

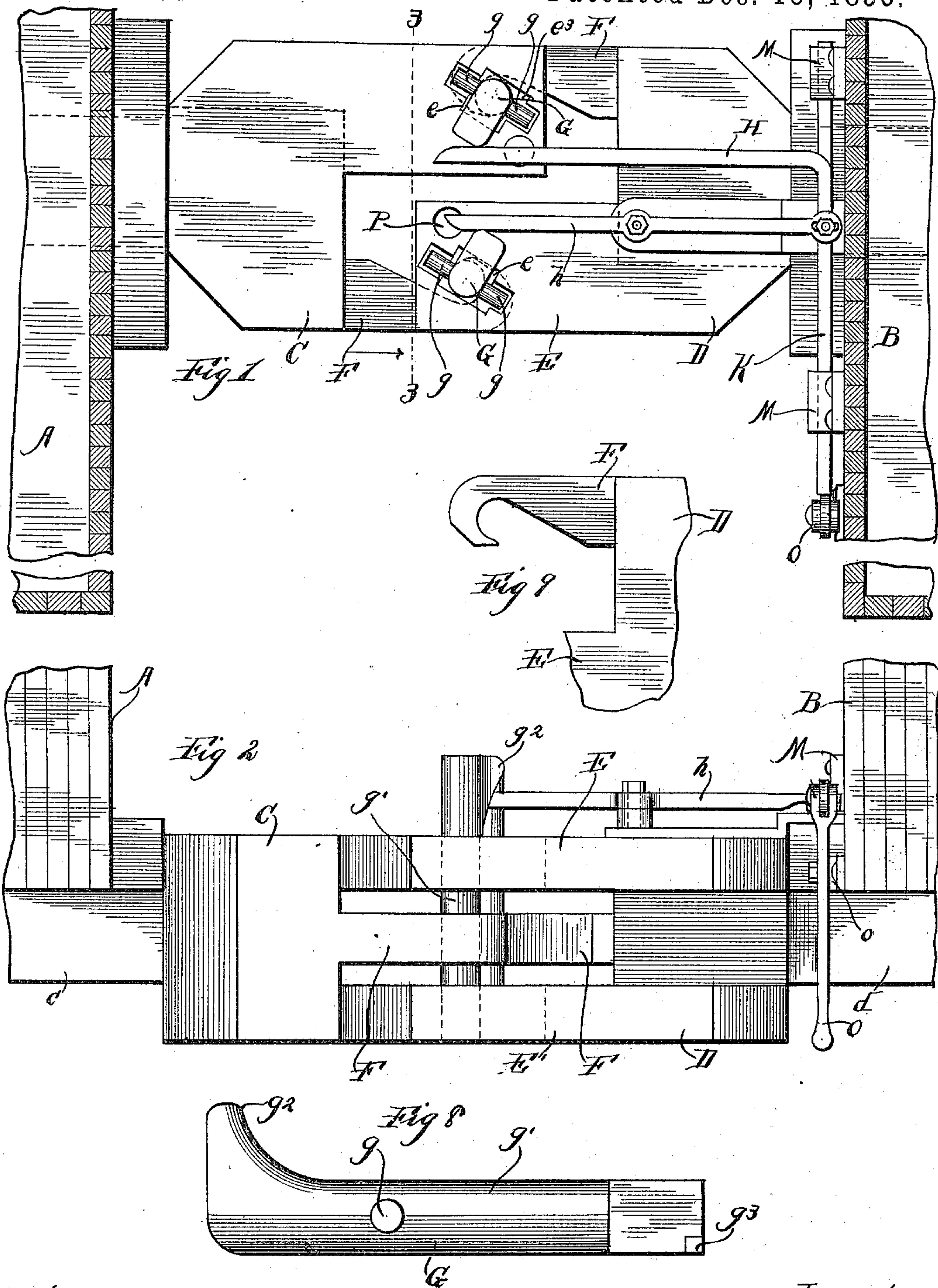
(No Model.)

2 Sheets—Sheet 1.

J. J. BOLGER.  
AUTOMATIC CAR COUPLING.

No. 572,954.

Patented Dec. 15, 1896.



