

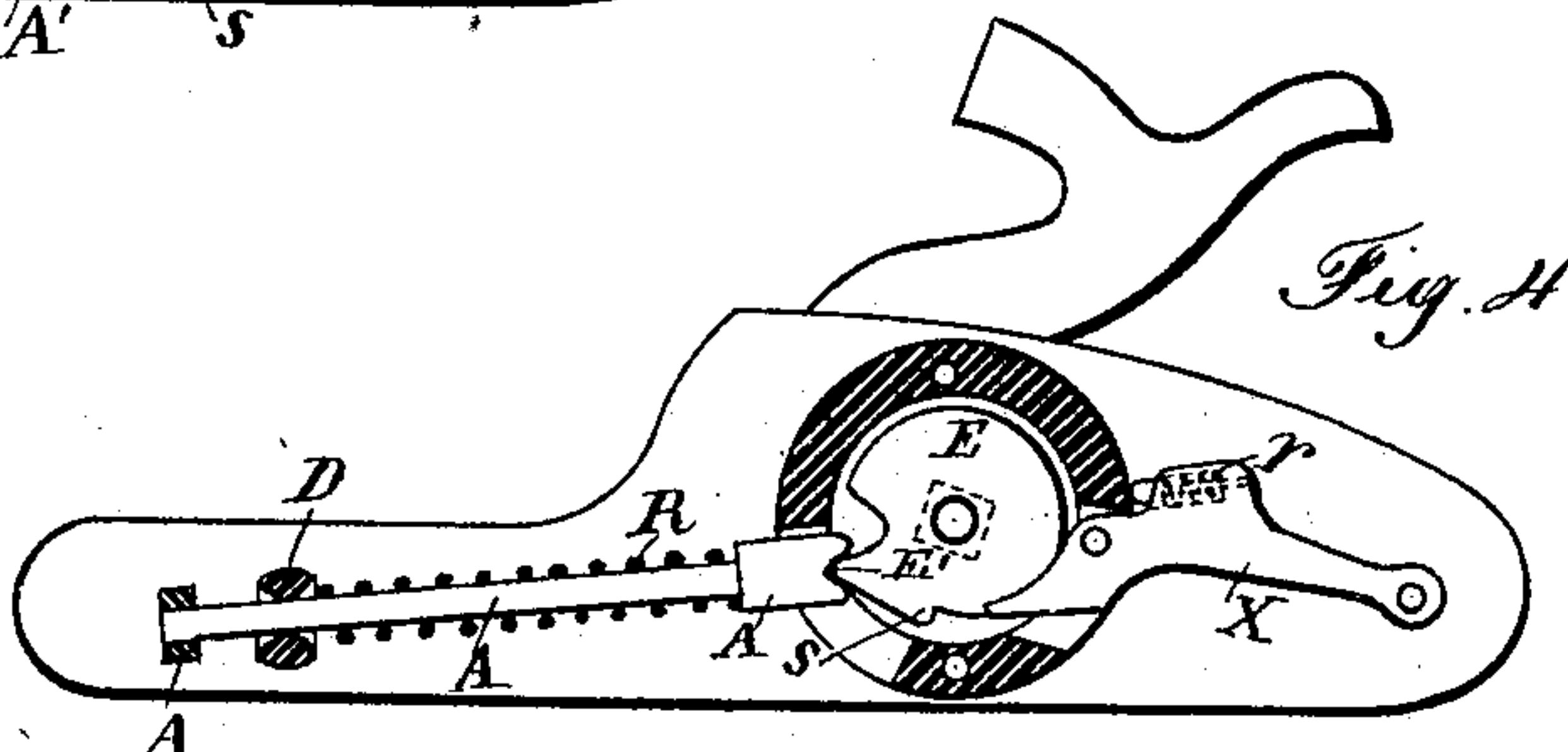
