

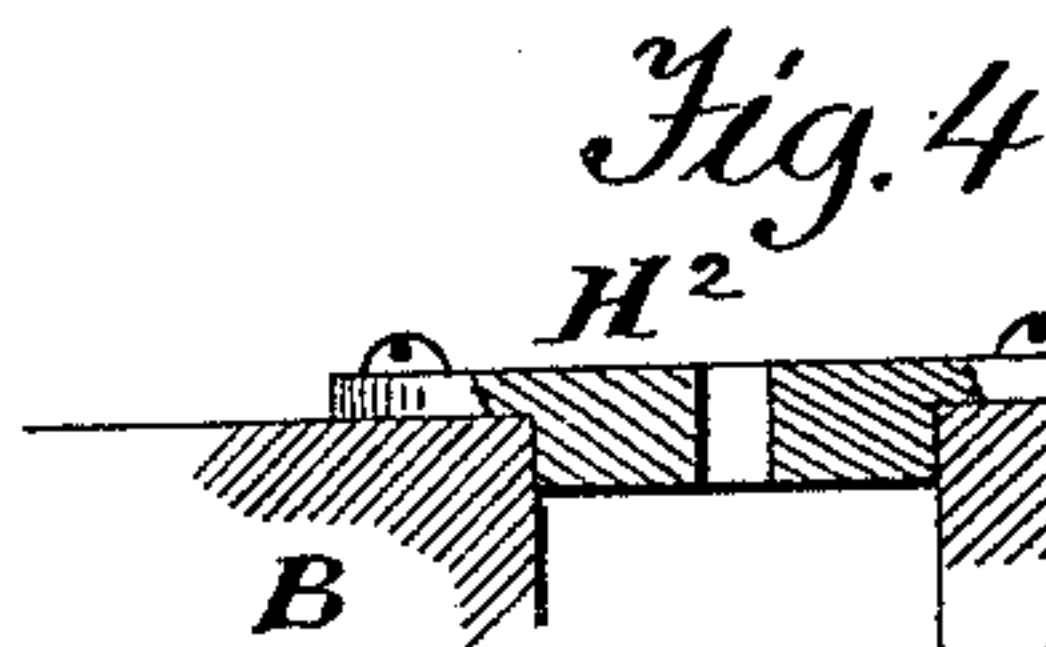
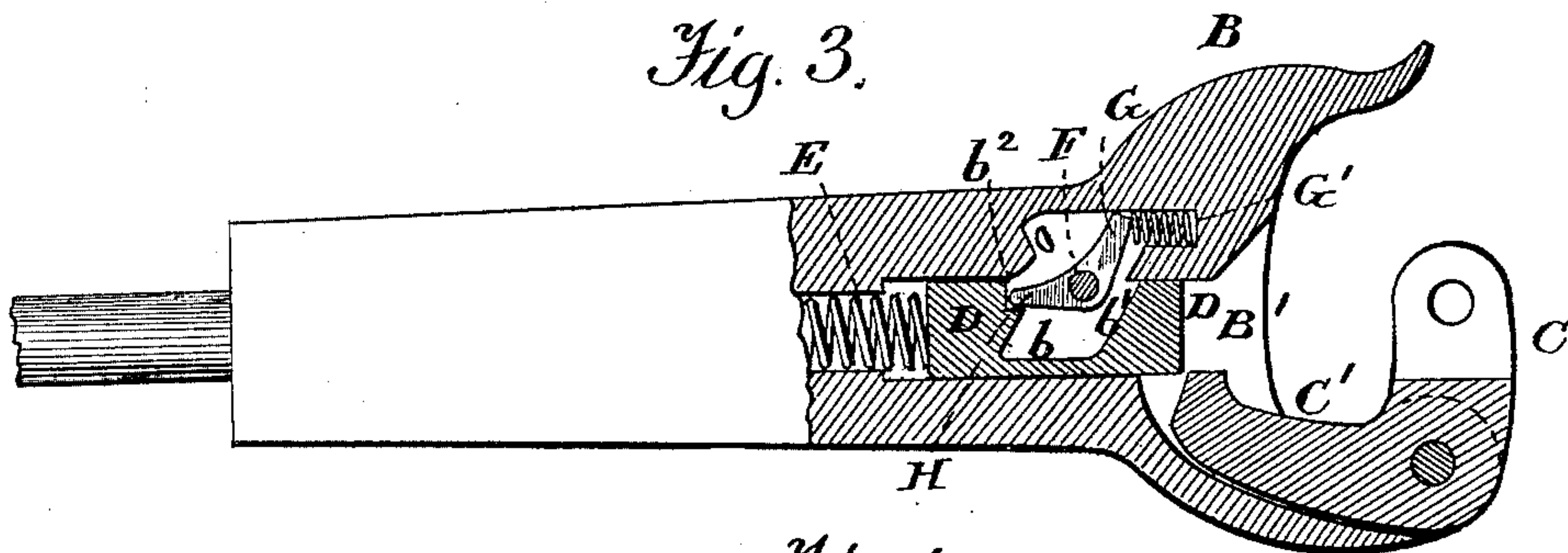
