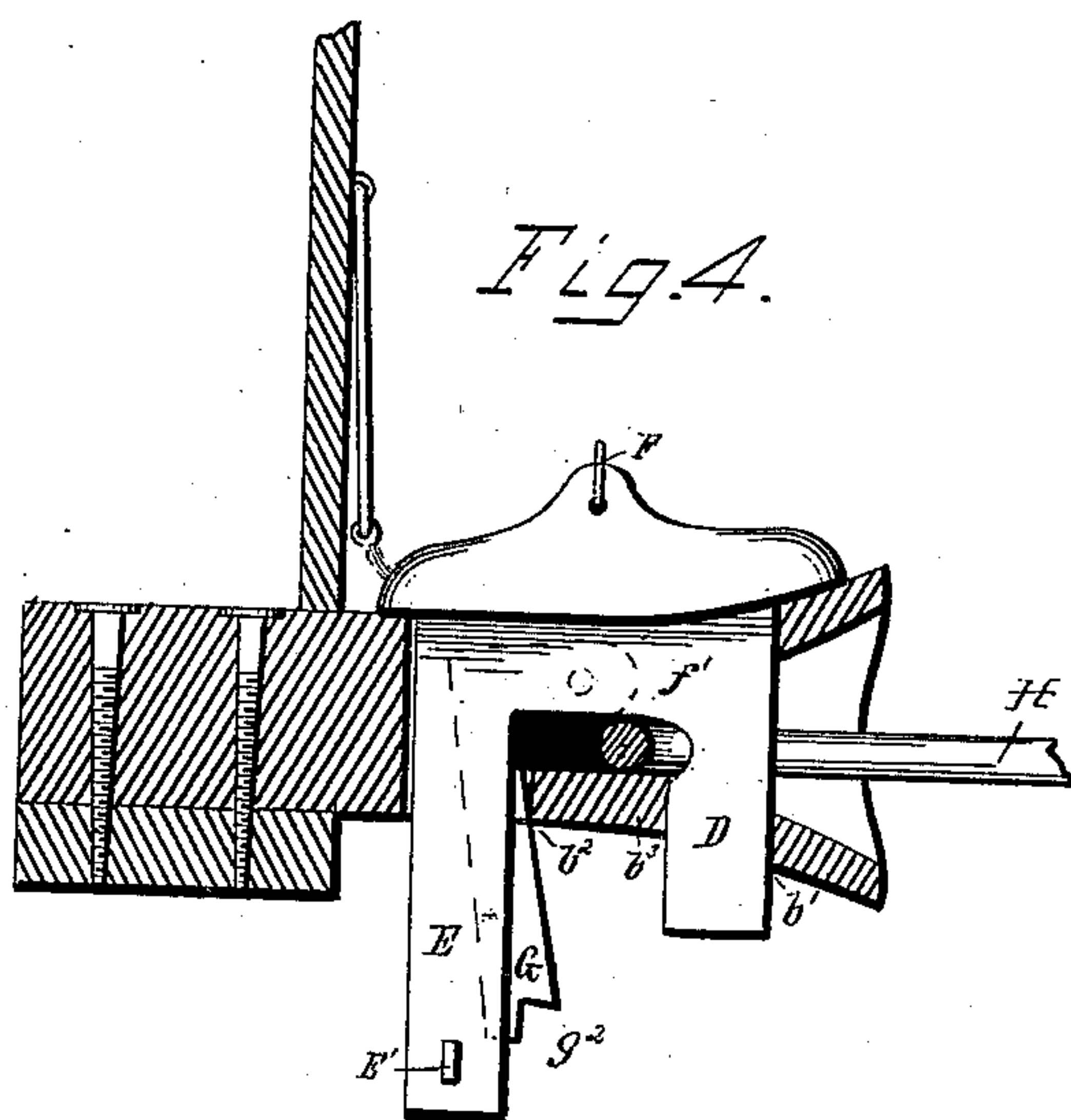
