

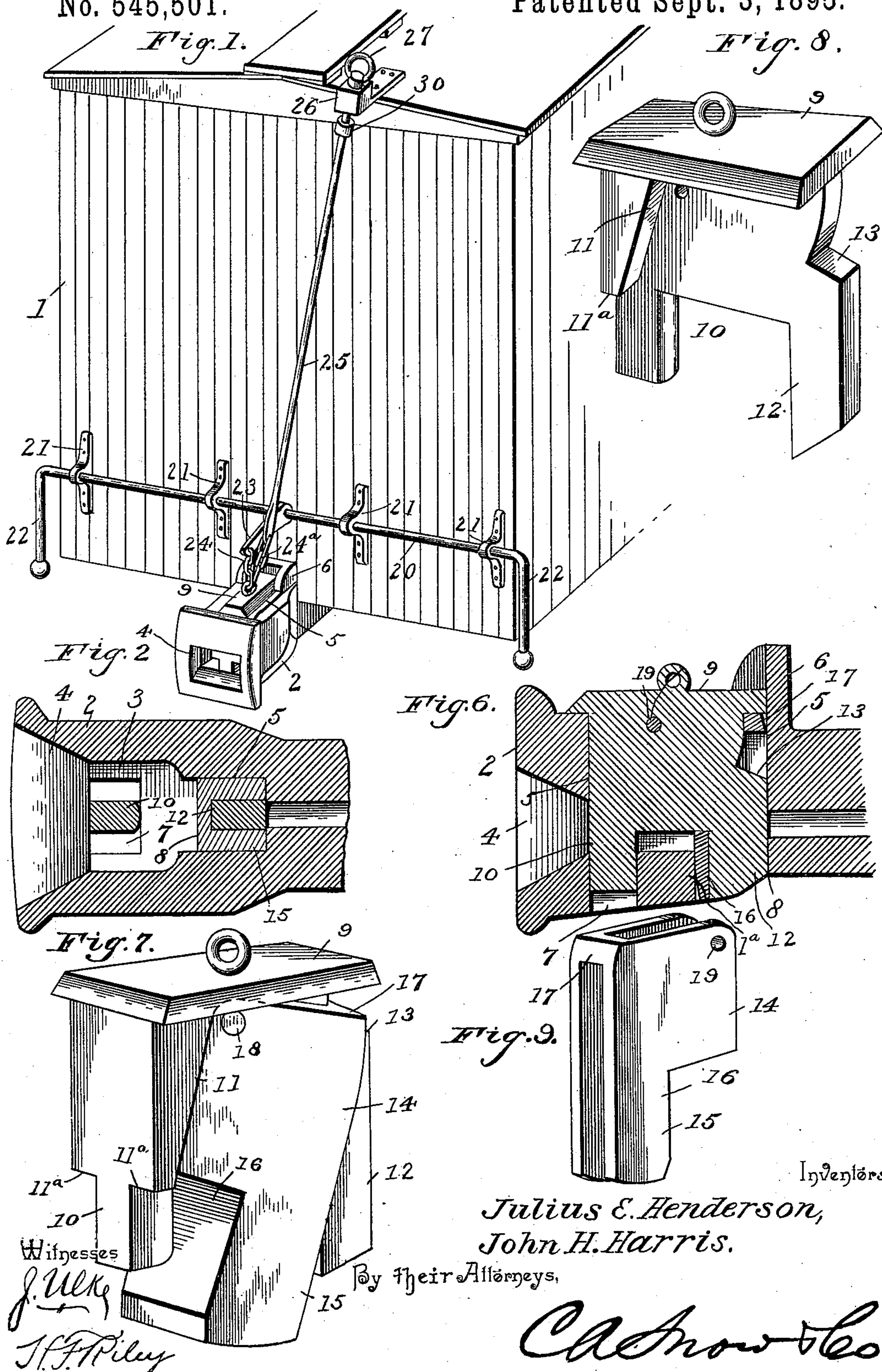
(No Model.)

2 Sheets—Sheet 1.

J. E. HENDERSON & J. H. HARRIS.
CAR COUPLING.

No. 545,501.

Patented Sept. 3, 1895.



