

(No Model.)

W. H. LIGHTCAP.  
CLEVIS.

No. 602,022.

Patented Apr. 5, 1898.

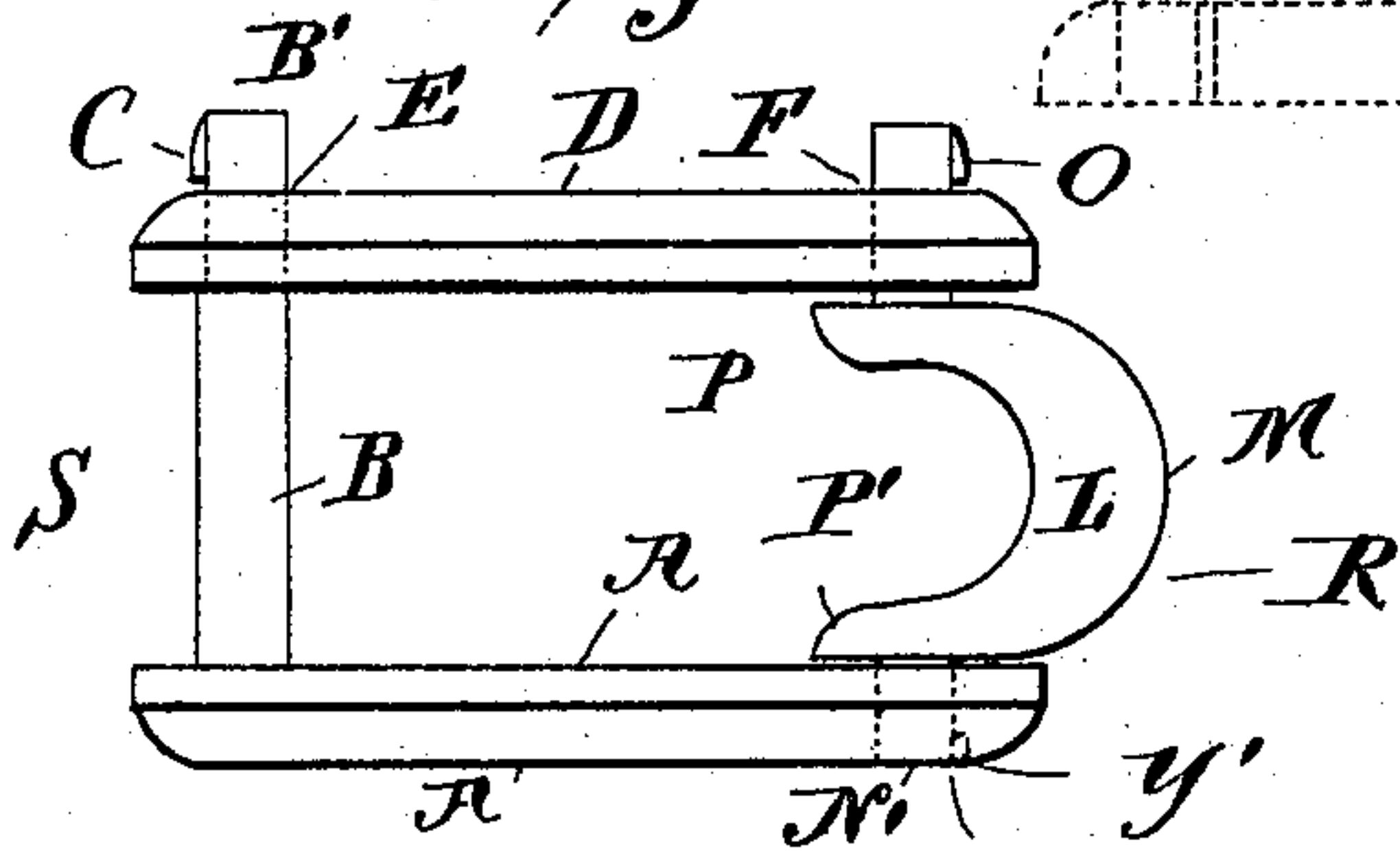


Fig. 2.

