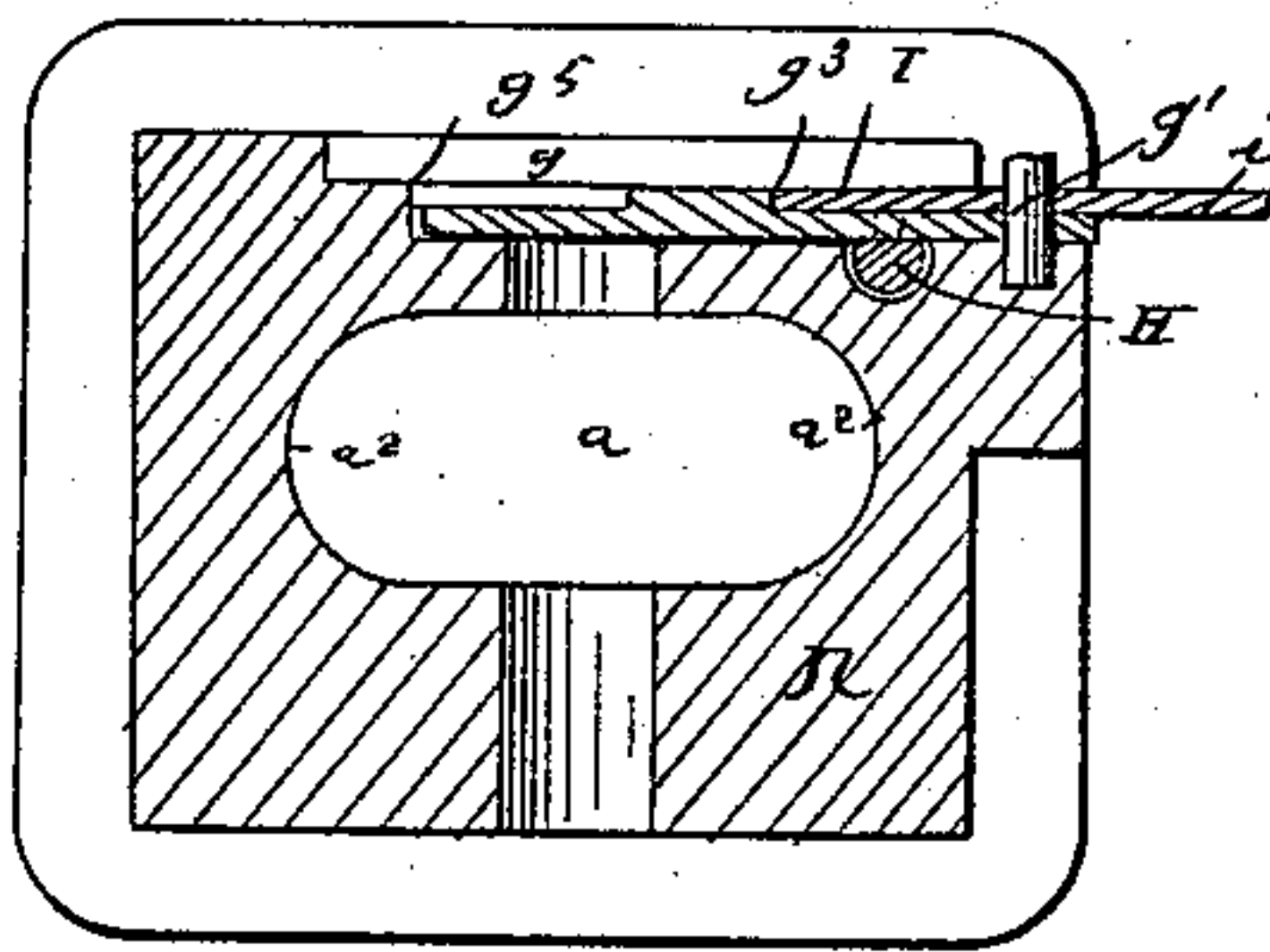
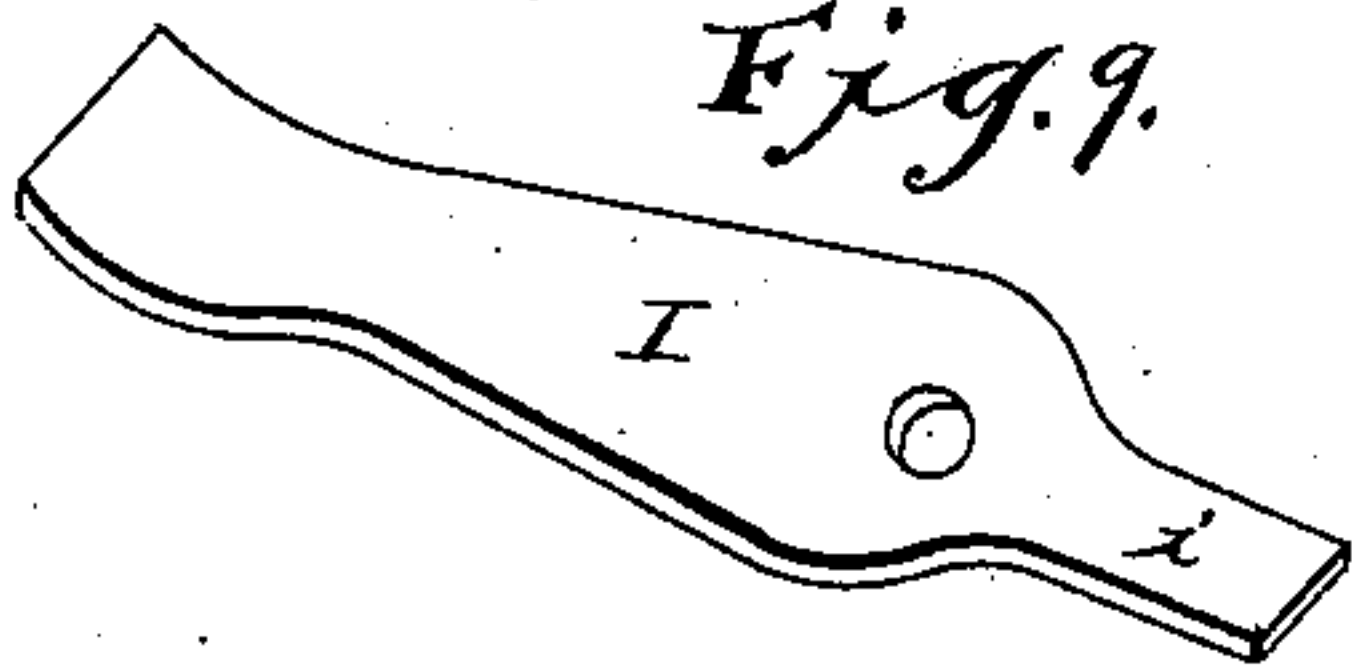
