

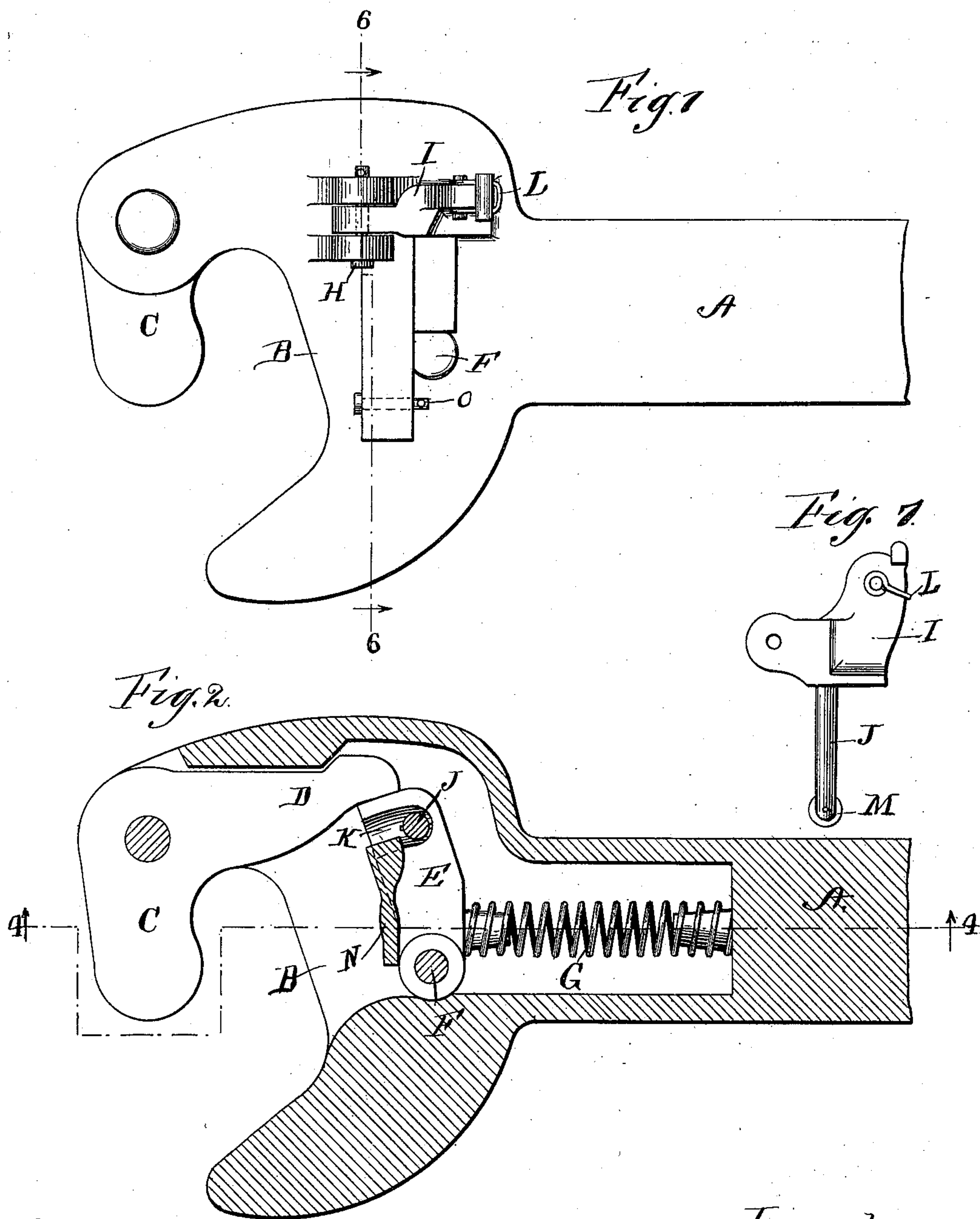
(No Model.)

2 Sheets—Sheet 1.

P. HIEN.
CAR COUPLING.

No. 598,990.

Patented Feb. 15, 1898.



Witnesses:
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V. Hugo.

Inventor
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by Raymond W. Quinlan
Att'y's.

(No Model.)

