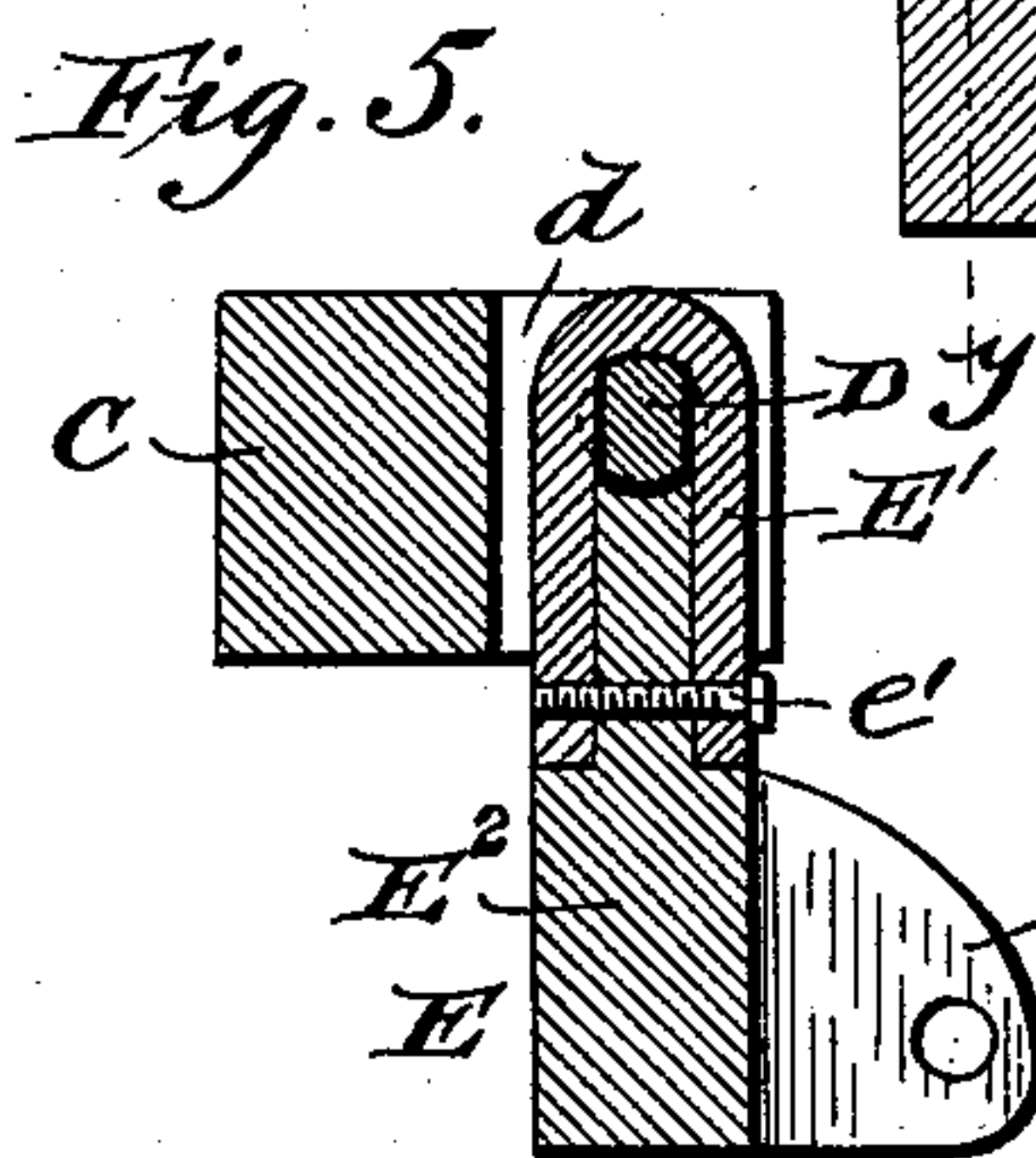
