

(No Model.)

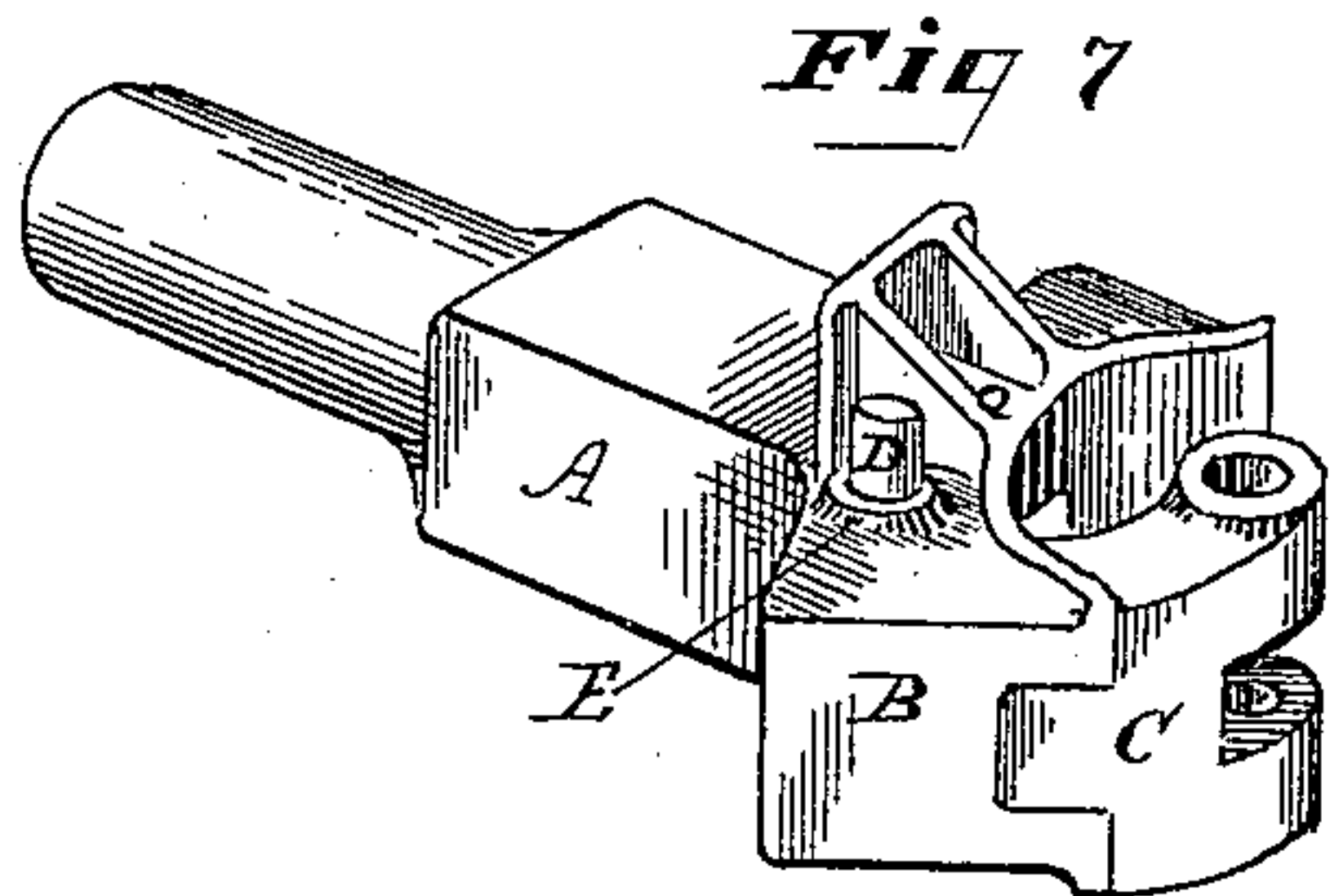
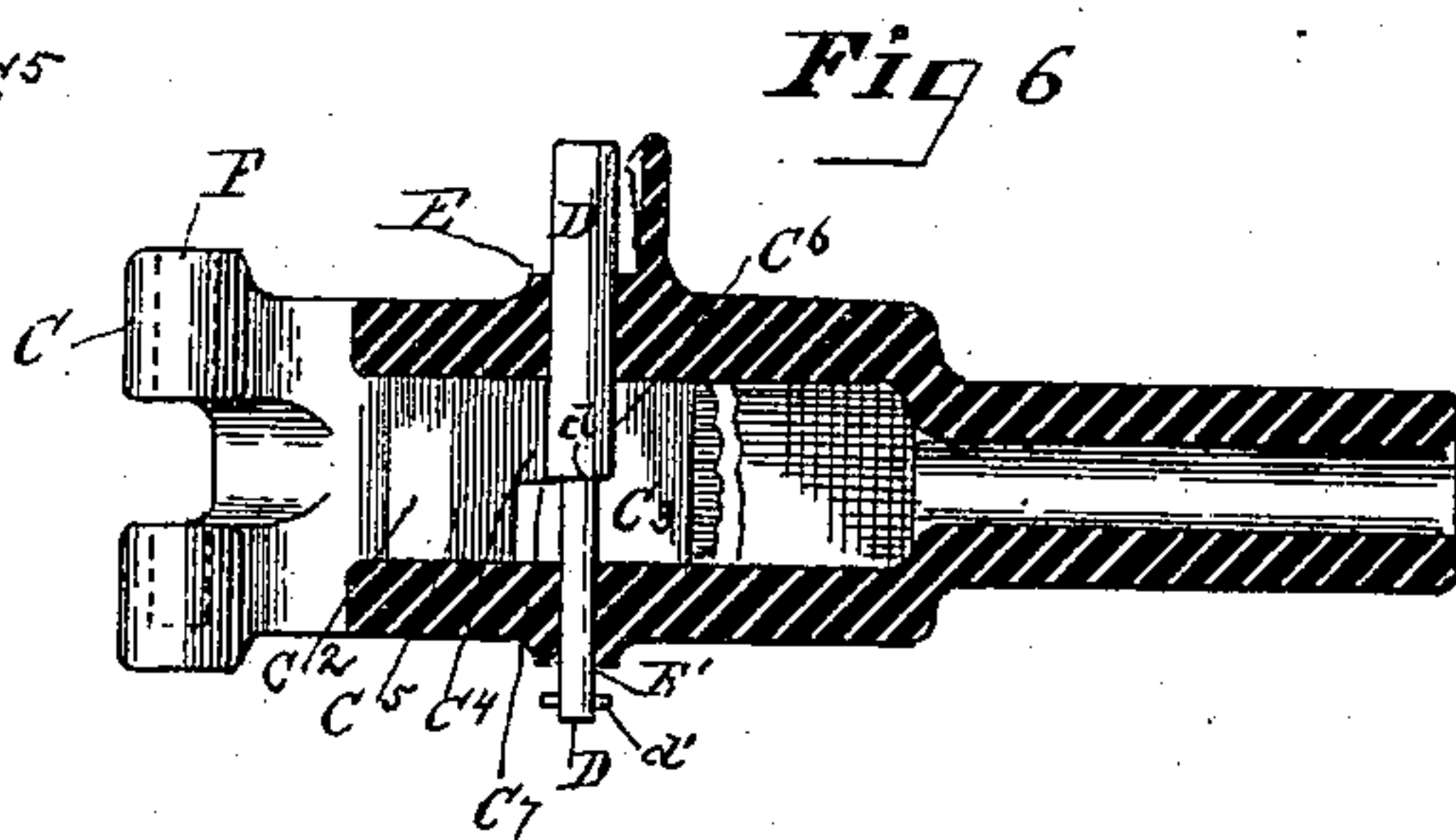
