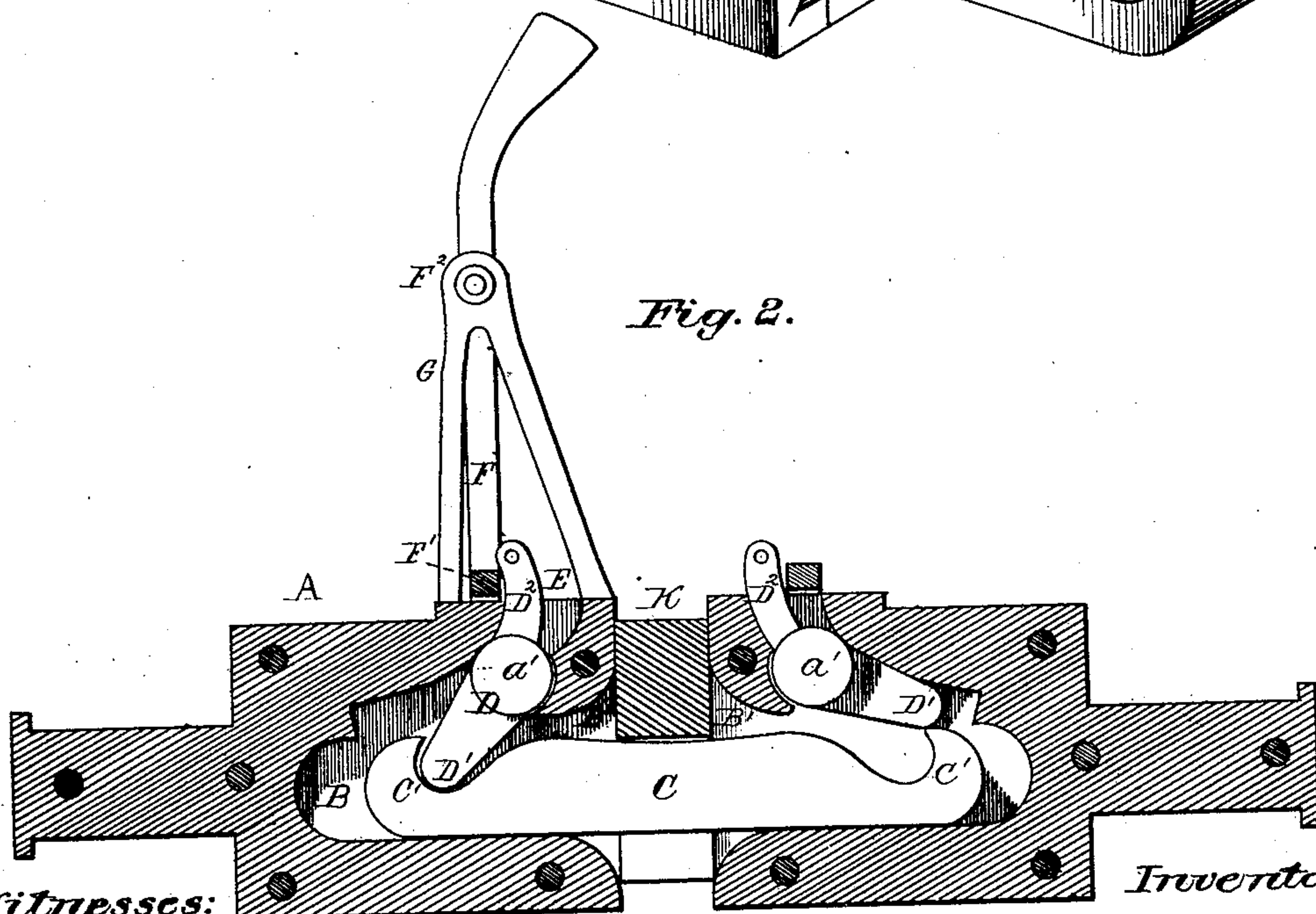