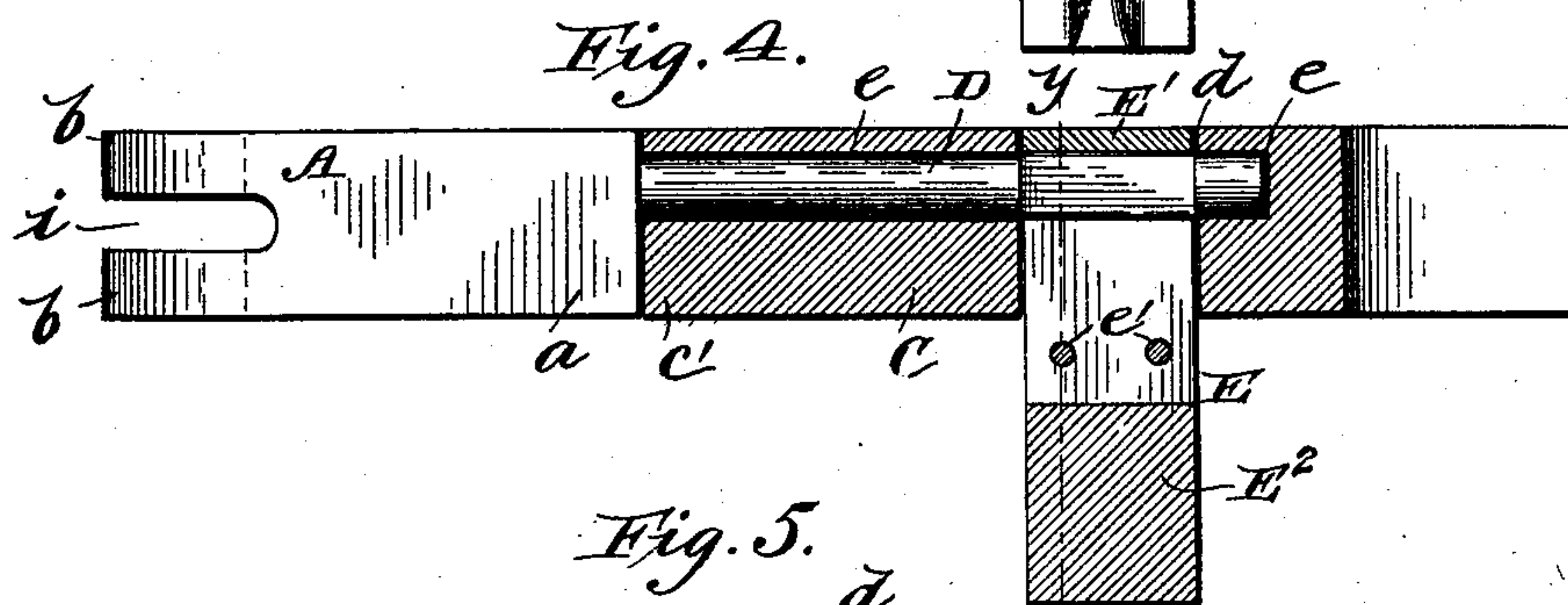
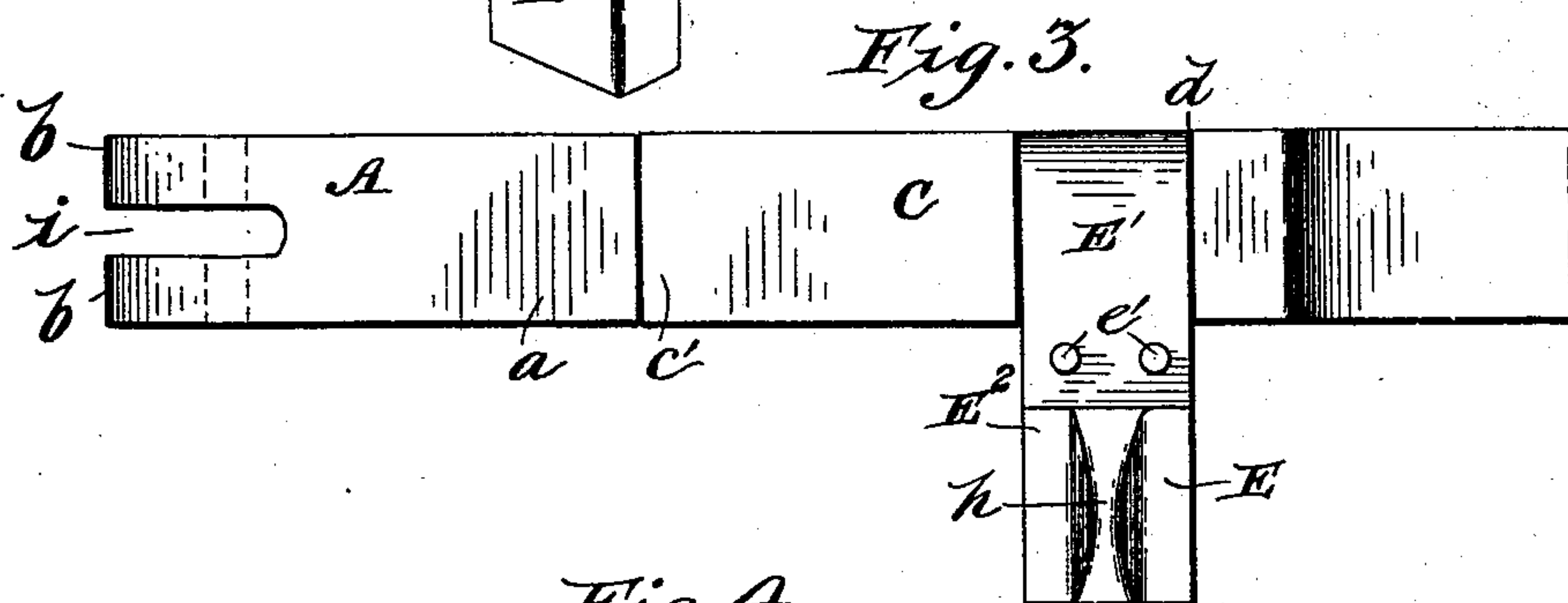