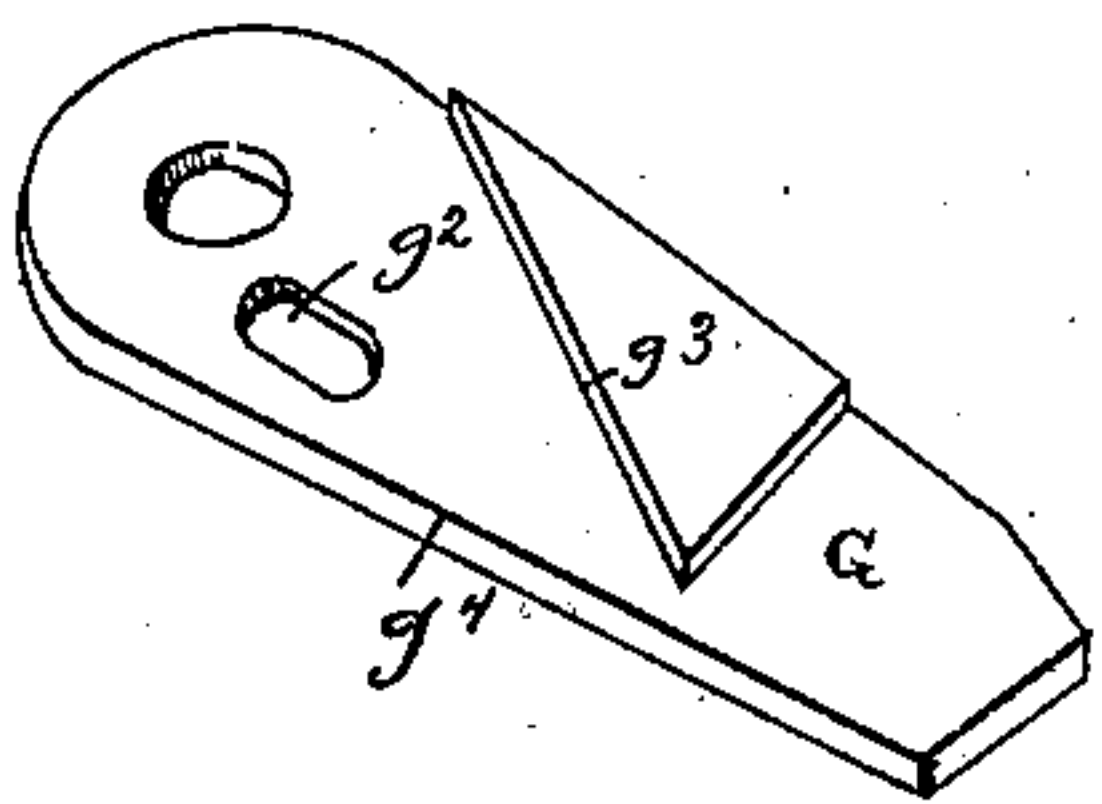