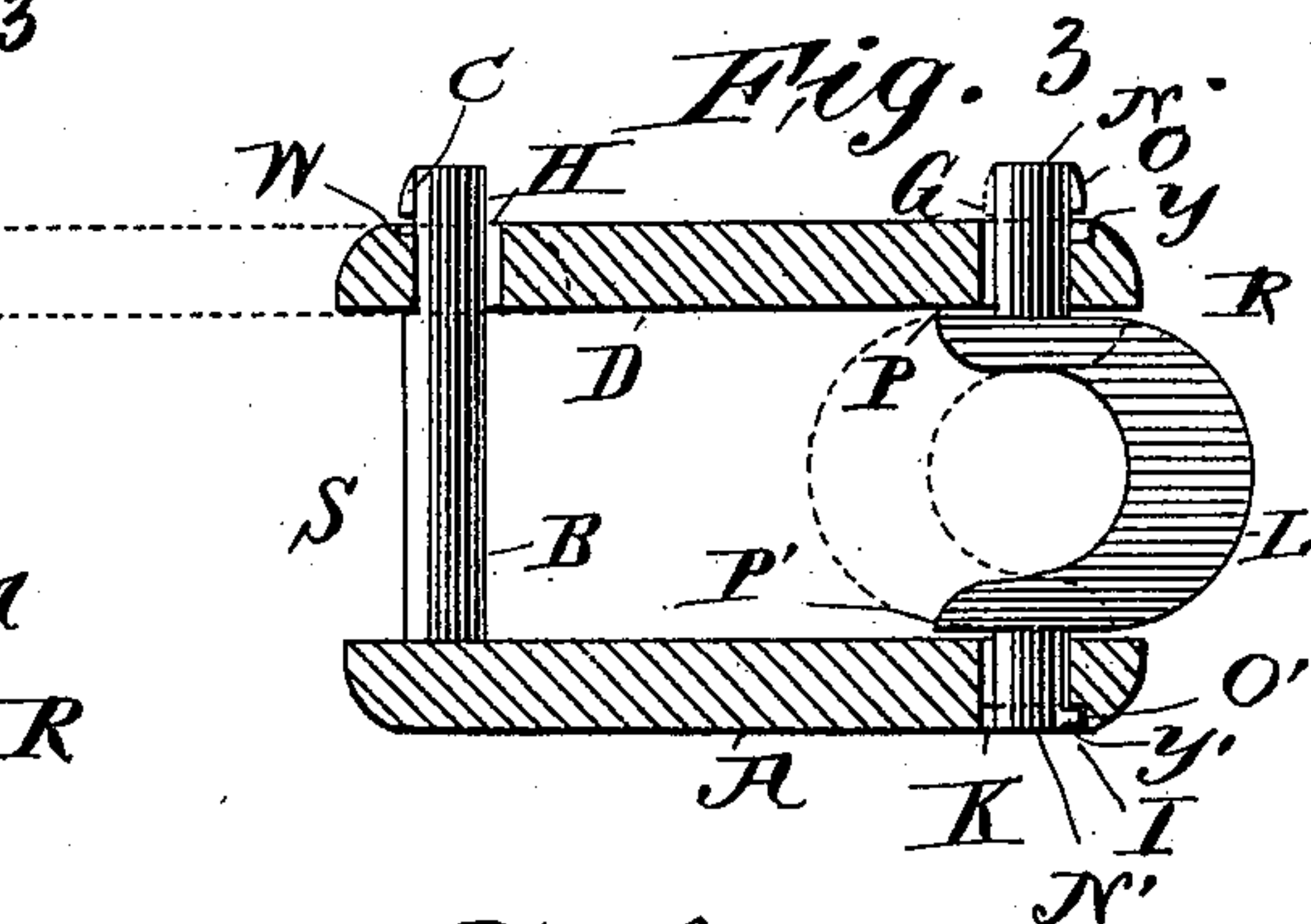


Fig. 3.

