

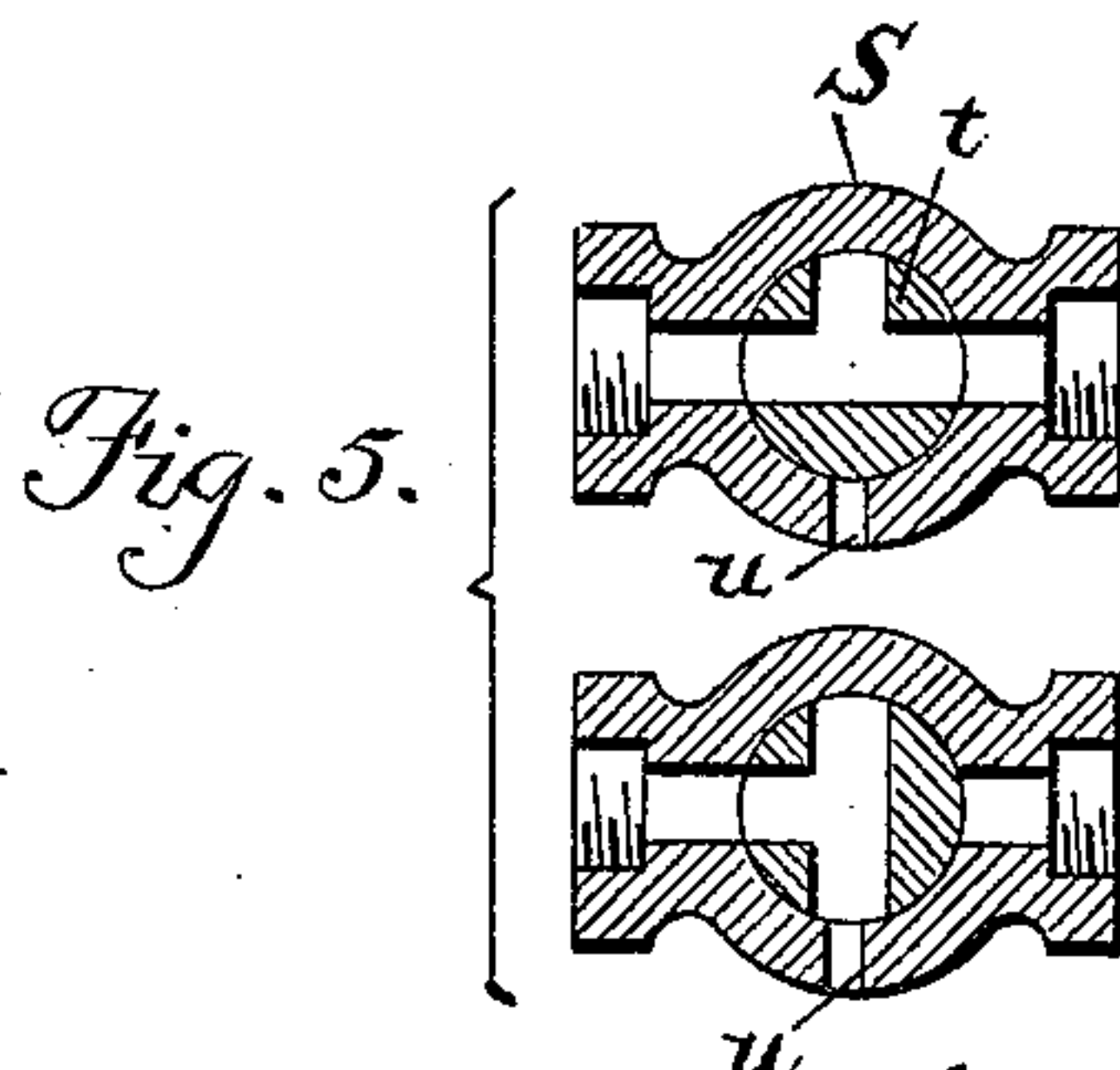
