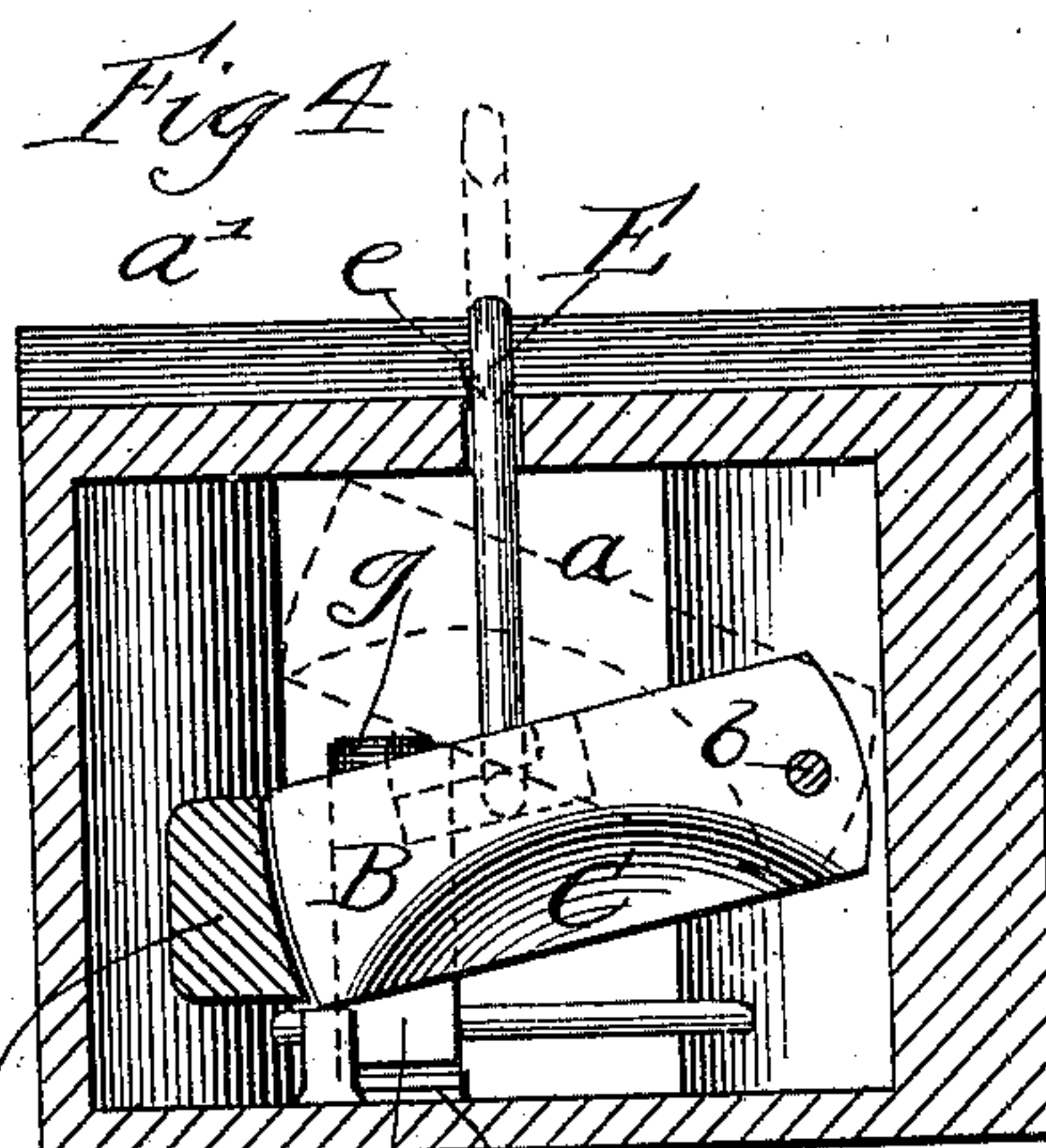