(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

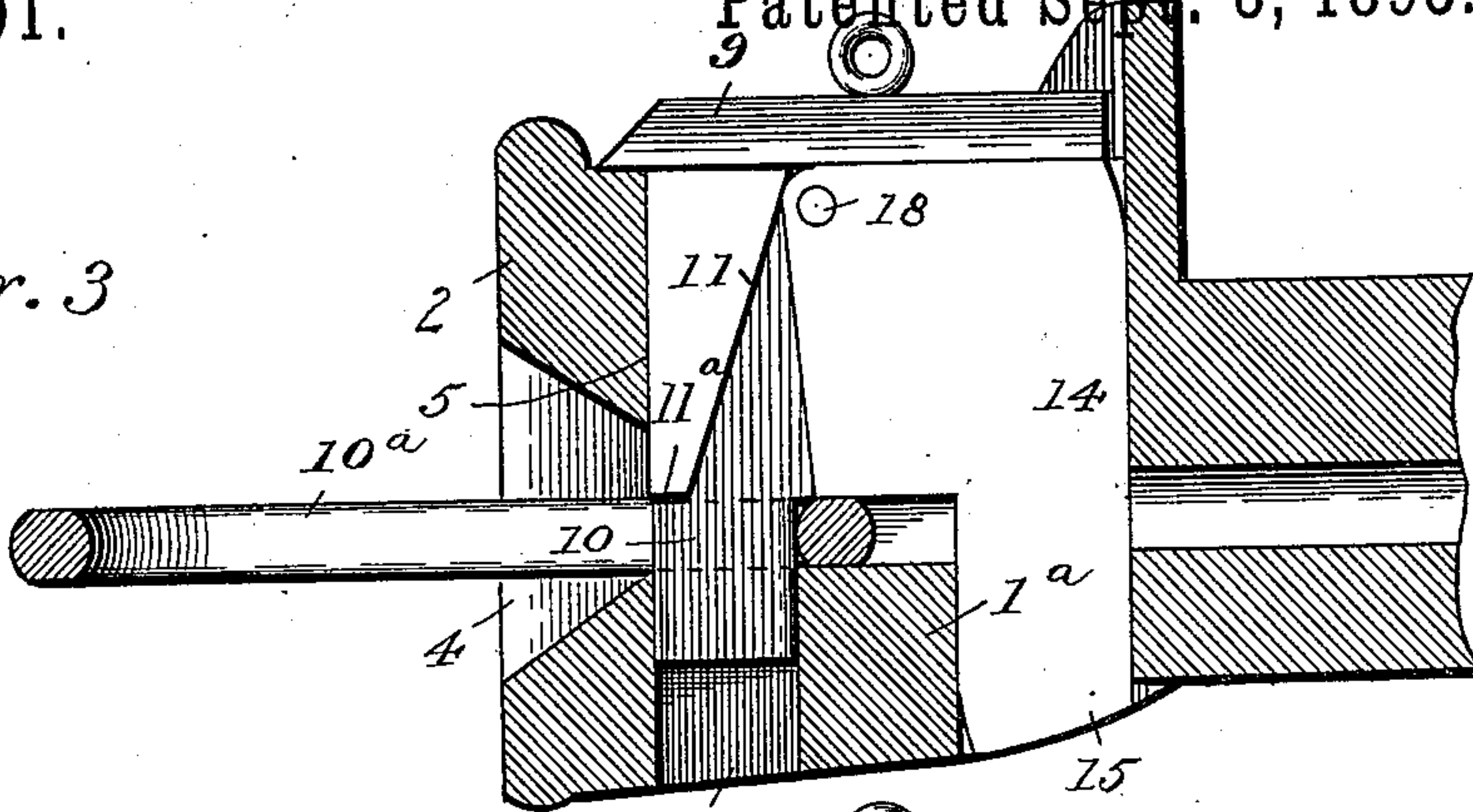


Fig. 4.