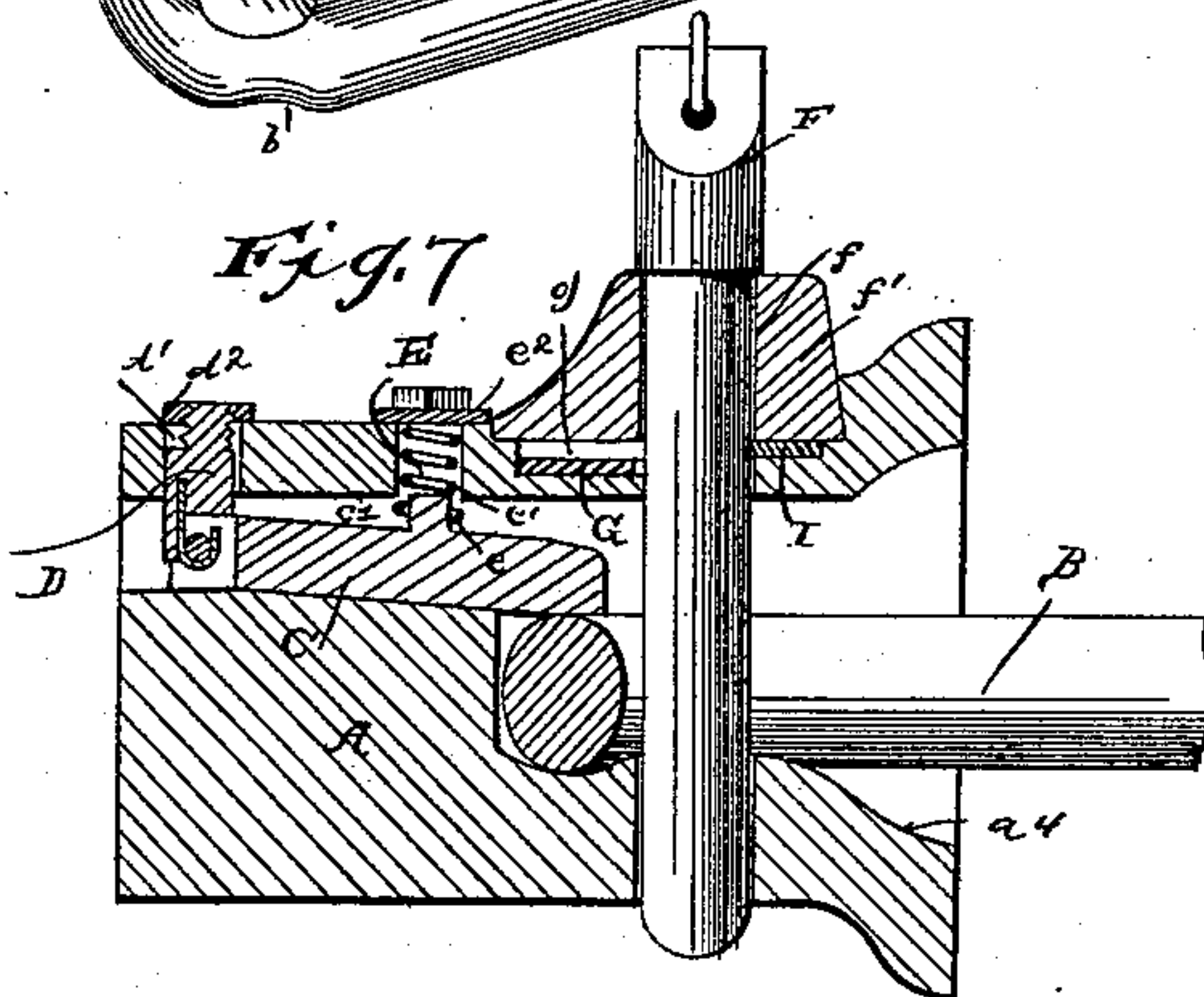
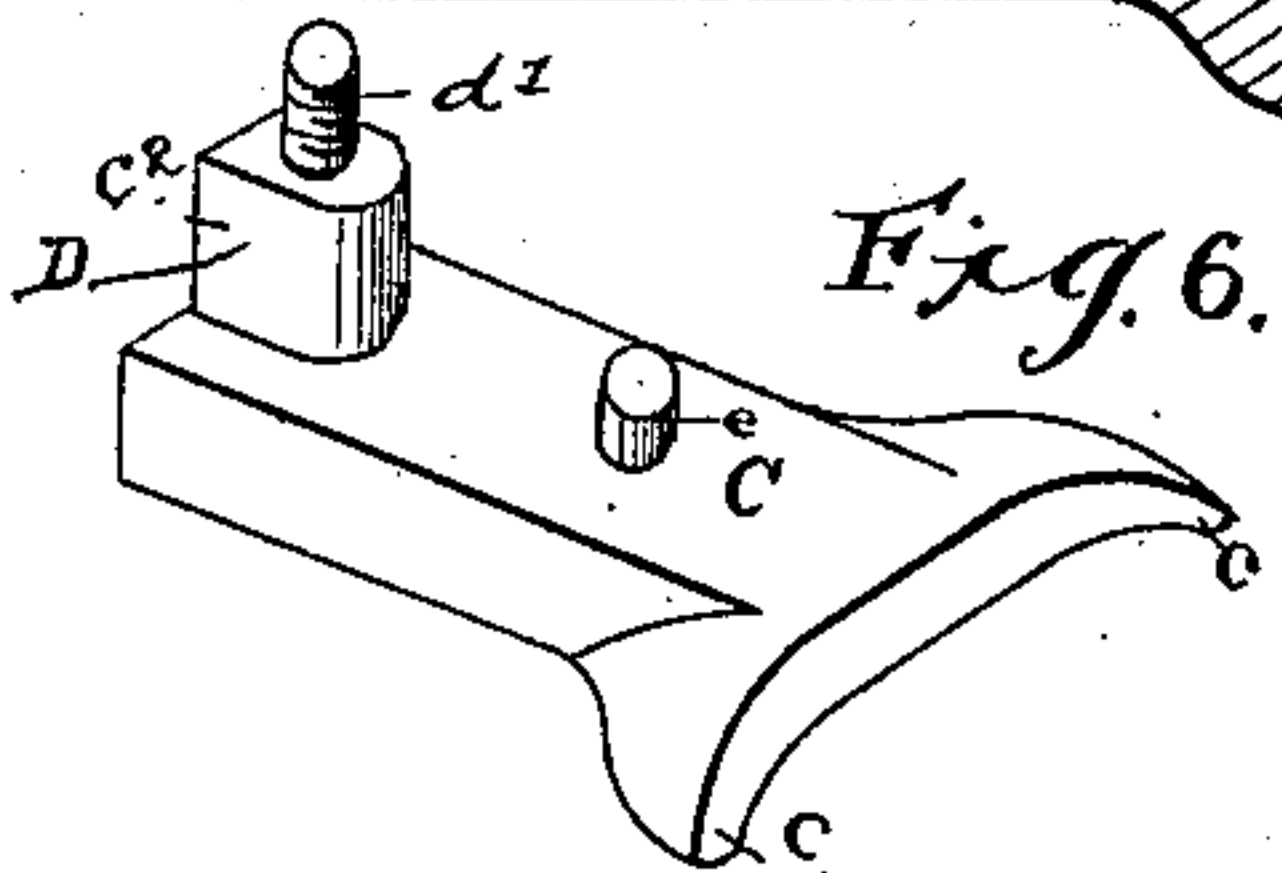