Witnesses

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Inventor  
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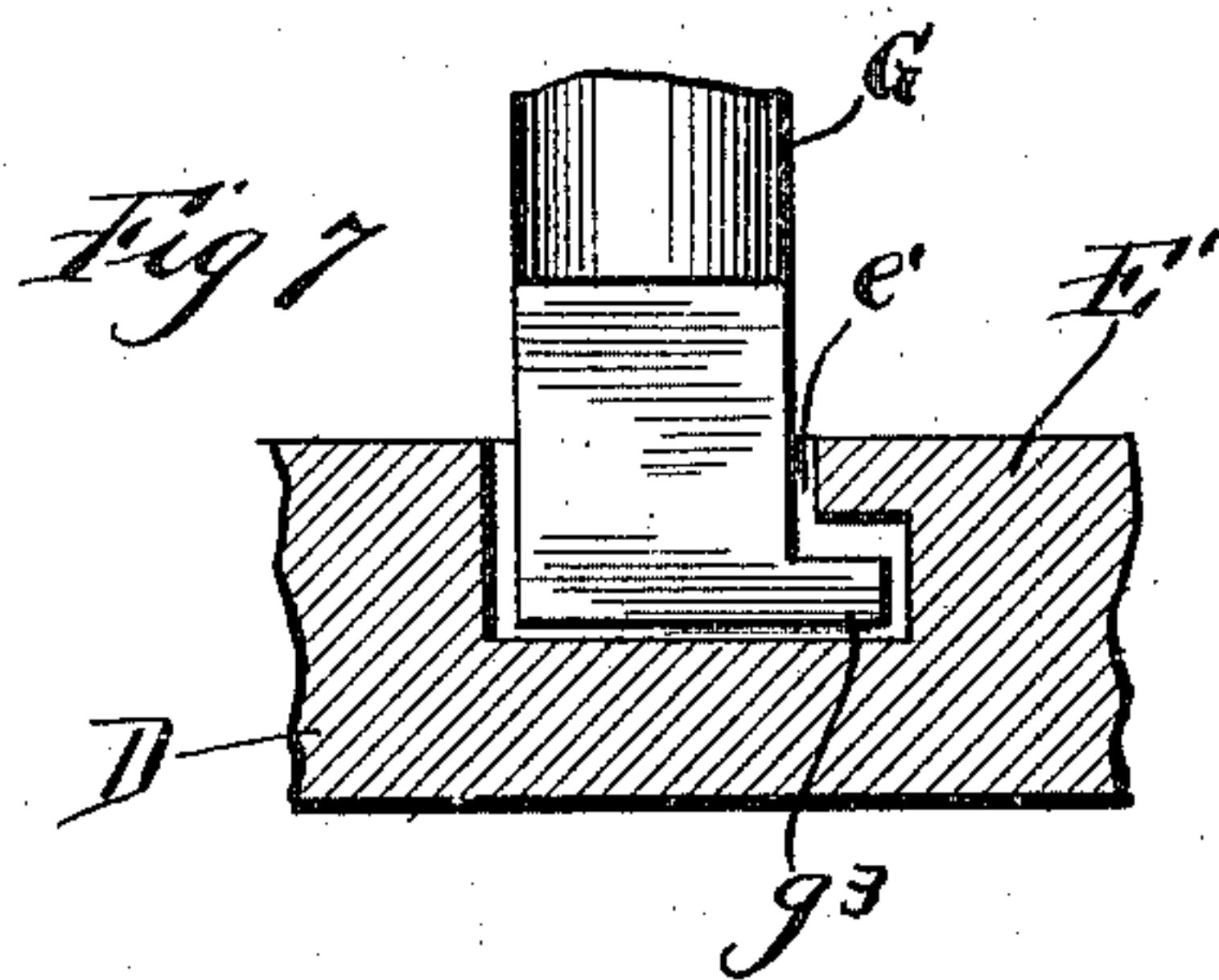
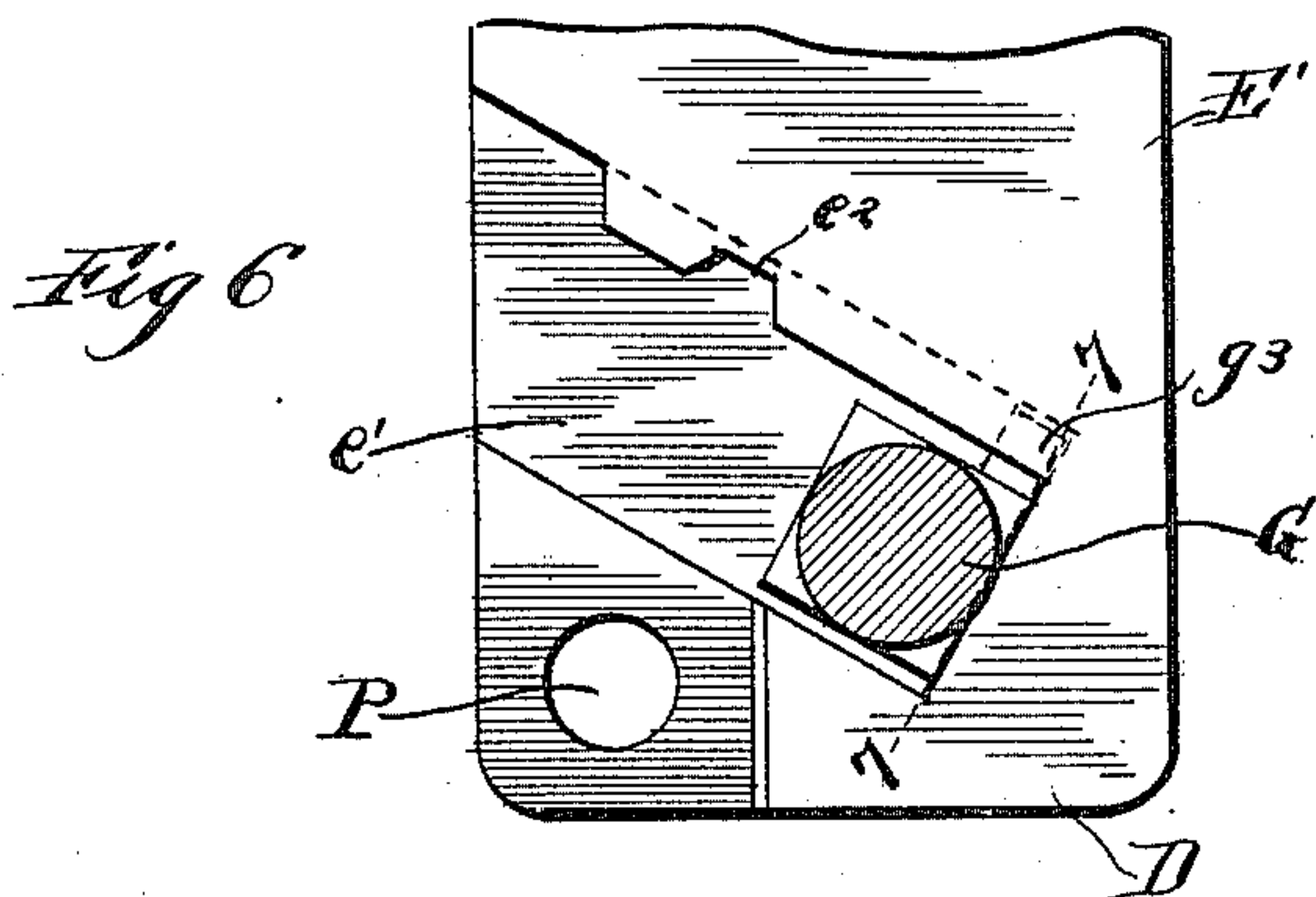