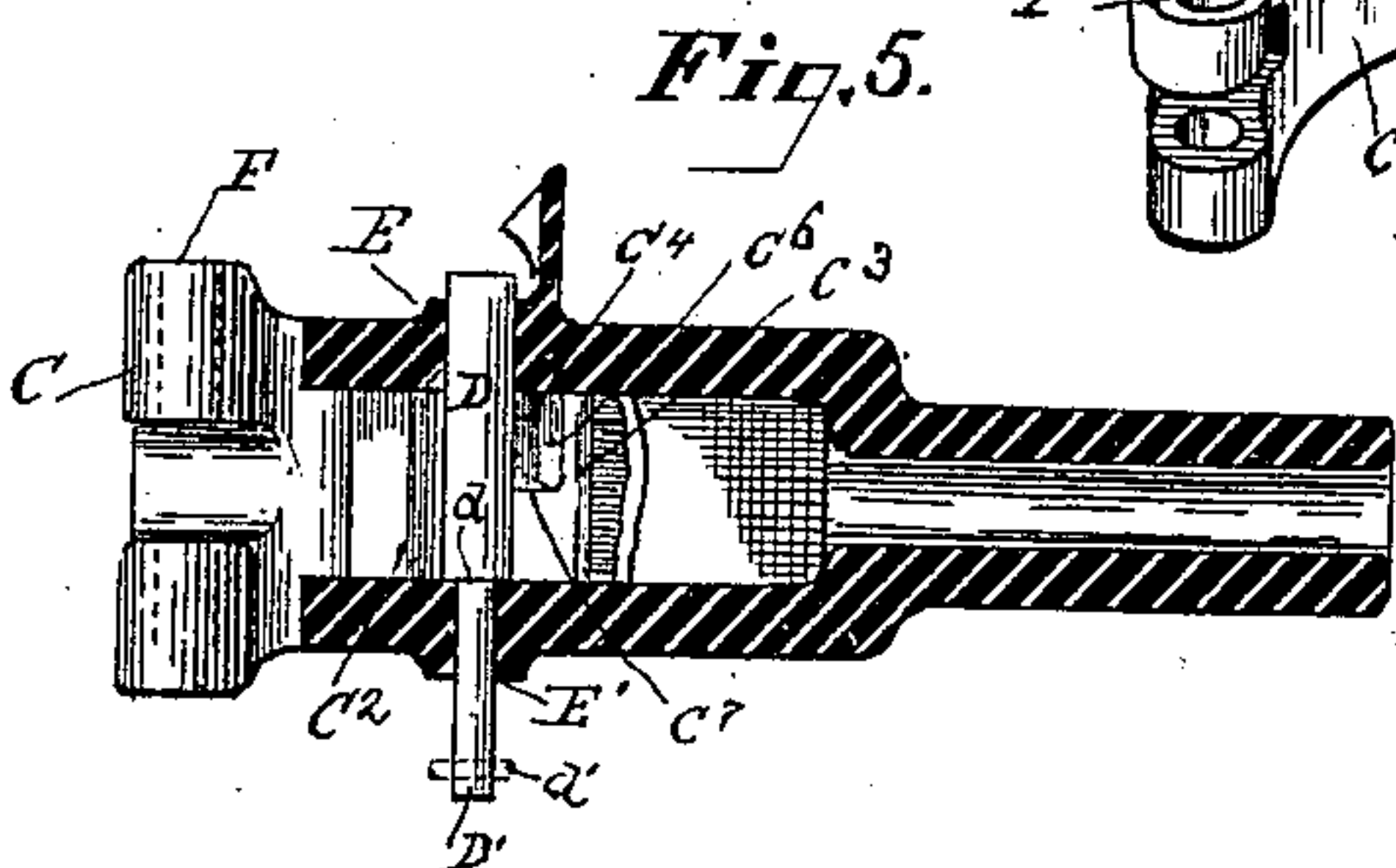
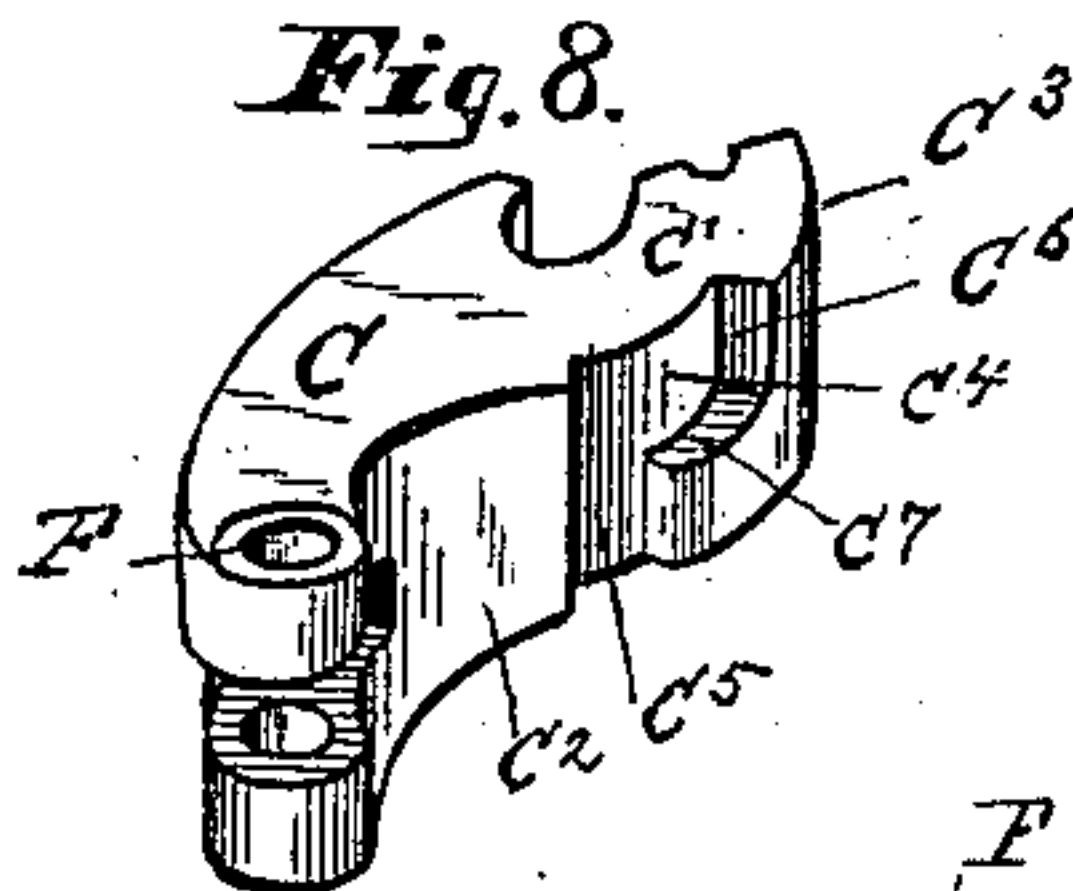
