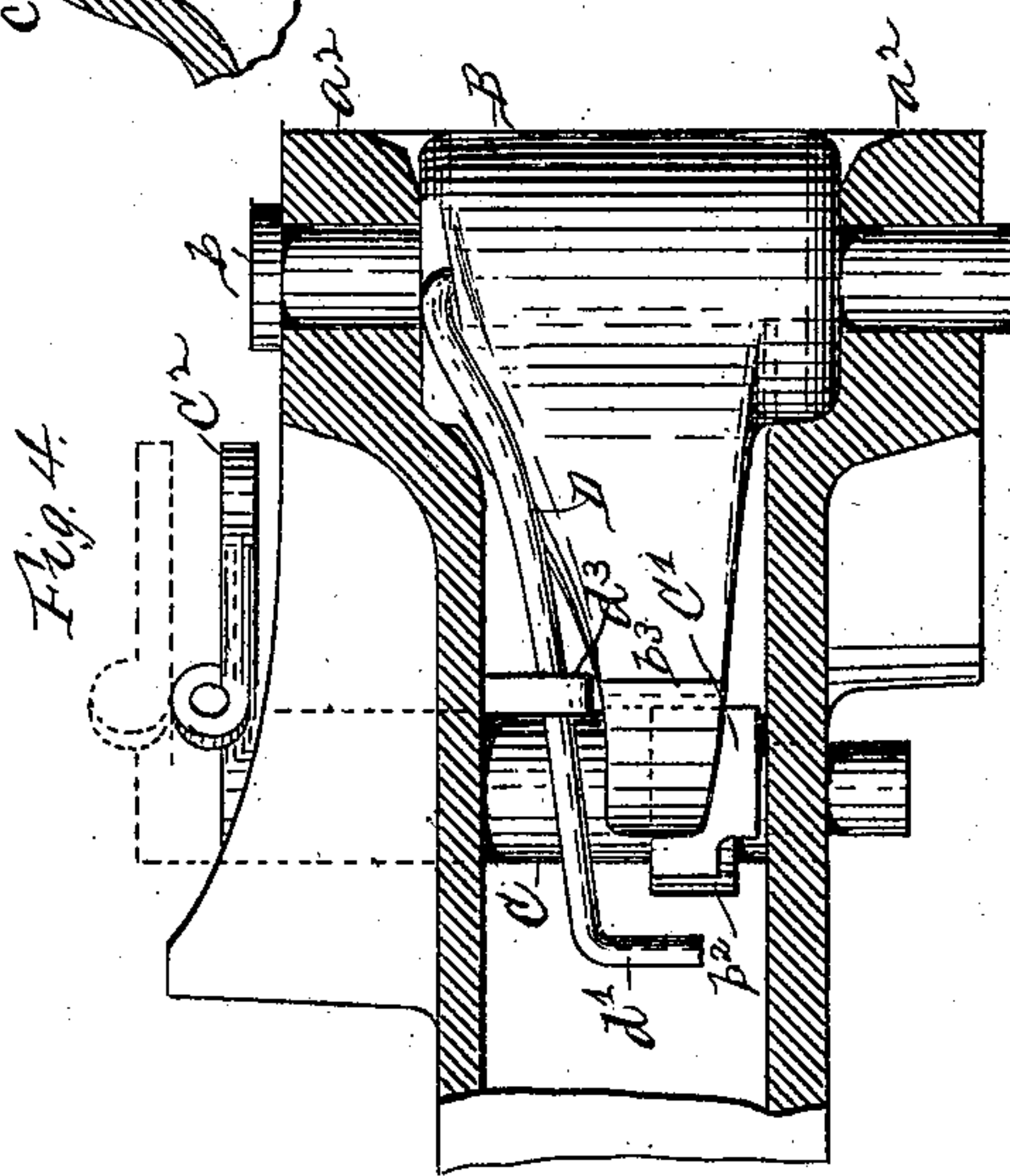