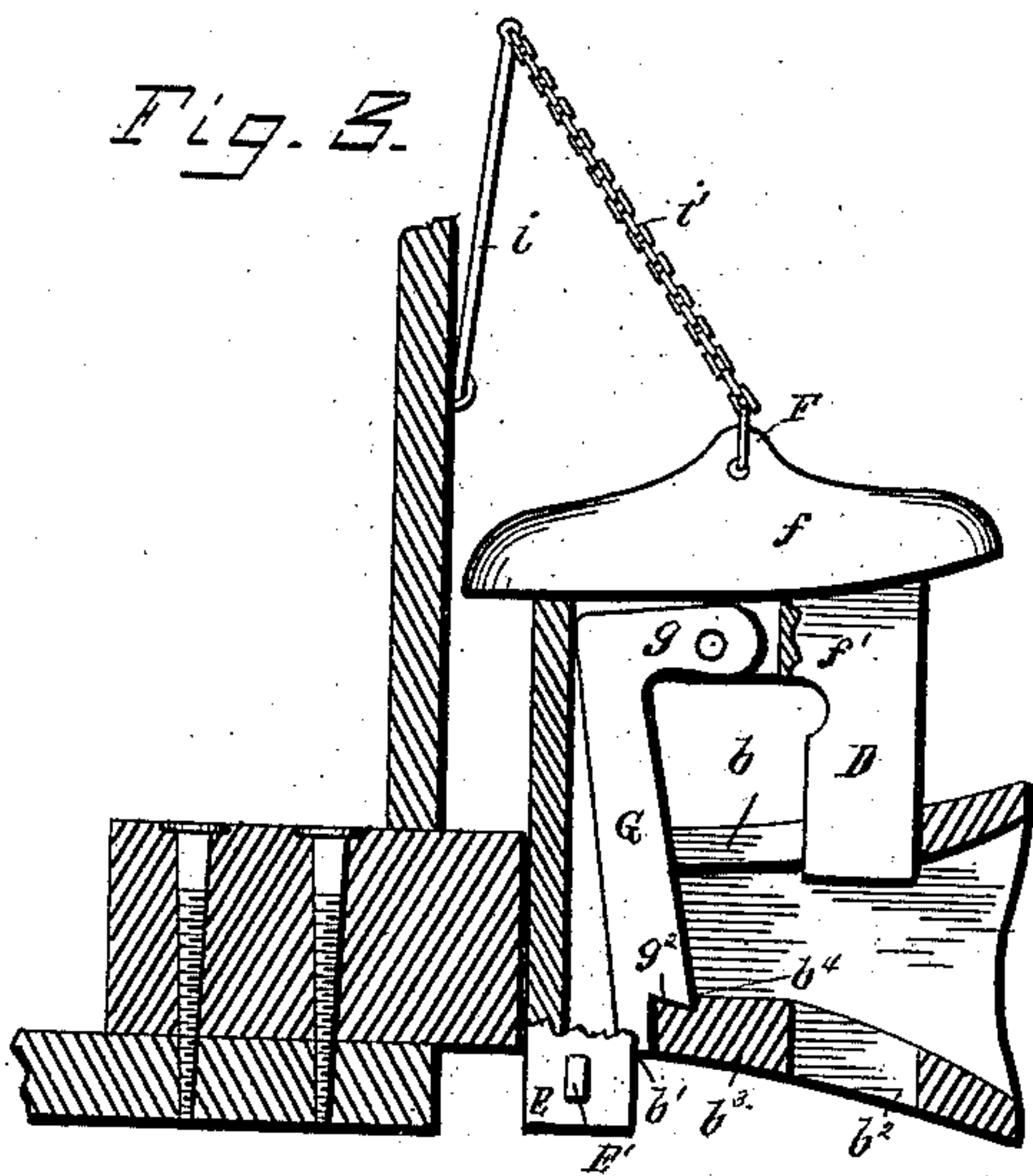
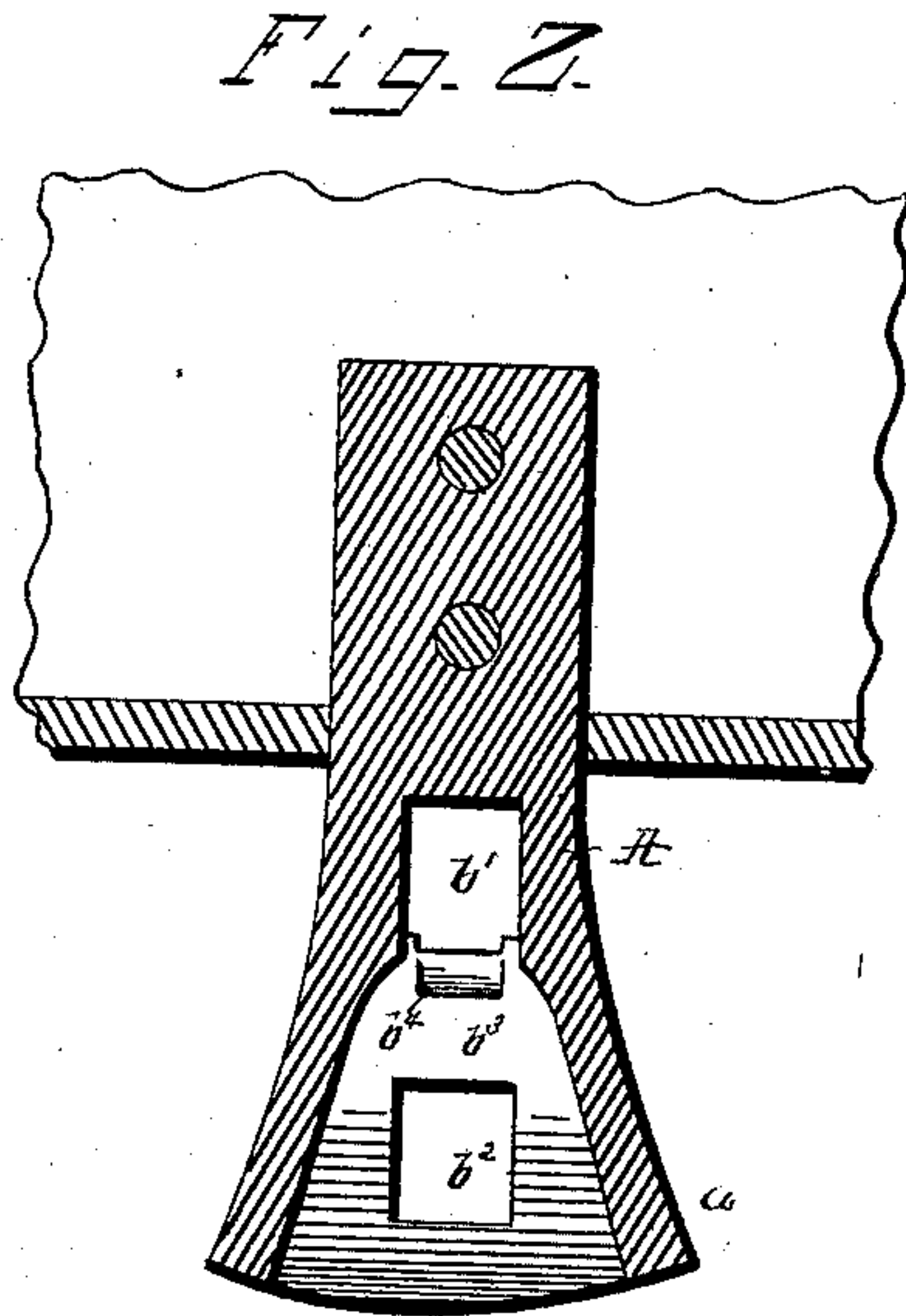