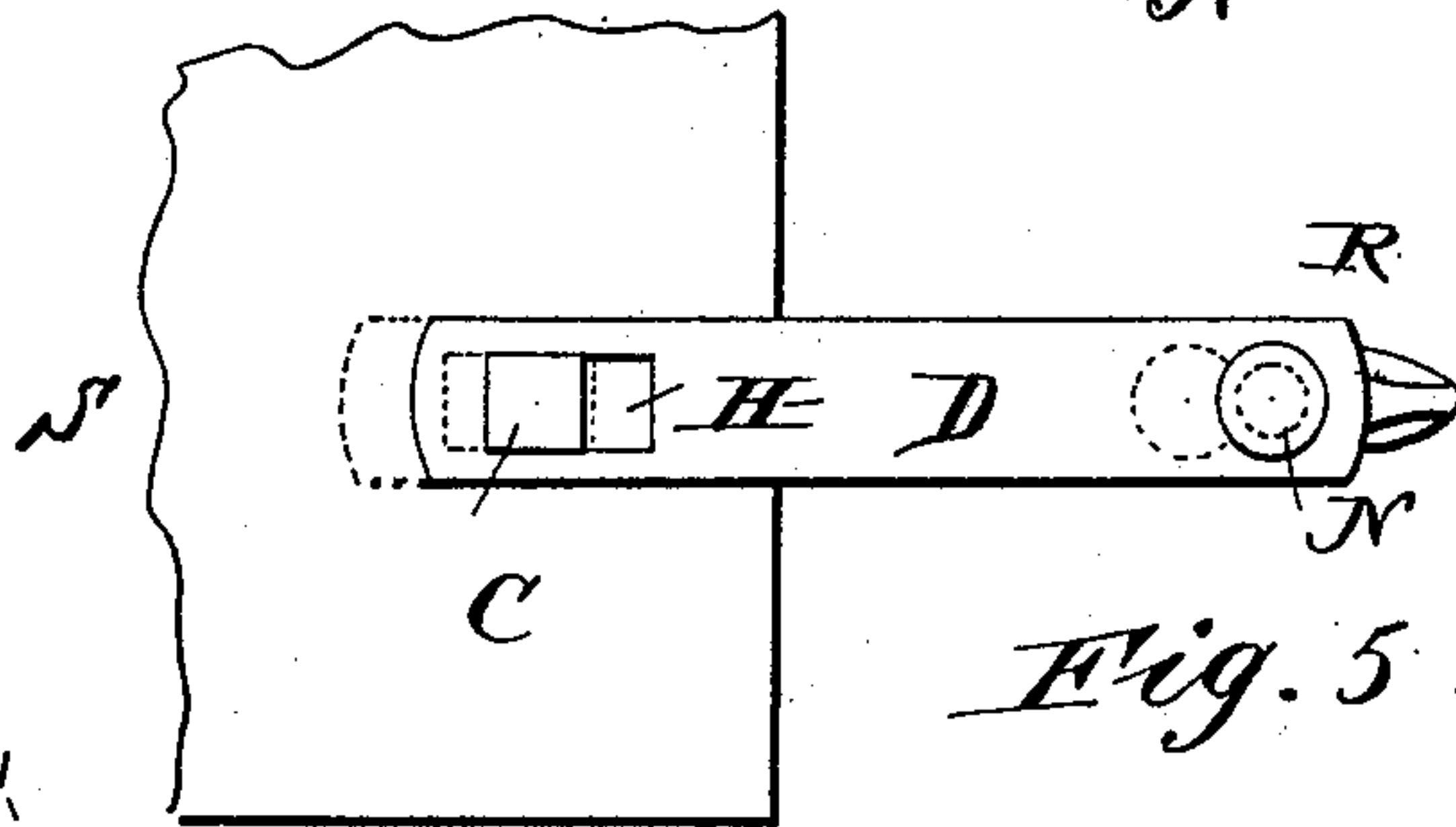


Fig. 5.