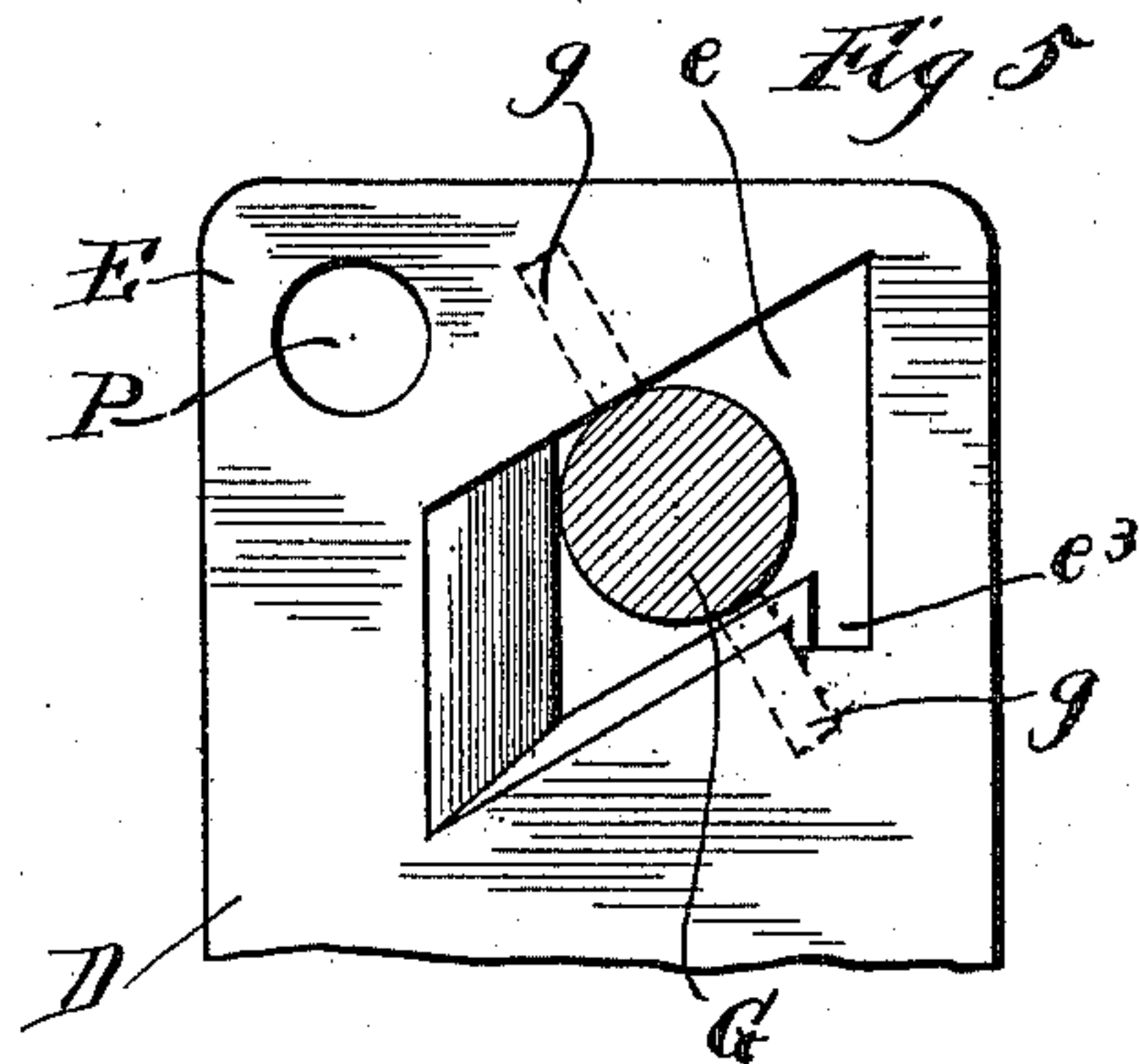
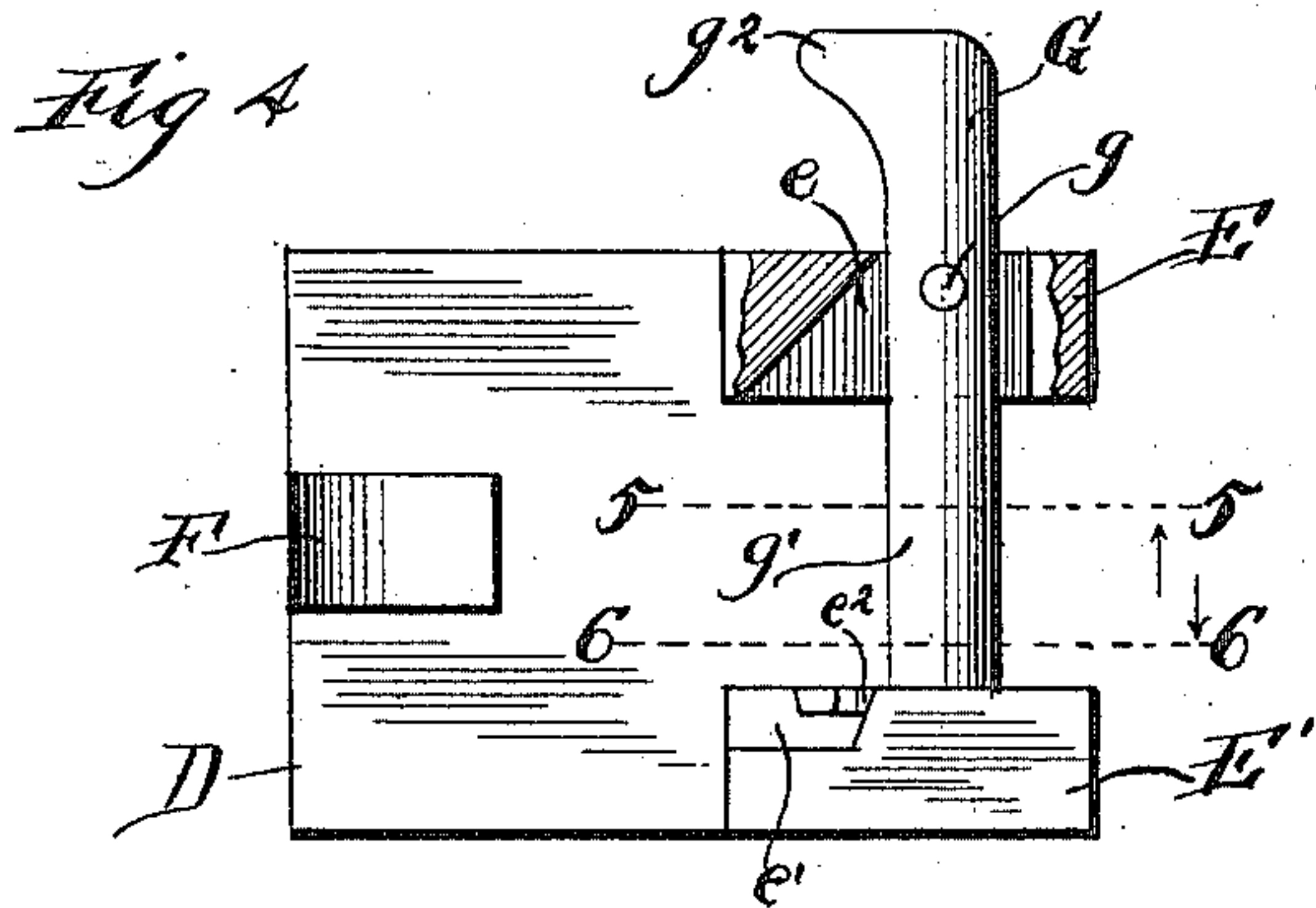
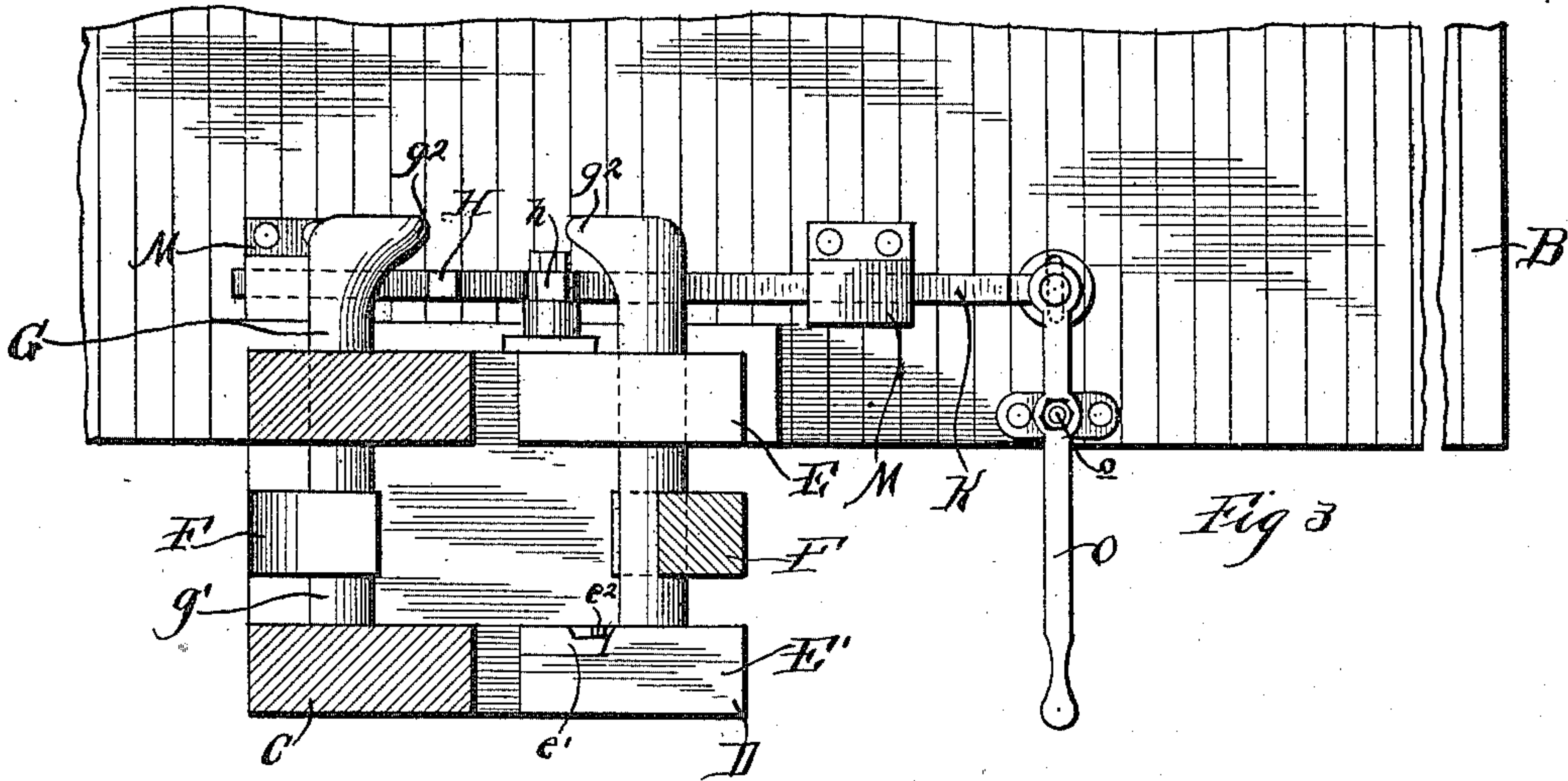
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# UNITED STATES PATENT OFFICE.