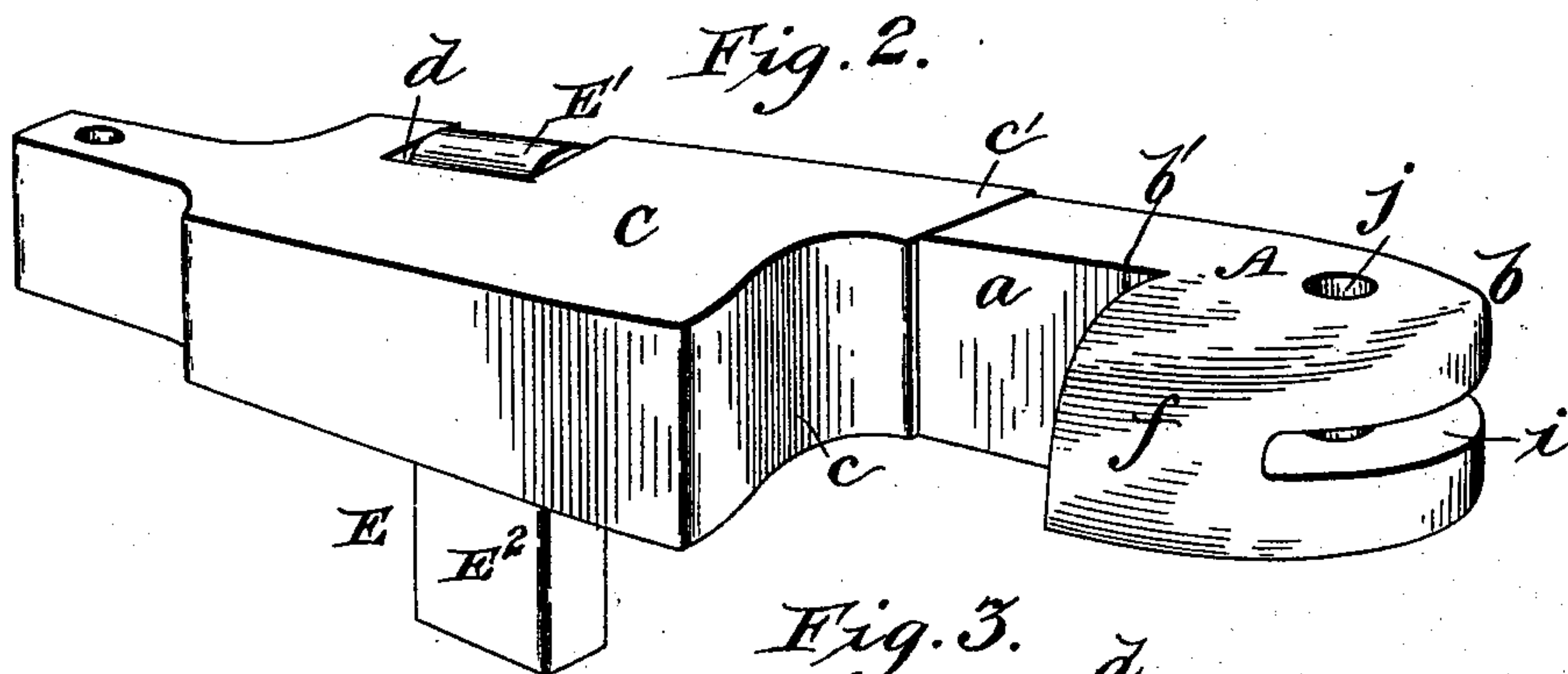