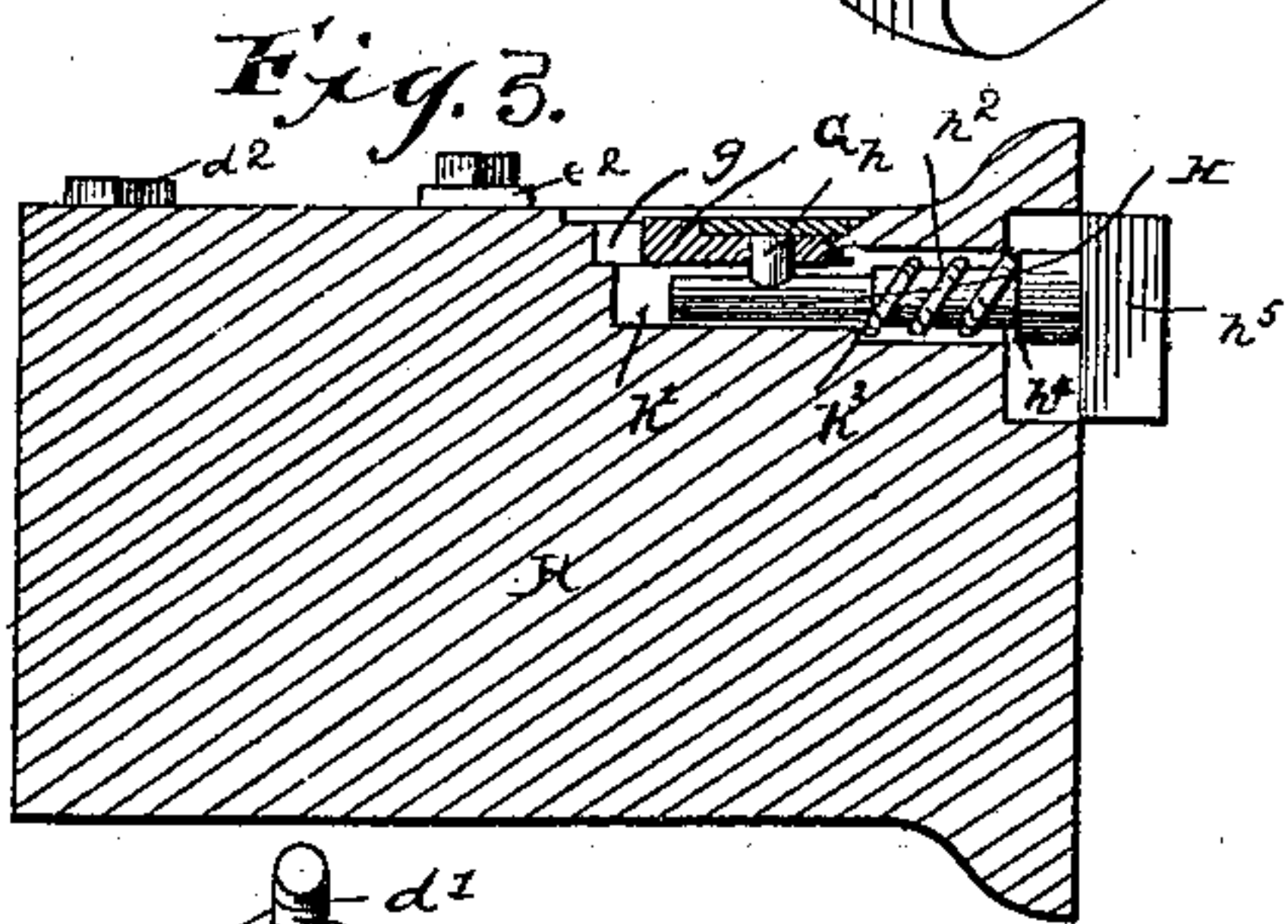