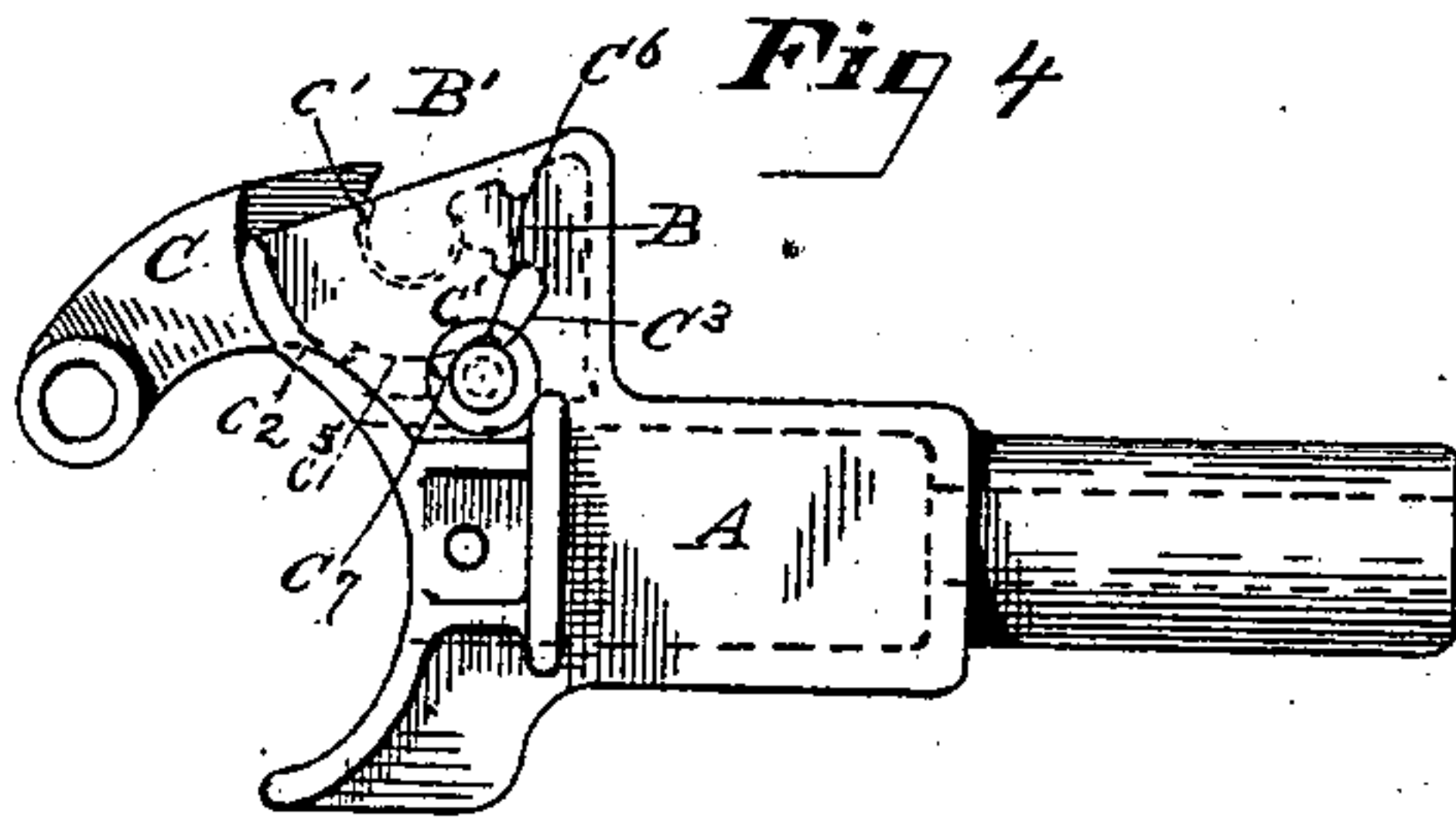
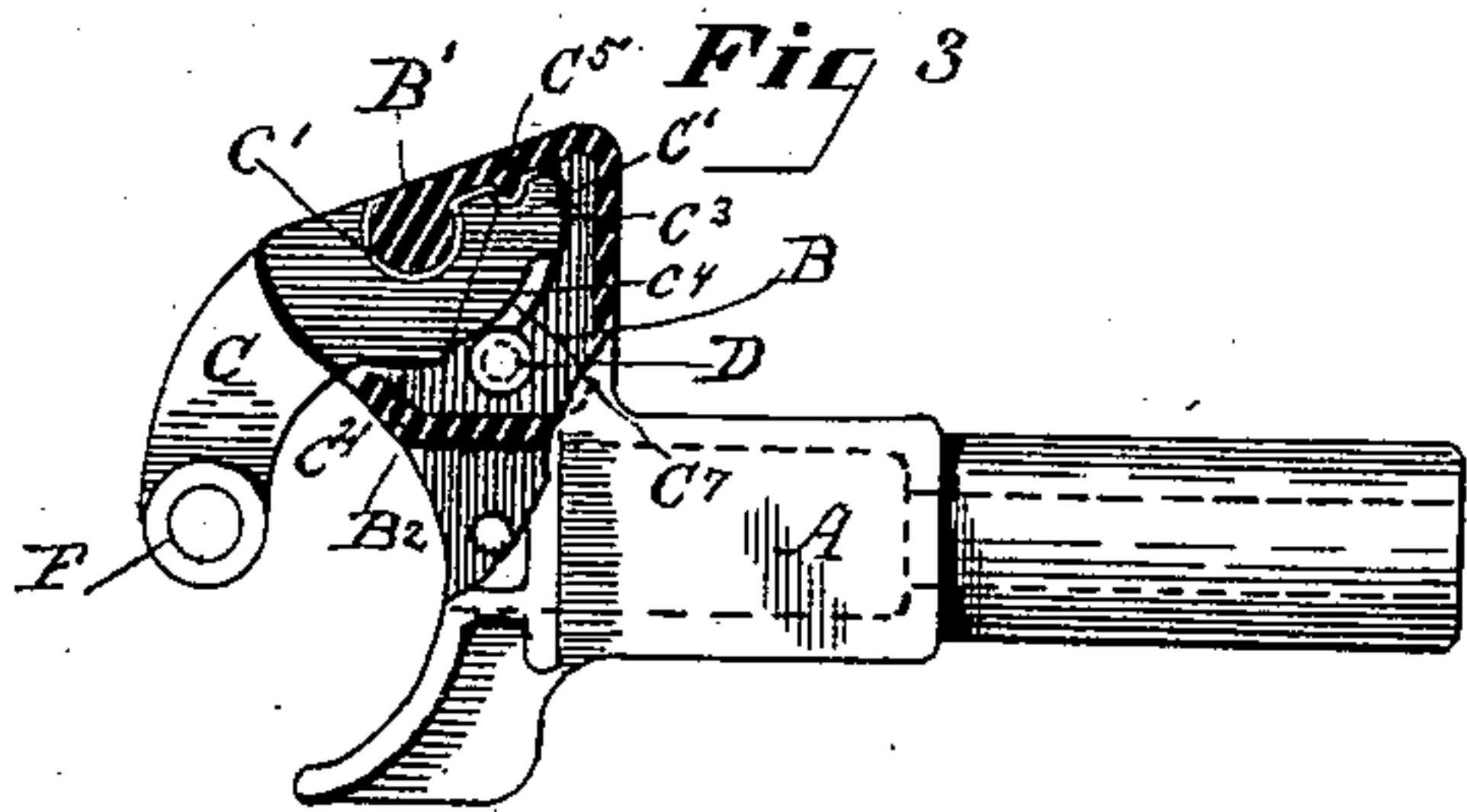