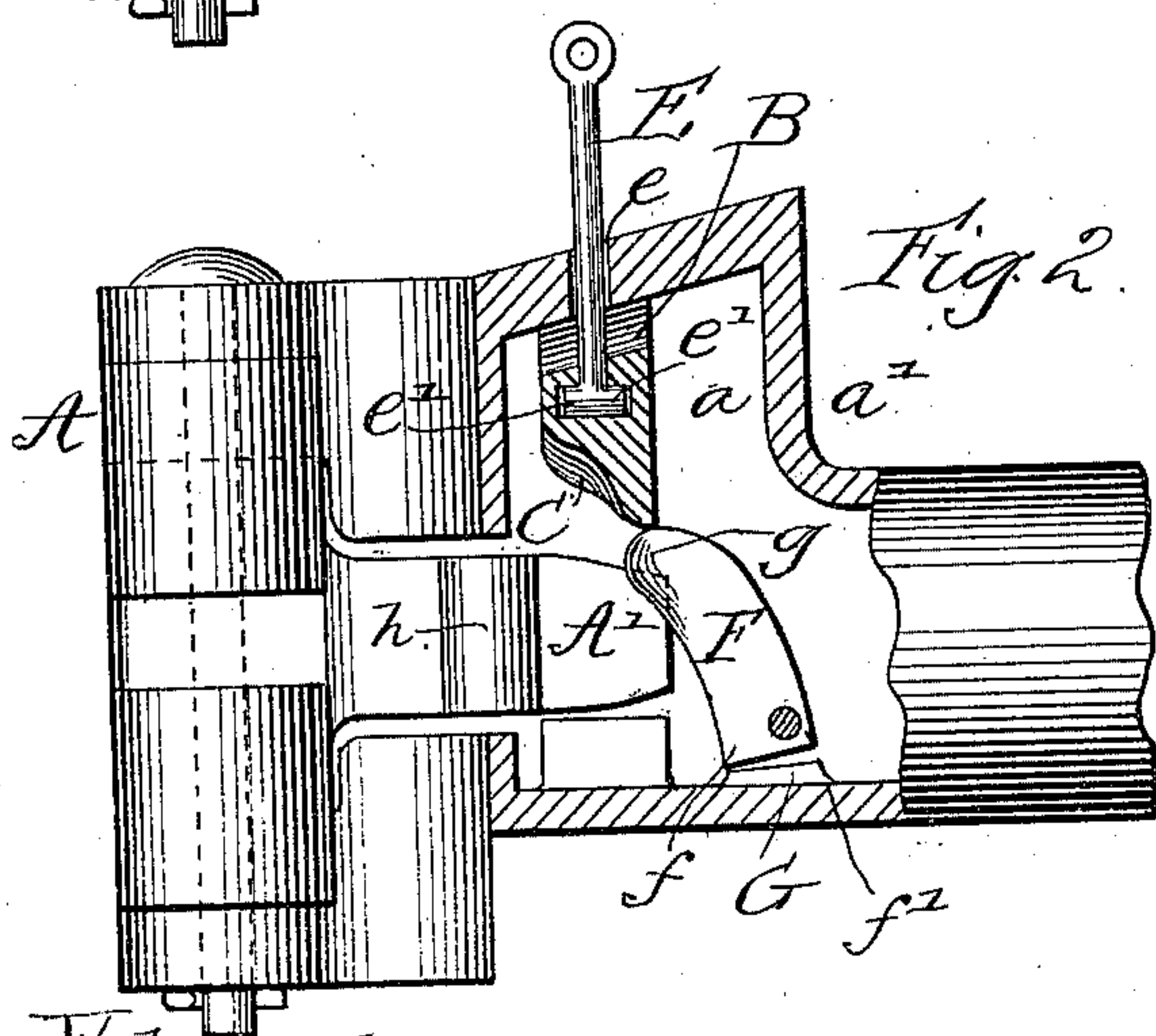
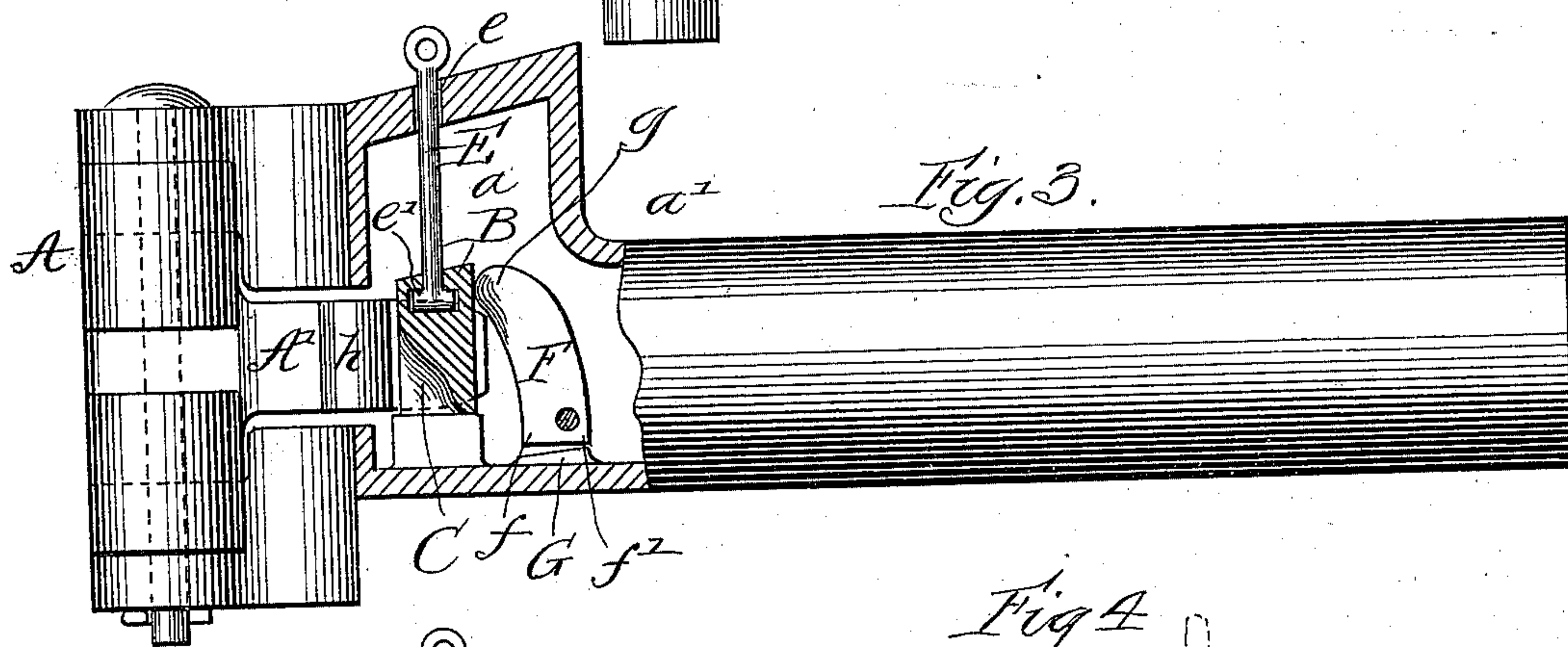