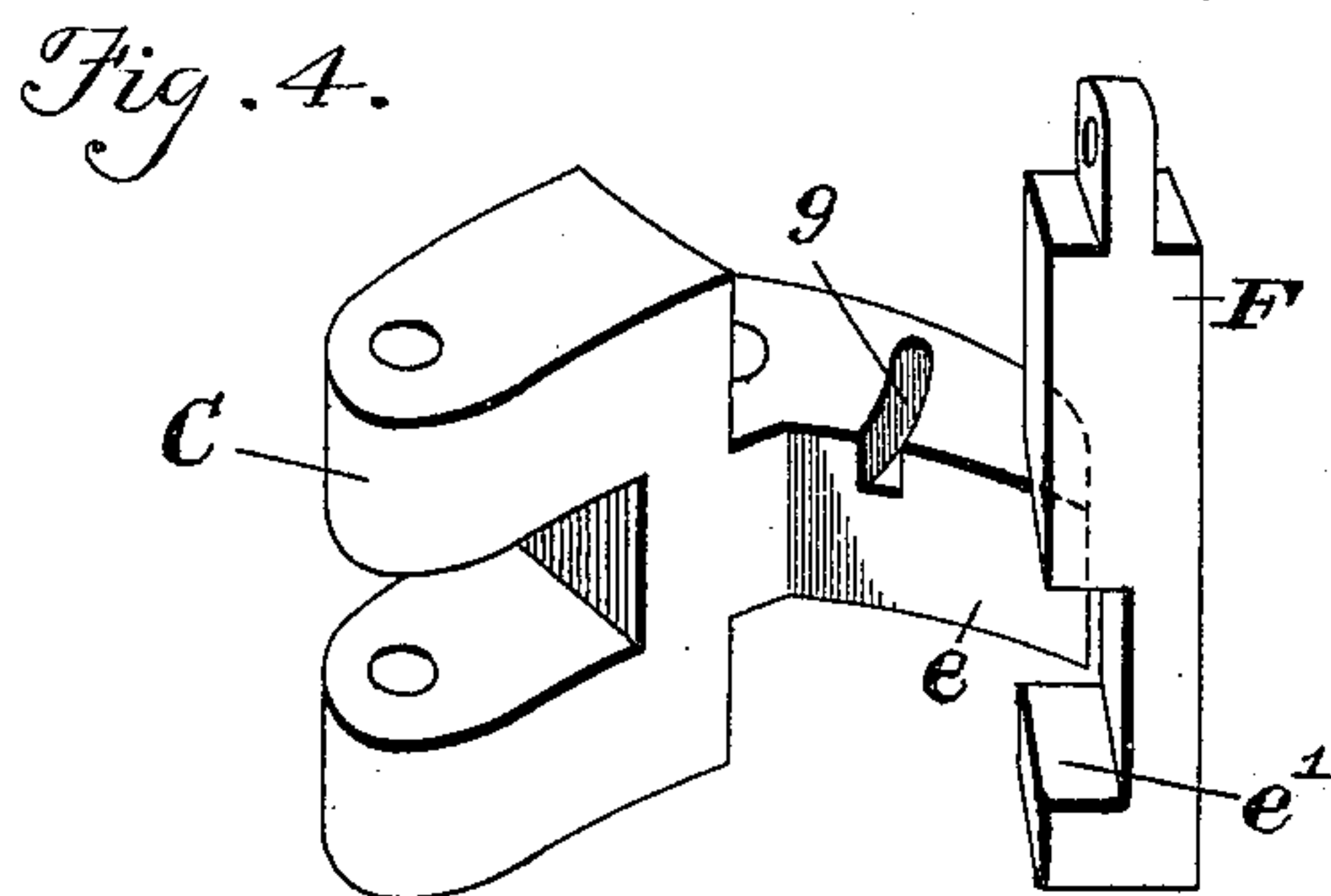
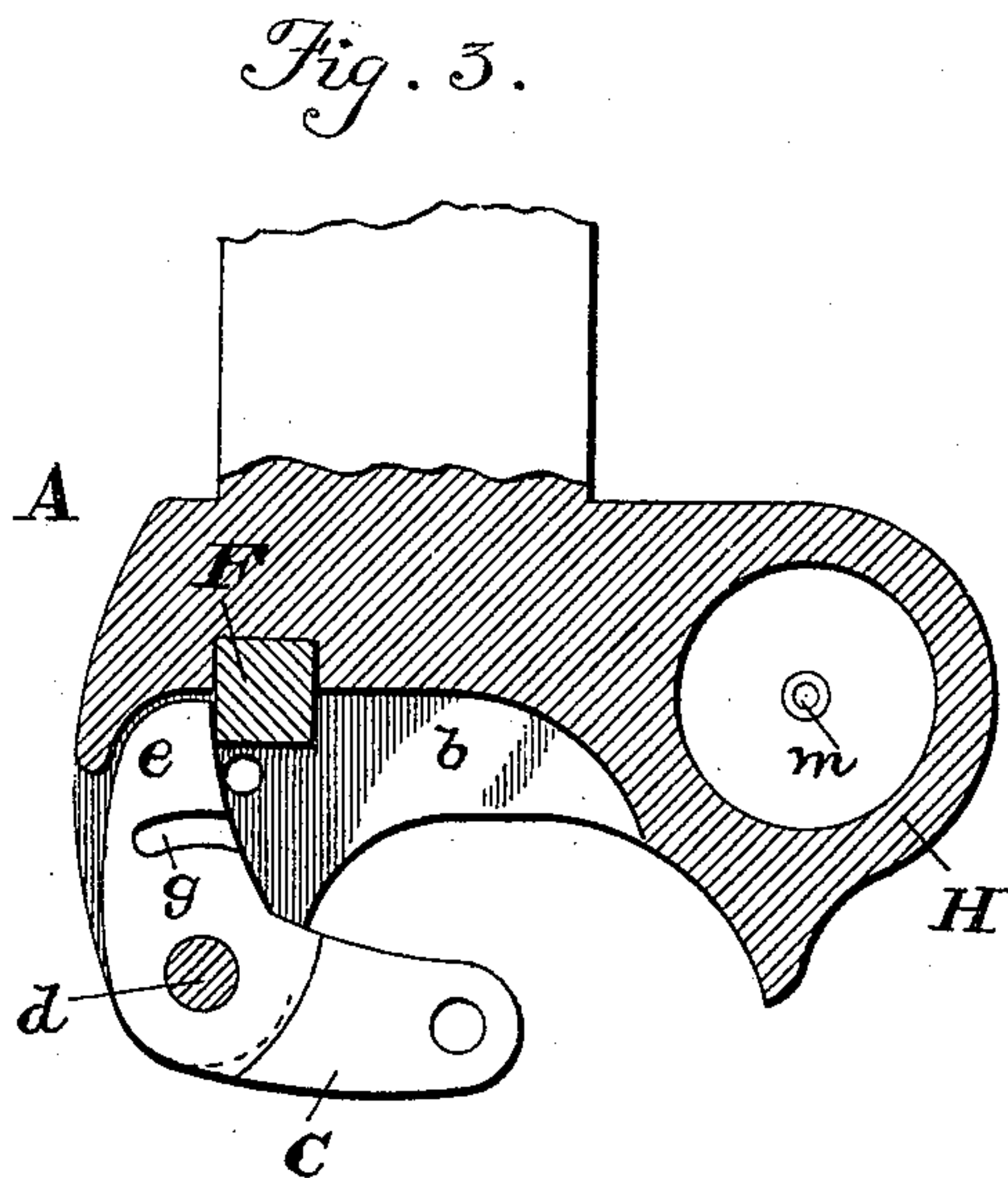