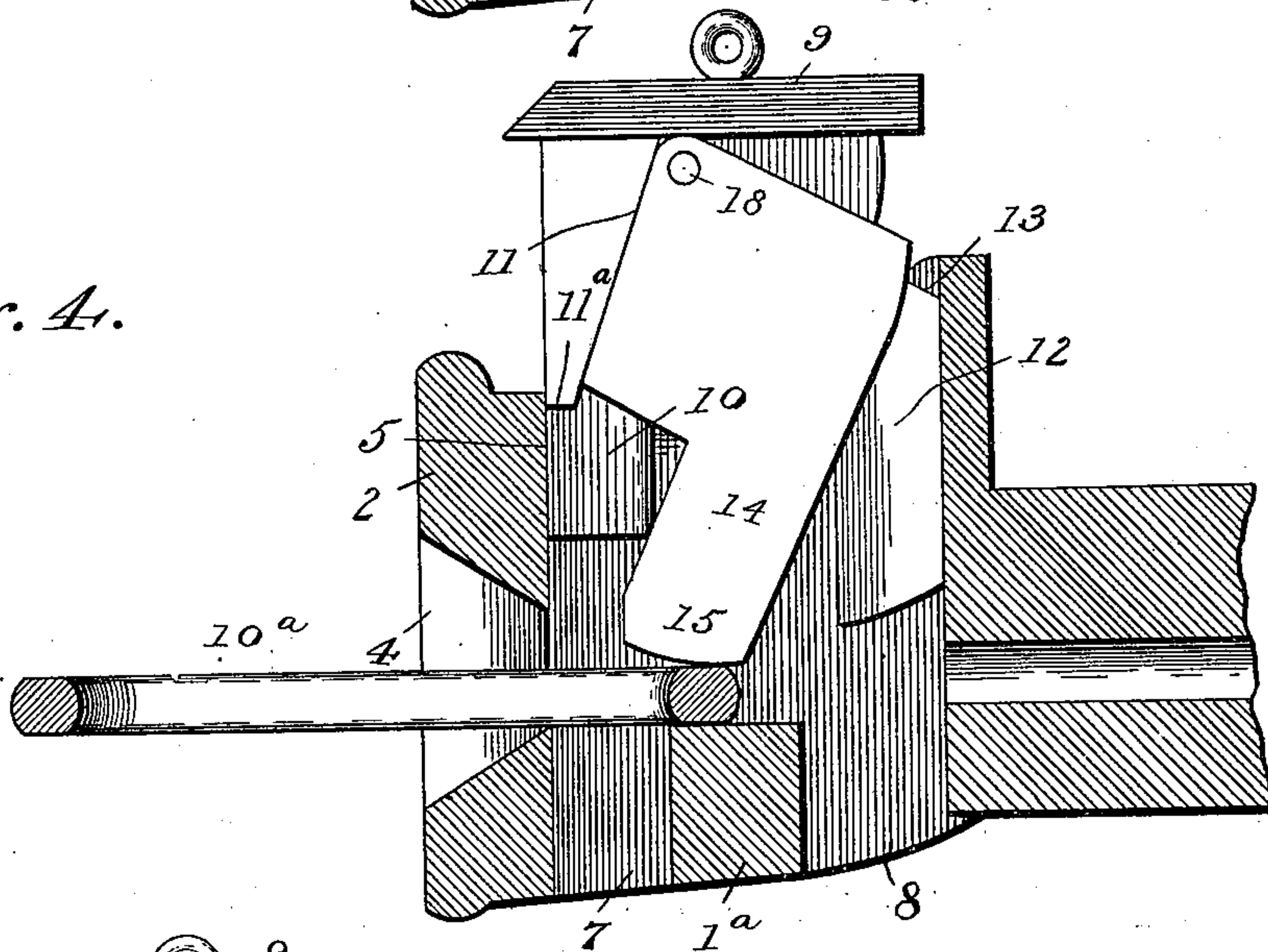
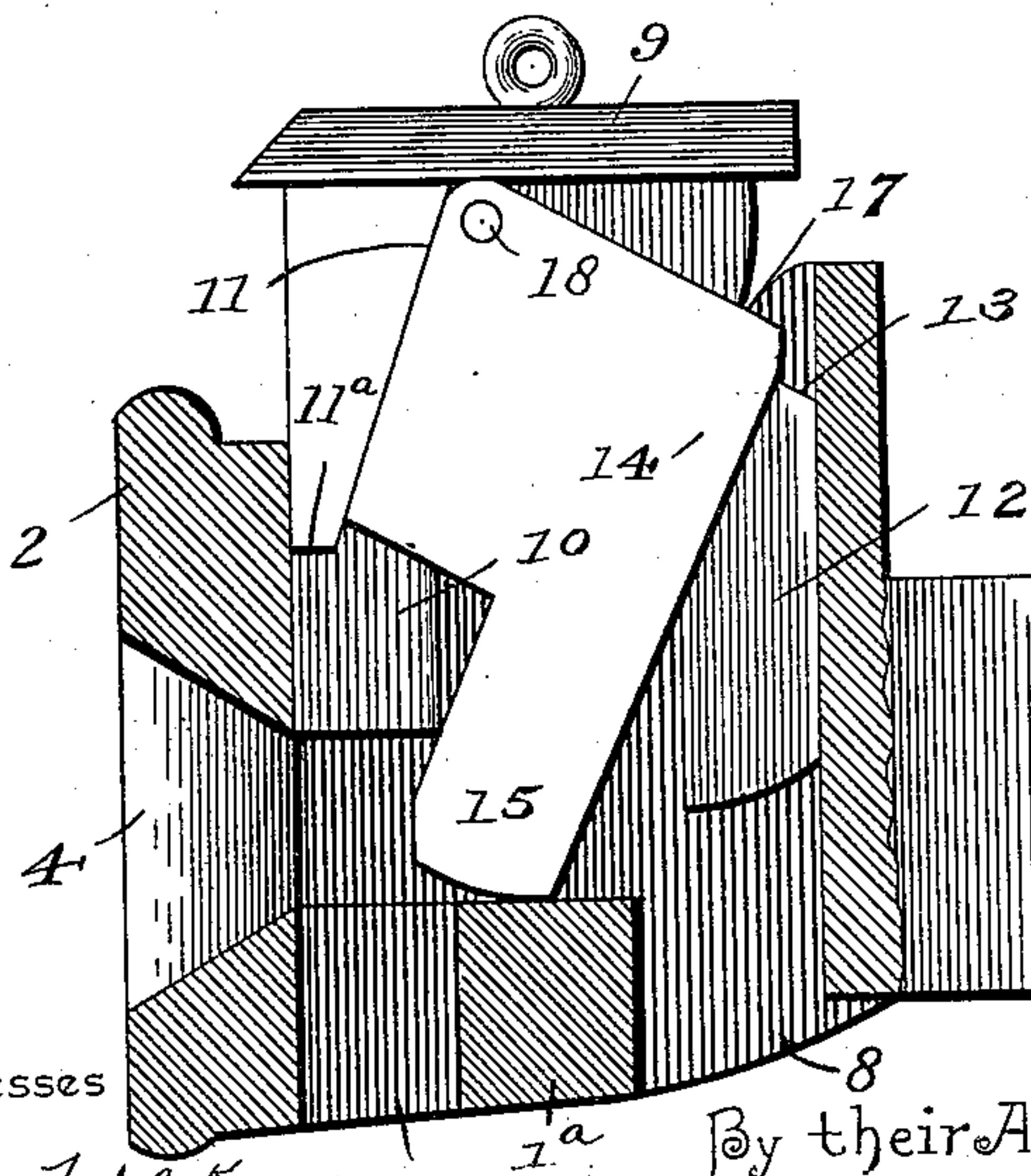