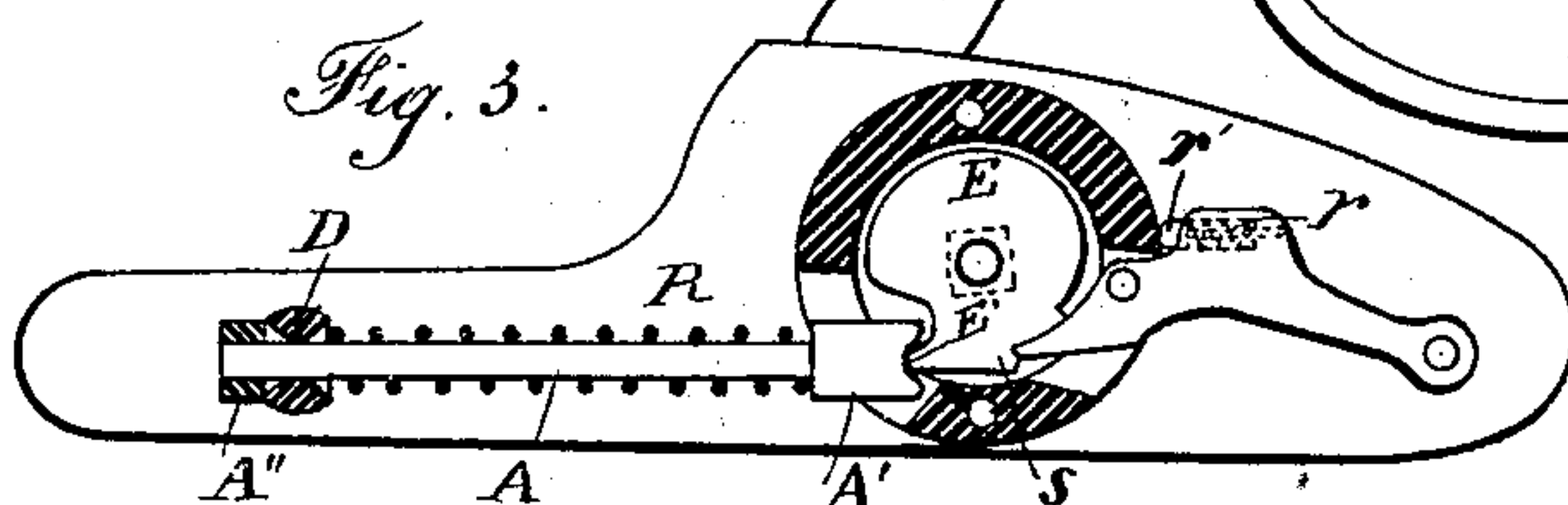
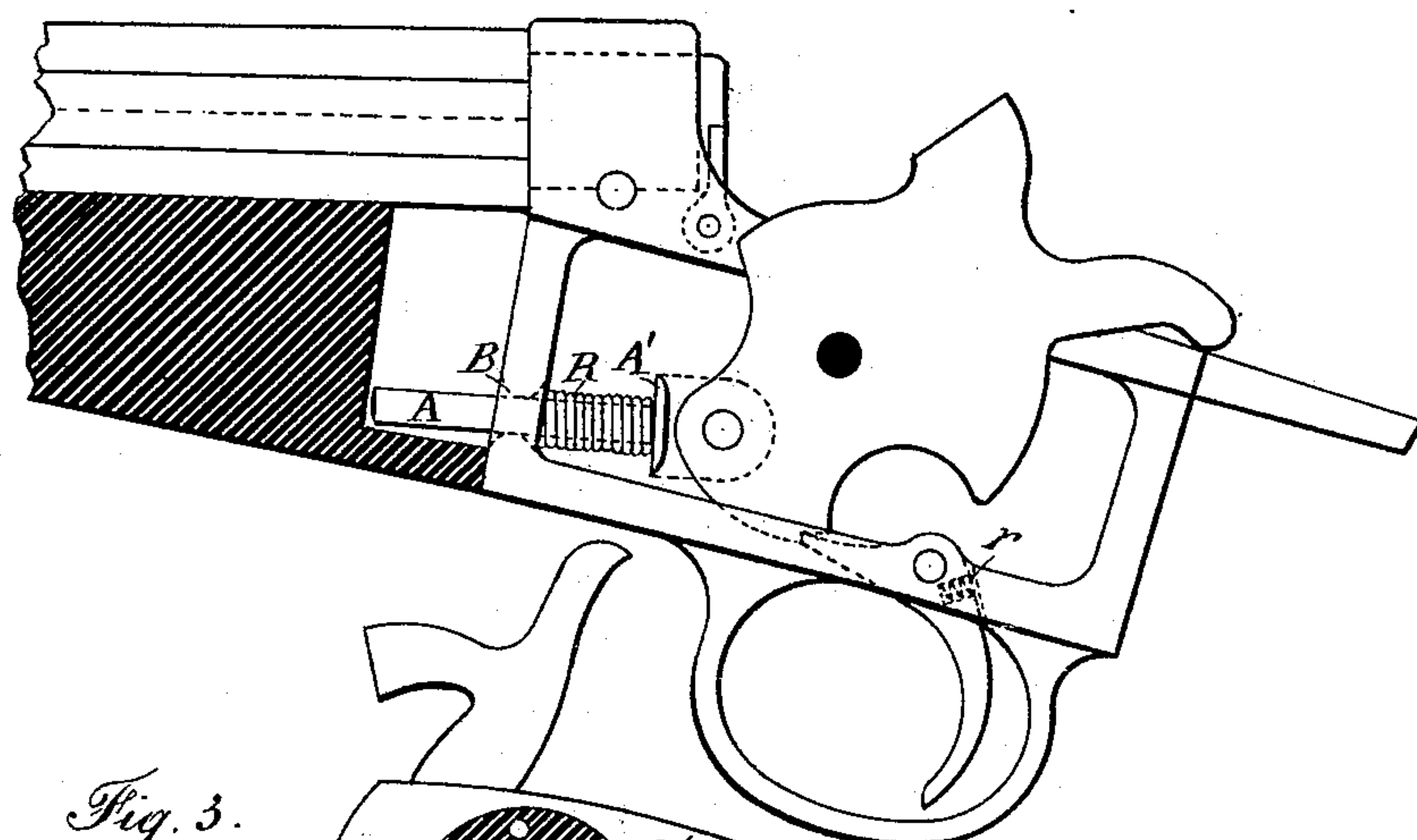