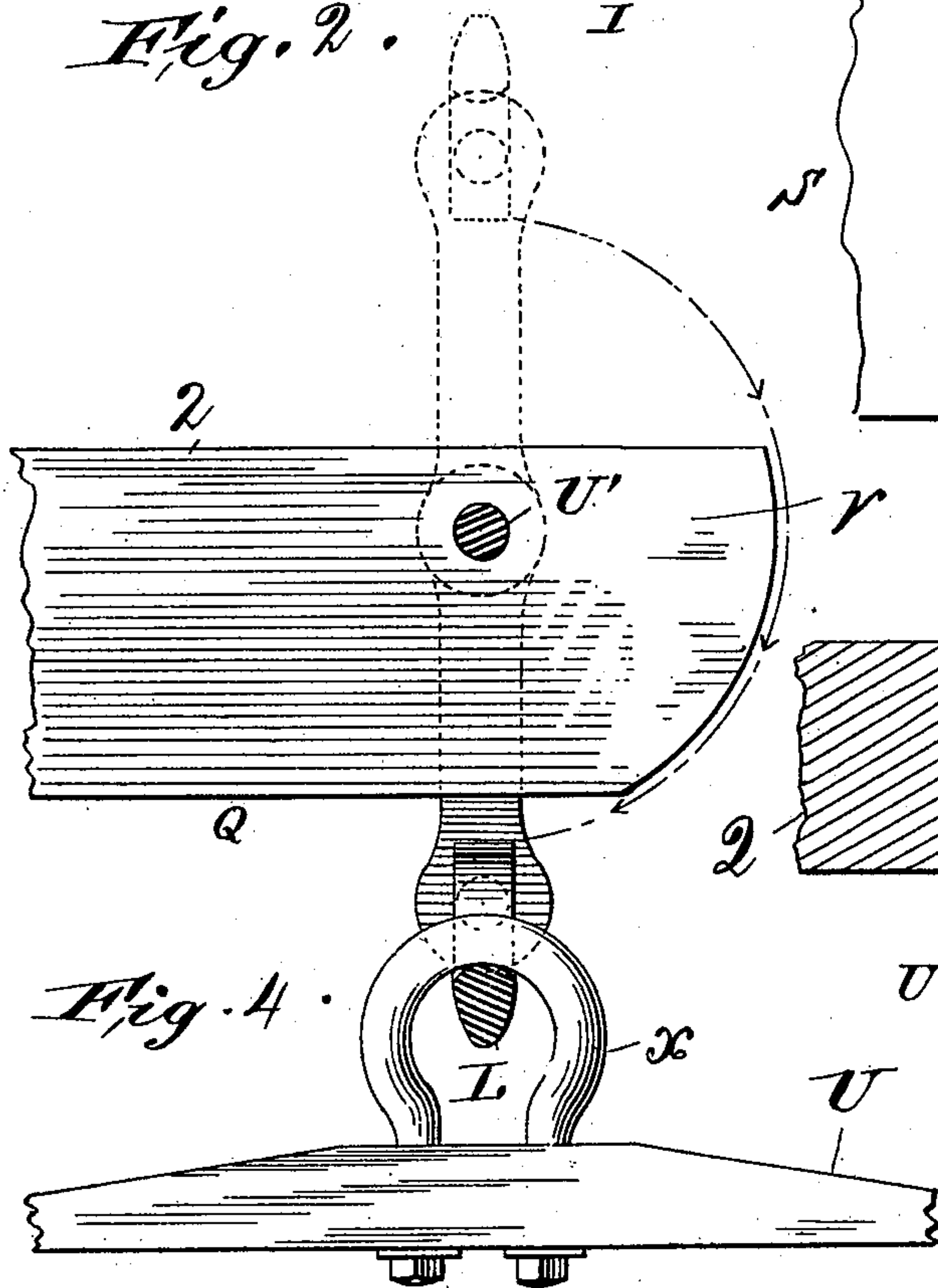


Fig. 4.