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Fig. 3

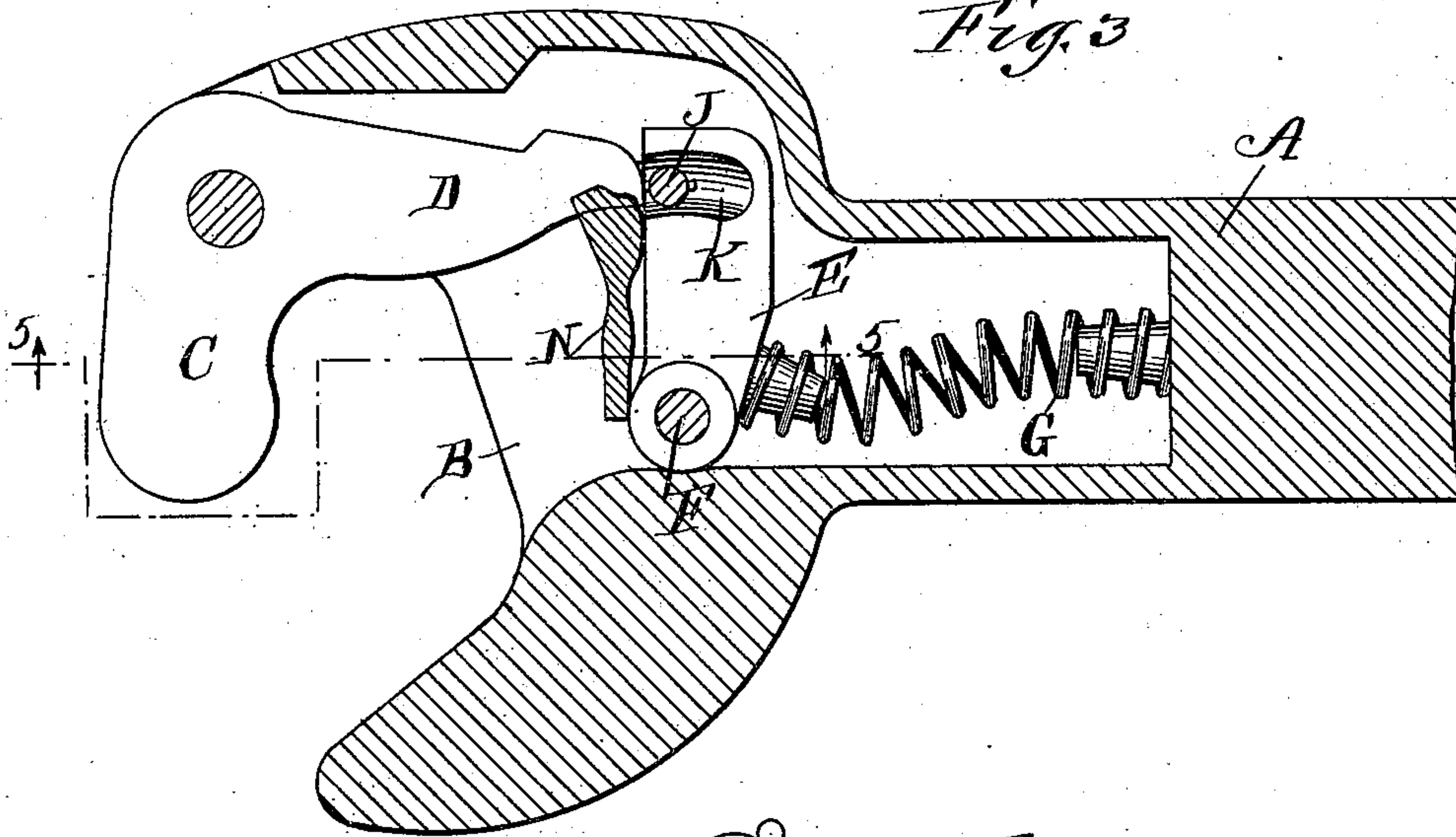