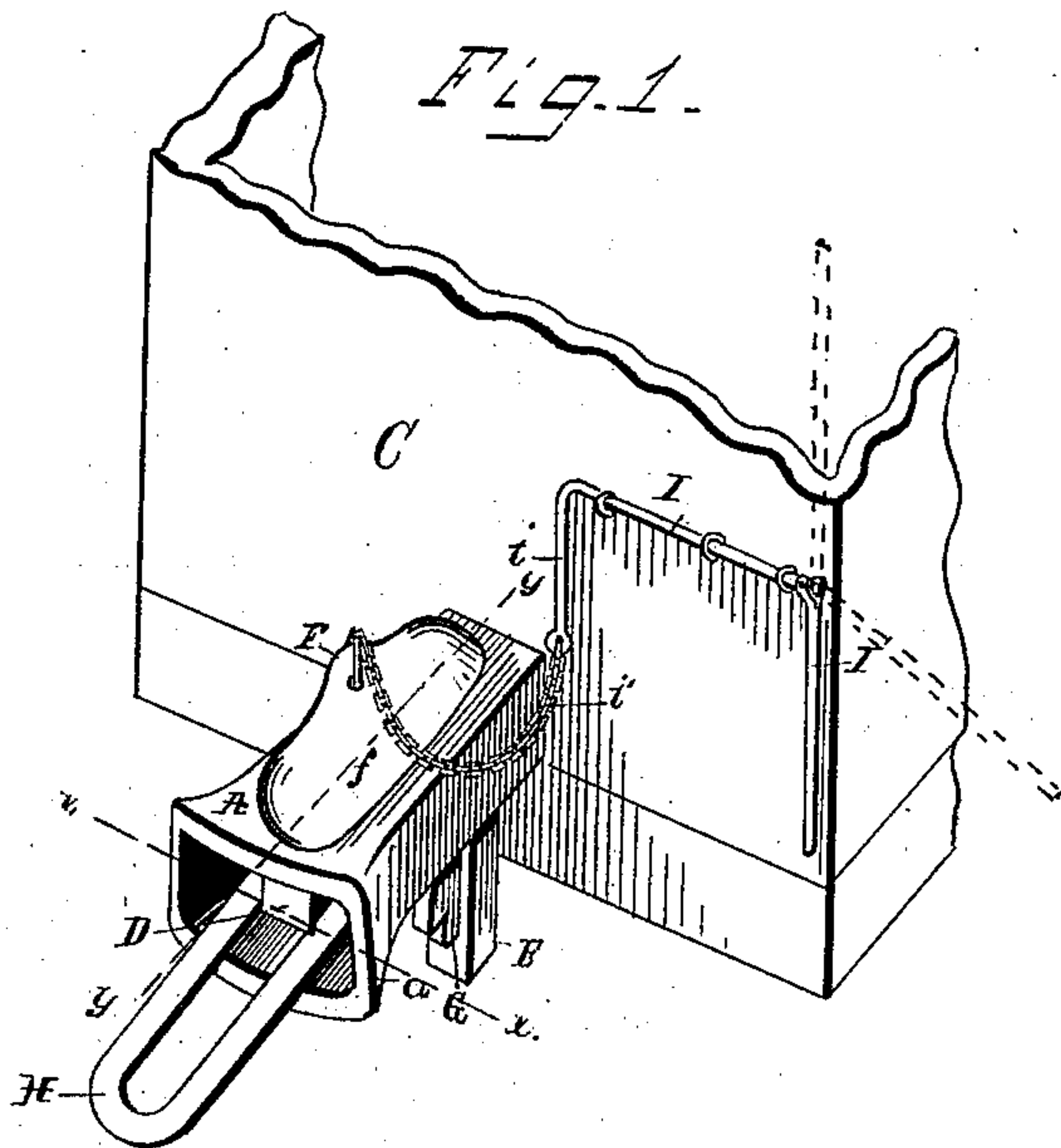