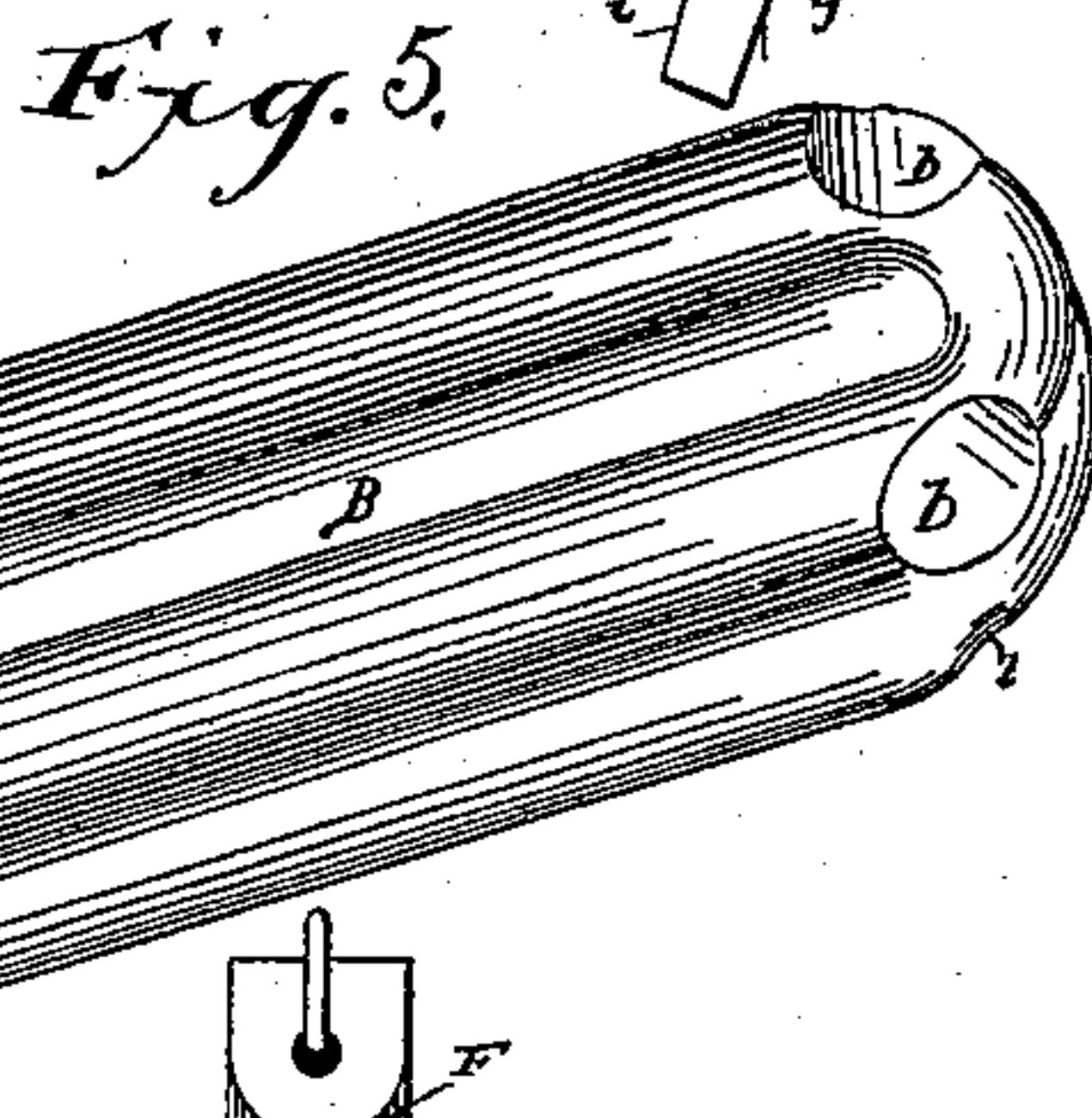
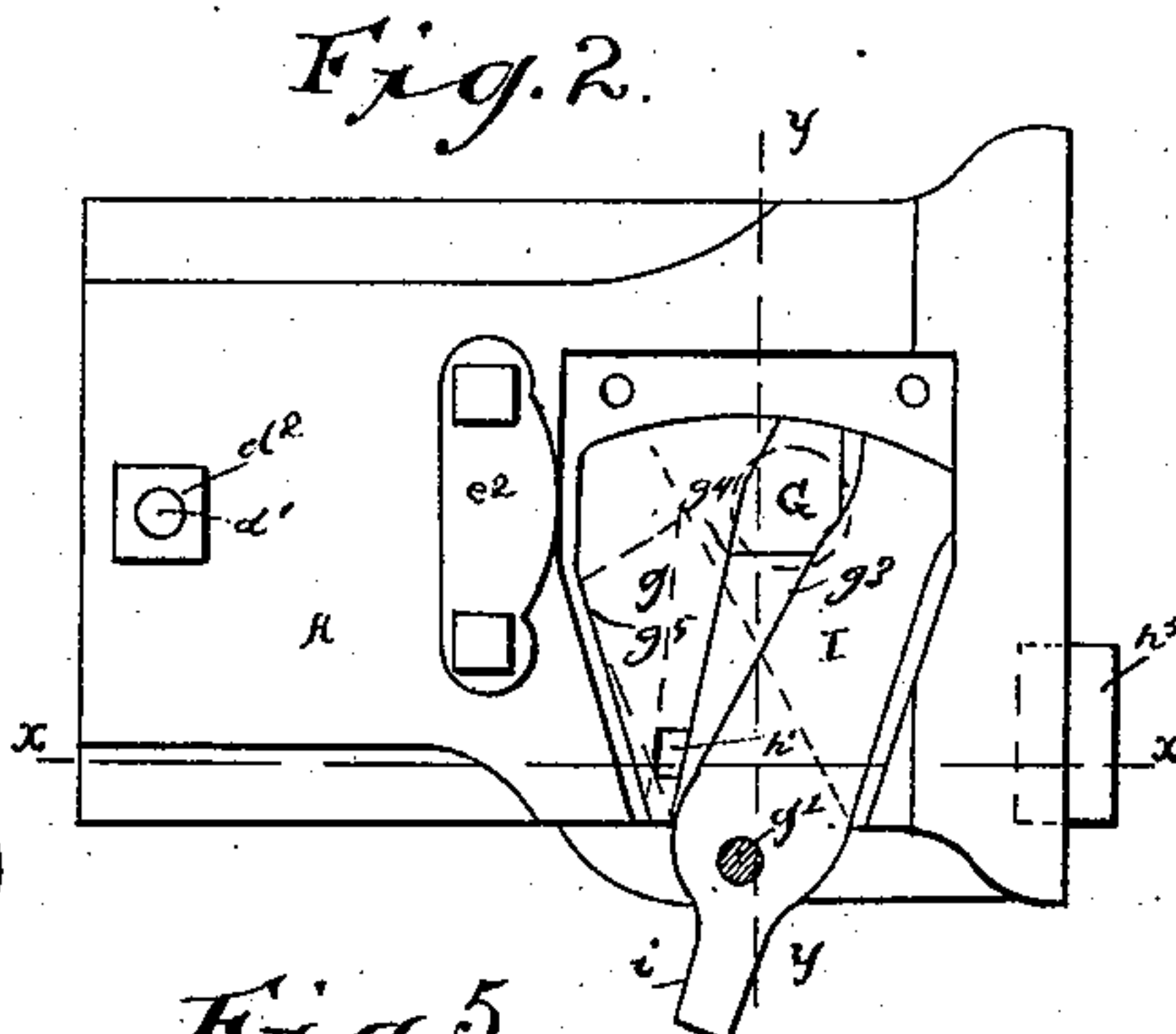