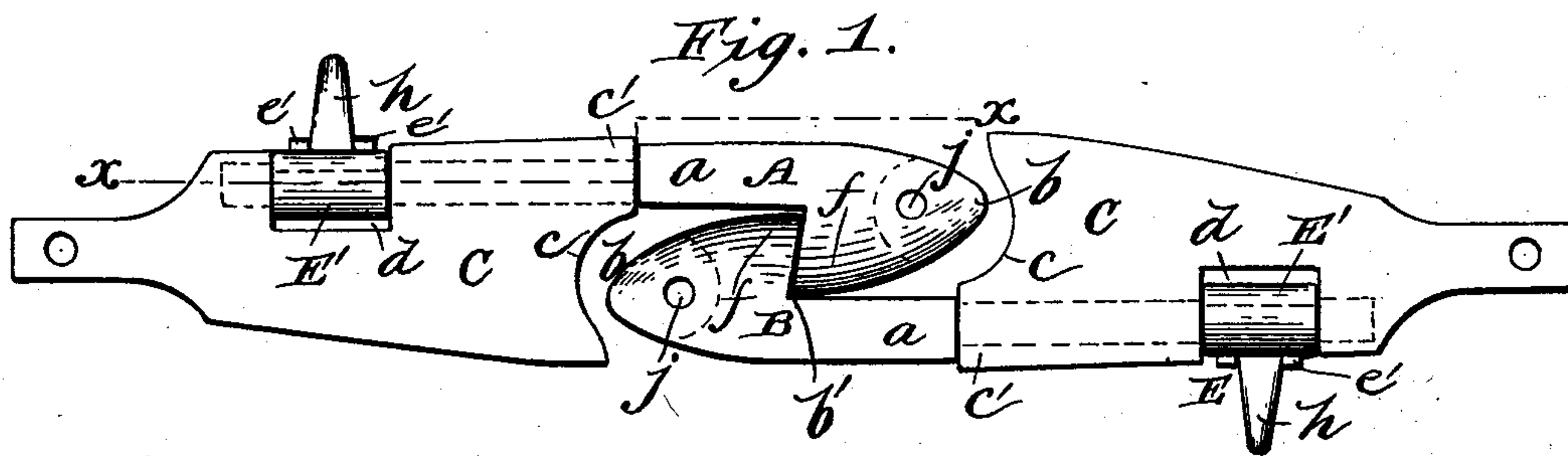