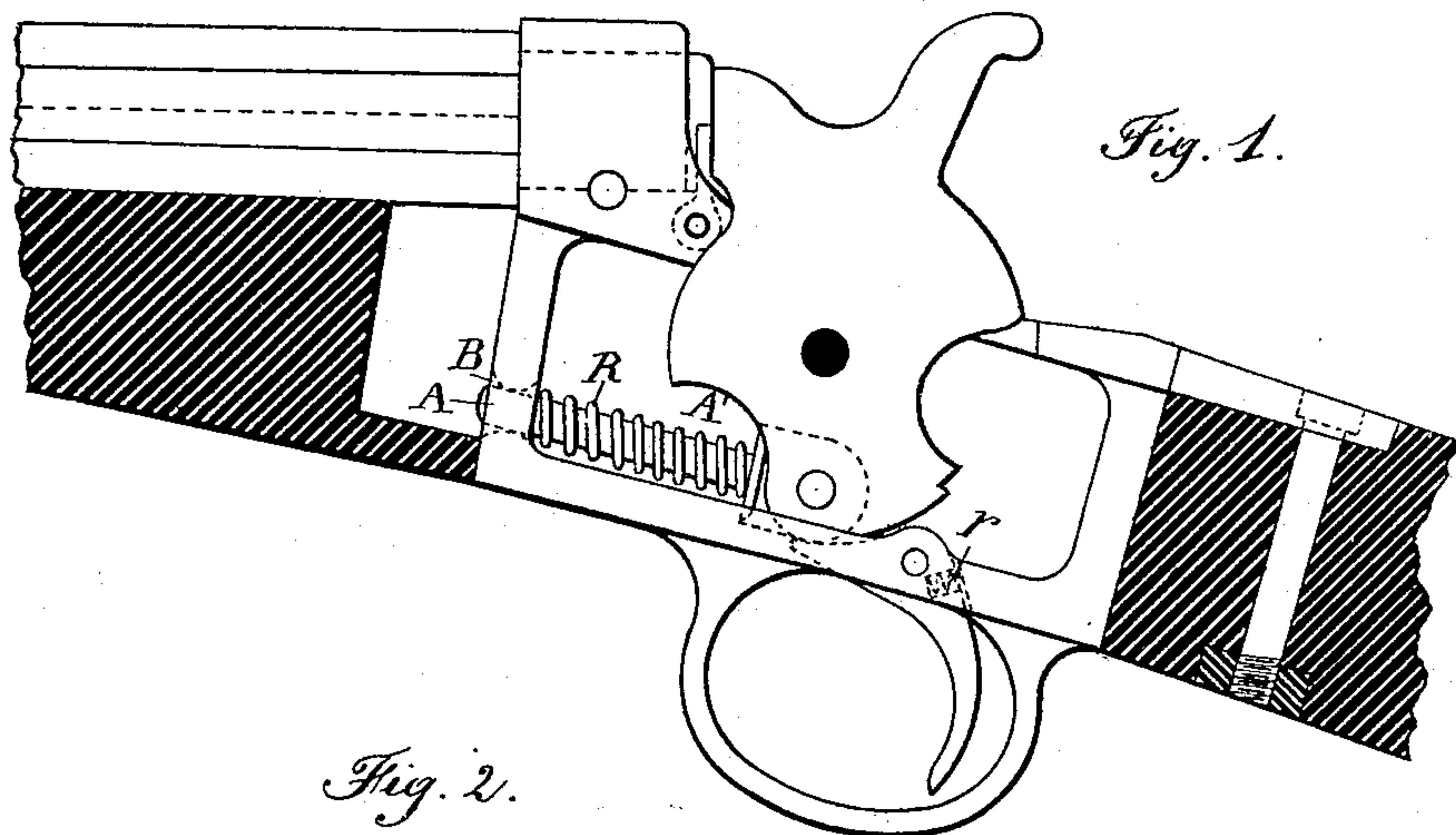
(No Model.)