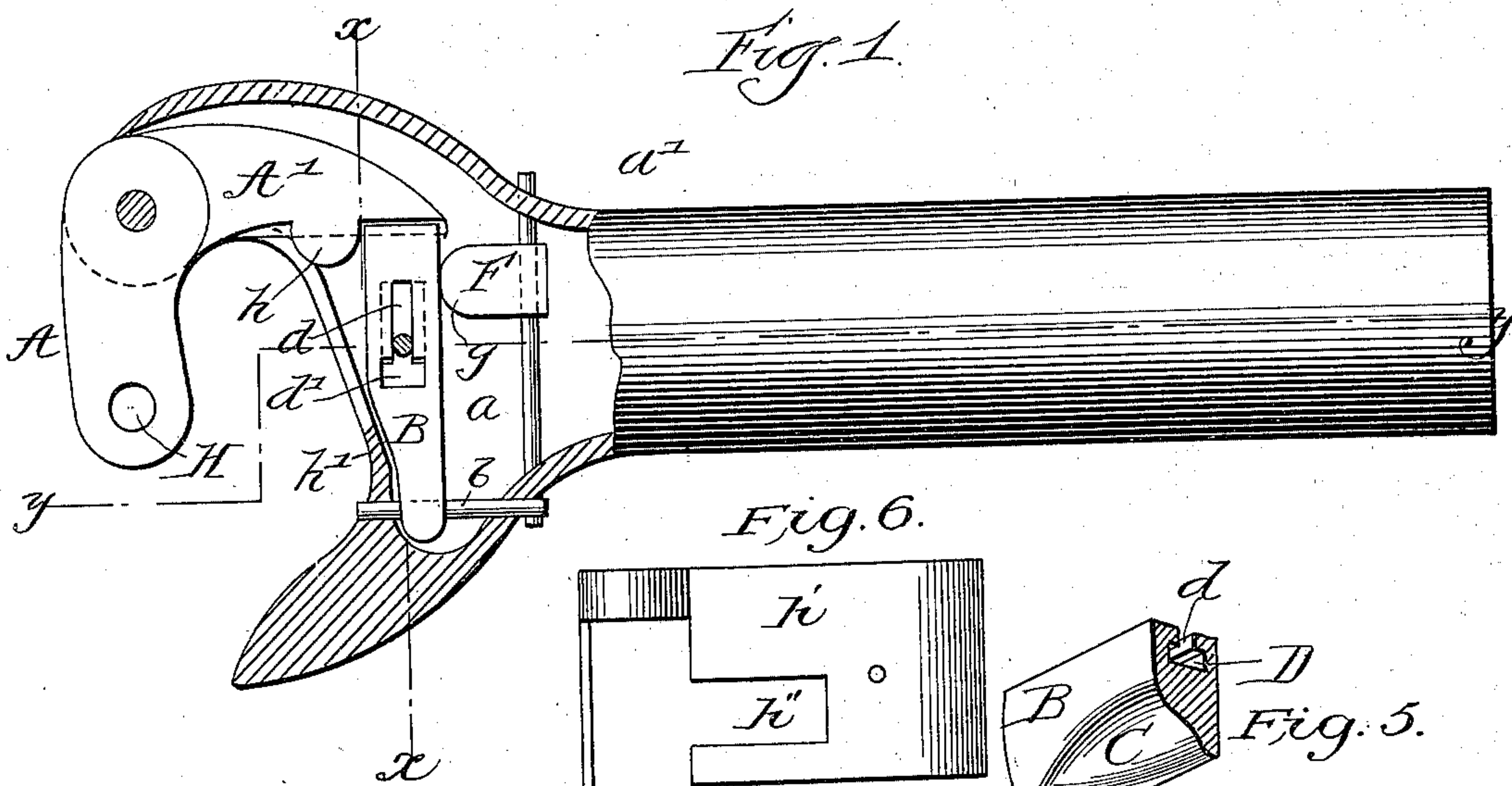