Fig. 4

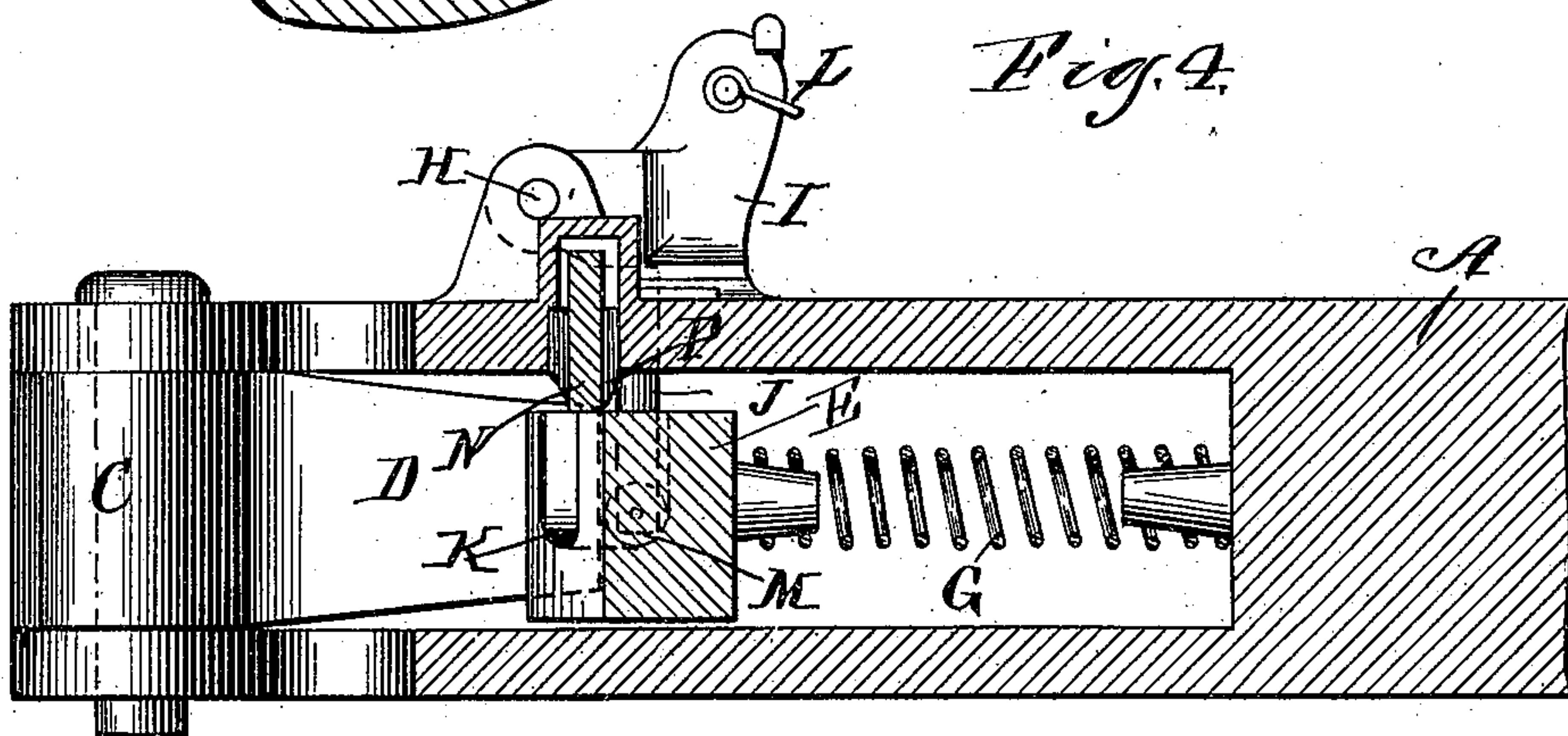


Fig. 5