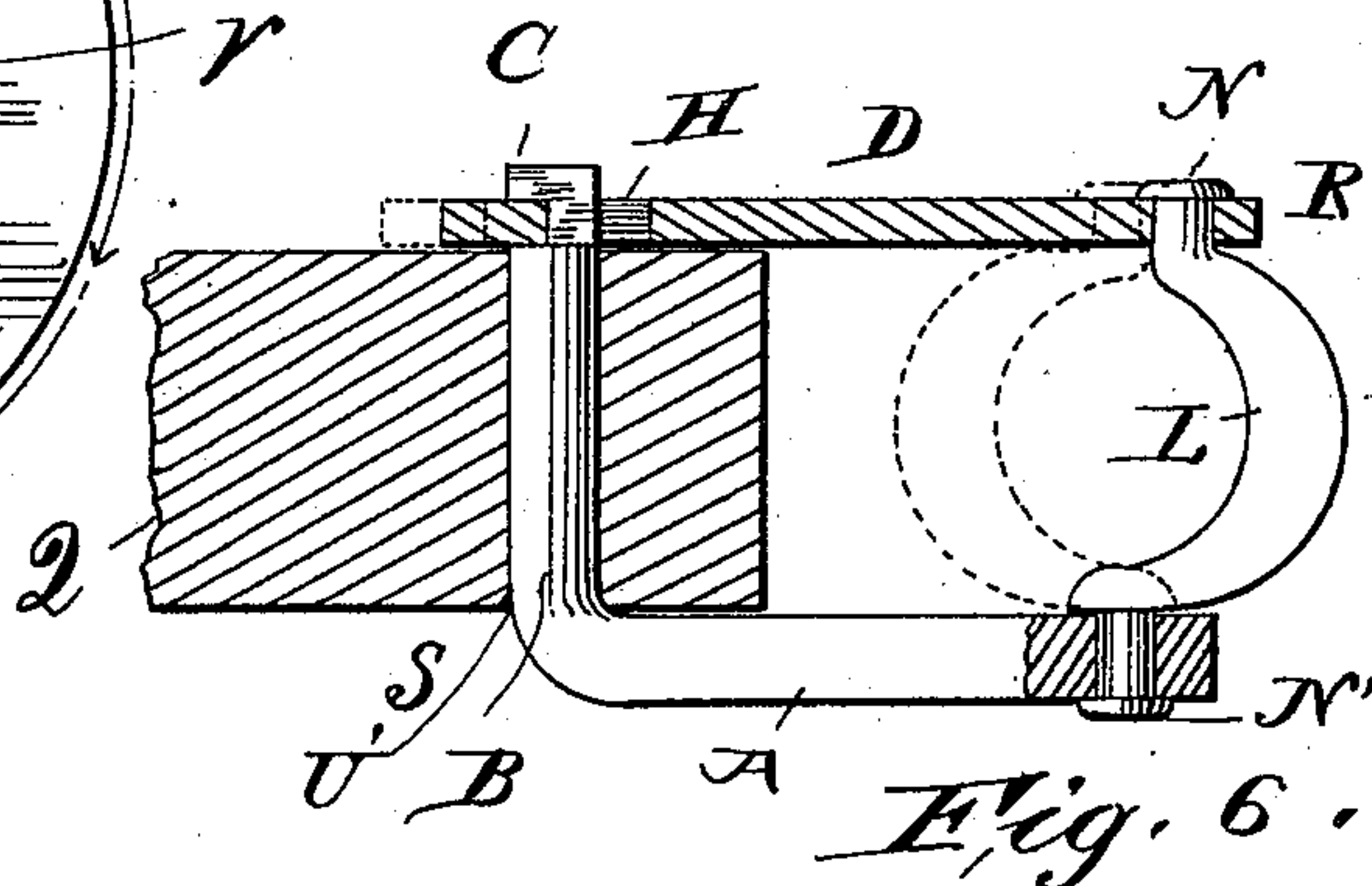


Fig. 6.

WITNESSES

C. W. Benjamin  
L. L. Manning

INVENTOR

William H. Lightcap

BY

Gadd-Daniel

ATTORNEY



# UNITED STATES PATENT OFFICE.

WILLIAM H. LIGHTCAP, OF HAZEL GREEN, WISCONSIN.

## CLEVIS.

SPECIFICATION forming part of Letters Patent No. 602,022, dated April 5, 1898.

Application filed December 19, 1896. Serial No. 616,330. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. LIGHTCAP, a citizen of the United States, residing at Hazel Green, in the county of Grant and State

5 of Wisconsin, have invented a certain new and useful Improvement in Clevises, of which the following is a specification, such as will enable others skilled in the art to which it appertains to make and use the same.

10 The object of my invention is to form a clevis of a simple and cheap form of construction so made that the same cannot be accidentally displaced or separated from the doubletree; and to this end my invention consists of an

15 upper and lower bar joined together at one end by a straight pin and at the other by a curved link for the attachment of the single-tree, the pin and link being provided at the ends with suitable lugs adapted to register

20 with suitable slots adjacent to the holes in the straight piece when in one position and to be out of registry therewith when the parts are in the working position, although it is not to be understood that such invention is

25 limited to such exact form of construction, for my invention consists in the construction of certain devices and parts and the combination of certain devices and parts, all as hereinafter more specifically described, set

30 forth, and claimed.