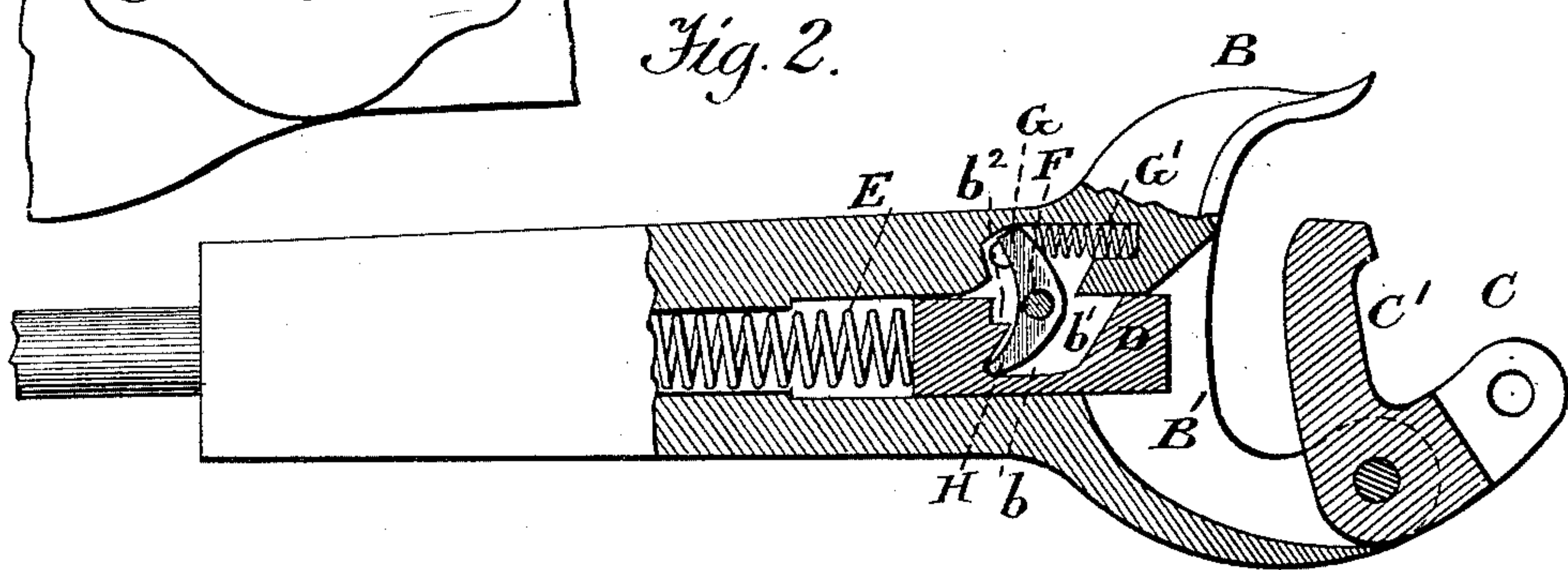
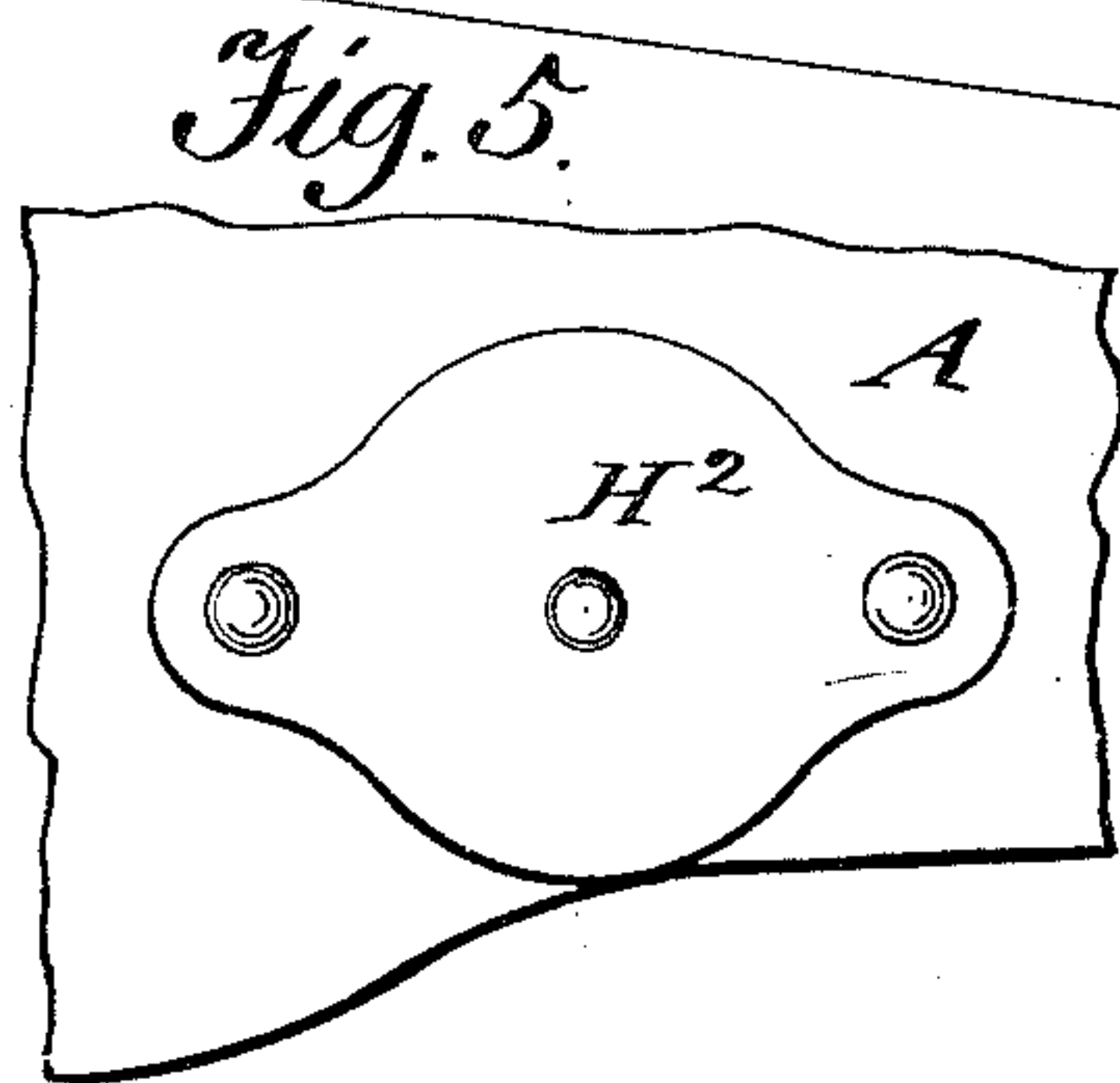