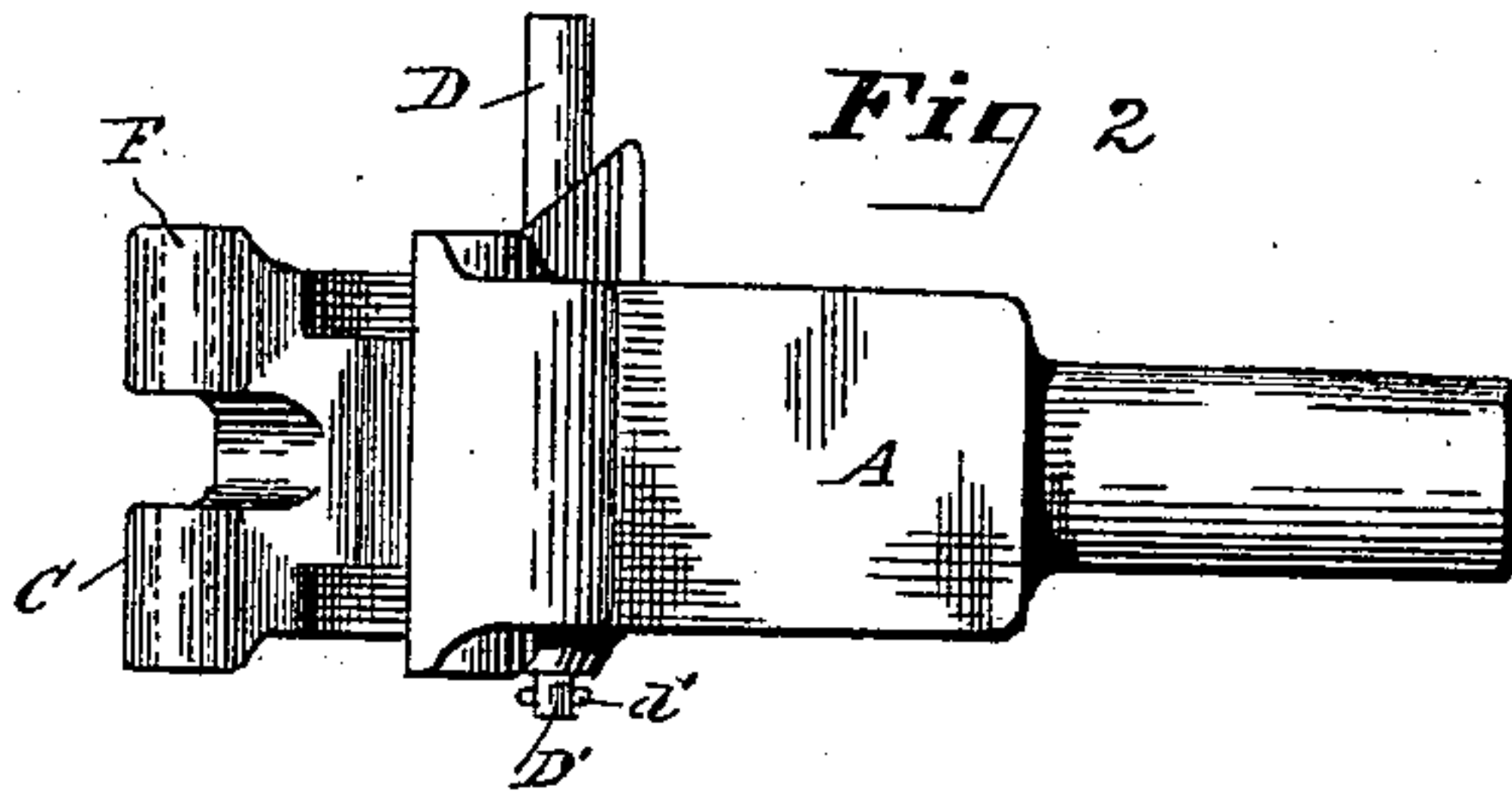
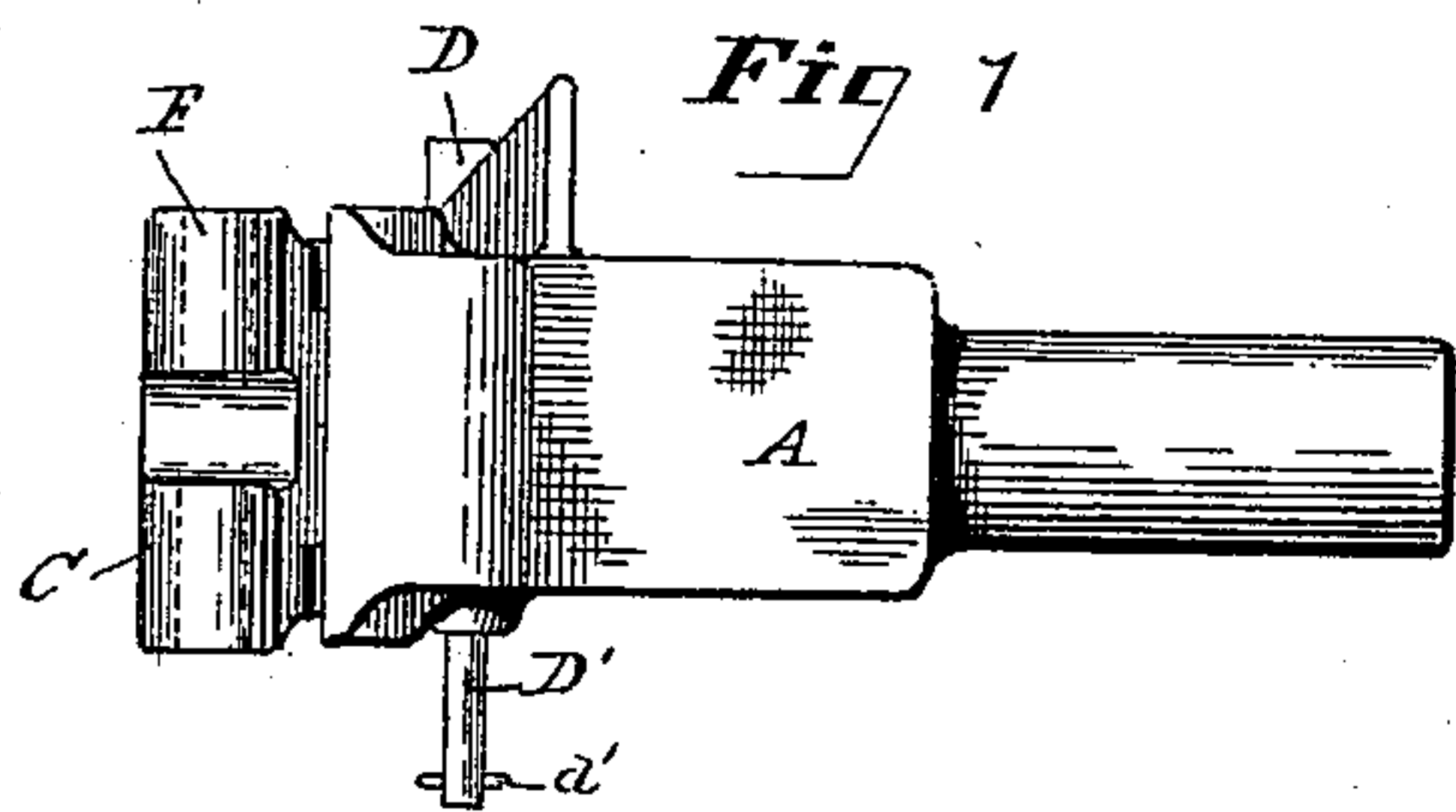
2 Sheets—Sheet 1.