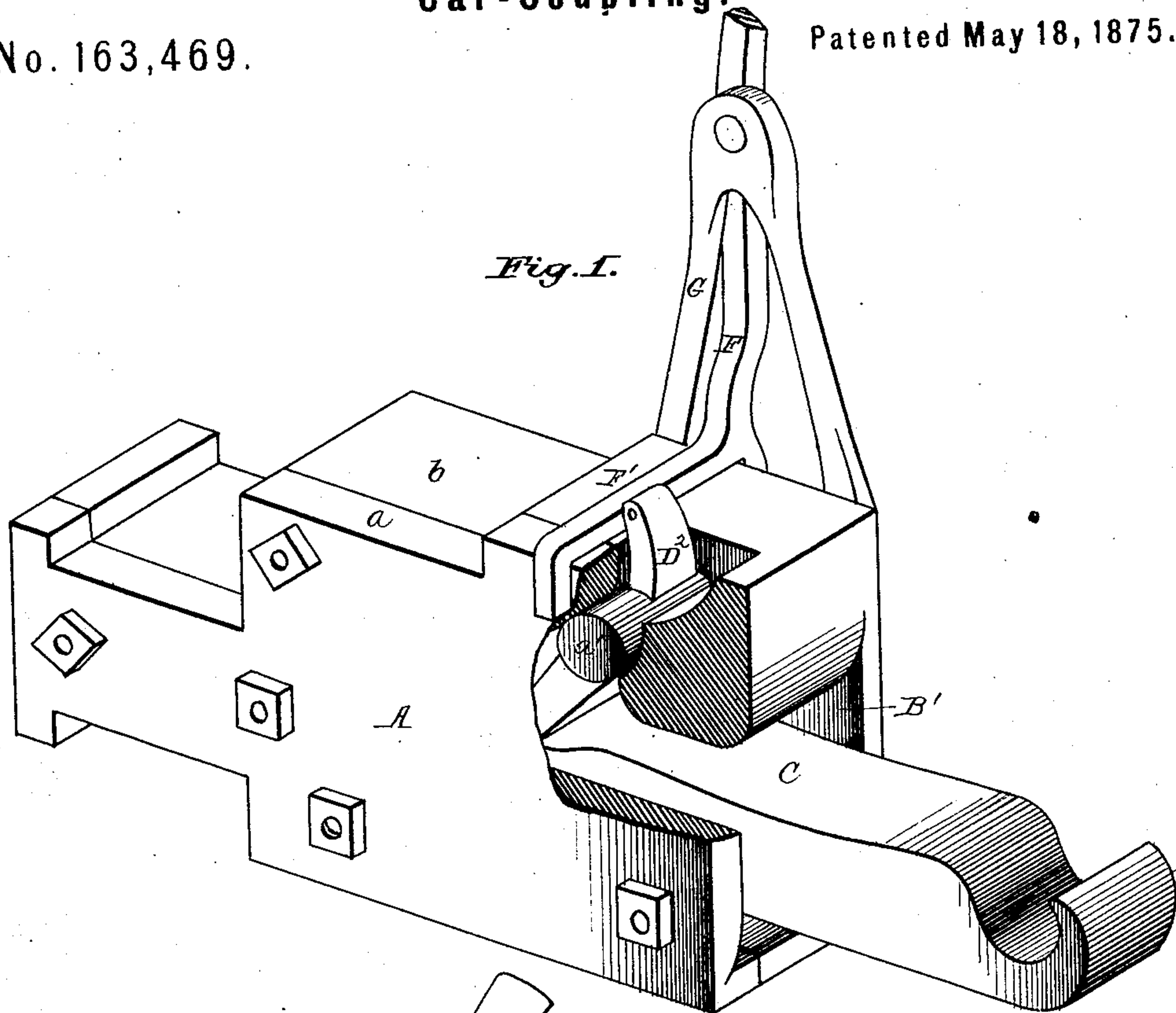