JOSEPH J. BOLGER, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-THIRD TO  
CORNELIUS MEERSE, OF SAME PLACE.

## AUTOMATIC CAR-COUPLER.

SPECIFICATION forming part of Letters Patent No. 572,954, dated December 15, 1896.

Application filed March 4, 1895. Serial No. 540,559. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH J. BOLGER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Car-Couplers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The object of the invention is to provide for secure and automatic coupling of cars and simple and easy means for disengaging the coupling.

The invention consists in forming the coupler-head with a projection upon one side in which is hung a laterally-swinging pin, and a projection upon the opposite side in the form of an inturned hook, so that when two of these couplings come together the hook of the one grapples the pin of the other.

The invention further consists in various details of construction, as hereinafter fully pointed out.

In the accompanying drawings, Figure 1 shows a pair of couplers in plan view as being in engagement, a portion of the car ends being shown in plan section. Fig. 2 is a side elevation of the same. Fig. 3 is a transverse section on the line 3 3 of Fig. 1. Fig. 4 is an end elevation of one of the couplers, partly in elevation. Fig. 5 is a sectional view on the line 5 5 of Fig. 4. Fig. 6 is a sectional view on the line 6 6 of Fig. 4. Fig. 7 is a sectional view on the line 7 7 of Fig. 6. Fig. 8 is an elevation of the swinging pin, and Fig. 9 is a detail showing a plan view of the hook.

The adjacent ends of two cars coupled together by my improved coupling are indicated at A B and the couplers at C D.

The couplers are secured to the cars in the usual manner by the draw-bars *c d*. As they are exactly alike only one of them needs to be described.

Upon one side of the body portion of the coupler is located a pair of forwardly-projecting arms *E E'* in vertical alinement, and upon the opposite side of the coupler is formed a

forwardly-projecting inturned hook *F*, lying in a horizontal plane which passes through the space between the arms *E E'*. The arm *E* is vertically apertured, as shown at *e*, this aperture being prolonged transversely and obliquely to the arm, its inclination being backward and inward. The upper surface of the lower arm *E'* is provided with a recess *e'*, which is directly below and of the same general contour as the aperture *e*. A pin *G* is set within the aperture *e* and is supported by a pair of trunnions *g g*, which are journaled in suitable recesses in the upper face of the arm *E* and extend laterally from the aperture *e*. The lower end of the pin *G* enters the recess *e'*, but does not reach the bottom thereof, so that it is free to swing upon its trunnions. The body portion *g'* of the pin *G*, that is, the portion between the arms *E E'*, is approximately round, and the upper end of the pin is provided with a lateral projection *g<sup>2</sup>*, directed toward the inner end of the aperture *e*, the lower face of this projection being curved downwardly to the body of the pin. The rearward wall of the recess *e'* is undercut, and near the inner end of this wall a vertical recess is formed therein, as indicated at *e<sup>2</sup>*.