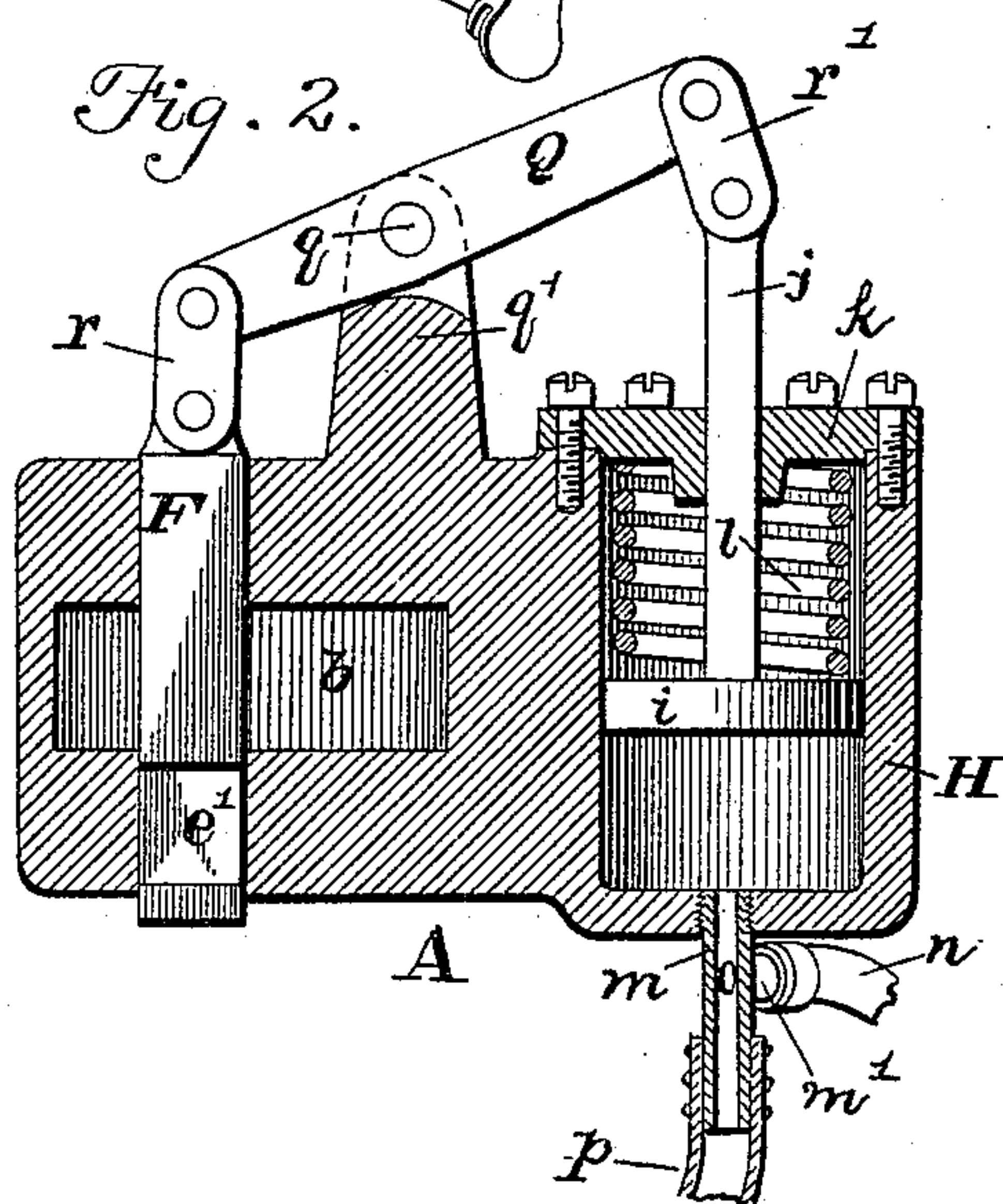