L. D. EVANS.  
Car-Coupling.

No. 163,469.

Patented May 18, 1875.



Witnesses:

W. H. Morris,  
J. G. Brown

Inventor

Lewis D. Evans,  
By James L. Morris.

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Fig. 3.

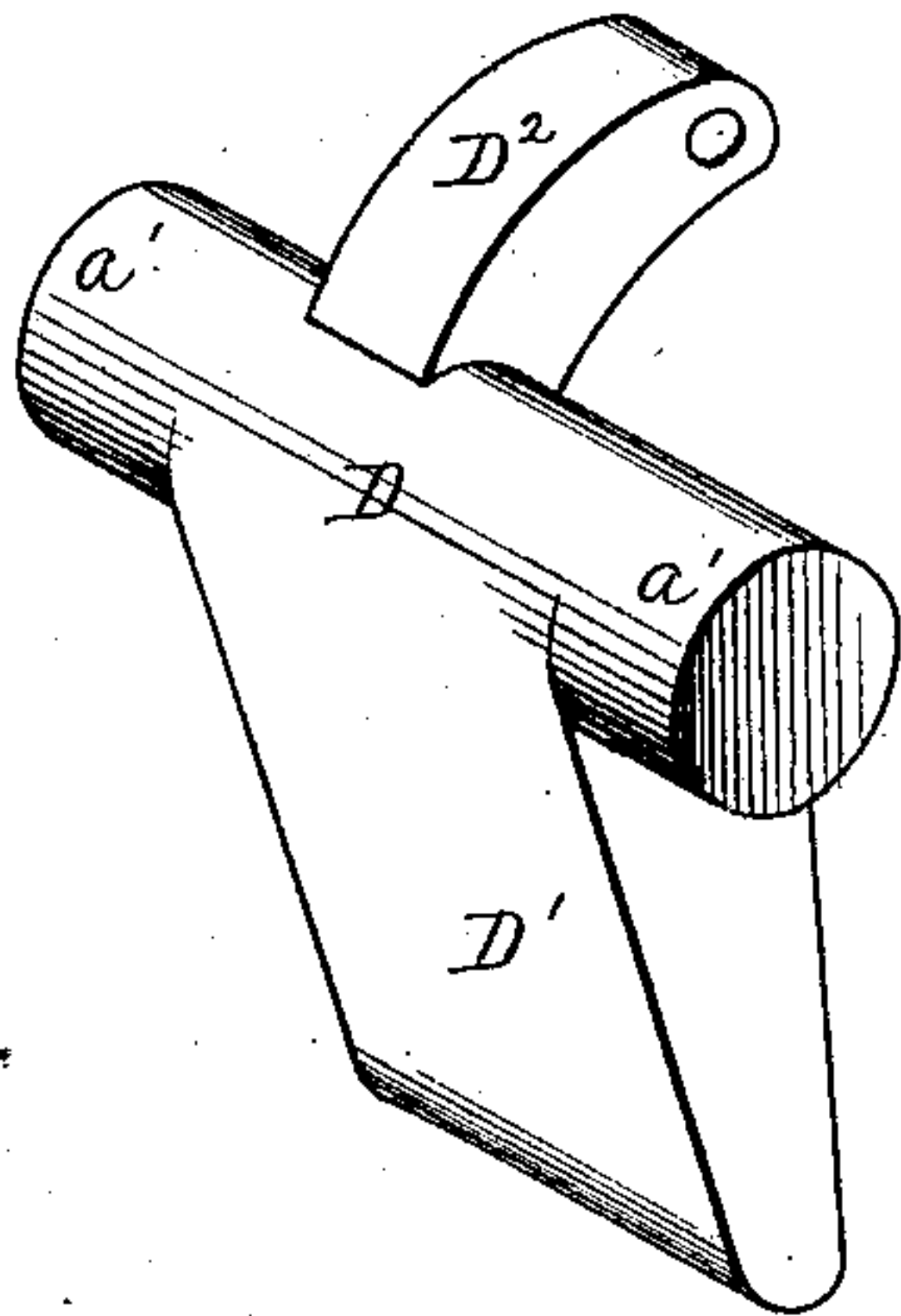


Fig. 4.

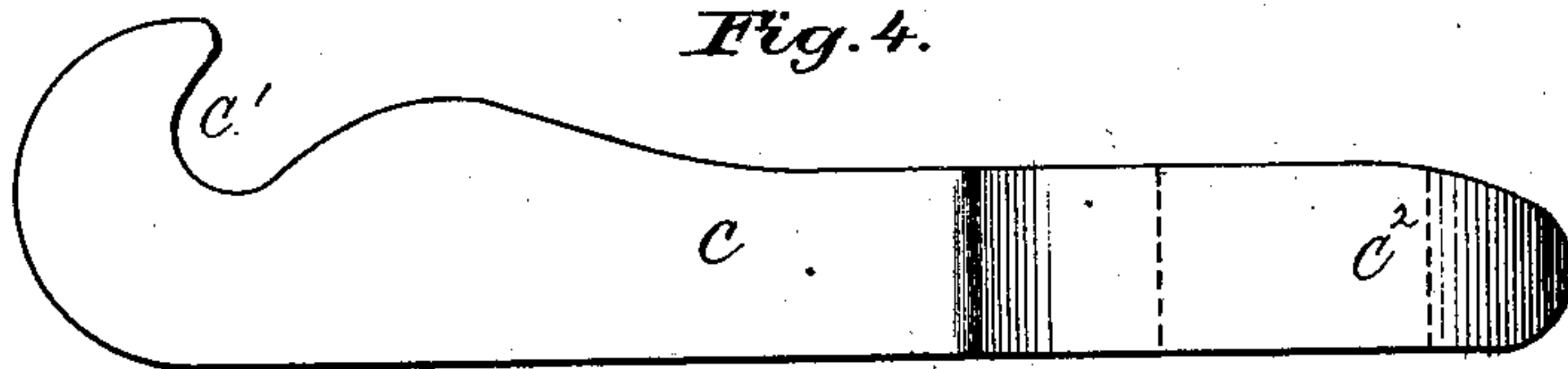


Fig. 5.