Fig. 5.



Witnesses

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By their Attorneys.

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UNITED STATES PATENT OFFICE.

JULIUS E. HENDERSON AND JOHN H. HARRIS, OF IOLA, KANSAS, ASSIGNORS
OF ONE-THIRD TO H. L. HENDERSON, OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 545,501, dated September 3, 1895.

Application filed October 16, 1894. Serial No. 526,091. (No model.)

To all whom it may concern:

Be it known that we, JULIUS E. HENDERSON and JOHN H. HARRIS, citizens of the United States, residing at Iola, in the county of Allen and State of Kansas, have invented a new and useful Automatic Car-Coupling, of which the following is a specification.

The invention relates to improvements in car-couplings.

The object of the present invention is to improve the construction of car-couplings and to provide an automatic one which will be simple and inexpensive in its construction and which may be readily uncoupled from the tops and sides of cars without going between them.

A further object of the invention is to provide a car-coupling in which the link will be held in a horizontal position for automatically guiding it into the mouth of a draw-head to obviate the necessity of guiding the link by hand and the consequent dangers thereof.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of a car-coupling constructed in accordance with this invention and shown applied to a car. Fig. 2 is a horizontal sectional view. Fig. 3 is a longitudinal sectional view illustrating the manner of holding the link horizontally for guiding it into the mouth of a draw-head. Fig. 4 is a similar view showing the pin-support resting upon the upperface of the link preparatory to the withdrawal of the latter. Fig. 5 is a longitudinal sectional view, the parts being set for automatic coupling. Fig. 6 is a central longitudinal sectional view illustrating the position of the parts when coupled, the link being removed. Fig. 7 is a detail perspective view of the coupling-pin and its support. Fig. 8 is a similar view of the coupling-pin. Fig. 9 is a detail view of the coupling-pin support.