(No Model.)

C. C. DAVISON.  
CAR COUPLING.

No. 509,299.

Patented Nov. 21, 1893.



Witnesses

Everance

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# UNITED STATES PATENT OFFICE.

CHARLES C. DAVISON, OF MONCTON, CANADA, ASSIGNOR OF THREE-  
FOURTHS TO JOSEPH A. HARRIS, OF SAME PLACE.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 509,299, dated November 21, 1893.

Application filed March 3, 1893. Serial No. 464,506. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES C. DAVISON, a subject of the Queen of Great Britain, and a resident of Moncton, in the county of Westmoreland, Dominion of Canada, have invented certain new and useful Improvements in Car-Couplings; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in car couplers of that class known to the art as "twin jaw" couplers which embody two reversely-placed jaws of the same form; and the invention consists of a hook shaped head capable of oscillating in a vertical direction and carried by a horizontal rock shaft or arbor extending in line with the hook-shaped head, and mechanism associated or combined with the rock-shaft in a manner to limit the rocking or oscillating movements of said head and shaft and designed to hold the hook-shaped head normally in proper position to be interlocked with the companion head constituting the coupling in its entirety.

In the preferred embodiment of my invention, this mechanism for holding the hook-shaped head in its normal position to interlock with the companion head of another car, consists of a drop weight which is rigid with the rock shaft and depends from the same to abut against the draw-bar and thereby be limited in one direction; and said drop weight is furnished with a perforated lug or eye for the convenient attachment of a lever, chain or other contrivance that may lead to one side or top of a car or platform, whereby the brakeman is enabled to lift said drop weight and thus rock the shaft and turn the hook-shaped head for a limited distance about its longitudinal horizontal axis so as to adjust the said head in position to free itself from the other companion jaw and uncouple the cars without the necessity of the brakeman going between the cars, and obviating the danger to life and limb. The inner face of the hook-shaped head is rounded or beveled in advance of the abrupt shoulder on the same, and as the head is capable of turning freely in one direction about its horizontal longitudinal

axis or shaft, the coupling of the cars can be automatically effected when the cars come together from the fact that the hook-shaped heads will yield or turn sufficiently for the abrupt shoulders to pass or clear each other, and afterward the drop weights return the hook shaped heads to their normal raised positions to cause the abrupt shoulders thereon to interlock with each other, thus effecting the coupling automatically.

The invention further consists in the peculiar construction and organization of parts comprising an automatic car coupler as will be hereinafter more fully described and particularly defined by the claims.

The accompanying drawings fully illustrate this invention, in which—

Figure 1 is a plan view of the companion twin jaws constructed in accordance with this invention. Fig. 2 is a perspective looking at one side of one of the hook-shaped heads and the draw bar. Fig. 3 is an elevation looking at the opposite side of the jaw or head and draw bar. Fig. 4 is a longitudinal sectional view through one of the jaws or heads and draw bars on the plane indicated by the dotted line  $x-x$  of Fig. 1. Fig. 5 is a detail cross-sectional view on the line  $y-y$  of Fig. 4.

Like letters of reference denote like parts in all the figures of the drawings, referring to which—

A, B, designate the twin jaws or heads and C, C, the draw-bars in which the jaws A, B, are supported to rock or oscillate for limited distances.

As the two jaws, and the draw bars, embody substantially the same construction and arrangement of parts, it is only deemed necessary to describe the detailed construction of one of the jaws, its draw-bar, and the parts associated therewith. The draw-bar is made tapering from its rear part toward the front thereof, so that the front is quite wide or broad; and the front end of said draw bar is provided with a rounded recess or socket,  $c$ , and a square or right-angled part  $c'$ , the latter lying at one side of the rounded recess or socket. Said draw-bar is further provided, in one side thereof, at an intermediate point of its length, with a notch or cut out part  $d$ , and in this side of the draw-bar is formed a



longitudinal opening or passage *e* which opens through the square end *c'* and the recessed part *d* in the draw-bar.

D is a longitudinal horizontal shaft which extends through and is journaled in the passage *e* which thus serves as the bearing for said shaft, which shaft has its rear part extending across the notch *d* and its front end extending through the squared end *c'* of the draw bar.

The jaw or head, A or B, is made in one solid piece with a shank *a* and the front end of the jaw is rounded as at *b* and made quite wide, while the shank *a* is narrower than the head, thereby forming the abrupt shoulder *b'* between the wide head and the narrow shank. The face or side of the head contiguous to the abrupt shoulder is rounded or beveled, at *f*, from the lower toward the upper side of the jaw or head; and as the other companion jaw or head is placed reversely, the beveled rounded parts of the heads are adapted to impinge or abut one against the other when the cars come together so that as the jaws yield or oscillate on their horizontal pivots or shafts D the shoulders *b'* of the two jaws are enabled to pass one another, and to interlock with each other as the drop weights on the shafts return the jaws to their normal positions, thus enabling the cars to be coupled automatically. The shank *a* of the jaw or head is rigidly united or secured to the front end of the rock-shaft, or the shaft and head may be made or forged from a single piece of metal so that the shaft and jaw are adapted to rock or turn together.