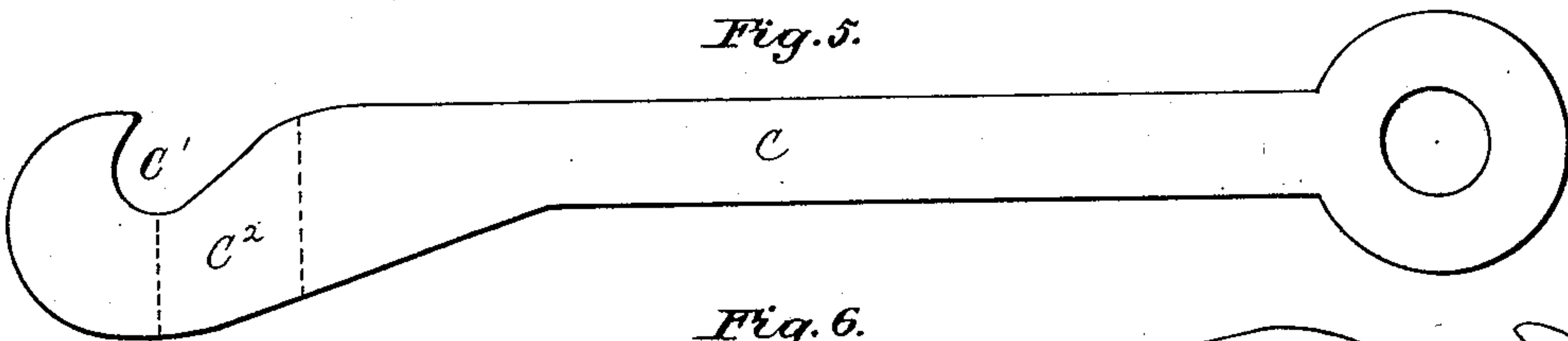


Fig. 6.

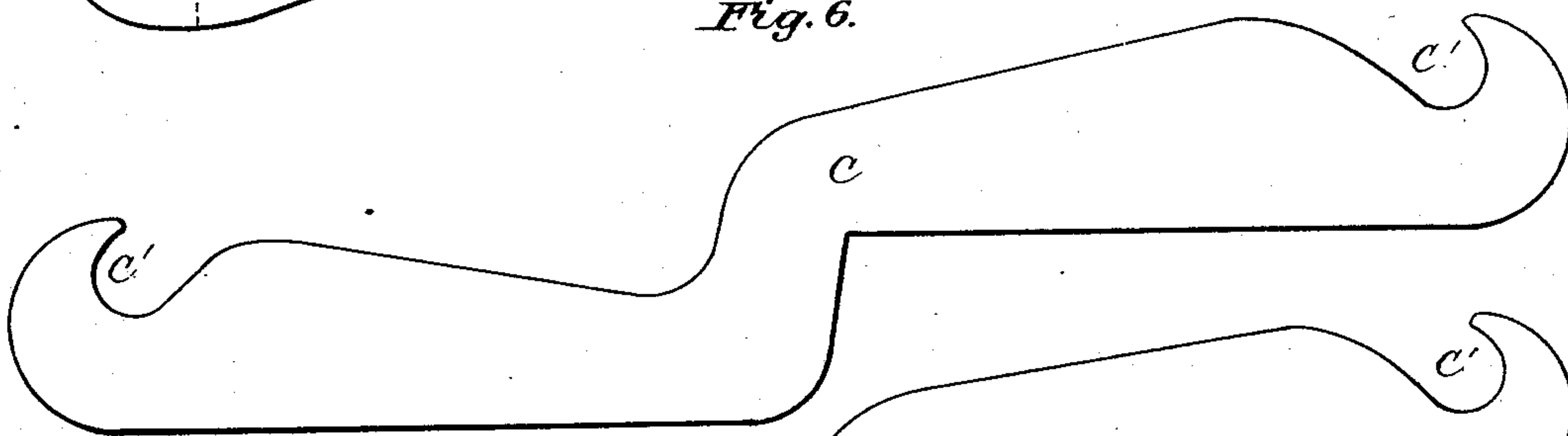
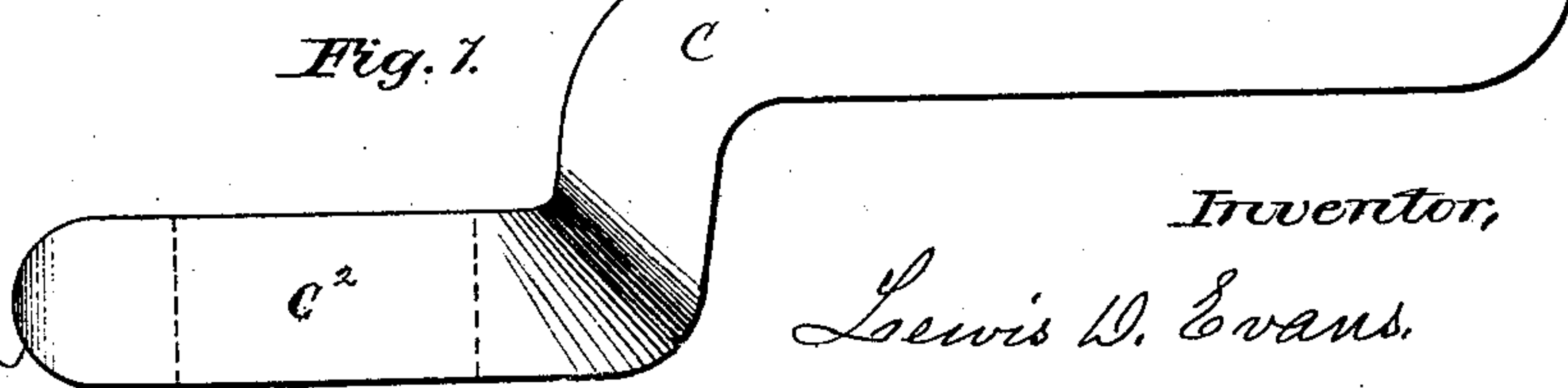