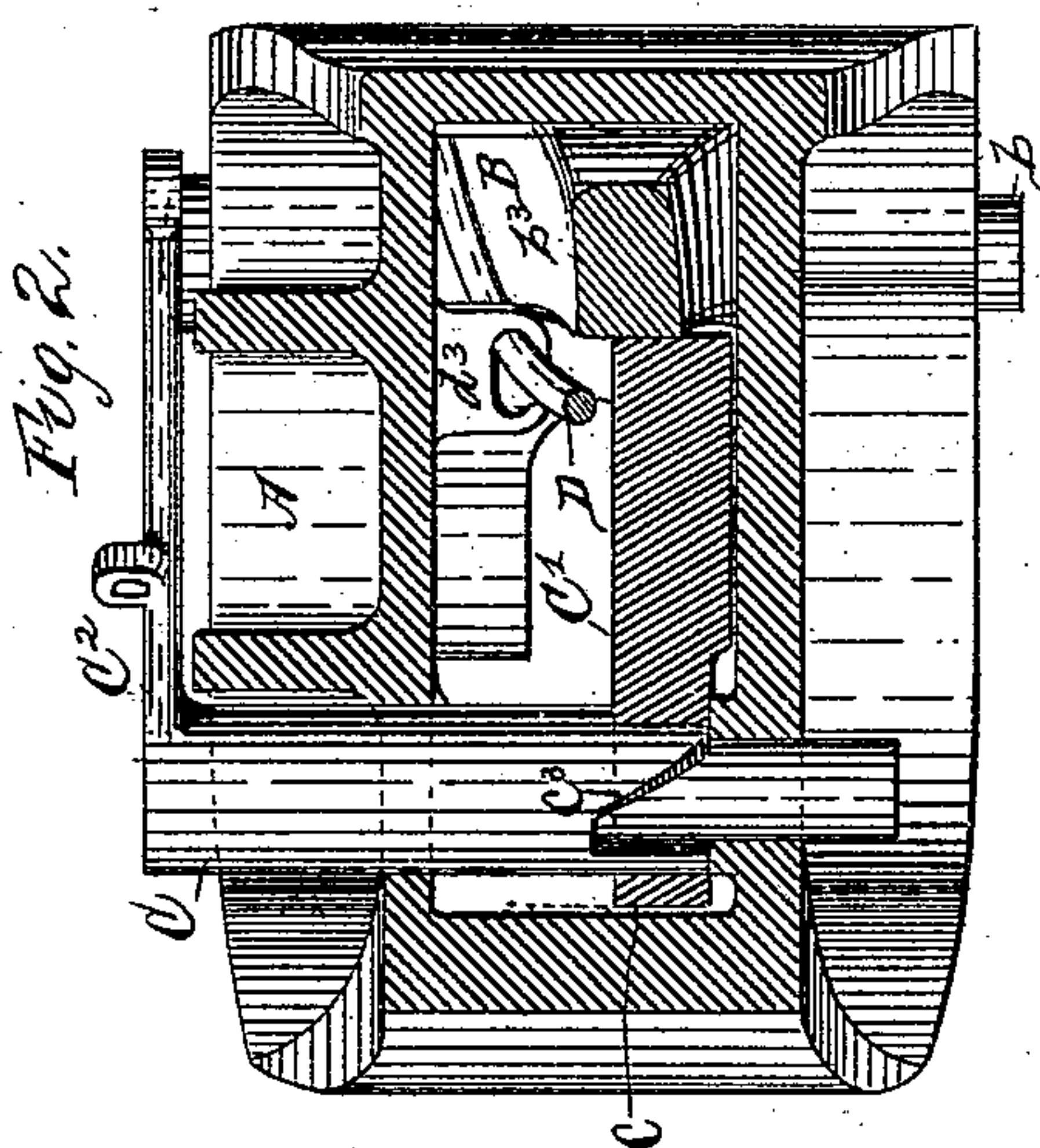
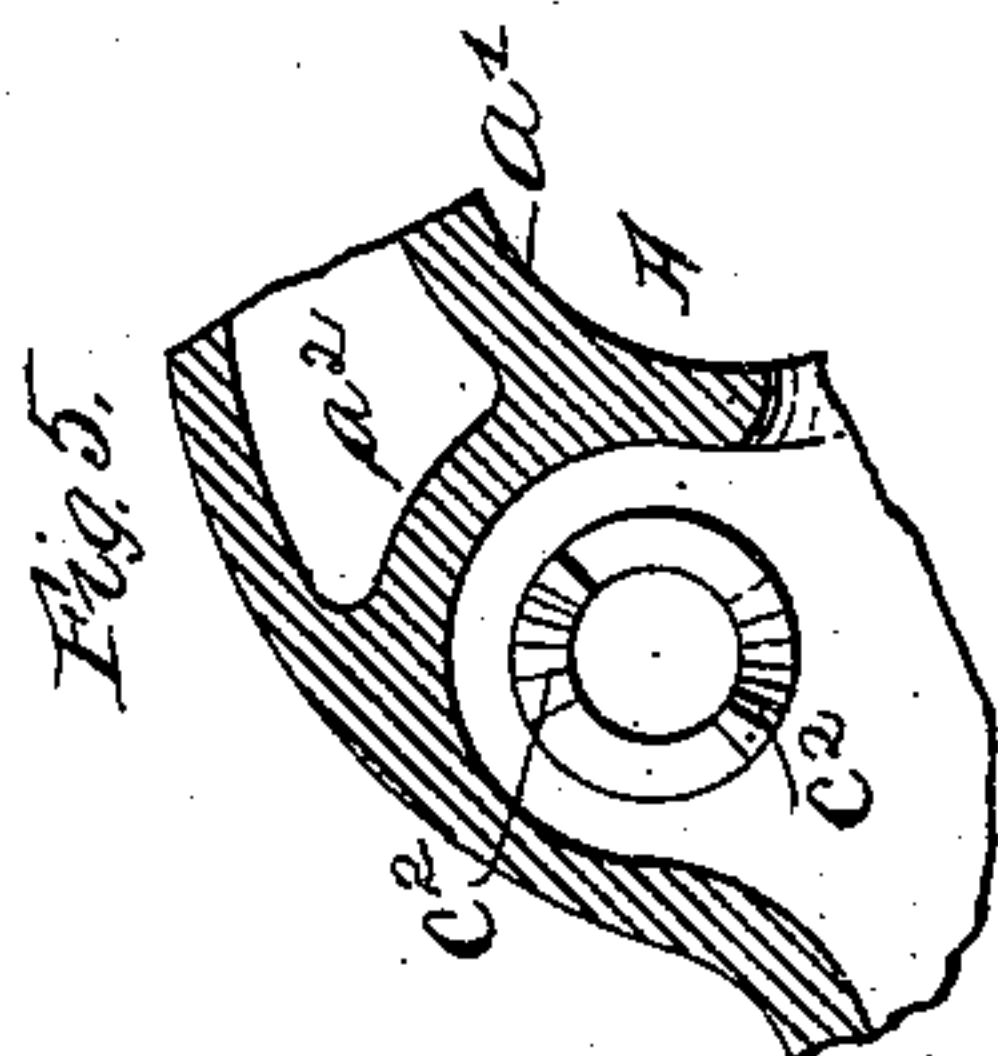