(No Model.)

J. A. RICHARD.
CAR COUPLING.

No. 361,184.

Patented Apr. 12, 1887.



Witnesses.
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Attys

UNITED STATES PATENT OFFICE.

JOSEPH A. RICHARD, OF ST. LOUIS, MICHIGAN.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 361,184, dated April 12, 1887.

Application filed January 31, 1887. Serial No. 226,080. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH A. RICHARD, a citizen of the United States, residing at St. Louis, in the county of Gratiot and State of Michigan, have invented certain new and useful Improvements in Car-Couplings; 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 ap-

10 pertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to car-couplings which automatically couple the cars when run together, and can be actuated to uncouple the cars at pleasure from the top, sides, or any convenient point without the necessity of the brakeman going between the cars for the purpose.

The object of the invention is to simplify the construction of such devices, and to devise a simple arrangement for counterbalancing the link and controlling its position by the coupling-pin, and to contrive a means for guiding the coupling-pin in its movements and holding the same in an elevated position by a latch adapted to fold within the guide, and which latch is adapted to be struck by the link when the same is inserted therein for permitting the coupling-pin to drop.

The improvement consists in having the draw-head provided with one long opening through the upper side, extending into the throat, and two openings through the lower side thereof, which likewise extend into the throat and are directly opposite the long opening and located at each end thereof, and in having the coupling-pin, which is adapted to pass through the long opening and the forward opening of the two openings, provided with a guide adapted to work through the long opening and the rear opening of the two openings, said guide being provided with a latch which is designed to hold the coupling-pin elevated till struck by the link, when the pin will fall. The weight of the pin holds the link in a horizontal position, and when the pin is slightly elevated the link will incline to a horizontal plane for lowering its outer end in case the draw-head of the car to be coupled is lower.