Fig. 7.



Witnesses:  
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Inventor,  
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Atty.



# UNITED STATES PATENT OFFICE.

LEWIS D. EVANS, OF NEWARK, OHIO.

## IMPROVEMENT IN CAR-COUPPLINGS.

Specification forming part of Letters Patent No. **163,469**, dated May 18, 1875; application filed April 16, 1875.

*To all whom it may concern:*

Be it known that I, LEWIS D. EVANS, of Newark, in the county of Licking and State of Ohio, have invented certain new and useful Improvements in Car-Couplings, of which the following is a specification:

My invention relates to certain improvements in car-couplings, whereby the coupling operation is rendered very effective and simple; and my invention consists in providing the draw-head with a trigger, pivoted within the same, having a retaining-arm adapted to drop into a recess in one end of a connecting link or bar, while another arm of the said trigger is so constructed as to be capable of being operated to turn or rotate the retaining-arm on its journal-bearings, in order to cause it to engage or disengage with the connecting link or bar.

The trigger is operated by means of a lever-arm, pivoted either to a bearing carried by the draw-head, or to a bracket or support attached to the platform or other part of the car to which the device is applied.

My invention relates, secondly, to the combination, with such trigger, of a coupling bar or link having one or both of its ends inclined or rounded, and provided with a recess adapted to receive and be held by the said trigger.

The opposite ends of the said coupling-link may be similarly constructed, so as to couple with the draw-heads of adjoining cars provided with triggers, constructed according to my invention; or the said link or bar may be formed at one end with an ordinary hole or loop, and the other with a recess for the reception of my improved trigger.

But that my invention may be fully understood, I will describe the same in detail, by reference to the accompanying drawing, in which—

Figure 1 represents a perspective view, partly in section, of a draw-head and link illustrating my invention. Fig. 2 is a vertical section of a pair of draw-heads, showing a link coupled to my draw-head, and in the act of being coupled to the other. Fig. 3 shows a detail view of my improved trigger. Fig. 4 represents a side view of a coupling-bar adapted to be applied to the rear end of the

tender. Fig. 5 is a similar view of a bar suitable for attachment to the cow-catcher of an engine. Fig. 6 shows a side view of a bar adapted for coupling cars having draw-heads at unequal heights. Fig. 7 is a view of a similar bar, adapted to couple at one end with my improved trigger, and at the other end with my improved trigger.

In each of the views similar letters of reference are employed to indicate corresponding parts wherever they occur.

