No. 618,886. Patented Feb. 7, 1899.

P. J. LEE.

CAR COUPLING.

(Application filed Apr. 7, 1898.)

(No Model.) 3 Sheets—Sheet 1.

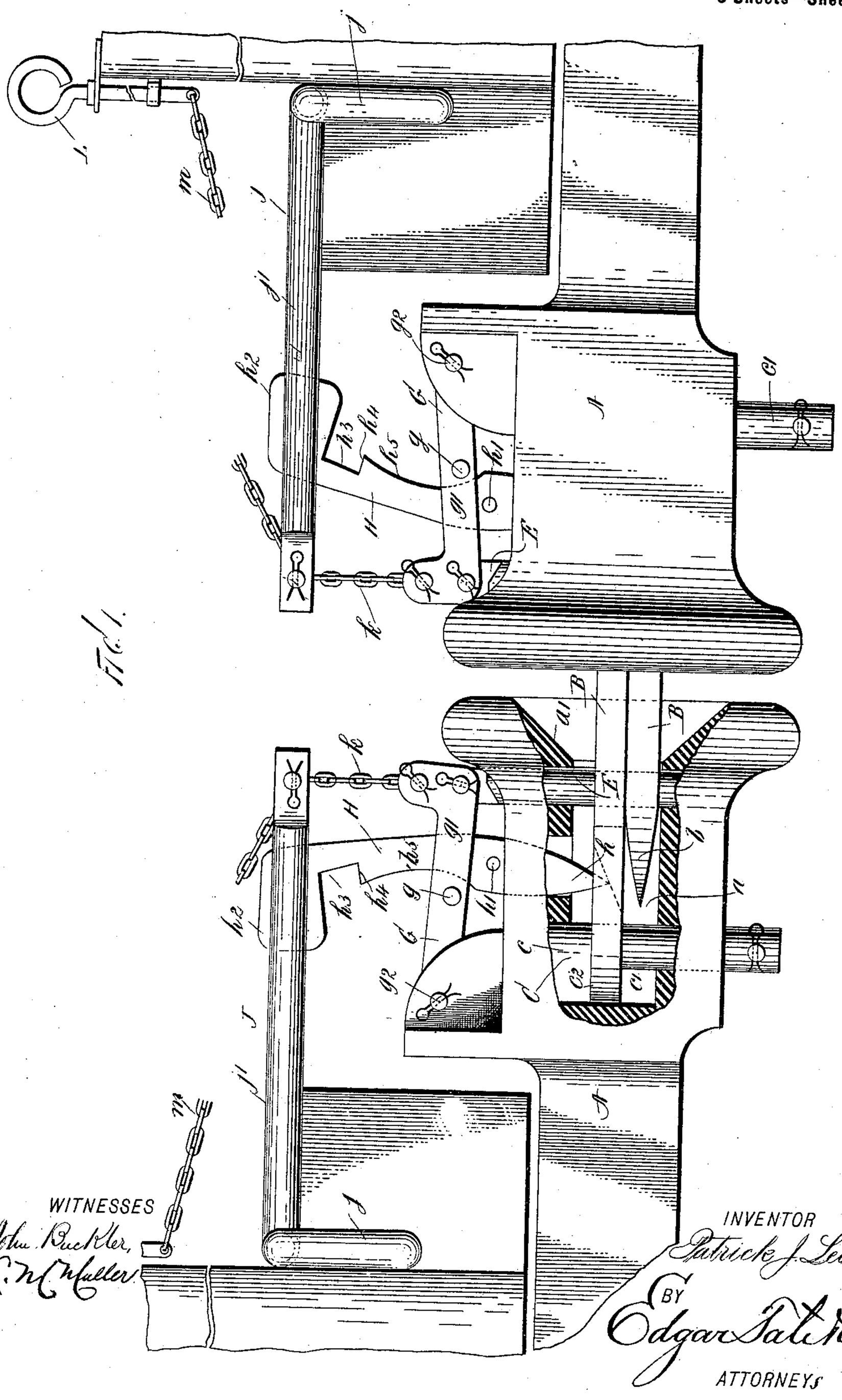

Fig. 1.

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FIG. 2.