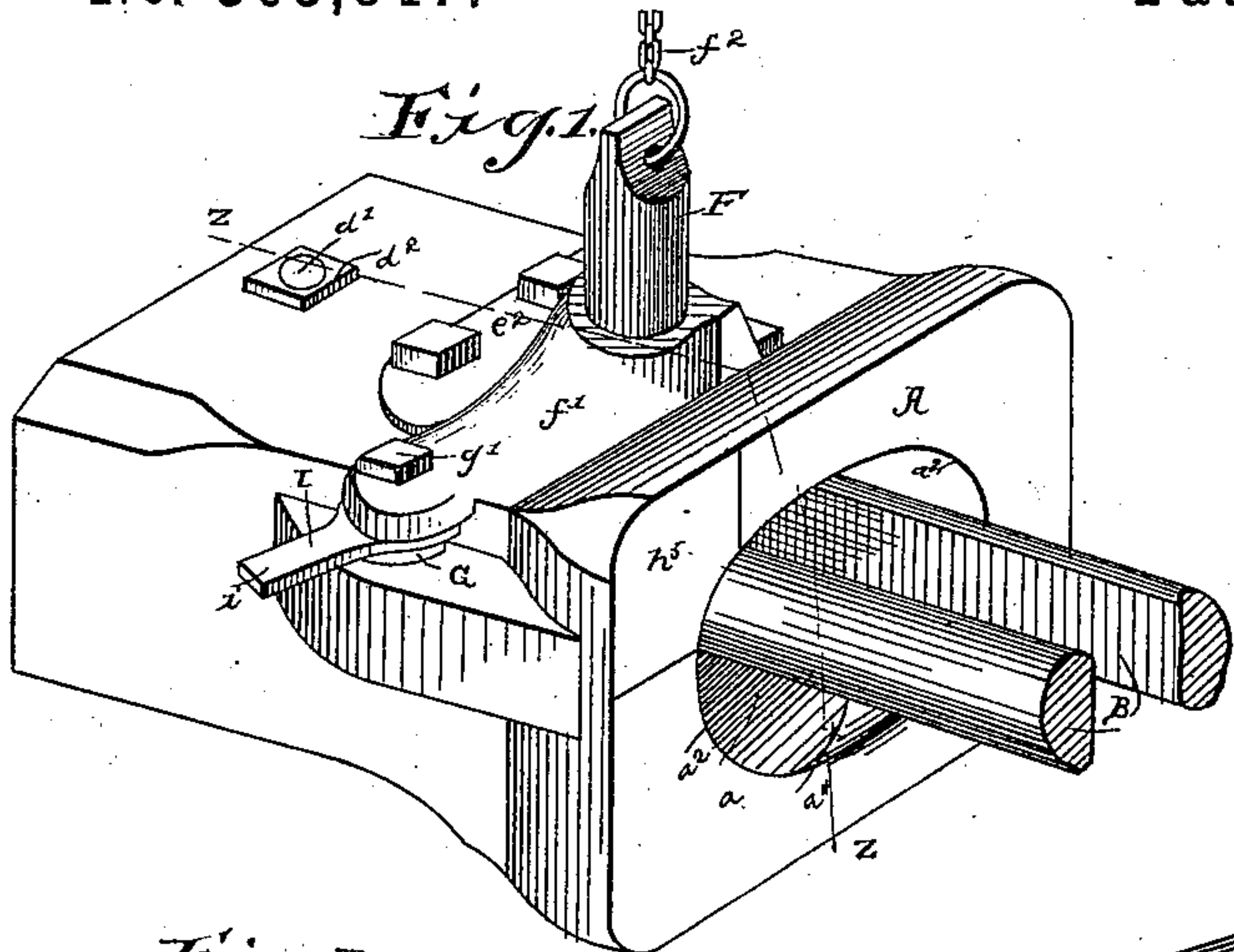