The device of this invention is set forth in the following specification, of which the accompanying drawings form a part, wherein similar letters of reference designate like or

35 equivalent parts wherever found throughout the several views, and in which—

Figure 1 is a top plan view of my improved clevis in working position. Fig. 2 is a side view thereof. Fig. 3 is a side view thereof

40 in central vertical section on the line 3 3 of Fig. 1, the disconnecting position of the parts being shown in dotted lines; and Fig. 4 is a top plan view of such clevis in position upon the doubletree, the position assumed by the

45 same in removal being shown in dotted lines. Fig. 5 is a top plan view of a modified form of the construction shown in Figs. 1 to 4 in the rearward, loosening, or non-working position upon the doubletree; and Fig. 6 is a

50 side view, partially in central vertical section, of the construction shown in Fig. 5, the

disconnecting position of the parts in said Figs. 5 and 6 being shown in dotted lines.

Referring to the drawings, A designates a straight bar forged or cast from suitable

55 metal or any other desired material, which is provided at one end with a pin or rod B, which is preferably formed integral therewith or secured firmly thereto at one end, as shown. This pin B is preferably of rounded

60 form throughout and is provided at the top with a suitable lug C, as shown.

D designates a bar similar to the bar A and preferably of the same shape, and this bar D is provided at one end with a hole E, preferably

65 round as shown, and at the other end with a similar hole F, each of which holes E and F is preferably provided upon the inward side thereof as shown, with suitable

70 slots G and H respectively, and the bar A is provided at its outer end with a suitable hole

75 K, provided with a similar slot I.

L designates a link which may be of any desired form, but is preferably of that shown, consisting of the curved central portion M,

75 provided at the ends with the rounded journal portions N and N', provided at the extreme ends with the lugs O and O', which rounded journal portions and lugs are similar

80 in shape and form to the rounded upper portion B', and lug C of the pin B and the link L is preferably provided with the shoulders P and P'.

Adjacent to the journal holes or perforations E and F, and preferably located in the

85 side thereof opposite to the slots H and G, are preferably provided countersinks W and Y of the same form and contour and adapted to receive the lugs C and O, and the bar A is

90 preferably provided with a similar countersink Y' to receive the lug O'.

R represents the front of the clevis and S the back thereof, while Q designates the doubletree and U the whiffletree.

If desired, the pin B, instead of being

95 formed integral with or secured to the bar A at the bottom, may be connected therewith in the same manner as it is with the bar D; also, instead of having the journal end portions of the pin B and link L project beyond

100 the bars A and D, suitable countersinks may be provided of sufficient depth to receive the



lugs C, O, and O', and the pin B and link L be made of such lengths that when the parts are assembled the ends thereof will not project beyond the bars A and D.

5 The doubletree is provided with a hole U' adjacent to the end and close to the back of the doubletree, and the distance from the hole U' to the end of the doubletree is just sufficient to permit the clevis to be swung  
10 from front to rear around the end thereof, and the end of the doubletree is preferably of the rounded form shown at V in Fig. 2, so that it will be impossible to swing the link L into the non-working or disconnecting po-  
15 sition shown in dotted lines in Fig. 3 before the clevis has been swung to the extreme rearward position shown in dotted lines in Fig. 2.

The parts being disconnected, to assemble the clevis in position upon the doubletree so  
20 as to connect the whiffletree therewith the pin B is passed through the hole U' in the doubletree, and the bar D is then placed on the end of the pin B by bringing the slot E into registry with the lug C and slipping the  
25 bar D down over the pin B, when such bar D will assume the position shown in dotted lines in Fig. 3, after which it is swung around into position parallel to and extending over the  
30 bar A, when the bar D will be of course locked to the pin B, and such bars A and D extending, as they do, to the rear of the doubletree, as shown in dotted lines in Fig. 4, the rounded journal portion N' of the link L is inserted in position in the bar A, with the  
35 bowed portion M of the link extending toward the pin B, as shown in dotted lines in Fig. 3, after which the ring or link X of the whiffletree U is passed over the link L and the bar D passed down over the journal N of  
40 the link, when by the rotation of the link L to the front or working position, as shown in full lines in Figs. 1 to 4, inclusive, the various parts of the clevis will be locked together, and when the clevis is then swung around the  
45 end of the whiffletree B into the position shown in Fig. 4 it will be seen that it will be impossible when in such working position to rotate the link L sufficiently far to the rear to permit of the disconnecting of the various  
50 parts of the clevis.