2 Sheets—Sheet 1.

H. PIEPER.
LOCK MECHANISM FOR FIREARMS.

No. 591,291.

Patented Oct. 5, 1897.



Witnesses:

Jas. A. Richmond.
A. B. Dugger

Inventor:

Henry Pieper
by *J. A. Altman*
Attorney.

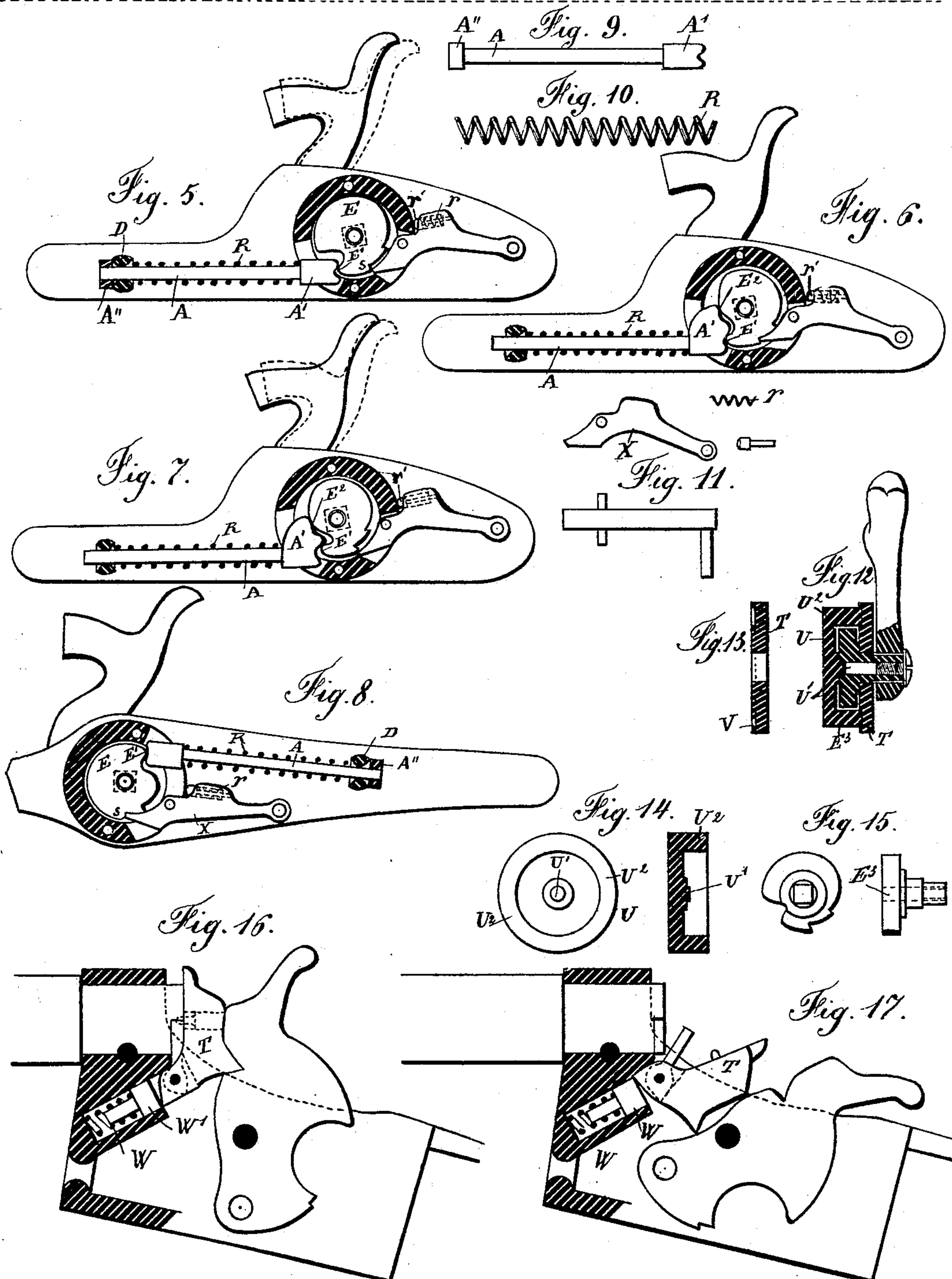
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Witnesses:
Jas. A. Richmond.
A. B. Decker