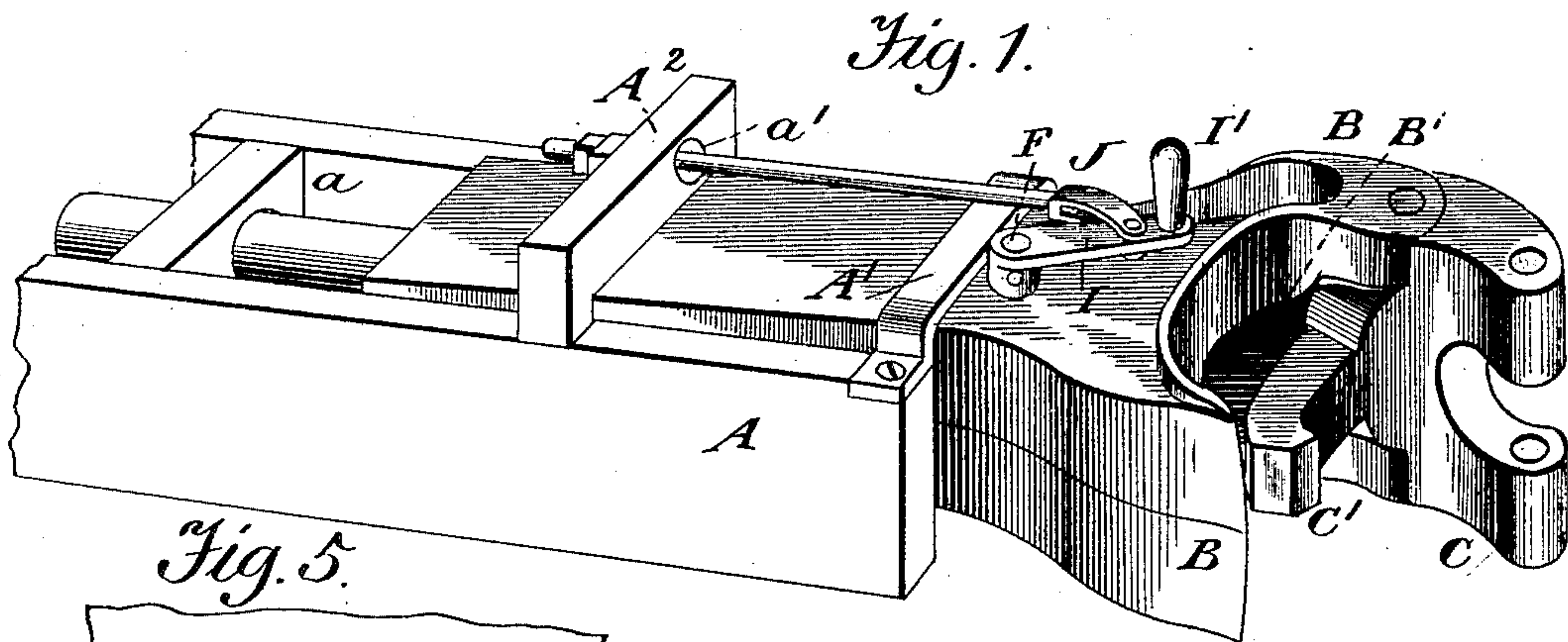
(No Model.)