In the modified form of construction of my improved clevis shown in Figs. 5 and 6 the hole in the bar D, through which passes the end of the rod or pin B, is made of a rectangular form, and the upper end of the pin B,  
55 instead of being of the rounded form shown in the preceding views, is made of a square form and provided with a lip C, preferably of the same width as the square head of such  
60 square end portion of the pin. The link L, instead of having the centers of the end journal or pivot portions thereof coincident and in line one with the other, has that journal or pivot N, which passes through the bar D,  
65 located nearer to the bowed portion M of such link L than is the bottom pivot N', as shown in Figs. 5 and 6, in such manner that the rota-

tion of the link L will give a reciprocating motion to the bar D, for the reason that being pivoted to the bar A the journal or pivot N, pivoted in the bar D, will act upon such bar as an eccentric. When it is desired to disconnect this form of the device from the doubletree, the clevis is swung around into the rearward position on the doubletree  
75 (shown in dotted lines in Figs. 4, 5, and 6) and the link L is then swung into the rearward and non-working position shown in dotted lines in Fig. 6. When in this position, the bar D will be forced back into the position shown in dotted lines in said Figs. 5 and  
80 6, in which position the lip C of the square upper portion of the pin B will register with the slot H, and the bar D can be disconnected therefrom, swung to one side, and the pin B be  
85 forced down through the doubletree and the singletree removed therefrom, and the reconnecting of this form on the clevis is, of course, the reverse of this process. The advantage of this form of the device lies in the fact that  
90 all the parts are permanently connected together and cannot be separated one from another, as the ends of the link L are riveted down over the bars A and D, so as to allow of sufficient movement thereof for the pur-  
95 pose described, while allowing of free rotation of the link L, and in either form when loosely connected the link L may be riveted, as shown in Figs. 5 and 6.

My improved form of clevis shown herein  
100 is of such form that it may be used with either the bar A or bar D uppermost, as may be desired; but ordinarily it is preferable to use the same with the bar A at the top and the bar D underneath.  
105

Having now particularly described my said invention, its construction and operation, what I claim, and desire to secure by Letters Patent, is—

1. In a clevis, the combination with a bar  
110 A, of a pin B, a link L, and a bar D, the bar D being provided with holes adjacent to the ends provided with the slots H and G, and the pin and link being provided with suitable lugs adapted to register with the slots, sub-  
115 stantially as shown and described.

2. In a clevis, the combination with a bar  
A having rigidly secured thereto a pin B having a lug C, a link L having the pivot or journal end portions N and N' provided with like  
120 lugs, and a bar D having suitable journal-perforations adapted to receive the journal portions of the pin B and link L and provided with suitable slots H and G to allow of the connection of the parts when in one position,  
125 and the bar A being provided with a suitable journal-perforation and slot adapted to receive the pivot portion N' of the link L, substantially as shown and described and for the purposes set forth.  
130

3. In a clevis, the combination with a bar A, of a pin B, a bar D, and a curved link L provided with journal portions N and N' pivoted in the bars A and D, the construction



being such that the bar D can only be disconnected from the pin B when the bow of the link is pointing toward the pin B, substantially as shown and described and for the purposes set forth.

4. In a clevis, the combination with a bar A, of a bolt B having a lip C at the upper end, a bar D having a slot H, and a link L pivoted to the bars A and D in such manner as by its rotation to give a reciprocal movement to the bar D so as to lock and unlock the same from the pin B, substantially as shown and described and for the purposes set forth.

5. In a clevis, the combination with a bar A, of a bolt B connected at one end with the

bar A and having a lip C at the other end, a bar D having a slot H adapted to fit over the lip C and be drawn back under the same, and a curved link L rotatably pivoted in the bars A and D the pivots being eccentric one to another, substantially as shown and described and for the purposes set forth.

Signed, at the city of Hazel Green, Grant county, in the State of Wisconsin, this 7th day of December, A. D. 1896.

WILLIAM H. LIGHTCAP.

Witnesses:

C. McCANN,

WM. PIERCE.