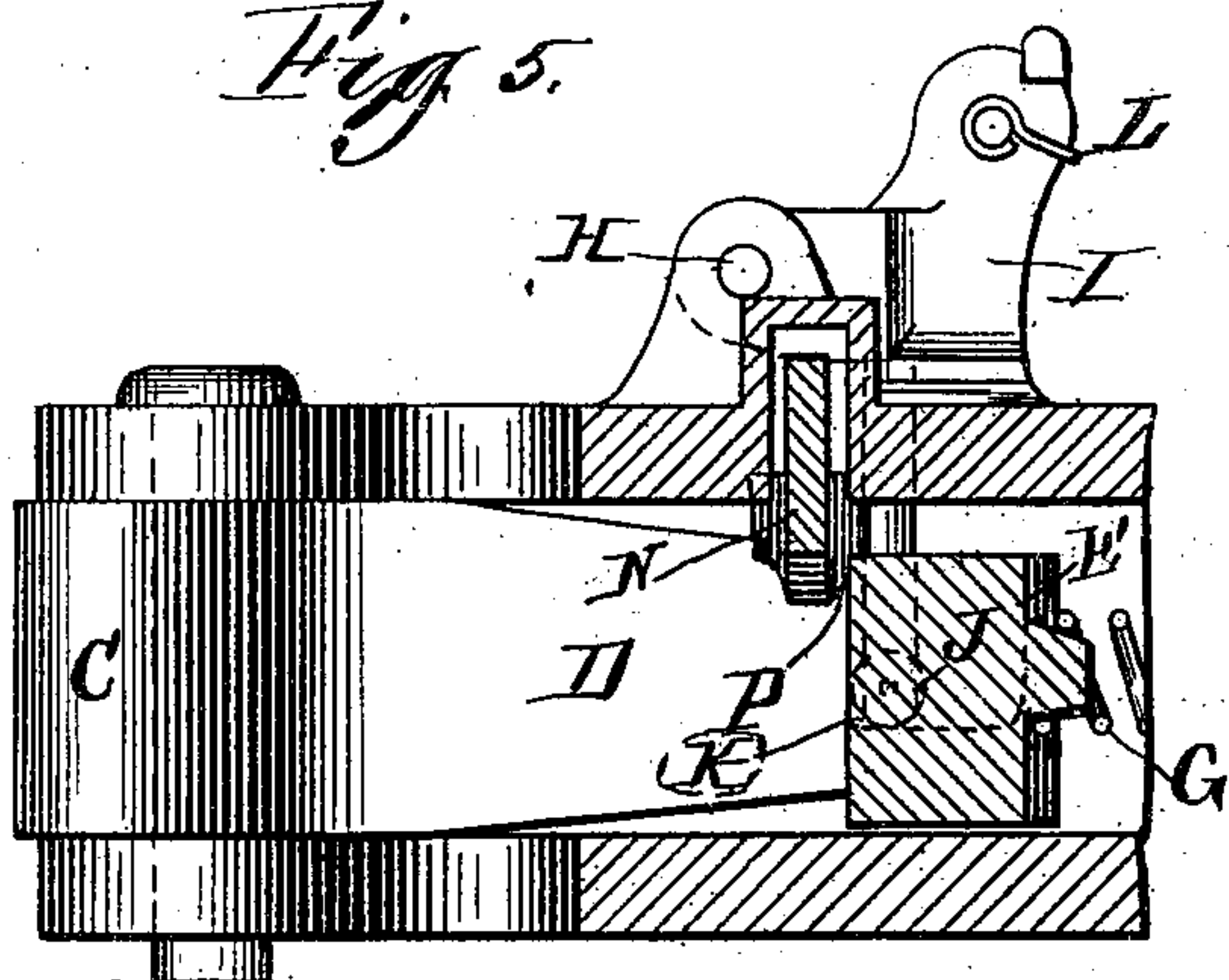
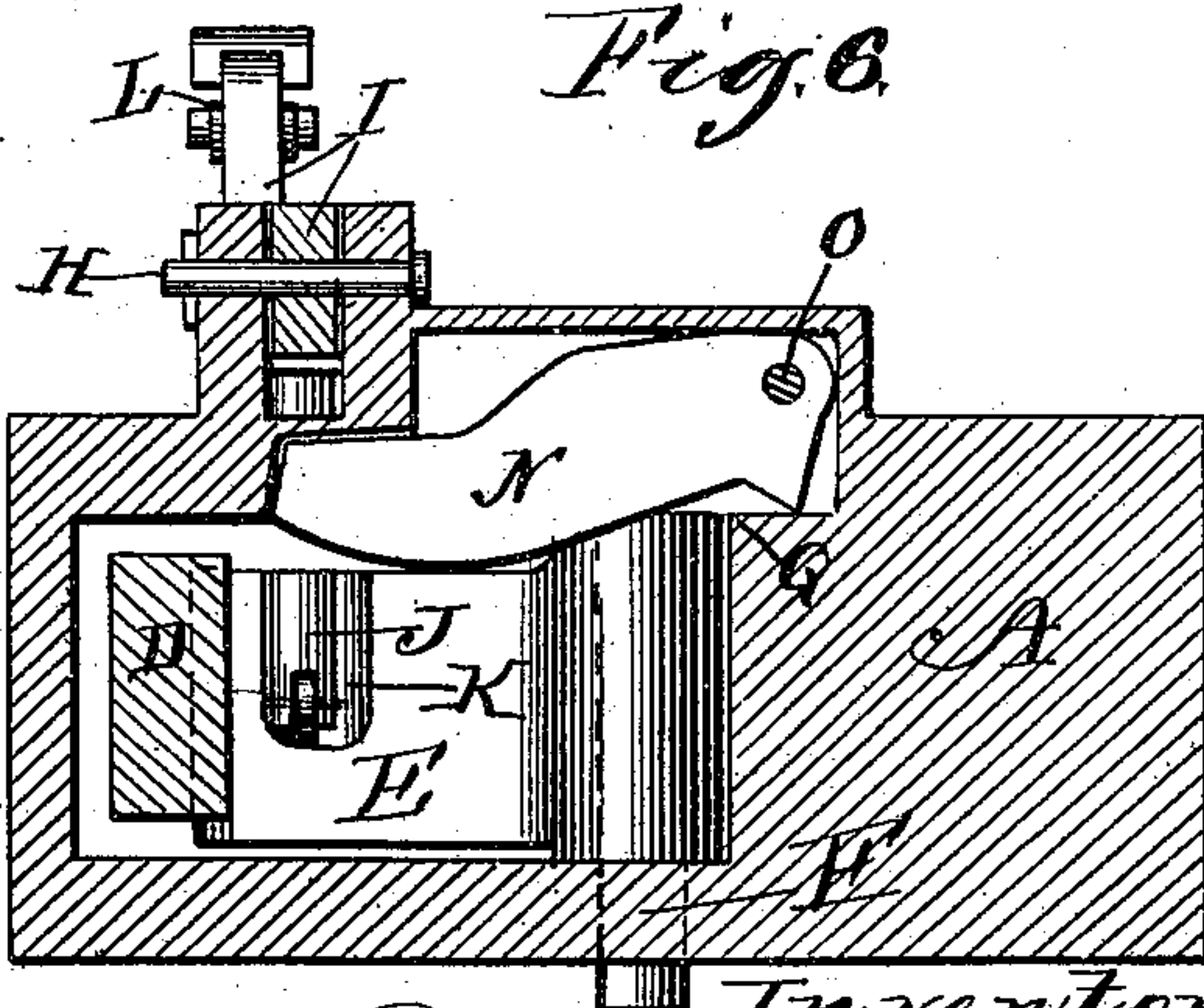