Inventor:
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UNITED STATES PATENT OFFICE.

HENRY PIEPER, OF LIEGE, BELGIUM.

LOCK MECHANISM FOR FIREARMS.

SPECIFICATION forming part of Letters Patent No. 591,291, dated October 5, 1897.

Application filed January 23, 1897. Serial No. 620,446. (No model.)

To all whom it may concern:

Be it known that I, HENRY PIEPER, a subject of the King of Belgium, residing at Liege, in the Kingdom of Belgium, have invented certain new and useful Improvements in Lock Mechanism for Firearms; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to locks for firearms with hammers having a circular motion.

The object in view is to produce a very simple lock composed of parts having a novel and very simple form. The mainspring is a coiled spring, which is so placed in the lock that during the stroke of the hammer it takes different inclinations and that its power, acting on the hammer, is disposed toward the same in a manner as to obtain the best possible effect.

In the accompanying drawings the invention is shown as applied to a carbine, Figures 1 and 2. Figs. 3, 4, and 5 show the device as applied to a shotgun with rebounding hammer, some of the parts being shown in cross-section. Figs. 6 and 7 show the same lock in a slightly-modified form. Fig. 8 represents a lock having the mainspring in the rear instead of in front. Figs. 9 and 10 show in detail the spring-rod and the mainspring, respectively. Fig. 11 shows in detailed side and top view the inner trigger, sear, or tumbler, with spring and spring-bolt. Fig. 12 is a cross-section through the revolving nut carrying the hammer, the surrounding casing, and the outer lock-plate. Fig. 13 is a cross-section through the said lock-plate, showing a circular groove as seat for the casing. Fig. 14 shows said casing in elevation and cross-section, and Fig. 15 shows in front and side elevation the revolving nut provided with notches for the sear and mainspring. Figs. 16 and 17 illustrate the application of my invention to a gun-lock in connection with a cartridge-extractor.

The tumbler E, Fig. 15, is provided with a laterally-projecting cylindrical pin moving in a corresponding bore of the lock-plate T and carrying on the outside the hammer. It is perforated longitudinally, as indicated by E³. This nut is inclosed in a circular casing U,

having in the center a small projecting stud U', which enters into the bore E³ of the tumbler. The rim U² of this casing is adapted to fit into a circular groove V, Fig. 13, cut into the inner face of the lock-plate T, against which the casing is secured by screws in the ordinary manner.

The rim U² of the casing is cut away on one side to allow the mainspring to enter and come in contact with the tumbler, while a corresponding opening on the other side allows the sear X to pass. The fulcrum of the latter is a pin partly inserted in a hole of the lock-plate and partly in the body of the casing U. A small coiled spring *r* is placed in a bore of the body of the sear, pressing with one end against the bottom of said bore and with the other end against the head of the pin *r'*, thus forcing the latter against the casing U and giving the sear a tendency to lean against the rim of the tumbler E. The mainspring R, also being a coiled spring, surrounds a rod A, leaning with one end against the guide-stud D, secured to the lock and suitably perforated to guide the rod A. The other end of the mainspring presses against the head A' of the rod A. The tumbler E is provided with the ordinary notches for the rebound and armed positions of the hammer. It is also provided with a rounded projection E', against which the head A' of the rod A presses.

The stroke of the rod A is limited by a collar A'', (see Figs. 3, 4, 5, 8, and 9), securely attached to the end of the rod A and adapted to strike against the fixed stud D.

When cocking the hammer, Fig. 4, the spring R is compressed between the stud D and the head A' of the rod A.