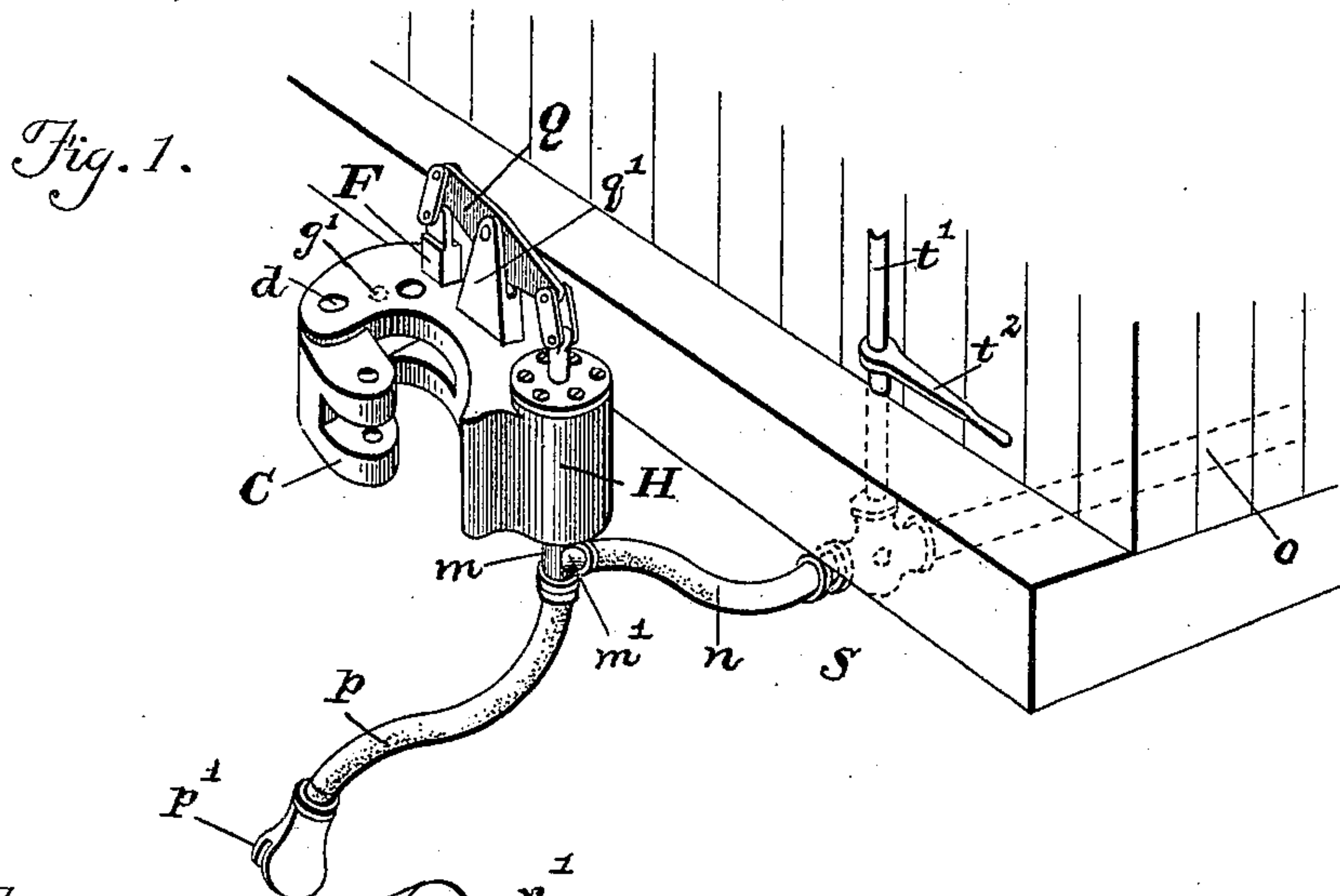
No. 619,559.