S. H. HARRINGTON.

CAR COUPLING.

No. 350,486.

Patented Oct. 12, 1886.



WITNESSES:

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INVENTOR

Samuel H. Harrington
by his attorney
Francis T. Chambers

(No Model.)

2 Sheets—Sheet 2.

S. H. HARRINGTON.

CAR COUPLING.

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Fig-9

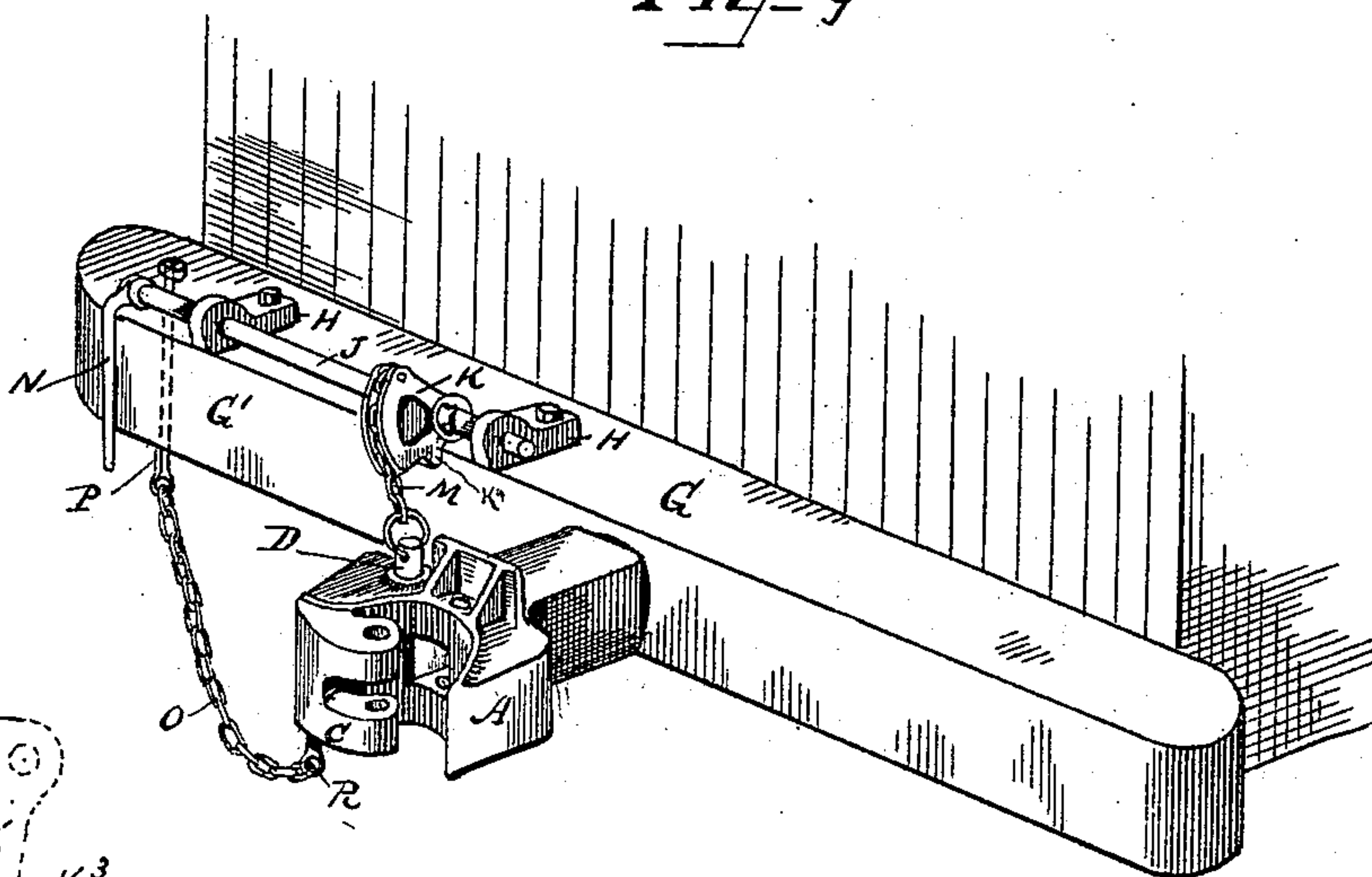


Fig-10

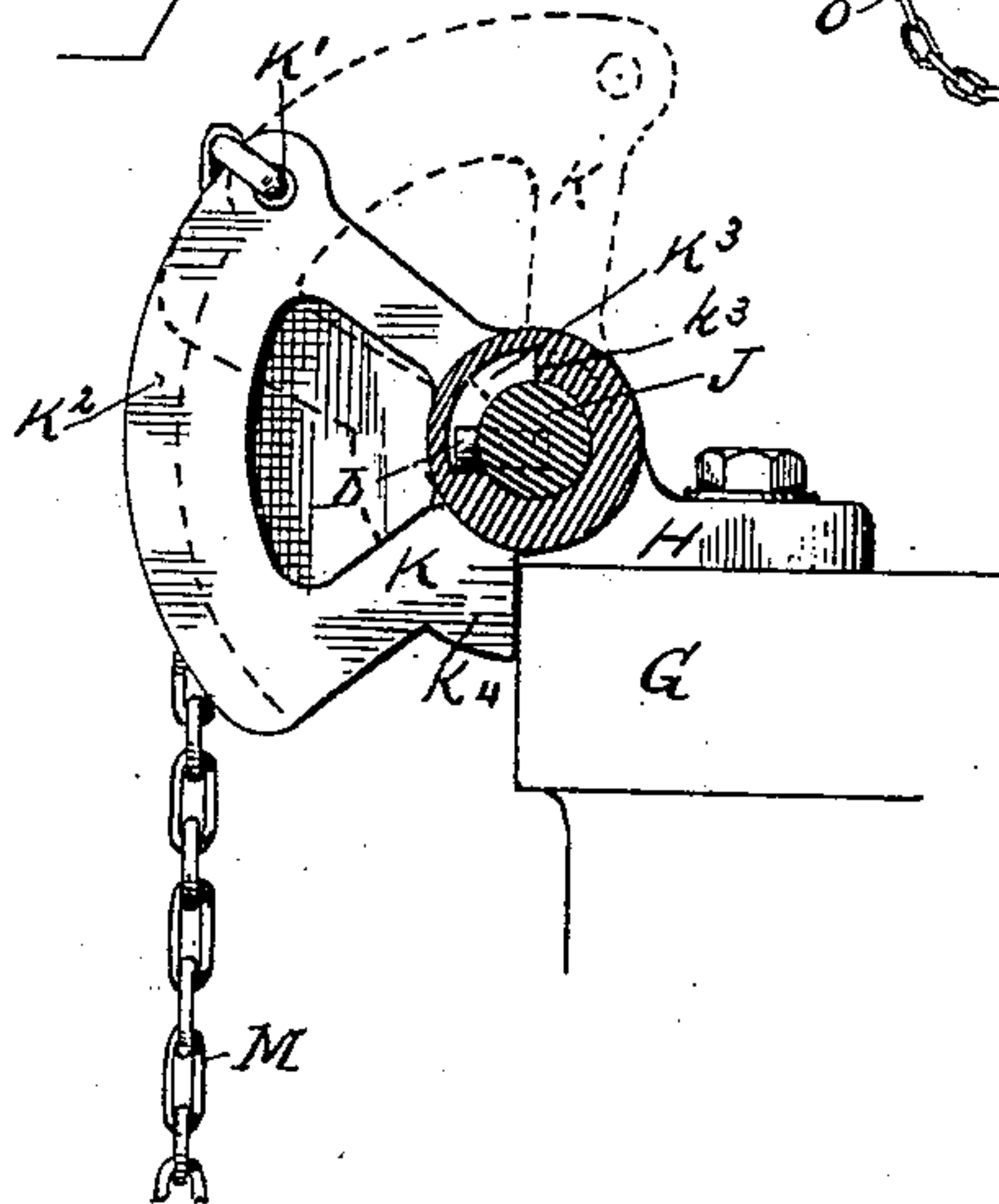


Fig-11

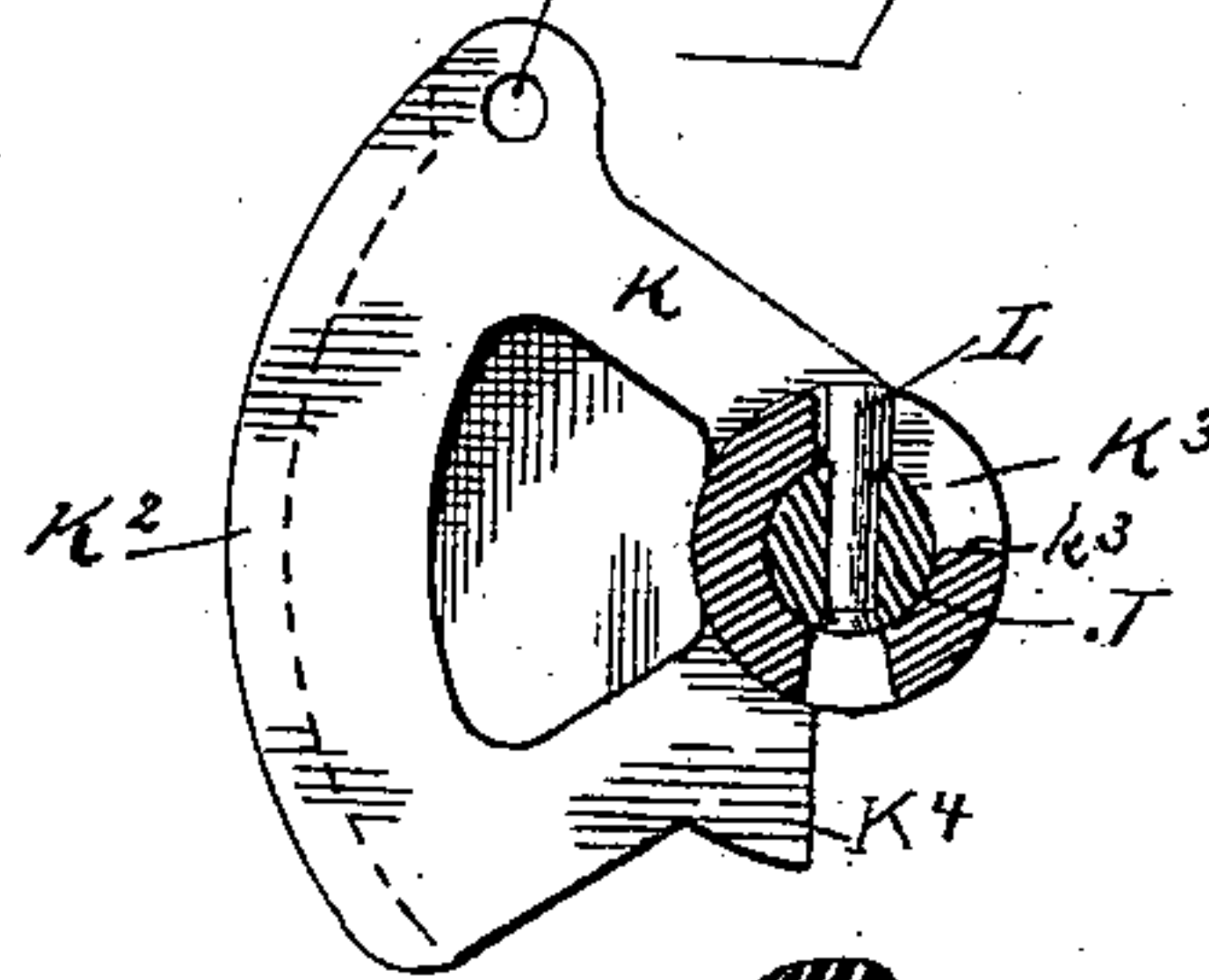
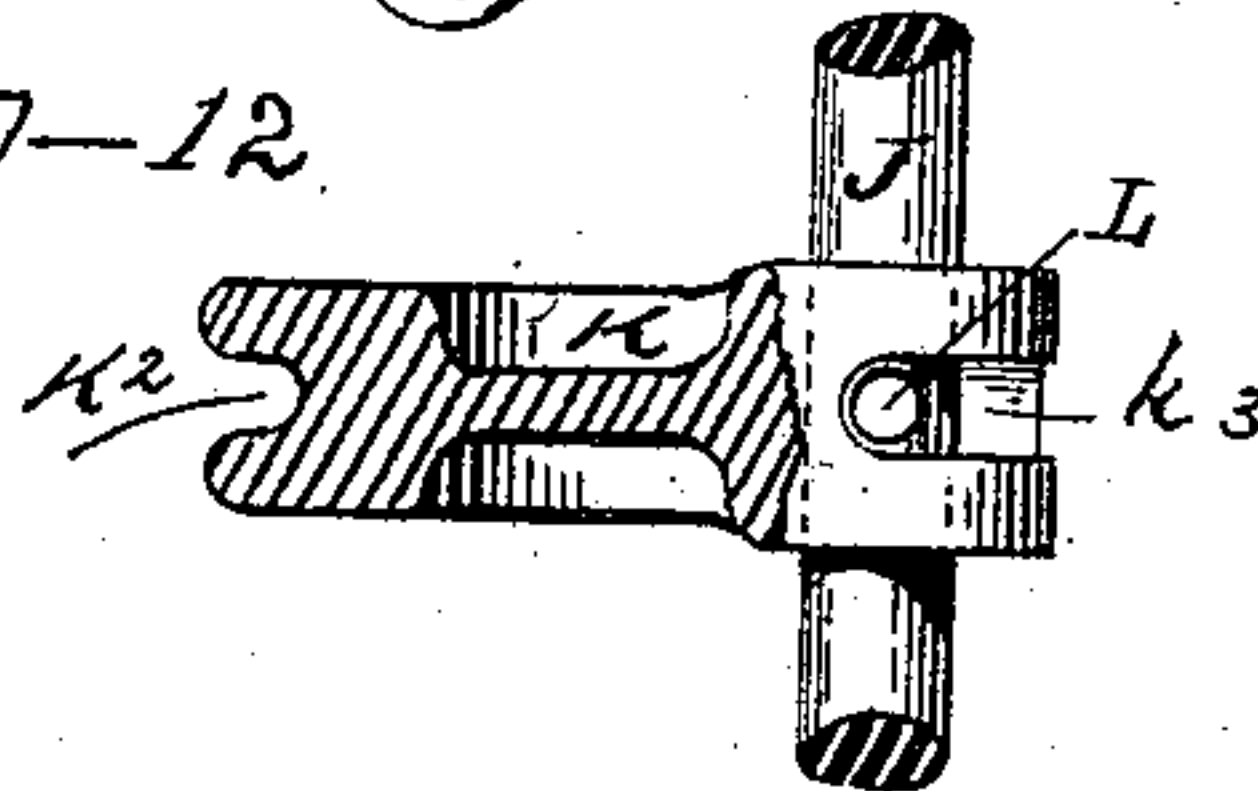


Fig-12



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UNITED STATES PATENT OFFICE.

SAMUEL H. HARRINGTON, OF COLUMBUS, OHIO.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 350,486, dated October 12, 1886.

Application filed August 9, 1886. Serial No. 210,413. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL H. HARRINGTON, of Columbus, Franklin county, State of Ohio, have invented a new and useful Improvement in Car-Couplers, of which the following is a true and exact description, due reference being had to the drawings which accompany and form part of this specification.

My invention relates to car-couplers of the general character of those known as "vertical-plane" couplers, and is especially intended as an improvement on what is known in the market as the "Dowling Coupler;" and my object is to improve such couplers and make them better