(No Model.)

P. HIEN.  
CAR COUPLING.

No. 555,950.

Patented Mar. 10, 1896.



Witnesses,  
Wm. S. Flaming  
Wm. O. Bell.

Inventor  
Phillip Hien  
By Raymond and O'Connell  
Attys



# UNITED STATES PATENT OFFICE.

PHILLIP HIEN, OF CHICAGO, ILLINOIS.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 555,950, dated March 10, 1896.

Application filed November 7, 1895. Serial No. 568,245. (No model.)

*To all whom it may concern:*

Be it known that I, PHILLIP HIEN, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have  
5 invented certain new and useful Improvements in Car-Couplings, of which the following is a full, clear, and exact description, reference being made to the accompanying drawings, forming a part of this specification.

10 My invention relates to certain new and useful improvements in car-couplings, and particularly to devices for locking and unlocking the coupling.

The object of the invention is to provide a  
15 coupling combining strength with simplicity of construction which can be unlocked and left in an unlocked condition, the parts remaining, however, substantially in the same position as when the coupling is locked until  
20 the cars carrying the coupling are separated.

With these and other ends in view the invention contemplates an ordinary knuckle provided with a suitable tailpiece, a locking-piece pivotally arranged in rear of the tail-  
25 piece and adapted to be operated thereby, a handle for raising said locking-piece, and a dog arranged to engage the locking-piece to hold it in an elevated position, all being combined and arranged substantially in the man-  
30 ner and for the purpose described.