When the trigger is pulled, the spring R throws the hammer down, Fig. 5, whereby the rod A, being limited in its forward motion, follows the hammer-tumbler only so far as to allow the sear to fall into the rebound-notch, equivalent to the position indicated in dotted lines in Figs. 5 and 7. The rest of the stroke of the hammer to effect the percussion is obtained by the momentum of the hammer alone. Thus the latter is free from any pressure after having performed the percussion and naturally rebounds, so that the sear, pressed by its spring *r*, Fig. 5, falls into the

notch S, securing the hammer in the rebound position and holding again the projection E' in contact with the head A' of the rod A.

As shown in Fig. 8, similar dispositions are made for the parts when the mainspring R is placed in the rear of the tumbler.

The modification shown in Figs. 6 and 7 consists in the provision of two projections of the tumbler E' and E², in combination with a suitable enlarged head A' of the rod A, coming in contact with the second projection E² to bring the hammer back into the rebound position after the percussion. When in a lock of this form the hammer is armed, the projection E' alone is in contact with the head A' of the rod A. When the trigger is pulled, the mainspring acts on the hammer until it reaches the rebound position shown in dotted lines. In this position the part E² of the tumbler comes in contact with the enlargement of the head A' and slightly presses the spring R back again by the momentum of the hammer. This back pressure is sufficient to bring the hammer back into the rebound position after its having effected the percussion, Fig. 6.

In Figs. 1 and 2, showing a lock in normal and armed positions as applied to a carbine, the mainspring R is carried by a rod A, which is pivotally connected to a projection of the hammer, and the free end of the rod A glides in a hole B in the frame.

When the hammer is cocked, the mainspring is pressed between the head A' of the rod and said frame.

The trigger is held in engagement with the notches of the hammer by a small coiled spring r, placed in a corresponding bore of the trigger and compressing against the middle of the guard.

In the different devices above described the pressure transmitted by the spring R on the hammer is directed at different distances of its arc, according to the position of the hammer, and, as the figures indicate, the more the spring is compressed the more its action is disposed toward the axis or fulcrum of the hammer.

The point of attaching the hammer can be obtained either by simple contact, as shown in Figs. 3, 4, 5, 6, 7, and 8, or by means of the articulation, as shown in Figs. 1 and 2.

In Figs. 16 and 17, where the hammer works in connection with a cartridge-extractor T, the latter of course is perforated, carrying a pin, through the medium of which the hammer causes the ignition of the cartridge in the ordinary well-known manner. The figures illustrate how the coiled spring W acts on the head W' of the rod or bolt A and how the cartridge-extractor is secured by a spring in both closed and open position.

Having thus described my invention, I claim—

1. In a gun-lock a coiled mainspring guided on a rod or bolt provided on one end with a collar adapted to limit the expansion of the spring and provided on its other end with a head contacting with the hammer at a point near its pivot in combination with a trigger fulcrumed in the ordinary manner to the frame of the gun-lock and provided in a bore near its pivot with a coiled spring adapted to press the trigger against the hammer substantially as described.

2. In mechanism for discharging firearms, a hammer-tumbler provided with a laterally-projecting cylindrical pin adapted to move in a corresponding bore of the lock-plate and carrying on its outer end a hammer, said tumbler being inclosed in a circular casing and having a projection to be acted upon by the mainspring and having notches to receive the tongue of the sear or trigger, which is pivotally secured in a suitable cut-out of the casing, and which carries in a bore a small coiled spring adapted to press the sear against the notches of the hammer in combination with a coiled mainspring surrounding a rod or bolt the head of which, passing through a suitable cut-out within the casing, engages with the projections of the tumbler, said rod or bolt being limited in its forward motion by a collar secured to its end so that after having effected the percussion the hammer is free to rebound and is held in a partially-cocked position by the spring-actuated sear, substantially as described.

3. In mechanism for discharging firearms, a hammer-tumbler provided with a laterally-projecting cylindrical pin adapted to move in a corresponding bore of the lock-plate and carrying on its outer end a hammer, said tumbler being inclosed in a circular casing, having two projections E' and E², to be acted upon by the mainspring and having notches to receive the tongue of the sear or trigger, which is pivotally secured in a suitable cut-out of the casing, and which carries in a bore a small coiled spring adapted to press the sear against the notches of the hammer in combination with a coiled mainspring surrounding a rod or bolt the head of which, passing through a suitable cut-out within the casing, engages with the projections of the tumbler, first with E' to throw the hammer down and then with E² after it performs the percussion, so as to throw the hammer back into the rebound position, substantially as described.

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

HENRY PIEPER.

Witnesses:

L. CAMPENNE,
JOHN GRATT.