(No Model.)

J. L. PURKEY.  
CAR COUPLING.

No. 363,847.

Patented May 31, 1887.



Witnesses

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# UNITED STATES PATENT OFFICE.

JOHN L. PURKEY, OF MILLER, DAKOTA TERRITORY.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 363,847, dated May 31, 1887.

Application filed March 30, 1887. Serial No. 233,042. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN L. PURKEY, a citizen of the United States, residing at Miller, in the county of Hand, Dakota Territory, have invented a new and useful Improvement in Car-Couplers, of which the following is a specification.

The invention relates to improvements in car-couplers, the objects being to couple automatically and retain the link in a horizontal position before it enters the opposite draw-head; and it consists in the construction and arrangement of the pin holding and releasing mechanism, and of the mechanism that bears down on the inner end of the link within the draw-head, as hereinafter described, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of the draw-head embodying the invention; Fig. 2, a view of the upper portion of the draw-head, with the guide-cap or casting for the coupling-pin detached. Fig. 3 is a vertical longitudinal section on the line  $x x$  of Fig. 2. Fig. 4 is a vertical longitudinal section on the line  $y y$  of Fig. 2. Fig. 5 is a perspective view of the link detached. Fig. 6 is a detail perspective view of the part within the draw-head that depresses the link. Fig. 7 is a longitudinal section on the line  $z z$  of Fig. 1. Figs. 8 and 9 are respectively perspective views of the detent-plates.

Referring to the drawings, A designates a draw-head, provided with the recess  $a$ , having its end  $a'$  and the rear parts,  $a^2 a^2$ , of its sides rounded or concave to fit the corresponding end of a link, and its outer portions,  $a^3$ , flaring out, so as to allow the outer end of the link to turn laterally, or up or down.

$a^4 a^4$  are grooves on the outer part of the floor of the recess to guide the link straight therein from the opposite draw-head.

B is the link, having its ends notched above and below, at  $b$ , on each side, to receive the bent-down or curved ends  $c c$  of the depressor-block C, the face of which is concave to press down equally at all points on the link, and the back of the arms and the stem of which lie in a properly-shaped recess,  $c'$ , on the upper part of the draw-head to the rear of the link-recess. The end of said stem is bifurcated and has a rod,  $c^2$ , connecting the arms of the bifurcation. This arm is engaged by a hook,  $d$ , on a vertical

bar, D, standing in the rear part of the recess  $c'$ , and with its upper tapped end passing through an opening,  $d'$ , in the roof of said recess, and engaged by a nut,  $d^2$ , thereabove.

E is a coiled spring surrounding a boss,  $e$ , on the upper part of the stem within a recess,  $e'$ , in the draw-head, and depressing the block C upon the link, so as to hold its outer end horizontal. The upper end of the spring E bears against a short plate,  $e^2$ , bolted to the draw-head above the recess  $e'$ .

F is the coupling-pin, which passes down through the upper pin-opening,  $f$ , which extends through the cap-piece  $f'$ , bolted to the upper surface of the draw-head.