In the accompanying drawings, Figure 1 shows a horizontal sectional view of the head of a coupling embodying my invention. Fig. 2 is a vertical sectional view of a coupling, showing the same unlocked and ready to be  
35 uncoupled. Fig. 3 is a similar view on the line *y y* of Fig. 1, showing the coupling locked in coupled position. Fig. 4 is a cross-sectional view on the line *x x* of Fig. 3. Fig. 5 is a detail sectional view of the locking-piece, and  
40 Fig. 6 is a front view of the coupling-head without other parts.

Similar letters of reference designate the same parts in the several figures of the draw-  
45 ings.

A is an ordinary pivoted knuckle common to this style of coupling, and it is provided with a suitable tailpiece *A'*, which is arranged to operate in a chamber *a* formed in the coupling-head *a'*. A locking-piece B is pivotally  
50 secured within said chamber at one side thereof and partially in the path of the tail-

piece. This locking-piece is supported on a pivot-pin *b*, and one portion of the locking-piece is recessed to form cam-surfaces C, for  
55 a purpose hereinafter described. In the upper side of the locking-piece is a channel D, opening through the side in a narrow slot *d*, and at one end *d'* it is wider to permit of the insertion of the handle. The handle E ex-  
60 tends down through an opening *e* in the top of the coupling-head, and it is provided with right-angled projections *e'* at its lower end which can be easily arranged in the channel D by first inserting it in the wider end *d'*  
65 thereof. In this position the projections *e'* prevent the handle from becoming displaced, and loosely connect it with the locking-piece, so that the latter may be easily operated. A  
70 dog F is eccentrically pivoted in rear of the locking-piece, and it is provided with a forwardly-projecting upper end having a rounded cam-surface *g* adapted to engage the under side of the locking-piece and maintain it in an elevated position at certain times. The  
75 lower portion of this dog is provided with a shoulder *f* adapted to engage a lug G and prevent the dog from falling too far forward, and it also has a shoulder *f'* to prevent it falling  
80 too far backward.

The several parts of the coupling are properly assembled and the operation is as follows: When the knuckle of the coupling is thrown open, the locking-piece will rest in the position shown in full lines in Fig. 4. As the  
85 knuckle is closed, the tailpiece will swing in the arc of a circle and the end thereof will bear against the recessed portion of the locking-piece, the cam-surfaces of which are so formed that the tailpiece will push the lock-  
90 ing-piece up and out of its path of movement. The tailpiece does not, however, rise so high in this operation that the dog will engage the lower side thereof, as the upper end of the dog is in a higher plane than the upper sur-  
95 face of the tailpiece. The tailpiece continues in its movement until it passes the locking-piece, which immediately falls back into position, as shown in Fig. 1, and locks the coupling.

To unlock the coupling, the locking-piece is raised by means of the handle until the dog falls by gravity into position beneath it, whereupon the locking-piece will be sup-  
100



ported by the dog clear of the tailpiece, as shown in Fig. 2. The parts will remain in this position until the cars are separated, and at that time the tailpiece swinging outward will push the dog out of engagement with the locking-piece, so that the latter will fall into its customary position.

In order that the locking devices may be protected as far as possible from the operation of a link, which may be employed to couple the cars through the medium of a pin inserted in the hole H in the knuckle, I provide a projection *h* on the tailpiece and a front plate *h'* on the coupling-head, having an opening *h''* to receive the tailpiece. By this construction the opening in the front of the coupling-head is just wide enough for the movement of the tailpiece when the knuckle is secured in place, and the locking devices are thereby protected.

I am aware that changes in the form and proportion of parts and details of construction of the invention may be made without departing from the spirit or sacrificing the advantages thereof, and I therefore reserve the right to make all such changes as fairly fall within the scope and spirit of the invention.

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

1. In a car-coupling, the combination of a coupling-head, a knuckle pivotally supported therein and provided with a tailpiece, a locking-piece pivoted in the coupling-head in the path of the tailpiece, and a dog arranged behind said locking-piece and adapted to operate by gravity when the locking-piece is raised to engage the lower edge of the locking-piece and hold it in an elevated position, substantially as described.