Fig. 6



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UNITED STATES PATENT OFFICE.

PHILLIP HIEN, OF CHICAGO, ILLINOIS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 598,990, dated February 15, 1898.

Application filed April 23, 1895. Serial No. 546,872. (No model.)

To all whom it may concern:

Be it known that I, PHILLIP HIEN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have
5 invented certain new and useful Improvements in Car-Couplers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

10 This invention relates to improvements in car-couplers, and more particularly to automatic couplers of that class in which the action of the parts in uncoupling sets the parts in position for automatic recoupling when
15 companion couplers are brought together in an open position.

The prime object of this invention is to obviate the necessity for the brakeman holding the releasing or locking and releasing device
20 until the act of uncoupling is completed, thereby enabling a single brakeman to successively set a large number of cars for uncoupling whenever pulled apart.

Another object is to have a coupler capable of being so set, at the same time self-setting, for automatic relocking whenever the
25 cars are pulled apart or the knuckles are thrown open.

These and such other objects as may hereinafter appear are attained by the devices
30 illustrated in the accompanying drawings, in which—

Figure 1 represents a plan view of a coupler embodying my invention. Fig. 2 represents
35 a horizontal section taken on a plane with the upper face of the knuckle. Fig. 3 is a view similar to Fig. 2, showing the parts in a moved position. Fig. 4 is a longitudinal vertical section on the line 4 4 of Fig. 2.
40 Fig. 5 is a longitudinal vertical section on the line 5 5 of Fig. 3. Fig. 6 is a transverse vertical section on the line 6 6 of Fig. 1, and Fig. 7 is a detail view of the releasing-pin.

Similar letters of reference indicate the
45 same parts in the several figures of the drawings.

Referring by letter to the accompanying drawings, A indicates the draw-bar, B the
50 draw-head, and C the knuckle pivoted to the front end of the draw-head, which parts are constructed generally on the lines of this class of couplers, and there is a companion

coupler with the knuckle oppositely arranged, as usual, this general class being so well understood in the art that it is not deemed necessary to illustrate or describe the joint action
55 of the companion couplers in detail.