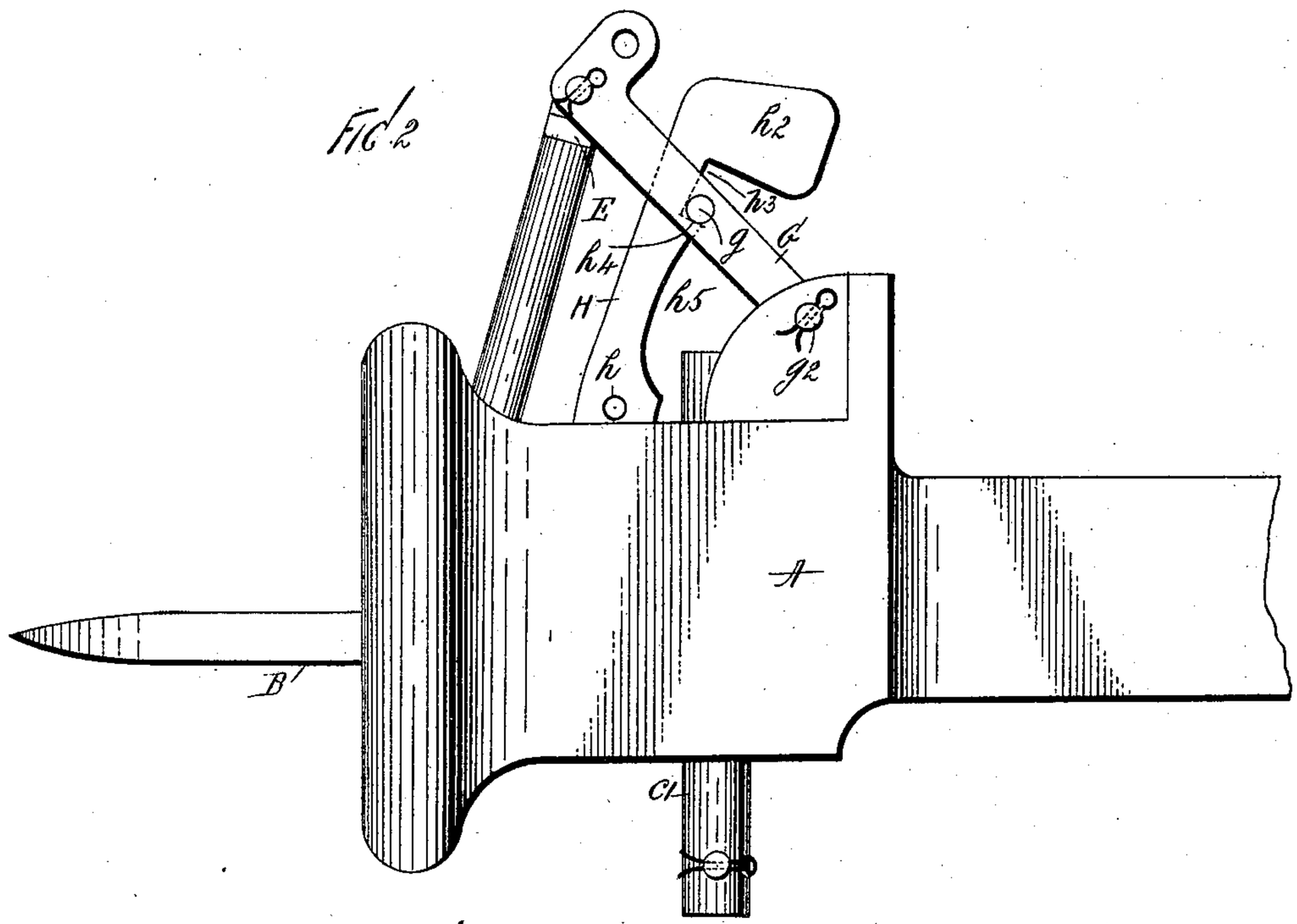