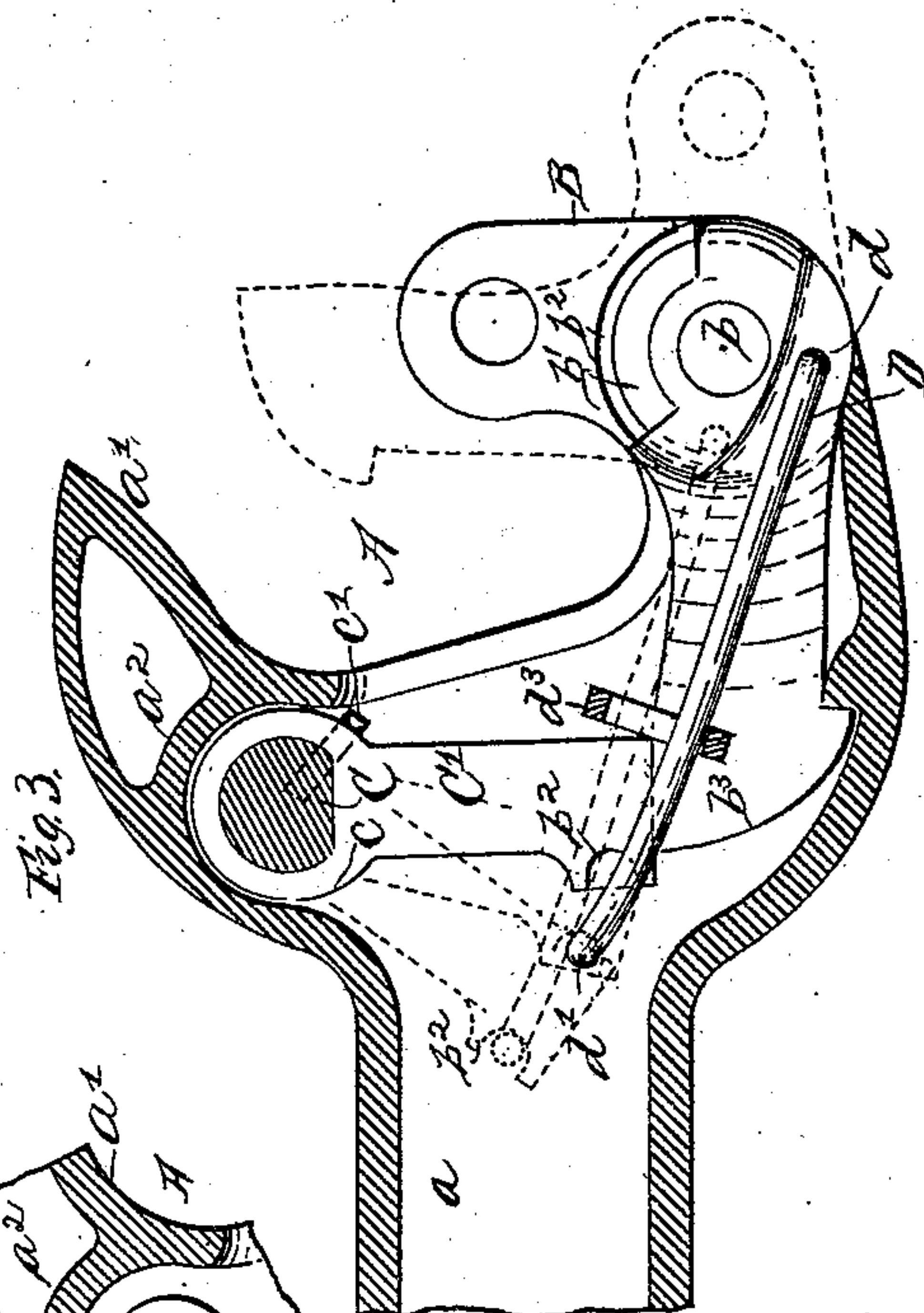