Like numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates a car-body, on which is mounted a draw-head 2, which may be fixed to the

car by any desired construction of draft mechanism. The draw-head is provided with a link-cavity 3, and it has a flaring beveled mouth 4, adapted to direct into the draw-head links arranged at different elevations and located either above or below the plane of the bottom of the link-cavity. The top of the draw-head is provided with a longitudinal slot or opening 5, which communicates with the link-cavity 3, and at the rear end of the slot or opening 5 is an upward-extending flange, forming a vertical shoulder 6, which is arranged to engage the dead wood of the car and limits the inward or rearward movement of the draw-head in the usual manner.

The bottom of the draw-head is provided with front and rear openings 7 and 8, located directly beneath the terminals of the longitudinal slot or opening 5, and forming an intervening solid portion 1^a, extending transversely of the link-cavity.

The longitudinal slot or opening 5 and the openings 7 and 8 form a vertical way for a coupling-pin 10, which is guided in the draw-head, and which is adapted to move vertically therein to engage or release a link 10^a, and the coupling-pin is provided at its top with a cap-plate formed integral with it and projecting horizontally beyond the longitudinal slot or opening 5 and adapted to cover the same to exclude moisture from the draw-head and to limit the downward movement of the coupling-pin.

The coupling-pin 10 has its front portion or coupling-pin proper arranged to operate in the opening 7, and it is provided with a vertically-disposed guide or arm 12, located at the rear terminus of the longitudinal slot or opening 5 and adapted to operate in the rear opening 8 of the bottom of the draw-head. A support 14 embraces the rear portion of the coupling-pin, and is pivoted to the latter at 18 at a point beneath the top-plate and in advance of the center of the coupling-pin, and its lower portion 15 is rearwardly offset and depends from the upper portion and is adapted when free to swing forward into an inclined position, as illustrated in Figs. 5 and 7 of the accompanying drawings. Its forward movement or swing is limited by inclined shoulders 11, formed by lateral enlargements of the

front upper portion of the coupling-pin. The pin-support is composed of similar parallel sides, conforming, when in a vertical position, to the general configuration of the rear portion of the coupling-pin and connected at the front edges of the depending rearwardly-offset portions 15 by a transverse web 16 and at their upper rear corners by a cross-piece 17, which is located in a curved recess 13 of the coupling-pin. The curved recess 13 is located at the back of the coupling-pin, directly beneath the cap-plate 9, and the cross-piece 17 is located between the said cap-piece and the lower shoulder formed by the recess 13. The front upper corners of the sides of the pin-support are rounded and are provided with perforations 19 for the reception of the pivot 18, which passes through a corresponding perforation of the coupling-pin. When the pin-support is in a vertical position, the web 16 fits against the front edge of the rear guide or arm 12, and the upper edges of the sides bear against the projecting or overhanging laterally-disposed portions of the cap-plate 9, and the two parts form a solid, compact structure and conform to the configuration and have their outer edges flush to facilitate free movement in the vertical way of the draw-head.

The lower terminals of the lateral enlargements of the front portion of the coupling-pin form horizontal shoulders 11^a, which are located in the same horizontal plane as the lower edge of the central portion of the coupling-pin, and the lower edges of the front upper portion of the sides of the pin-support are also located in the same horizontal plane when the said pin-support is disposed vertically. These lower edges form shoulders, which, as illustrated in Fig. 3 of the accompanying drawings, are adapted to rest upon the upper face of the inner portion of the link 10^a, for the purpose of maintaining the latter in a horizontal position for guiding it into the mouth of a draw-head in coupling, to obviate the necessity of performing this operation by hand, and to enable the operation of coupling to be performed without requiring the train-hands to go between the cars.

The car-coupling is automatic in its operation, and the operation of uncoupling, which may be performed from the top and sides of a car, by means hereinafter described, sets the parts in position for automatic coupling. When the coupling-pin is raised sufficiently to carry the lower rearwardly offset and weighted portion 15 of the pin-support out of the lower rear opening 8, the bottom portion 15 of the pin-support swings forward to a position directly above the transversely-disposed solid portion 1^a of the bottom of the draw-head and rests upon the upper face of the link until the latter is withdrawn by the separation of the cars, when it will fall with the coupling-pin and be supported directly upon the solid portion 1^a of the bottom of the draw-head. This brings the parts in position