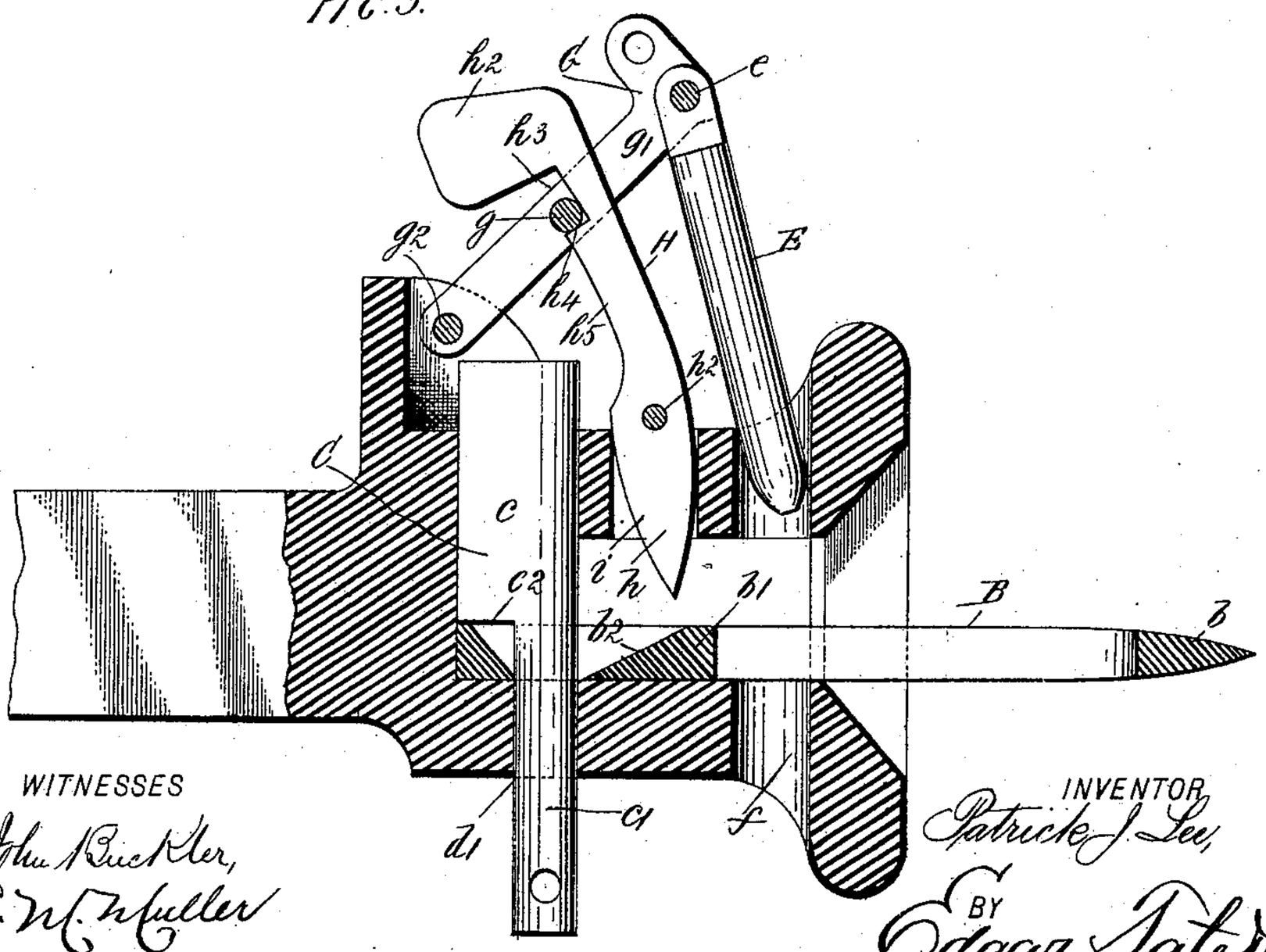