fitted for practical use. Couplers of this kind, as they have heretofore been made, have had a latch consisting of a pin with a projecting lug upon it, which was introduced by passing the pin with its lug through an opening in the bottom of the coupler, and secured in place by means of a pin inserted in its upper end. As this pin was all that held the latch in place, its loss would permit it to fall out and be lost, and in case of loss or breakage of the latch the coupler became inoperative, as without the specially-formed lug it was impossible to latch the coupler. Again, in the Dowling as in nearly all vertical-plane couplers the knuckle or movable jaw is generally combined with a spring, which forces the jaw open to its fullest extent, and keeps it so until it is closed by a stronger force. These springs are frequently broken by the shock of two cars meeting to make a coupling, and, besides this, they necessitate a harder blow or shock to make a coupling than would otherwise be necessary, since their resistance must be overcome. Another difficulty which has been met with in these couplers has been in the devices used to unlatch the coupler knuckle or jaw when it is desired to uncouple two cars, which devices must be actuated from the platform or sides of the car. Many of those which have been tried have been found defective and liable to be broken or get out of order, while others more efficient are comparatively expensive.

My invention consists, in the first place, in adapting the coupler to be latched by means of a straight pin of a uniform cylindrical or other plain outline—such, for instance, as an

ordinary coupling-pin—which can be introduced from the top of the coupler, in a specially-formed latch-pin adapted to be used in this way, and in adapting the coupler to the use of this special pin; secondly, in the combination, with the knuckle of the coupler, of a chain secured to it and to the end of the car near its corner, so that the knuckle or jaw may be opened by pulling on the chain; and, thirdly, in the device, hereinafter fully described, and illustrated in the drawings, consisting of a chain attached to an eyebolt or staple at the end of the platform, and a cam actuated by a shaft resting in bearings upon the edge of the platform or end sill of the car, and having a lever secured to it, by which it may be turned, the arrangement being such that the chain never becomes slack to such a degree as to endanger its getting between the buffer and end sill and being crushed, and the parts being so arranged that the action of withdrawing the latch-pin may be very rapidly performed, and at the same time the weight of the pin and chain counterbalanced when the latch-pin is raised, so that the latch may remain inoperative, if desired.