The knuckle C is provided with a tailpiece D, extending into the chamber of the draw-head when the knuckle is in closed position, and is provided with a flat side face to engage with a horizontally-moving lock-block E, pivoted at one end, as at F, to the draw-head and normally actuated to project forward into engagement with the tailpiece under the influence of a coil-spring G, confined
60 between the rear face of the block and the end of a socket in the draw-bar. This lock-block is swung on its pivot, so as to release the tailpiece by a releasing device, which is substantially of the shape of a bell-crank lever, pivoted at H in suitable bearings at the
65 top of the draw-head, one arm I of such lever lying outside of the draw-head and projecting above the same, and the other arm J projecting through a slot in the draw-head down into the chamber in the draw-head and into a groove K, formed in the upper face of the
70 lock-block, near the outer end thereof. The upper end of the bell-crank lever is so shaped as to close the slot against the entrance of snow and dirt when the parts are in their normal position and may be provided with a
75 bail L for convenience of attaching a chain or other device thereto for operating the coupler from the side of the car. Obviously, however, this release device may be operated by
80 hand, if desired.

It will be readily understood that when the lock-block is in its normal locking position the pin will be in the slot therein, with the
85 shoulder on the outer arm I of the releasing device resting upon the top of the draw-head. When, however, the releasing device is swung upon its pivot, the arm J thereof will impinge against the lock-block and force it back on its pivot, overcoming the tension of the
90 spring G and releasing the tailpiece of the knuckle. To reduce the friction and render the releasing operation easy of accomplishment by hand, I mount in the lower end of the
95 arm J an antifriction-roller M, which works directly upon the lock-block and relieves the friction which would otherwise occur between
100

the two members moving in different directions.

In order to avoid the necessity for holding the releasing device until the act of uncoupling is effected, I provide an automatic stop device which is designed to drop down in front of the lock-block when it is moved to release position, so as to hold the block in this position until the knuckle is thrown open, in which action the tailpiece lifts the stop until it rides upon the upper face of the lock-block, when the latter will move out to locking position, following the tailpiece, which is now released, and sustaining the stop device in its elevated position. The parts are now in position for automatic recoupling and the tailpiece, when swinging back to position, will force the lock-block back until it passes the same, when the lock-block will swing out and thus lock the knuckle in closed position.

Obviously many forms of stop devices may be employed for accomplishing this desirable object, the one I have shown in the drawings being in the form of an arm N, pivoted at O in a suitable recess provided in the draw-head above the lock-block. This arm, as illustrated more clearly in Figs. 2 and 4, normally rests upon the upper face of the lock-block, near the forward end thereof, and when the lock-block is thrown back by the releasing device the stop device drops by gravity down in front of the lock-block and prevents its return to its forward locking position, as illustrated in Figs. 3 and 5.

The under or lower edge of the stop device is provided with a cam-surface which projects down into the path of movement of the tailpiece of the knuckle, so that when the tailpiece moves outward to open position it lifts the stop device, thereby permitting the lock-block to move forward under the influence of its actuating-spring to a position under the stop device, which it then maintains in an elevated position. To facilitate this operation, the rear face of the stop device, near the forward end thereof, is provided at P with a beveled or inclined surface, which is engaged by the upper edge of the lock-block as the latter moves forward to insure the re-

taining of the stop in elevated position in the act of recoupling, when the tailpiece throws the block slightly beyond the normal rear lower edge of the stop device. The provision of this incline also avoids the necessity for exactness in fitting the parts and allows for slight play which will result, both in operation and from wear of the parts, without detriment to the operativeness of the device.

The arm N is prevented from falling too low by the lower edge thereof engaging the ledge Q upon the draw-head in its lowest position. When in this lowest position, the upper edge of the incline P is in a plane below the upper face of the lock-block, so that the force of the latter cannot raise the stop device until it has been lifted by the tailpiece sufficiently for the engagement of the upper forward edge of the block with the inclined surface.

Of course numerous forms of stop devices may be employed for accomplishing the desired object—to wit, the holding of the locking-jaw in release position until the knuckle is open, in which action the locking-jaw is permitted to swing back to locked position for automatically relocking when the knuckle is again moved to closed position.

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

1. In an automatic coupler, the combination with a tailpiece of the knuckle, and a spring-actuated lock-block therefor pivoted at one end, of a release device for said block, and a stop device comprising an arm pivoted at one end and having a cam on its lower edge, substantially as described.

2. In an automatic coupler, the combination with the tailpiece of the knuckle, and a spring-actuated pivoted lock-block, of a stop device for said block consisting of a pivoted arm provided with a cam on its lower edge, and an incline or bevel on its rear face, substantially as described.

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Witnesses:

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