FIG. 3.



WITNESSES

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FIG. 4.

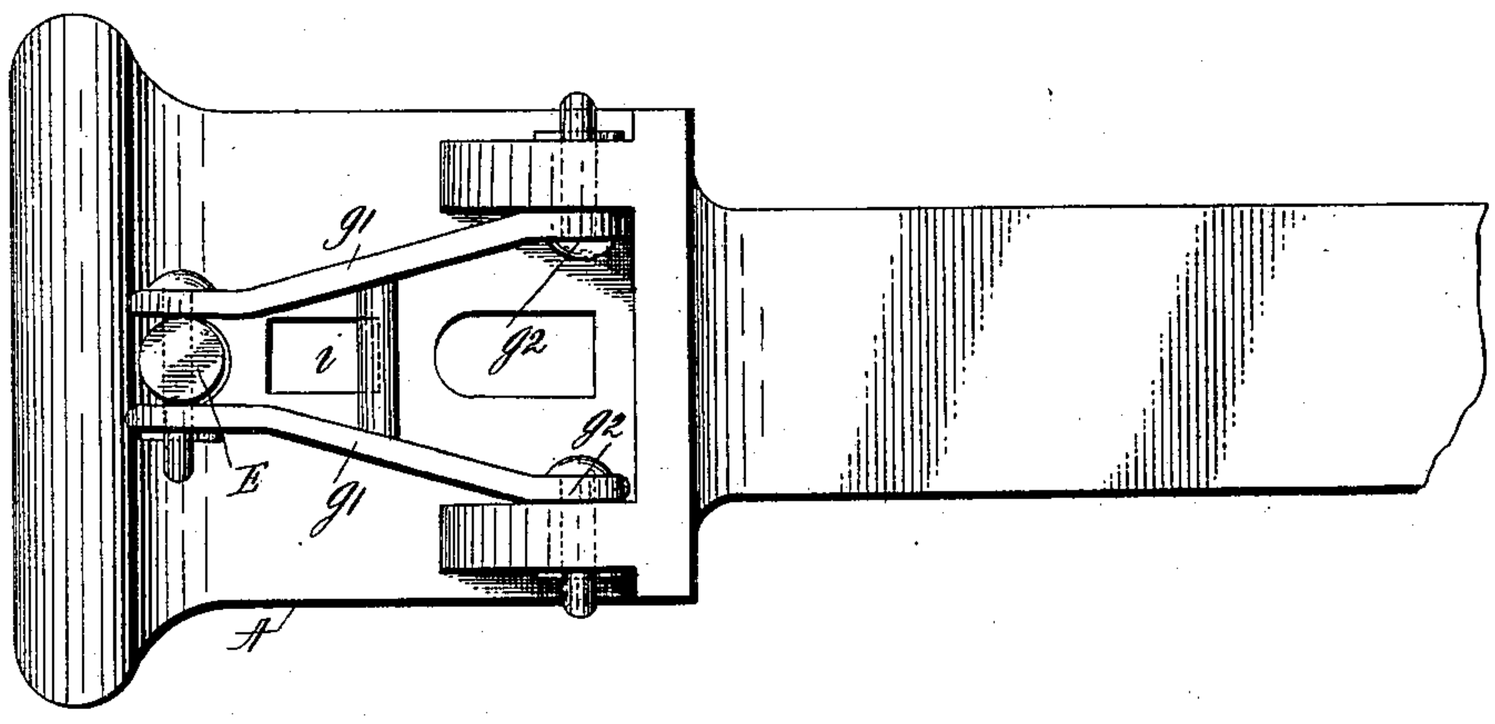
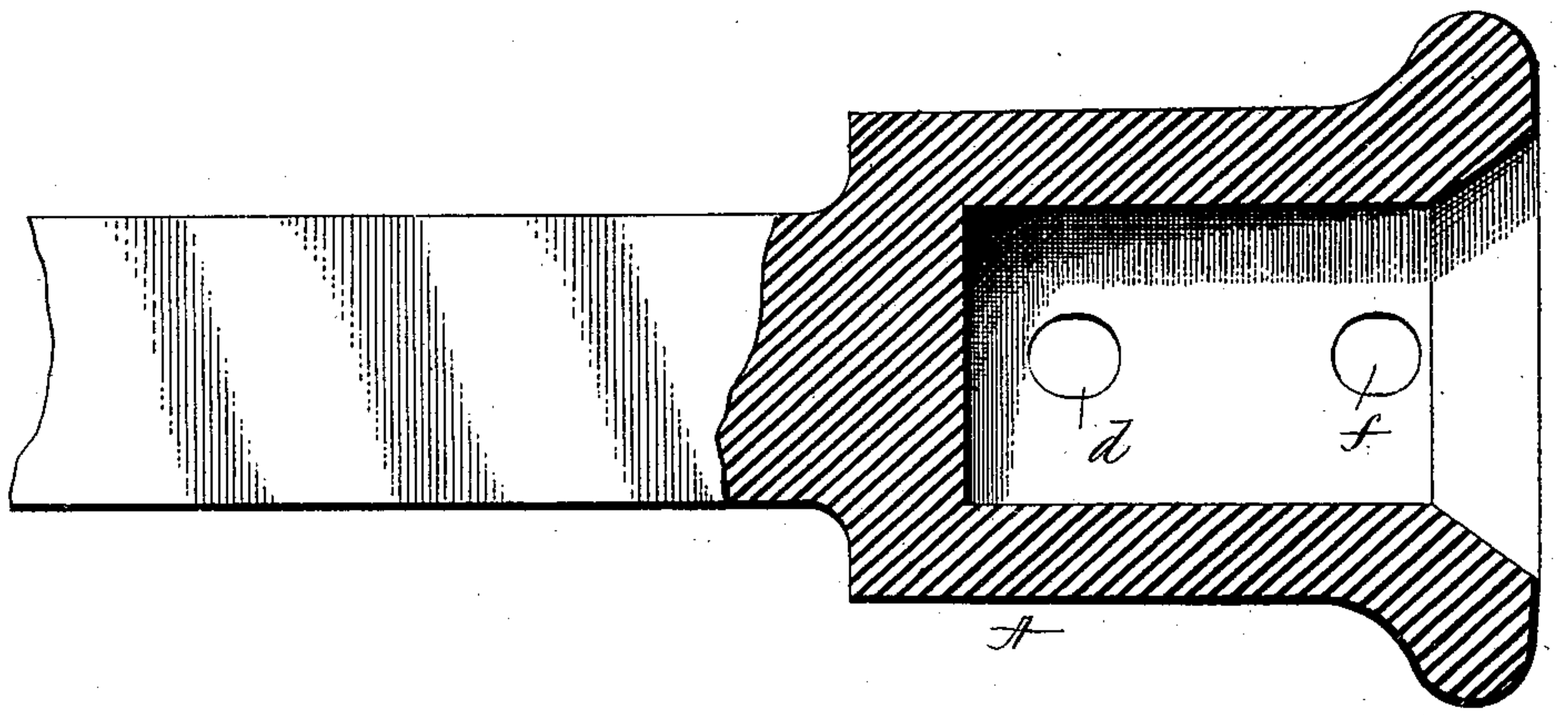