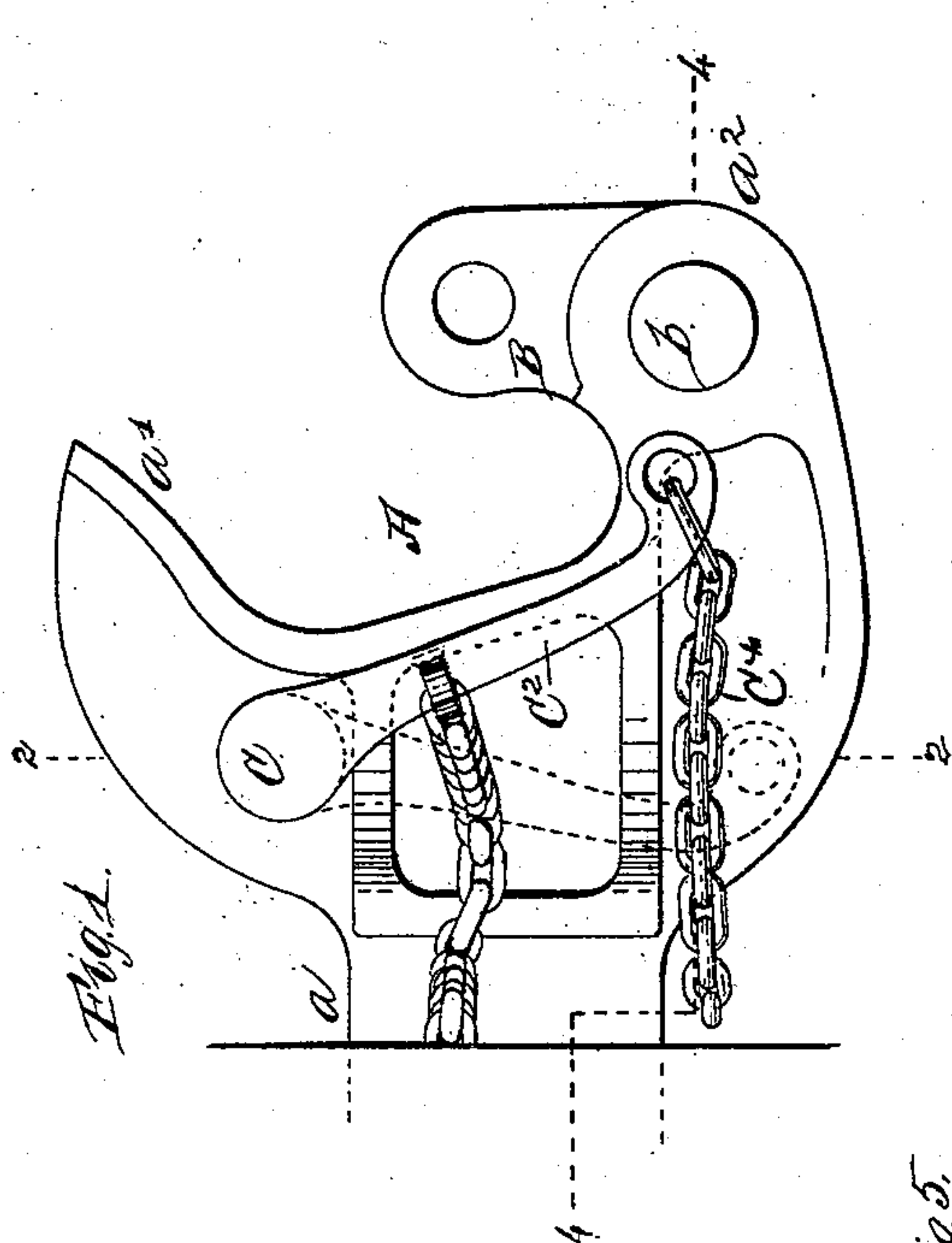