A lateral lug *g<sup>3</sup>* upon the lower end of the pin *G* extends within the undercut of the wall of the recess to prevent the withdrawal of the pin, but may be freely passed through the aperture *e<sup>2</sup>*. A lateral extension of the aperture *e* (shown at *e<sup>3</sup>*) accommodates the lug *g<sup>3</sup>* as the pin *G* is inserted or withdrawn. The normal position of the pin *G* is near the outer end of the aperture *e* and recess *e'*, and hence there is no liability of the accidental disengagement of the lug *g<sup>3</sup>* from the flange of the wall of the recess *e'*. The inner end of the aperture *e* is inclined downwardly and backwardly to form ample clearance for the swinging of the pin *G*.

The hook *F* is adapted to engage the body *g'* of the pin *G*, and its end is inclined or curved, so that when it contacts with the pin of the opposing coupler it swings it laterally and passes it, the pin immediately falling backwardly and being engaged by the hook. As the couplers are all alike, it follows that, when applied to the end of a car, the pin is



always at the same side, as shown in the drawings, to the left, so that, as two cars come together, the couplers are always in such position that the hook of the one coupler will engage the pin of the other. This coupler forms a perfectly-secure attachment, and yet one which is not rigid, allowing for the necessary slack in the train to permit the engine to start it. In passing a curve in the track it will be seen that the hook upon the inner side of the curve will slide freely upon the pin, so that there is no straining whatever of the parts.

I attach at one end of the car, as upon the car B, the following-described device for disengaging the coupling: A sliding rod K is located across the end of the car, being carried in suitable loops, as M M, and being pivotally connected at one end with a swinging arm O, which is pivoted at o to the end of the car, the other or free end of the lever O being adapted for the grasp of the operator. An arm H is secured rigidly to the rod K and projects forwardly in such position as to engage the inclined lower face of the lateral projection  $g^2$  upon the pin G, carried by the coupler of the car A, so that by sliding the rod K the lower end of the pin G is caused to swing inwardly so as to disengage it from the hook F. A second arm h is so disposed as to similarly engage the pin G of the coupler of the car B. This arm is pivoted to the upper surface of the coupler D and is in pivotal engagement with the rod K, so that the movement of the rod which carries the arm H outwardly also carries the outer end of the arm h outwardly, so that the pins are simultaneously disengaged from their respective hooks.

The arms E E' may be provided near their forward and inner angles with vertical apertures P to accommodate an ordinary coupling-pin, in the event that it becomes neces-

sary to unite a car provided with my improved coupling with a car having the old form of link-coupling.

By so pivoting the pin that it swings obliquely to the line of draft it is more readily pushed aside by the nose of the hook, and when engaged by the hook the draft brings it to the forward end of the recess in the bar E' within which it swings.

I claim as my invention—

1. The combination with a draw-head, of a pair of forwardly-projecting arms in vertical alinement at one side of the head, a pin pivotally carried by the upper arm so as to swing transversely thereto and having a bearing in the lower arm, and an inturned hook projecting forwardly from the opposite side of the head, substantially as described and for the purpose set forth.

2. The combination with a pair of cooperating draw-heads, of a pair of vertically-alined, forwardly-projecting arms on each head, a pin pivoted within the upper arm of each pair so as to swing transversely to the line of draft and having a bearing in the lower arm in the line of draft, a forwardly-projecting inturned hook carried by each draw-head and so disposed as to cooperate with the pin of the opposite head, a bar mounted to slide transversely to the line of draft, an arm rigidly fixed to the bar, a second arm pivoted to one of the draw-heads and in pivotal engagement with the bar, such arms being adapted each to engage one of the pins to swing it when moved by the slide-bar, substantially as described and for the purpose set forth.

JOSEPH J. BOLGER.

Witnesses:

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HUGH C. RAMSAY.