$f^2$  is a chain connecting a ring on the link with a proper point on the cap-piece, so as to prevent the former from being drawn out of the pin-opening  $f$ ; and  $f^3$  is a vertical rod running through suitable guides on the end of the car from the top thereof and communicating with the chain, so that a brakeman on top of the car may uncouple the same.

G is a detent-plate situated and turning in the shallow recess  $g$  immediately below the cap-piece  $f'$ . The said plate is pivoted near its outer end on the bolt  $g'$ , that secures the outer corner of the cap-piece to the draw-head, and is provided with the small slot  $g^2$  and the long inclined shoulder  $g^3$ , for purposes hereinafter described.

The front edge,  $g^4$ , of the detent-plate G abuts against the long transverse shoulder  $g^5$  of the recess  $g$  when in its normal position, and the slot  $g^2$  is occupied by a projection,  $h$ , rising from the upper surface of a bar, H, that lies in a longitudinal recess,  $h'$ , at the corresponding side of the draw-head. The outer part of said bar is surrounded and pressed outward by a coiled spring,  $h^2$ , which bears on the shoulders  $h^3$  and  $h^4$ , respectively, on the bar and on the inner surface of the recess. The outer end of the bar H is formed into a head,  $h^5$ , that, when the draw-heads abut together, is pressed inward, and by means of the projection  $h$  in the slot  $g^2$  turns the detent-plate G on its pivot and moves it from under the point of the coupling-pin, so that the latter is free to fall and engage the link that is now in the draw-head.

I is the second detent-plate, situated above the former, pivoted on the bolt  $g'$ , and having



an outwardly-extended arm, *i*, within reach of the brakeman. The rear edge of the plate I lies against the shoulder  $g^3$  of the plate G, and its inner end is in front of the shoulder  $g^5$ , and consequently in front of the upper pin-opening.

The plate I is used when the cars are jammed together and it is desired that they should set themselves in coupling position after being moved away from each other. When the cars are so jammed and the plates G pushed back, the brakeman raises the coupling-pins and turns the corresponding plates, I, under the same by means of the handle or arm *i*. Then when the cars separate the plate I is drawn forward by the shoulder  $g^3$  of the plate G, upon which the spring-controlled bar H is now free to act, and does not allow the pin to drop, but holds its point up until the plate G passes under the said point.

The operation of the coupler is then as follows: The link has its outer end held straight outward and horizontal by the depressor and shape of the link-recess, as described. When the two draw-heads impinge on each other, the link already connected to one enters the other, and the head  $h^5$  of the bar of the latter draw-head is driven inward by the former, and by the described means turns the detent-plate G rearward, allowing the pin to fall and couple with the link. In coupling to a higher draw-head a link having a central bend is used.

The device is a simple and compact coupler, will couple automatically, and is not liable to get out of order.

Having thus described my invention, I claim—

1. In a car-coupler, the combination, with the draw-head and coupling-pin, of the detent-plate pivoted in a recess in the draw-head in the path of the pin, with its front edge against a shoulder in said recess, when in its normal position, the bar resting in a longitudinal recess in the draw-head and having a projection on its upper surface entering a slot in the detent-plate, and the spring forcing said bar outward, so that its head is in front of the front surface of the draw-head, substantially as described.

2. In a car-coupler, the combination, with the draw-head and coupling-pin, of the automatic detent-plate, standing normally in the path of the pin in a recess in the draw-head, the spring-controlled bar having its outer end pro-

jecting from the front surface of the draw-head, and provided with a projection engaging in a slot on the automatic detent-plate, and the non-automatic detent-plate pivoted together with the automatic plate and above the same, provided with an arm standing outward from the side of the draw-head, and with its rear edge lying against a shoulder on the upper surface of the automatic plate, substantially as specified.

3. In a car-coupler, the combination, with the draw-head and coupling-pin, of the detent-plate G, provided with the shoulder  $g^3$  and slot  $g^2$ , pivoted in the recess *g* by the bolt  $g'$ , and resting against the shoulder  $g^5$  of said recess, the detent-plate I, provided with the arm *i* and resting against the shoulder  $g^3$  of the detent-plate G, with its inner end in front of the upper pin-opening, and the spring-controlled bar H, with its projection *h* engaged in the slot  $g^2$  of the detent-plate G and its head projecting in front of the draw-head, substantially as specified.

4. The combination, with the link and the draw-head A, having the end  $a'$  and rear part of the sides of its recess concaved to fit the end of the link, and provided with the grooves  $a^1 a^1$  in the outer part of its recess, of the depressor-block C in a suitable recess in the draw-head, the rod  $c^2$ , connecting the arms of the bifurcated rear end of the stem of said block, the hook *d*, secured to the bar D and engaging said rod, and the coiled spring E, bearing against the upper surface of the stem of said block and against the plate  $c^2$ , secured above the recess containing said spring, substantially as specified.

5. The combination of the link and the draw-head, constructed, substantially as described, to have its recess fit upon said link at its end, the depressor to engage upon the inner end of the link and have its stem loosely secured at its rear end within a longitudinal recess in the draw-head, and a spring situated in a recess in the draw-head and bearing down on the stem of the depressor, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

JOHN L. PURKEY.

Witnesses:

MANFORD E. WILLIAMS,  
JNO. E. DOWELL.