2. In a car-coupling, the combination of a coupling-head, a knuckle pivotally supported therein and provided with a tailpiece, a locking-piece arranged in the path of the tailpiece and having a channel in the upper part thereof and a slot opening through the top of the coupling-head and a handle provided with side projections adapted to be arranged loosely in the channel, substantially as described.

3. In a car-coupling, the combination of a coupling-head, a knuckle pivoted therein and provided with a tailpiece, a locking-piece arranged in the path of the tailpiece, and a pivoted dog located behind the tailpiece and adapted to fall by gravity into position to support the locking-piece out of the path of the tailpiece, substantially as described.

4. In a car-coupling, the combination of a coupling-head, a knuckle pivoted therein and provided with a tailpiece, a locking-piece having cam-surfaces arranged in the path of the tailpiece, a handle loosely connected to the locking-piece, and a dog arranged in rear of the locking-piece and adapted to maintain the latter in an elevated position when raised by the handle, substantially as described.

5. In a car-coupling, the combination of a

coupling-head, a knuckle pivoted therein and provided with a tailpiece, a locking-piece arranged in the path of the tailpiece, a dog pivotally mounted in rear of the locking-piece, and having the shoulders *f, f'*, adapted to engage the projection G, substantially as and for the purpose described.

6. In a car-coupling, the combination of a coupling-head, a knuckle pivoted therein and provided with a tailpiece, a locking-piece arranged in the path of the tailpiece, and provided with a recess having cam-surfaces adapted to be engaged by the tailpiece to lift the locking-piece out of the path of the tailpiece during the coupling operation, a handle loosely connected to the locking-piece to raise the same out of the path of the tailpiece, and a dog pivoted in rear of the locking-piece and having a forwardly-projecting upper end normally resting against the locking-piece, and adapted to support the latter when the coupling is unlocked, and the shoulders *f, f'*, on said dog arranged to engage with the projection G and maintain the dog in its proper position, substantially as described.

7. In a car-coupling, the combination of a coupling-head provided with a chamber, a knuckle pivoted therein, a tailpiece operating in said chamber, a projection on said tailpiece, and an extension on the coupling-head arranged to narrow the opening to the chamber, substantially as described.

8. In a car-coupling, the combination of a coupling-head, a knuckle pivotally supported therein and provided with a tailpiece, a locking-piece pivoted in the coupling-head in the path of the tailpiece and a dog eccentrically pivoted in the rear of the locking-piece, and adapted to fall a limited distance by gravity into position beneath the locking-piece to support the same and be disengaged from the locking-piece by the outward movement of the tailpiece when the coupling is being uncoupled, substantially as described.

9. In a car-coupling, the combination of a coupling-head, a knuckle pivoted therein and provided with a tailpiece, a locking-piece arranged in the path of the tailpiece, a dog eccentrically pivoted in rear of the locking-piece and adapted to fall by gravity into position beneath said locking-piece to support the same and a shoulder beneath the dog to limit its forward movement, substantially as described.

10. In a car-coupling, the combination of a coupling-head, a knuckle pivoted therein and provided with a tailpiece, a locking-piece arranged in the path of the tailpiece, and a dog eccentrically pivoted in rear of the locking-piece, and provided with a forwardly-projecting upper end having a rounded cam-surface adapted to engage the under side of the locking-piece to support the same, substantially as described.

11. In a car-coupling, the combination of a coupling-head, a knuckle pivoted therein and provided with a tailpiece, a locking-piece ar-



5 ranged in the path of the tailpiece and provided with a narrow slot in its upper side, and a handle extending down through the coupling-head and operating loosely in said slot, substantially as described.

10 12. In a car-coupling, the combination of a coupling-head, a knuckle pivoted therein and provided with a tailpiece, a locking-piece arranged in the path of the tailpiece, and provided with a narrow slot in its upper side having one end thereof wider than the other end,

and a handle extending down through an opening in the coupling-head and provided with right-angled projections at its lower end adapted to be inserted in the slot through the 15 wide end thereof and operate loosely therein, substantially as described.

PHILLIP HIEN.

Witnesses:

WM. O. BELT,  
M. E. SHIELDS.