In the drawings, Figure 1 is a perspective view of the end of the car provided with my improved coupler. Fig. 2 is a horizontal section of the draw-head on the line *xx* of Fig. 1. Fig. 3 is a vertical longitudinal section, parts broken away, on the line *yy* of Fig. 1. Fig. 4 is a similar view to Fig. 3, showing the coupling-pin in a different position.

The draw-bar *A* is secured to the car *C* in any desired manner, and is provided with the usual throat, *a*, from which extends the opening *b* through the upper side and the openings *b'* and *b''* through the under side thereof. The openings *b'* and *b''* are directly in line with the opening *b*, and are located opposite each end thereof and have the imperforate portion *b³* between them. The portion *b³* is in a horizontal plane; but the portion of the draw-head in advance thereof, and through which the opening *b'* extends, inclines outwardly and downwardly, as shown.

The coupling-pin *D* is adapted to work through the front end of the opening *b* and through the opening *b'*, and is directed in its movements by the guide *E*, parallel therewith and working through the rear end of the opening *b* and through the opening *b''*. The guide and coupling-pin are united by the head *F*, which has a flange, *f*, near its top, for overlapping the sides of the opening *b* and preventing the pin dropping through the draw-head. That portion *f'* of the head below the flange *f* is of a width to enter and fit within the opening *b*, and its lower side extends some distance within the throat, so as to rest upon the link and hold the same in a horizontal plane. The guide is much longer than the coupling-pin, and has a stop or pin, *E*, at its lower end to limit the upward movement of it and the coupling-pin.

The latch is \neg -shaped, and is fitted in a groove, *e*, of corresponding shape, formed in the under side of the head and in the forward side of the guide, and is pivoted at its forward end, *g*, within the head. The lower front corner is cut away, forming a shoulder, *g'*, which is pointed, and a projecting end or stop, *g''*. The tendency of the latch is to swing outward, and when the coupling-pin is elevated the shoulder *g'* thereof will spring forward of the opening *b''* and engage a notch, *b⁴*, in the portion *b³*. The projecting end or stop *g''*, striking

against the front side of the opening b^2 , limits the forward movement of the latch. In practice the link H strikes the latch and disengages the shoulder thereof from the draw-bar, and allows the pin to fall and engage the link, the inner end of which fits between the pin and guide and is held down by the head bearing thereon.

The coupling-pin, it will be observed, acts as a counter-balance for the link, and holds the same in a horizontal plane. If the outer end of the link should be too high, it can be lowered by elevating the coupling-pin, which will permit the link to incline, as will be readily understood.

The pin can be elevated in any desired manner, and for this purpose I have shown the rock-shaft I, journaled in suitable bearings to the front of the car, the arm i at its inner end, which arm is connected at its outer end with the head F of the coupling-pin by the chain or cable i' , and the hand-lever I' at the outer end of the shaft.

To prevent coupling, the rock-shaft has a reversible arm, to be operated to hold the coupling-pin up and prevent the coupling when desired. This is done by throwing the end of the rock-shaft the coupling-pin is attached to up in position. Then reverse the reversible handle, throwing the rock-shaft in the shape of the letter Z, with the reversible end down on the end of car. Put the end of reversible handle of rock-shaft over the staple-pin that is on the end of car, to prevent accidents. In this position the coupling is prevented. The reversing of movements liberates the coupling-pin for self-coupling.

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

1. The combination, with the draw-head having a long opening through its upper side and two openings through its lower side, of the coupling-pin, the guide, and the head F, uniting the pin and guide and having a portion adapted to fit in the long opening and bear upon the link and a flange extended from the sides of the head for resting upon the draw-head and overlapping the joint between the sides of said head F and the sides of the opening, substantially as set forth.

2. The combination, with the coupling-pin, the guide, and the head, of the γ -shaped latch pivoted at its upper end between the pin and guide, substantially as described.

3. The combination, with the coupling-pin, the guide, and the head, of the γ -shaped latch fitted in a groove in the head and guide and pivoted at its forward end to the head, substantially as shown and described.

4. The combination, with the draw-head having a long opening in its upper side and two openings in its lower side and an imperforate portion between the lower openings, of the coupling-pin, the guide, the head, and the latch having its lower forward corner cut away, forming a shoulder and stop, substantially as described, and for the purpose specified.

5. The combination, with the coupling-pin and the rock-shaft connected therewith, of the reversible lever, substantially as described, and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH A. RICHARD.

Witnesses:

LEIGHTON RICHARD,
IRA DAVENPORT.