FIG. 5.



WITNESSES
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UNITED STATES PATENT OFFICE.

PATRICK JOSEPH LEE, OF VELASCO, TEXAS, ASSIGNOR OF ONE-HALF TO CHARLES E. DAY, OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 618,886, dated February 7, 1899.

Application filed April 7, 1898. Serial No. 676,760. (No model.)

To all whom it may concern:

Be it known that I, PATRICK JOSEPH LEE, a citizen of the United States, residing at Velasco, in the county of Brazoria and State of Texas, have invented certain new and useful Improvements in Car-Couplings, of which the following is a full and complete specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to automatic car-couplings; and it has for its object to provide a simple and improved coupling device of this character which will effectively operate to automatically couple, which can be used in connection with the ordinary pin-and-link coupling, and which is adapted to be uncoupled from the sides or top of the car.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by the same letters of reference in each of the views, and in which—

Figure 1 is a side view, partly in section, of a car-coupling mechanism embodying my improvements and showing two opposite draw-heads in coupled position. Fig. 2 is a side view of one of the draw-heads with the mechanism in uncoupled position. Fig. 3 is a vertical longitudinal sectional view of the draw-head, showing the mechanism in uncoupled position. Fig. 4 is a top or plan view of the draw-head with the latch removed, and Fig. 5 is a horizontal sectional view illustrating the bottom plan of the draw-head.

Referring to the drawings, A designates the draw-head, which is provided with the usual link-recess *a*, having the flaring mouth *a'*. The draw-head permanently carries a link B, having a pointed or wedge-shaped outer end *b*, said link being retained in connection with the draw-head and also normally maintained in horizontal position by means of a weighted pin C, arranged at the rear of the recess *a* and embodying a weighted head *c*, passing through a corresponding opening *d* in the top of the draw-head, and a lower end *c'*, passing through a corresponding opening *d'* in the bottom of the draw-head. The head *c* forms a shoulder c^2, which bears upon the rear end of the link B, and the lower end portion *c'* of the pin passes through the link, as shown. The head *c* of this weighted pin and the opening *d* are preferably of corresponding angular contour in cross-section, so that turning of said pin in its vertical sliding movement is obviated.

E designates the coupling-pin, which is adapted to operate in a corresponding vertical opening *f* in the front portion of the draw-head and is pivotally connected, as at *e*, with a swinging bracket or arm G, by which said pin is carried. Said bracket G carries a cross-piece *g* at a point in rear of the pin E, and the bracket is preferably of approximately A shape, with its front ends embracing and pivotally connected to the top of the coupling-pin, while its rearwardly-divergent arms *g' g'* are pivotally connected at their rear ends, as at g^2, to the top of the draw-head.