Patented Feb. 14, 1899.

I. A. GARBER & U. BEALL.  
CAR COUPLING.

(Application filed Mar. 8, 1898.)

(No Model.)



Witnesses :-

Lee J. Van Horn.  
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# UNITED STATES PATENT OFFICE.

IRA A. GARBER AND UPTON BEALL, OF BALTIMORE, MARYLAND, ASSIGNORS  
TO THEMSELVES, WILLIAM T. PRITCHETT, AND ORLANDO W. PRITCHETT,  
OF SAME PLACE.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 619,559, dated February 14, 1899.

Application filed March 8, 1898. Serial No. 673,048. (No model.)

*To all whom it may concern:*

Be it known that we, IRA A. GARBER and UPTON BEALL, citizens of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Car-Couplings, of which the following is a specification.

This invention relates to railway car-couplings that are under the control of the engineer of a train.

The object of the invention is to provide for cars an improved coupler of the vertical-plane type that will automatically place the parts in position to couple when one car is run against another car and that can be operated by the engineer from the cab of the locomotive to uncouple.

A construction whereby the desired result is accomplished will be described in connection with the accompanying drawings, which illustrate one way of carrying the invention into effect.

Figure 1 is a perspective end view of a car-body, showing the coupler. Fig. 2 is a vertical cross-section of the coupler. Fig. 3 is a horizontal section of the coupler, showing the coupling-hook held in the coupled position. Fig. 4 is a perspective view of the coupling hook and pin in the position for uncoupling. Fig. 5 shows two sectional views of the two-way valve.

This improved coupler is applicable to any kind of cars, passenger or freight, and is here shown applied to a freight-car.

The draw-head A has a horizontal cavity *b* in its front, and a coupling-hook C is pivoted at *d*, so that its tail end *e* may swing in said cavity, where it remains when coupled. A locking-pin F passes vertically down through a hole in the draw-head and has on its front side and near its lower end a side notch *e'*, which will permit the passage of the tail end *e* of the coupling-hook when uncoupling. This action or position of parts is indicated by Fig. 4. When uncoupling, the pin F will first be raised and its notch *e'* will have position coincident with the cavity *b*. Figs. 2 and 3 show the position the parts have when coupled. The tail end *e* of the hook is at this time in-

ward to its limit, and the locking-pin F is down or lowered and holds said tail end from turning. The tail end has on top a curved slot *g*, the curve of which is concentric with respect to the pivot *d*. A vertical pin *g'* in the draw-head has its lower end projecting down so as to take into the said slot *g*. This pin serves as a stop device to limit the outward swing of the coupling-hook when uncoupling.