(No Model.)

C. H. DALE.  
CAR COUPLING.

No. 494,125.

Patented Mar. 28, 1893.



WITNESSES:

C. R. Ferguson.  
Wm. M. Cliff

INVENTOR

Charles H. Dale

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HIS ATTORNEY



# UNITED STATES PATENT OFFICE.

CHARLES H. DALE, OF NEW YORK, N. Y.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 494,125, dated March 28, 1893.

Application filed December 22, 1892. Serial No. 456,016. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES H. DALE, of New York, county and State of New York, have invented a certain new and useful Improvement in Car-Couplers, of which the following is a specification.

This invention relates to car couplers of the class having a swinging knuckle adapted to engage with another coupler and it consists in the construction and novel arrangement of parts for locking and also swinging the knuckle open after releasing the same.

I will describe a car coupler embodying my improvement and then point out the novel features in claims.

In the accompanying drawings Figure 1 is a top plan view of a coupler, embodying my improvement. Fig. 2 is a section on the line 2, 2 of Fig. 1. Fig. 3 is a horizontal section. Fig. 4 is a longitudinal section on the line 4, 4, of Fig. 1. Fig. 5 is a detail.

Referring by letter to the drawings A designates a coupler head having the rearwardly extending shank portion  $a$ , the forwardly extending horn  $a'$  and the forwardly extending bearing blocks  $a^2$ . The hollow horn  $a'$  has an integral transverse bridge or wall  $a^3$  which serves to give it strength.

B shows the knuckle substantially elbow shaped and fulcrumed at its angle, by means of a pin  $b$ , between the bearing blocks  $a^2$ . The bearings of the knuckle have double bevels  $b'$ ,  $b^2$  and the bearing blocks have corresponding bevels.

C designates a vertically arranged rock shaft having a dog or block  $C'$  extending at right angles from it and movable in a horizontal plane to engage and lock the knuckle in a closed position.