for automatic coupling, and a link entering the draw-head will engage the lower portion of the pin-support and move the same inward or rearward until it reaches the opening 8, when the coupling-pin and its support will drop, and the front portion 10 of the coupling-pin will engage the link and effect the operation of coupling. Thus it will be apparent that the car-coupling is purely automatic, and that the parts are continuously carried from a locked position to a position for automatic coupling, and that when not coupled it must be always in position for automatic coupling. This construction also enables a link to be ejected from a car in event of a link being in each of two cars desired to be coupled. When a link has its outer portion free, the elevation of the coupling-pin and the forward swinging of the pin-support will throw the link out of the draw-head, as will be readily apparent. When the parts are arranged for automatic coupling, the pin-support holds the coupling-pin elevated a sufficient distance to prevent a link from coming in contact with the front portion of the pin, the lower portion of the coupling-pin proper being located above the inner terminus of the mouth of the draw-head and being entirely out of the way of the link, as will be readily apparent.

The car 1 has journaled on it a rock-shaft 20, extending across the end of the car and located above the draw-head in bearings 21 and terminating at the sides of the car in depending-arms 22, forming handles for operating the shaft and provided with knobs. The rock-shaft is provided with a centrally-arranged outward extending arm 23, which is loosely connected by a short chain 24 with the coupling-pin, and the latter is provided with an eye which receives the chain. This construction enables the operation of uncoupling to be performed from the sides of the car, and in order to operate the coupling from the top of the car an upward-extending rod 25 is provided and is connected by a short chain 24^a with the eye of the cap-plate 9 of the coupling-pin. The rod 25 extends to the top of the car and passes through a perforation of a keeper 26, which is secured to the top of the car and extends outward therefrom. The upper end of the rod 25 is provided with a grip or handle 27, which limits the downward movement of the rod 25, and its upward movement is limited by an annular shoulder or collar 30 to prevent the coupling-pin and its support from being withdrawn entirely from the draw-head. The collar or enlargement 30 is located a short distance below the keeper 26, and it is adapted to come in contact with the same and form a stop. Besides enabling the operation of uncoupling to be performed from the top of a car this construction will enable the coupling to be under control of a train-hand at the top of the car and will form a safeguard against riotous strikers or the like to pre-

vent them from maliciously uncoupling the cars from the sides, the rod 25 being adapted to prevent a full upward movement of the coupling-pin.

5 When it is desired to uncouple the cars, the coupling-pin should be elevated until the collar 30 of the rod 25 comes in contact with the keeper 26, when the lower portion of the pin-support will swing forward and rest upon the link. This uncouples the cars, and when the link is withdrawn the pin-support will rest upon the solid intervening portion of the body of the draw-head between the front and rear openings 7 and 8. Both the weight of the coupling-pin and its support and the operating mechanism serve to maintain the link in a horizontal position for guiding it into the mouth of a draw-head, and it will be apparent that during the operations of coupling and uncoupling it is unnecessary for a train-hand to go between the cars. It will also be apparent that in making a flying-switch the car or cars to be cut off may be uncoupled from the top of a car.

25 It will be seen that the car-coupling is simple and inexpensive in construction, that it is automatic and positive and reliable in operation, and that it does not necessitate trainmen going between the cars either for coupling or uncoupling.

30 Changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention.

What we claim is—

1. In a car coupling, the combination of a draw-head, a coupling pin mounted therein, and provided at its front portion with lateral enlargements, forming inclined shoulders at

their rear sides and horizontal shoulders at their lower terminals adapted to engage the upper face of a link, and a pin support composed of opposite sides embracing the rear portion of the coupling pin, and having a lower rearwardly offset weighted portion, and arranged to engage the inclined shoulders of the coupling pin, substantially as described.

2. In a car coupling, the combination of a draw-head, a coupling pin mounted therein and having at its rear a vertically disposed guide or arm, and provided at its front portion with lateral enlargements forming inclined shoulders at the rear sides and horizontal shoulders at their lower terminals, said coupling pin being provided at its top with a plate or flange, and having at its rear a recess 13 forming a lower shoulder, and the pin support pivoted at its upper front corner to the coupling pin, and comprising the opposite sides embracing the rear portion of the coupling pin and conforming to the configuration of the same and having rearwardly offset lower portions 15, a transverse web connecting the front edges of the lower portions 15, and a cross-piece 17 connecting the upper rear corners of the sides and located in the recess 13, substantially as described.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

JULIUS E. HENDERSON.
JOHN H. HARRIS.

Witnesses to J. E. Henderson:

FRANK H. GAMEL,
H. R. MITCHELL.

Witnesses to John H. Harris:

T. M. BARTELS,
LEN BOSTWICK.