The draw-head carries a vertical cylinder H of any suitable construction, either attached to the draw-head or made integral with it. A piston *i* is in the cylinder and carries a stem *j*, which projects upward through the cap *k*. A spiral spring *l* within the cylinder is on top of the piston, and normally its pressure will press the piston down. A short pipe *m* opens in the bottom of the cylinder, and said pipe has a lateral branch *m'*, from which a short section of hose *n* leads and connects with a pipe *o*, extending longitudinally along the bottom of the car, as indicated in Fig. 1 by broken lines. A free section of the hose *p* is attached to the short pipe *m* in the cylinder-bottom and carries at its free end a hose-coupler *p'*, similar to air-brake couplings, for attachment to a similar device on another car.

On top of the draw-head is a vertical tilting lever Q, pivoted at *q* on a stud *q'*, and one end of which has links *r*, that connect with the locking-pin F, and the other end of the lever has links *r'*, that connect with the stem *j* of the piston. It will now be understood that when fluid-pressure from the pipe or hose enters the cylinder it will raise the piston and compress the spring and tilt the lever Q, and thereby press the locking-pin down, as in Fig. 2, and hold the tail end *e* of the coupler-hook in the coupled position, as in Fig. 3. When the fluid-pressure is released from the cylinder H, the spring will force the piston downward and the lever will raise the locking-pin F, and thereupon the coupling-hook C may turn on its pivot to uncouple. It will thus be seen that fluid-pressure under control of the engineer at the locomotive will enable the cars to be uncoupled at any time and will actuate the locking-pin F to hold the



parts coupled after the adjacent draw-heads of two adjoining cars have been brought to a position to be coupled.

It is obvious that air or steam may be employed as the fluid-pressure, but preferably compressed air.

A valve-case S is fitted to the pipe o at each end of the car, and the valve is an important adjunct to the air apparatus of the coupler. Section views of this valve are shown in Fig. 5. A plug-valve t is in the case and capable of turning. It has two ways, one diametrically through the plug, which when in position leaves the pipe o open for the passage of fluid-pressure, and the other is a lateral way branching from the diametrical way. The valve-case has at one side an exhaust-port u, which opens to the atmosphere. A vertical rod t' is attached to the plug-valve t and projects through the top of the case S and extends upward at the end of the car as high as may be desired. This valve-rod t' has a horizontal arm t<sup>2</sup> near the car-bumper, and in the case of a box-car, where the valve-rod would extend to the roof of the car, a second arm attached at the top may be used. By grasping the arm any one may turn the valve t to any position desired. It will be seen that a valve of this construction, combined with the pipe, cylinder, piston, and coupler parts, is productive of useful results. If it is desired to uncouple a rear car without disturbing the couplings of the forward cars, the valve should be turned as shown in the lower sectional view of Fig. 5, which brings the diametrical passage-way of the valve in register with the exhaust-port u and will allow compressed air in the pipe of the rear car to escape to the atmosphere; but the valve will at the same time confine the compressed air that may be in the

pipe of the forward cars and prevent uncoupling. Of course the valve may be turned to a position just the reverse of that shown in the lower section view of Fig. 5 to uncouple a forward car without disturbing the couplings of the rear cars.

From this description the operation of the improved coupler will be understood.

Having thus described our invention, what we claim is—

1. In a car-coupler, the combination of a pivoted coupling-hook; a vertically-movable locking-pin which engages the tail end of said hook, said locking-pin having a side notch which when in one position will permit the said hook to swing for uncoupling; a cylinder containing a piston; a spring within the cylinder to press the piston to the uncoupled position; a vertically-tilting lever pivoted on a stud; links at each end of said lever connecting it respectively with the locking-pin and piston.

2. In a car-coupler, the combination of a pivoted coupling-hook; a vertically-movable locking-pin which engages the tail end of said hook to hold it coupled; a cylinder bored out or integral with the draw-head of said coupler and containing a piston whose stem projects upward; a stud on top of the draw-head between the locking-pin and piston-stem; and a vertically-tilting lever pivoted on said stud and connected with both the locking-pin and the piston-stem.

In testimony whereof we affix our signatures in the presence of two witnesses.

IRA A. GARBER.  
UPTON BEALL.

Witnesses:

CHARLES B. MANN, Jr.,  
CHAPIN A. FERGUSON.