Reference is now had to the drawings which illustrate my invention, and in which Figure 1 is a front side view of my improved coupler with the knuckle or jaw closed; Fig. 2, a similar view showing the jaw open; Fig. 3, a plan view of my coupler with the upper part cut away to show the parts of the jaw inclosed in the body of the coupler and the latch, the jaw being shown as closed. Fig. 4 is also a plan view showing similar parts to Fig. 3, the jaw being open. Figs. 5 and 6 are views of my coupler similar, respectively, to Figs. 1 and 2, the body of the coupler being cut away to show the latch-pin, its bearings, and a front side view of the knuckle or jaw. Fig. 7 is a perspective view of the coupler. Fig. 8 is a perspective view of the jaw or knuckle C C'. Fig. 9 is a perspective view of the end of a car having my improved coupler and appliances for opening the jaw and for lifting the latch-pin and maintaining it out of operation. Fig. 10 is an enlarged view of the lifting-cam, showing its attachment to its actuating-shaft in section; and Figs. 11 and 12 are respectively side and edge views (the latter partly

in section) of the lifting-cam, showing a somewhat different method of securing it upon the shaft to that shown in Fig. 10.

A is the main body of the coupler, which, as shown, is like the Dowling coupler, having a recessed chamber, B, with an opening between the projecting cylindrical formation B' and the wall B², (see Figs. 3 and 4,) into which the end C' of the movable jaw C is inserted, the jaw or knuckle having a cylindrical recess, c', which fits upon the projection B', upon which the knuckle C turns as on a hinge. The surface C² is a segment of a cylinder having its center corresponding with the center of the hinge at B', and therefore fits snugly against the wall B² and closes the recessed chamber B against the admission of dirt. The surface C³ is also cylindrical, and of the same curvature as the surface C², or substantially so. At C⁴ this surface is cut away upon the upper part of the face of the arm C', and for a distance corresponding to the angular motion which it is desired the jaw or knuckle shall have, and at C⁵ it is cut away entirely for a breadth equal to the diameter of the pin to be used as a latch, or nearly so. The cutting away of the face of the arm C', as described, will of course form a vertical shoulder, C⁶, and a horizontal shoulder, C⁷, as shown in Figs. 3, 4, 5, 6, and 8, besides forming the vertical groove C⁵.

D is a pin, preferably round, which is inserted through a hole, E, formed in the top of the coupler, and so placed that the pin shall fit neatly along the groove C⁵ when the jaw C is closed, as shown in Fig. 5. I prefer to form the lower end of this pin D into a smaller pin, D', which may pass through a hole, E, in the bottom of the coupler and serve as a guide to keep the latch-pin in place. A pin, d', in the end of this guide will prevent the withdrawal of the latch-pin, and a shoulder, d, is of course formed where the latch D and guide D' unite. That portion of the surface C³ which lies below the shoulder C⁷ is so curved that it can pass the guide-pin D', but not the latch-pin D.

F is a hole for a coupling-pin, which is formed in the knuckle or jaw C, and by means of which the cars may, when desired, be coupled with an ordinary link. Another pin, DD', may be carried in it and serve the ordinary purposes of a link coupling-pin, while at the same time it is always ready for use as a latch-pin.

From what I have said the mode of use of this latch-pin will be apparent. The end C' of the jaw C is inserted in the cavity B and the jaw closed. The pin D may then be passed freely through the opening E, its end D' passing through the opening E', and the shoulder d resting on the bottom of the chamber B, as shown in Fig. 5. The retaining-pin d' is then inserted, and will prevent the withdrawal of the latch-pin. While the pin D is in this position, as shown in Fig. 5, it fits closely in the groove C⁵ and locks the jaw or knuckle C in its closed position, as shown in Figs. 1, 3, 5,

and 7. When it is desired to open the coupler, the pin D is raised until its shoulder d comes to a level with or above the shoulder C⁷, when the coupler may be opened, the recessed surface C⁴ affording room for the end of the pin D as the jaw turns around the hinge B', and the shoulder C⁶ serving to prevent too great a movement by the jaw or the withdrawal of the jaw from the recess B. In case the pin D D' is lost or broken any ordinary coupling-pin may be used in its place, the hole E and the recesses in the arm C' of the jaw C being adapted for a pin of the ordinary size of a coupling-pin.

Referring now to Sheet 2, G G', Fig. 9, represent the end sill of a freight-car. Upon this end sill, or upon the platform should the car have one, are secured bearings H H, in which a shaft, J, is supported and turns. Upon the shaft J, and above the latch-pin D, is secured a cam, K, having a lug or other device, K', to which a chain may be attached, and a grooved face, K². In the bearing-surface of this cam is cut a slot, K³, and in the shaft J is secured a pin, L, which projects into the slot K³. (See Figs. 10, 11, and 12.) A chain, M, is secured to the head of the latch-pin D and to the lug K' of the cam K, the chain lying in the grooved face K² of the cam.

N is a lever secured to the shaft J. It may lie horizontally along the platform or vertically over its edge, as shown in Fig. 9.

As shown in Fig. 9, the latch-pin is in the position where it locks the jaw C in its closed position, and the cam K, with its shaft J and lever L, in their corresponding positions, and, as is shown, the chain M, while loose, is not so slack as to run any danger of getting between the buffer and the end sill. When it is desired to raise the pin D, the lever N is turned, the shaft J turning with it, but the cam-sector K not being affected until the pin L has moved through the slot K³ and come in contact with the shoulder K³, when the cam will be raised, and by means of the chain M will raise the pin D and unlatch the jaw C. The lever N may, by this device of the slotted cam K, be moved through a large arc, (say ninety degrees,) while the cam K moves through a much smaller arc, and the weight of the lever may, if desired, be made to balance the weight of the pin, chain, and cam, and hold the pin up, if it is not desired to make a coupling.

O is a chain attached at one end to a lug, R, on the jaw C, and at its other end to an eyebolt or staple at the under side of the end sill or platform, near the corner of the car, where the brakeman can easily get at it without going between cars. By drawing on this chain the jaw is opened when not latched.

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

1. The combination of the knuckle or jaw C, having an arm, C', formed as specified, and the coupler-body A, having a perforation, E,

in its upper face, whereby a straight pin of the dimensions of an ordinary coupler-pin may be introduced to serve as a latch-pin, substantially as shown and described.

5 2. The combination of the knuckle or jaw C, having an arm, C', formed as specified, and the coupler-body A, having a perforation, E, in its upper face, and a smaller perforation, E', in its lower face, whereby it is adapted to
10 receive a special pin, D D', or a straight pin of the dimensions of an ordinary coupler-pin may be introduced to serve as a latch-pin, substantially as shown and described.

15 3. The combination of the knuckle C C', formed substantially as described, the coupler-body A, having a recess, B, and perforations E E', and the pin D, having a guide rod or pin, D', all substantially as and for the purpose specified.

4. In combination with a coupler having a 20 movable jaw or knuckle, substantially as specified, a chain, O, attached directly to said jaw at one end and to or near the corner of the car at its other end, as described, so as to afford a means of opening the jaw and of re- 25 taining it in its open position.

5. In combination with an actuating-shaft and lever, J and N, journaled on the car-body, the cam K, having a slotted bearing, K³, and engaging with the shaft J by means of a pin, L, 30 the chain M, secured to the cam, and a latch-pin, D, all substantially as and for the purpose shown and described.

SAML. H. HARRINGTON.

Witnesses:

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C. C. CORNER.