers, and connected to the pin by means of a chain as shown. Stop-blocks or studs $b$, $b'$, are fixed on the support 25, to limit the movement of the levers.

The operation is apparent from the description: The cars are run together while the coupling-pins are held seated on the stop-plate lying across the pin-holes, and as the coupling-plates progress through the mouths of the draw-heads, the ends encounter the arms on the arbor of the respective stop-plates, and move the stop-plates from across the pin-holes, when the pins drop down and through the coupling-plates, and the coupling is effected. This operation it will be perceived is automatic.

To uncouple the cars, the pins are lifted by the agency of the lifting mechanism on the front of the car; the stop-plate swings or moves across the pin-hole, and the cars can be moved apart; the respective pins remaining in position ready for action whenever another coupling operation is desired.

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

1. The combination with a draw-head, of a coupling-plate, fulcrumed to the draw-head, and consisting of a metal plate having a rounded tapering outer end, and an elongated coupling pin-hole, substantially as described.

2. The combination in a car-coupling of the draw-head having a pin-hole surrounded with an annular collar, formed with a slot extending partially across it at the base, of a stop-plate mounted on an arbor in the draw-head, a spring to hold the stop-plate in the said slot,

and an arm on said arbor in the draw-head, whereby the stop-plate may be moved from the slot, substantially as described.

3. In combination, the draw-bar and head, formed with a flaring mouth-piece at one side, and extending portions reaching front of the mouth, a coupling-plate fulcrumed in the said extensions, and a spring at the rear of the coupling-plate to hold it from turning too far inward, substantially as described.

4. In a car-coupling, the combination of the draw-head and bar formed with the laterally projecting mouth-piece, and lengthened coupling portions, and the coupling-plate 1, pivotally mounted between the lengthened portions, substantially as described.

5. The coupling-plate herein-described consisting of a metal plate having a tapering outer end provided with a centrally located elongated coupling pin-hole, and a bolt-hole at its rear-portion having its center located outside of the center of the coupling pin-hole, as specified.

6. In a car-coupling, the combination with the draw-head having extensions reaching in advance of the mouth, of a coupling-plate fulcrumed on the extension, the said fulcrum being exterior of the center of the line of draft of the draw-head, and a holding means to keep the coupling-plate from turning inward, substantially as described.

7. In combination with the draw-head and coupling-pin, of the vertically movable bar formed with a cross-head, levers fulcrumed on the car to engage with one of the respective ends of the cross-head, and rods to operate the levers, whereby the bar is raised and the pin lifted as specified.

8. In a car-coupling a draw-head formed with top and bottom plates extending beyond the mouth of the draw-head, and a coupling-plate pivotally supported between said plates whereby the coupling-plate is held in horizontal direction from dropping downward.

In witness whereof I have hereto set my hand in the presence of two attesting witnesses.

RICHARD A. SHIPMAN.

Attest:
A. G. HEYLMUN,
W. C. DUVALL.