The rock shaft C has a bearing at its lower end in the lower wall of the head A and is extended upward through a bearing in the upper wall of the head A. At its outer end the rock shaft is provided with a lever  $C^2$  by means of which it may be oscillated or rocked. The lever  $C^2$  may have a chain extended from it to a connection with a part of a car. The chain will automatically open the coupling should the coupling be broken. I have shown the dog or block  $C'$  as detachably secured to the rock shaft. It has a collar or yoke  $c$  at one end through which the rock shaft passes.

A pin  $c'$  passing through a hole in the collar or yoke  $c$  into the rock shaft secures the dog or block to the shaft.

I have made the parts described detachable so that the rock shaft may be inserted in place. In placing the parts in position the rock shaft is passed through the bearing in the upper wall of the head A, then through the collar or yoke  $c$  and then inserted in its lower bearing. The pin  $c'$  may then be inserted.

After oscillating or rocking the shaft C to release the knuckle and upon releasing the lever  $C^2$  the rock shaft must return to its normal position. I provide for this by means of an inclined plane or inclined planes which will impart an upward vertical motion to the rock shaft as it is oscillated by means of the lever  $C^2$ , and upon releasing said lever the rock shaft will move downward by gravity and the inclined plane or planes will cause it to oscillate to return the dog or block  $C'$  to a locking or normal position.

I have shown two vertically inclined planes  $c^3$  projecting from the inner side of the lower wall of the head A, and longitudinally curved around the rock shaft, and the rock shaft at its lower portion is provided with two inclined planes  $c^3$ , arranged reversely to the inclines  $c^3$ . Obviously these inclined planes will operate to oscillate the shaft C when it is released.

In the operation of coupling cars the head of an opposite coupler section comes in contact with the knuckle B and swings it to a closed position. In doing so the end of the inner portion  $b^3$  of the knuckle B will engage the front side of the dog or block  $C'$  and turn it, with the rock shaft, so that the end of the part  $b^3$  may pass beyond the end of the dog or block, and then the dog or block will be automatically returned, as described, to its normal position with the end bearing against the side of the portion  $b^3$  of the knuckle thus locking the knuckle.

I provide means for automatically swinging the knuckle open for the purpose of putting the parts in position for coupling cars. This means consists, as here shown, of a link D having a lost motion connection between the knuckle and the locking dog or block.

The link D has a pivotal connection with



the knuckle, near the hole made in the knuckle for the passage of the pin  $b$ , as at  $d$ .

The link  $D$  has a lost motion connection with the dog or block  $C'$ . It extends over the top of the block and has a downwardly turned hook end  $d'$  to engage between fingers  $d^2$  on the rear side of the block. The link is supported and guided by passing loosely through a loop  $d^3$  depending from the upper wall of the head  $A$ .

It will be seen that when the dog or block is in its normal or locking position, the hook or stop  $d'$  will be at a distance rearward of the fingers  $d^2$ , so that the said hook or stop will not engage with the fingers until the dog or block shall have been moved past the end of the portion  $b^3$  of the knuckle. When the hook or stop  $d'$  engages with the fingers a further oscillation of the rock shaft will draw the link longitudinally and swing the knuckle open.

A chain  $C^4$  extends from the end of the lever  $C^2$  to any convenient part of a car, so that a train man may operate the lever by said chain.

Having described my invention, what I claim is—

1. In a car coupler the combination with a coupler head and a swinging knuckle, of a vertically extending rock shaft, having an inclined plane on its lower portion, an inclined plane, extending from the lower wall

of the coupler head, and coacting with the first named inclined plane, and a locking dog or block extending from the rock shaft, substantially as specified. 35

2. In a car coupler the combination with a coupler head and a swinging knuckle, of the vertically extending rock shaft, an inclined plane for oscillating the shaft to a normal position, a locking dog or block extending from the rock shaft, and the link having a pivotal connection with the knuckle and a lost motion engagement with the dog or block, substantially as specified. 40 45

3. In a car coupler the combination with the coupler head having the bearing blocks provided with the double bevels  $b'$ ,  $b^2$ , and the knuckle having the corresponding bevels, substantially as specified. 50

4. In a car coupler the combination with the head and the knuckle of the dog or block, the vertical rock shaft carrying the same, the lever on the rock shaft and the operating chain attached to the car body, substantially as specified. 55

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES H. DALE.

Witnesses:

CLARENCE R. FERGUSON,  
WILLIAM M. ILIFF.