E is the drop weight which is rigid with the rock shaft D and fits in the recess or notch *d* in the side of the draw-bar. To adapt the drop weight to be conveniently fastened to the rock-shaft, I make the drop weight in two parts or sections *E'*, *E''*; and the member *E'* is made in the form of a U-shaped piece which is fitted around the shaft and the shaft is flattened at this point to receive it while the other member *E''* is fitted between the separated legs of said U-shaped member, the two members being rigidly fastened to each other by means of the through bolts *e*, which also serve to bind and clamp the member *E'* rigidly to the shaft D, as will be clearly seen by reference to the detail view, Fig. 5. By thus constructing the drop-weight, it can be readily fastened to the rock shaft after the latter has been connected to the draw bar, which is important when the rock-shaft is made integral with or rigidly fastened to the jaw or head before the shaft is fitted in the draw bar. The drop-weight normally depends from the rock shaft and abuts against the side of the draw-bar so as to hold the jaw or head in the position it occupies when the two jaws are coupled together, the abrupt shoulder *b'* on the head being vertical, and the movement of the drop weight being limited in one direction by the draw-bar, it follows that the jaw or head cannot move be-

yond its normal position in which the shoulder *b'* is vertical. But the jaw is capable of moving freely in the opposite direction for a limited distance which is sufficient to withdraw the shoulder *b'* thereof from engagement with the shoulder on the companion or twin jaw so that the jaws can be disengaged and the cars uncoupled.

To effect the uncoupling of the jaws, I may employ a lever, pull chain, or any other suitable contrivance, (not shown,) and for the convenient attachment of this releasing device, the drop weight is furnished with a perforated lug or eye *h* to which the releasing device can be loosely connected in order to lift the drop weight, turn the shaft in one direction, and turn the jaw so as to uncouple it from the other jaw or head.

This being the construction of my coupling, the operation may be briefly described as follows: The drop-weights normally hold the jaws in such positions that the shoulders *b'* thereof are vertical, and said weights abut against the sides of the draw bars to prevent the heads from turning farther upward but leaving them free to turn in the reverse direction. As the cars approach, the beveled rounded faces on the jaws impinge against each other so as to rock or turn and lift the weights to enable the shoulders on the jaws to pass each other, after which the weights again drop to their normal positions and thereby oscillate the jaws and cause them to interlock with each other, the rounded end of the jaw or head fitting in the concaved recess or socket *c* in the other draw-bar, which socket *c* forms a most convenient buffer. The cars are thus automatically coupled, and to uncouple them, it is only necessary to lift one of the weights so as to turn the head or jaw in the proper direction to cause its shoulder to clear the shoulder on the other jaw or head.

To adapt the jaw or head to be used in connection with the ordinary link and pin, and thus be coupled to the ordinary drawhead, I provide the jaw with the horizontal slot *i* in the rounded forward extremity thereof, to receive the ordinary coupling link, and with a vertical transverse passage *j* which intersects with the horizontal slot and is adapted to receive the usual coupling pin which can be passed through the link, in a manner which will be readily understood.

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

What I claim as new, and desire to secure by Letters Patent, is—

1. In a car coupler, the combination with a draw-bar, of the rock shaft journaled in said draw bar and carrying the oscillating jaw or head capable of a limited movement with said shaft, and a drop-weight rigid with said rock



shaft and limited in one direction by said draw bar, substantially as and for the purpose described.

2. In a car coupler, the combination of a draw bar provided with the recess or socket *c*, the longitudinal horizontal shaft journaled in said draw-bar at one side of said recess or socket, the jaw or head rigid with the rock shaft, and the drop weight also rigid with said shaft and limited in one direction by the draw bar, substantially as described.

3. In a car coupler, the combination of a draw bar, the rock shaft journaled in said draw bar, the jaw or head rigid with the rock shaft and having the rounded beveled end and the abrupt shoulder in rear of said beveled part, and a drop weight fastened rigidly to the rock shaft, substantially as described.

4. The combination of a draw bar, a rock shaft journaled therein and carrying at its forward end the hook-shaped jaw, and the sectional drop weight having one member thereof clamped rigidly to the rock shaft, substantially as described.

5. The combination of a draw bar, the rock shaft journaled therein and carrying the hooked-shaped jaw at its forward end, and the drop weight constructed in sections, one of said sections fitting around the shaft and the other section fastened to the first named section by bolts which bind or clamp said first named section rigidly to the shaft, substantially as described.

6. In a car coupler of the class described, the draw-bar provided with the concave front end *c* forming the buffer, combined with the oscillating jaw pivoted in the draw-bar on one side of the concave front end *c*, and a drop weight carried by the jaw and serving to normally hold the same in position to interlock with the twin jaw, substantially as and for the purpose described.

In testimony whereof I have hereunto set my hand this 13th day of February, 1893.

CHARLES C. DAVISON.

Witnesses:

JOHN THOMAS,  
GEORGE THOM.