W. L. SMITH.

CAR COUPLING.

No. 424,658.

Patented Apr. 1, 1890.



Witnesses  
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# UNITED STATES PATENT OFFICE.

WILLIAM L. SMITH, OF INDIANAPOLIS, INDIANA, ASSIGNOR OF ONE-HALF TO  
WILLIAM H. H. AYARS, OF SAME PLACE.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 424,658, dated April 1, 1890.

Application filed January 10, 1890. Serial No. 336,569. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM L. SMITH, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Car-Couplers; and I do declare the following to be a full, clear, and exact description of the invention, such as it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in car-couplings of that class known as "twin-jaw;" and it has for its object to provide an improved coupler of this class having an improved automatic lock.

The novelty resides in the peculiar combinations and the construction, arrangement, and adaptation of parts, all as more fully hereinafter described, shown in the drawings, and then particularly pointed out in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a bottom perspective view of my improved coupler and lock. Fig. 2 is a top plan with the coupler broken away. Fig. 3 is a like view with the parts in a different position. Fig. 4 is a detail view of the cap. Fig. 5 is a plan view of the cap  $H^2$ , showing the manner in which it is attached.

Like letters of reference indicate like parts throughout the several views.

Referring now to the details of the drawings by letter, A designates the timbers at one end of a car, there being a cross-timber  $a$ , on which the inner end of the draw-head rests, and a yoke  $A'$ , in which the forward end is seated, as shown.

Depending from the under side of the car there is a cross-piece or bridge  $A^2$ , having a hole  $a'$  therethrough for a purpose hereinafter made apparent.