A represents the draw-head, which is provided with a horizontal recess, B, for the reception of the coupling bar or link C. D is my improved trigger, formed with a journal, *a*, on each of its sides, which are pivoted within a recess in the sides of the draw-head A. The under side of the trigger is formed with a retaining-arm, D<sup>1</sup>, adapted to drop into a recess, C<sup>1</sup>, in one end of the coupling-bar C, and on the upper side is provided with a curved arm, D<sup>2</sup>, passing up through an opening, E, in the draw-head A, in position to be operated by means of an arm, F<sup>1</sup>, projecting from a lever, F, pivoted, at F<sup>2</sup>, to a standard or bracket, G, bolted or otherwise connected to the side of the draw-head A. The draw-head A, as shown in the drawing, is constructed in two parts, *a b*, and is constructed with the horizontal recess B, for the reception of the coupling-bar C, and also the opening E, for the passage of the arm D<sup>2</sup>, as well as the bearings for the journals *a*<sup>1</sup> of the trigger. The draw-head A may, however, be constructed with a central portion provided with the necessary recesses, and have plates bolted on each side. The forward end or mouth B<sup>1</sup> of the horizontal recess B is formed flaring, as shown at Figs. 1 and 2, so as to allow of the free play of the coupling-bar C, which latter is formed with rounded or inclined ends C<sup>2</sup> C<sup>2</sup>, which, with the flaring mouth B<sup>1</sup> of the draw-head, serves to insure the correct entering of the bar C into the recess B when coupling a pair of cars together. The bar C at each end is also provided with a recess, C<sup>1</sup>, for the reception of the retaining-arm D<sup>1</sup> of the trigger D.

The operation of the apparatus is as follows: A bar, C, constructed as shown in Figs 1 and 2, is first placed in the recess B of the draw-



head A of a car and forced backward, and, in so doing, its end  $C^2$  will raise the retaining-arm  $D^1$  until the bar has passed fully into the recess of the draw-head. The arm  $D^1$  will then fall of its own weight into the recess  $C^1$ , where it will remain and hold the bar C firmly in position until released, as hereinafter explained.

A bar or link having been thus placed in position, when it is required to couple onto another car provided with a similar draw-head, it is simply necessary to bring the two cars together when the bar or link C will enter the recess B of its draw-head A, and the retaining-arm  $D^1$  of the trigger D will fall of its own weight into the recess  $C^1$  and couple the cars securely together.

In drawing a train along with my improved couplings applied, the tendency of the strain on the coupling bar or link C and the retaining-arm  $D^1$  will be to cause a downward pressure on the links C, which will bind them tightly against the lower surface of the recess B, while the trigger will bear firmly against the parts *c d* of the draw-head A, and, as a consequence, the greater the strain on the bar or links C, the more firmly will the same be held in the draw-head A.

In place of forming the bars or links C with recesses  $C^1$  attached, as shown by Figs. 1 and 2, the said bars or links, in some cases, are formed with a hole,  $C^2$ , as seen at Figs. 4 and 5, for connecting the same by means of a pin to the tender or cow-catcher of an engine.

At Figs. 6 and 7 I have shown the bars or links adapted to couple cars having draw-heads at unequal heights, Fig. 6 representing one with recesses  $C^1$  at each end, while at Fig.

7 a recess,  $C^1$ , is formed at one end only, and a hole at the other for the reception of an ordinary pin.

In order to prevent the cars bumping against each other when the same are in the act of starting or stopping, I arrange between each pair of bumpers a wedge, K, which is constructed with a slot, so as to form two legs or arms which embrace the coupling bar or link, and the wedge thereby held in position. By this means the cars are at all times held the same or about the same distance apart, and when the cars are in the act of starting or stopping there will be no liability of bumping.

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

1. A pivoted trigger, D, in combination with a coupling-bar and a draw-head, A, and provided with a retaining weighted arm,  $D^1$ , for dropping into the recess of the coupling-bar, and a vertical arm,  $D^2$ , passing up through the draw-head, substantially as set forth.

2. The combination, with a trigger, D, pivoted within a draw-head, A, and provided with a downwardly-projecting arm,  $D^1$ , and a vertically-projecting arm,  $D^2$ , passing up through the draw-head A, of a lever-arm, a coupling-bar, C, having one or both ends,  $C^2$ , curved and provided with recesses  $C^1$ , substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand.

LEWIS D. EVANS.

Witnesses:

JOS. L. COOMBS,  
A. H. NORRIS.