H designates a gravity-latch which is arranged in front of the cross-piece *g* of the swinging bracket G and has a pointed or beveled lower end *h*, projecting through an opening *i* in the top of the draw-head and in rear of the coupling-pin opening *f*. The lower end of this latch and the opening *i* are preferably of angular contour in cross-section, whereby turning of the latch in its vertical operation is prevented. This latch is adapted to form a support by which the swinging bracket or arm G is retained in elevated position and the coupling-pin E is lifted up to the position shown in Fig. 3 of the drawings and ready for the automatic coupling operation. The latch has a trip engagement with the bracket G and is fulcrumed and sustained with its pointed end *h* projecting a proper distance within the draw-head recess *a* by means of a cross-pin *h'*, which normally rests upon the top of the draw-head. At the top end of the latch is provided a counterbalance-head h^2, and in its rear edge, beneath said counterbalance-head, is provided a notch or recess h^3, adapted to receive the cross-piece *g* of the swinging bracket-arm and forming a shoulder h^4, upon which said cross-piece rests. The rear edge of the latch, between the shoulder h^4 and its pointed end portion *h*, is preferably inwardly curved or inclined, as at h^5, so that it forms a way down which the cross-piece *g* will travel when the latch is tripped

or released and the bracket or arm G drops downwardly. The link B is provided with a cross-piece b', having a downwardly and rearwardly beveled rear edge b^2, which is adapted to engage the pointed end h of the latch and operate to lift the latter and disengage it from the cross-piece g of the swinging arm when said link in elevated within the draw-head.

It will be understood that in operation when the swinging bracket G is lifted to its elevated or raised position its cross-piece g will travel upwardly against the guide edge or way h^5 of the latch H until it reaches the shoulder h^4, when the top end of the latch will drop rearwardly by reason of its counterbalance weighted head h^2 and the cross-piece g will be received within the recess h^3 and rest upon the shoulder h^4. The coupling-pin E will thus be retained in elevated position with its lower end projecting within the top portion of the vertical opening f, and the latch will operate to sustain the parts in the position just stated. The link B is then in normal horizontal position, and is thus maintained by operation of its weighted governing-pin C. Now with the parts in this position the automatic coupling is effected in the following manner: When the point of the link of the adjoining draw-head enters the recess a of the opposite draw-head, it will ride up over the link contained therein and operate by engagement with the pointed end h to lift the latch H, or said link will ride under the link contained in the opposite draw-head and operate to lift said link, so that the inclined edge b^2 of its cross-bar b' will operate to lift the latch. When the latch is thus lifted by the entrance of the link of an adjoining draw-head, the shoulder h^4 will be disengaged from the cross-piece g of the swinging arm G, and as soon as the latch is thus tripped and the swinging arm released the latter will automatically drop downwardly and carry in its movement the coupling-pin E, which will pass through the two links and effect the coupling. To uncouple, it is only necessary to lift the swinging arm to the position first above described until the same is again engaged by the latch, so that it is sustained in elevated position.

To enable the convenient and safe uncoupling of the mechanism, a rod J is pivotally mounted upon the end of the car and comprises opposite end portions j, extending across the ends of the car and to the respective sides of the same, and a forwardly-projecting arm or projection j', the outer end of which is connected, preferably by a chain k, with the outer end of the swinging bracket G. The top arm j may be A-shaped, if desired. A convenient means for operating the mechanism from the top of the car may be provided by a vertical sliding rod L, mounted at the end of the car and connected by a chain m with the outer end of the front arm j' of the rod J.

The operation and advantages of my invention will be readily understood. In construction it is simple and durable, and it will effectively operate under various conditions and circumstances. It will be obvious that it may be conveniently used for coupling with an ordinary pin-and-link coupling without changing the links, and it will also be noted that the links when coupled will adjust themselves at any requisite angle within the draw-head by reason of the sliding movement of the governing gravity-pin C.

The general construction and arrangement as embodied in my invention provides a double-link coupling, which insures additional strength and security against accident. Each draw-head carries a link and two pins, one being the coupling-pin and the other pin governing the position of the link, in combination with a lifting mechanism for operating the coupling-pin and a latch mechanism operated by the link and governing the operation of the lifting mechanism.

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

1. In a car-coupler, the combination with a draw-head having a link-recess in the end thereof, and a swinging member provided with a vertically-operating coupling-pin, and a counterbalance latch-piece loosely supported with relation to the draw-head, with its lower end projecting within the link-recess, said latch-piece being arranged to engage the swinging member when the latter is in an elevated position, and said draw-head being provided with a vertical opening through which said coupling-pin is adapted to pass, and the upper wall of the draw-head being provided with a vertical opening adapted to receive the end of the latch-pin, substantially as shown and described.