The draw-head B is of the usual construction, known as the "Janney" type, except as

hereinafter particularly pointed out. It is preferably formed in two like parts brazed or otherwise suitably held together. The mouth of the draw-head is formed with a recess  $B'$ , in which the coupling-hook works and is seated when locked.

The coupling-hook C is pivoted in the ears of the draw-head on a vertical pivot in the usual manner. It has an arm  $C'$  adapted to work in the recess in the mouth of the draw-head, as shown, and to engage and operate the lock, hereinafter described.

The adjacent faces of the two portions of the draw-head are recessed, as shown in Figs. 2 and 3, to receive and provide room for the operating parts now to be described. Within the longitudinal central recess in the draw-head is loosely located the bolt D, which has a flat outer head and also a flat inner head, being recessed upon one side, as shown at  $b$ , and the front wall of the said recess being tapered outward, as shown at  $b'$ , the rear wall of the said recess being formed with a notch or nose  $b^2$  for a purpose hereinafter made apparent. Seated in a longitudinal recess at the rear of this bolt is a spiral spring E, abutting at its rear end against the rear wall of the recess and at its forward end against the rear end of the said bolt.

F is a transverse rod passed loosely through an opening in the two parts of the draw-head vertically and carrying within the chamber in the draw-head a lever or two oppositely-extending arms G and H, as shown, there being a spiral spring  $G'$  arranged in a side longitudinal recess and acting upon one of said arms, as shown clearly in Figs. 2 and 3. The other arm works within the recess in the upper face of the bolt. The upper end of this rod passes through a hole in a detachable cap  $H^2$ , which fits within a hole in the upper face of the coupler or draw-head and is provided with apertured lugs, by means of which and suitable screws it is detachably held in place to cover up the parts and yet allow of its ready removal for the purpose of inserting or removing or repairing the parts within the draw-head. The opposite end of this rod passes through a hole in the under side of the draw-head and has secured thereto in any



suitable manner an operating-lever I, provided with a suitable handle I' and fulcrumed between its ends between the bifurcations of the forked arm J, the other or inner end of which passes loosely through the opening  $a'$  in the bridge A<sup>2</sup> and is there provided with a nut to prevent its withdrawal. This rod plays loosely within the said hole to allow of end-wise movement of the draw-head, but yet prevents dropping down of the draw-head in case of breakage of the other parts, and thus holds the draw-head to the car.

The operation is simple and apparent. With the parts in the position in which they are shown in Fig. 2 the device is set ready for coupling. As the coupling-hook of the opposing car engages with the coupling-hook on the car to be coupled, it engages the bolt, or, rather, the arm thereof engages the bolt and pushes it inward just sufficiently to release the arm G from the notch or nose in the bolt, when the spring G' forces the arm H inward and allows the bolt to move forward by the action of its spring, and the coupler is held in its recess in the draw-head by side pressure on the bolt. When it is desired to uncouple, the operating-lever is turned so as to bring the bolt inward and engage the arm G in the notch of the bolt, when the arm of the coupler is released, and the parts are automatically set ready for coupling.

What I claim as new is—

1. The combination, with the car-timbers and a bridge beneath the same, of the automatic lock, the lever for operating the same, and a rod connected with the said lever and passed loosely through an opening in the

bridge and provided with a nut to prevent accidental displacement thereof, as set forth.

2. The combination, with the draw-head chambered as shown, of the reciprocating bolt therein and the spring-actuated lever within the chamber of the draw-head, as set forth.

3. The combination, with the chambered draw-head and the spring-actuated bolt therein formed with a recess and a nose, of the two-armed lever within the chamber of the draw-head with one arm working in the recess in the bolt, as set forth.

4. The combination, with the chambered draw-head and the spring-actuated bolt working loosely therein and formed with a recess and nose, as shown, of the two-armed lever within the chamber of the draw-head with one arm working in the recess in the bolt and adapted to engage said nose, and a spring acting on the other arm, as set forth.

5. The combination, with the chambered draw-head and the spring-actuated bolt therein formed with a recess and nose, of the two-armed lever in the chamber of the draw-head with one arm in the recess of the bolt and engaging the nose thereof, a spring acting on the other arm, and an operating-lever secured to the projecting end of the said lever, substantially as shown and described, and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM L. SMITH.

Witnesses:

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HARVEY A. GILBERT.