2. An improved car-coupling, comprising the draw-head having the link-recess, a swinging bracket or arm carrying the vertically-moving coupling-pin and a latch-piece having its lower end projecting within the link-recess and adapted to be elevated by the link, said latch-piece being provided with a notch or recess at its upper portion adapted to be engaged by a part of the swinging arm when the latter is in elevated position and with a counterbalance-head, substantially as and for the purpose set forth.

3. An improved car-coupling, comprising the draw-head having the link-recess, the pivoted swinging bracket or arm carrying the vertically-moving coupling-pin at its outer end, and provided with a cross-piece, and the latch having a pointed or beveled lower end projecting within the link-recess and adapted to be lifted by the link, said latch being arranged between the cross-piece of the swinging bracket and the coupling-pin and being provided in its rear edge with a notch or recess forming a shoulder adapted to be engaged by said cross-piece when the bracket

is in elevated position and with a counterbalance-head, substantially as and for the purpose set forth.

4. In a car-coupler, the combination with a draw-head having a link-recess in the end thereof, and a swinging member provided with a vertically-operating coupling-pin, and a counterbalance latch-piece loosely supported with relation to the draw-head, with its lower end projecting within the link-recess, said latch-piece being arranged to engage the swinging member when the latter is in an elevated position, and said draw-head being provided with a vertical opening through which said coupling-pin is adapted to pass, and the upper wall of the draw-head being provided with a vertical opening adapted to receive the end of the latch-pin, and means for operating said swinging member, substantially as shown and described.

5. An improved car-coupling, comprising the draw-head having the link-recess, the link carried in said recess and having a beveled or inclined portion, a supplementary pin engaging the rear portion of said link and operating to retain the same in normal permanent connection with the draw-head, the vertically-moving coupling-pin, a vertically-swinging bracket or arm carrying said coupling-pin, and a counterbalanced latch-piece vertically mounted and having its lower end projecting within the draw-head recess and adapted to be lifted by the beveled or inclined portion of the link, said latch being arranged to engage the swinging arm when the latter is elevated, substantially as and for the purpose set forth.

6. An improved car-coupling, comprising the draw-head having the link-recess, the link having the beveled or inclined portion, the vertically-moving rear pin engaging said link and operating to retain the same in normal permanent connection with the draw-head, said retaining-pin being weighted and having a shouldered portion resting upon the rear end of the link, the vertically-operating coupling-pin, the vertically-swinging pivoted bracket or arm carrying the coupling-pin and provided with a cross-piece, and the counterbalanced latch having a pointed or beveled lower end projecting within the draw-head recess and provided in its edge with a notch or recess having a shoulder adapted to engage the cross-piece of the swinging bracket and with a counterbalance-head, substantially as and for the purpose set forth.

7. In a car-coupling, the combination with a swinging member arranged to govern the vertical movement of the coupling-pin, of a counterbalanced latch-piece loosely mounted with respect to the draw-head, and the swinging member, and supported in such relation to the swinging member that it has a vertical and rocking trip movement with respect to the same, said latch-piece being adapted to engage said swinging member when the parts are in uncoupled position, substantially as shown and described.

8. In a coupling, the combination, with the draw-head, and a swinging member or bracket mounted above the draw-head and arranged to govern the vertical movement of the coupling-pin, of a counterbalanced latch-piece loosely mounted with respect to the draw-head and the swinging member, said latch-piece having its lower end projecting within the draw-head recess and its upper end projecting above the draw-head and provided with the counterbalance weighted head, the relative construction and arrangement being such that the latch-piece is supported upon the draw-head and has a free vertical movement with respect to the swinging member, substantially as set forth.

9. In a car-coupling, the combination, with a swinging member or bracket arranged to govern the vertical movement of the coupling-pin, of a counterbalanced latch-piece loosely mounted with relation to the coupling and the swinging member and having at its top end a rearwardly-projecting counterbalance-head and provided in its rear edge beneath said head with a notch or recess, the swinging member being provided with a projection adapted to be engaged by said notch or recess, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 26th day of March, 1898.

PATRICK JOSEPH LEE.

Witnesses:
W. T. DAY,
CHARLES E. DAY.