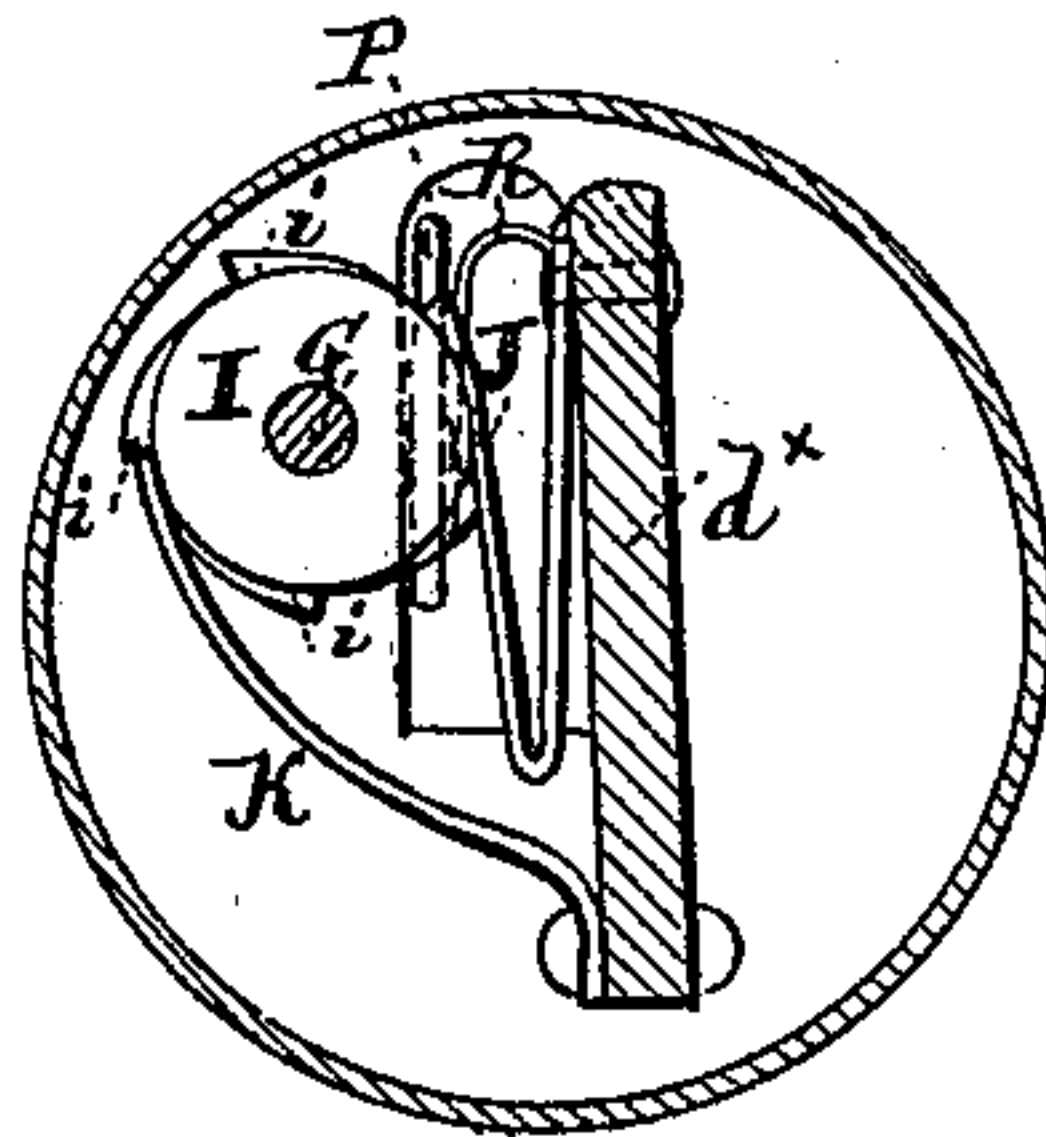
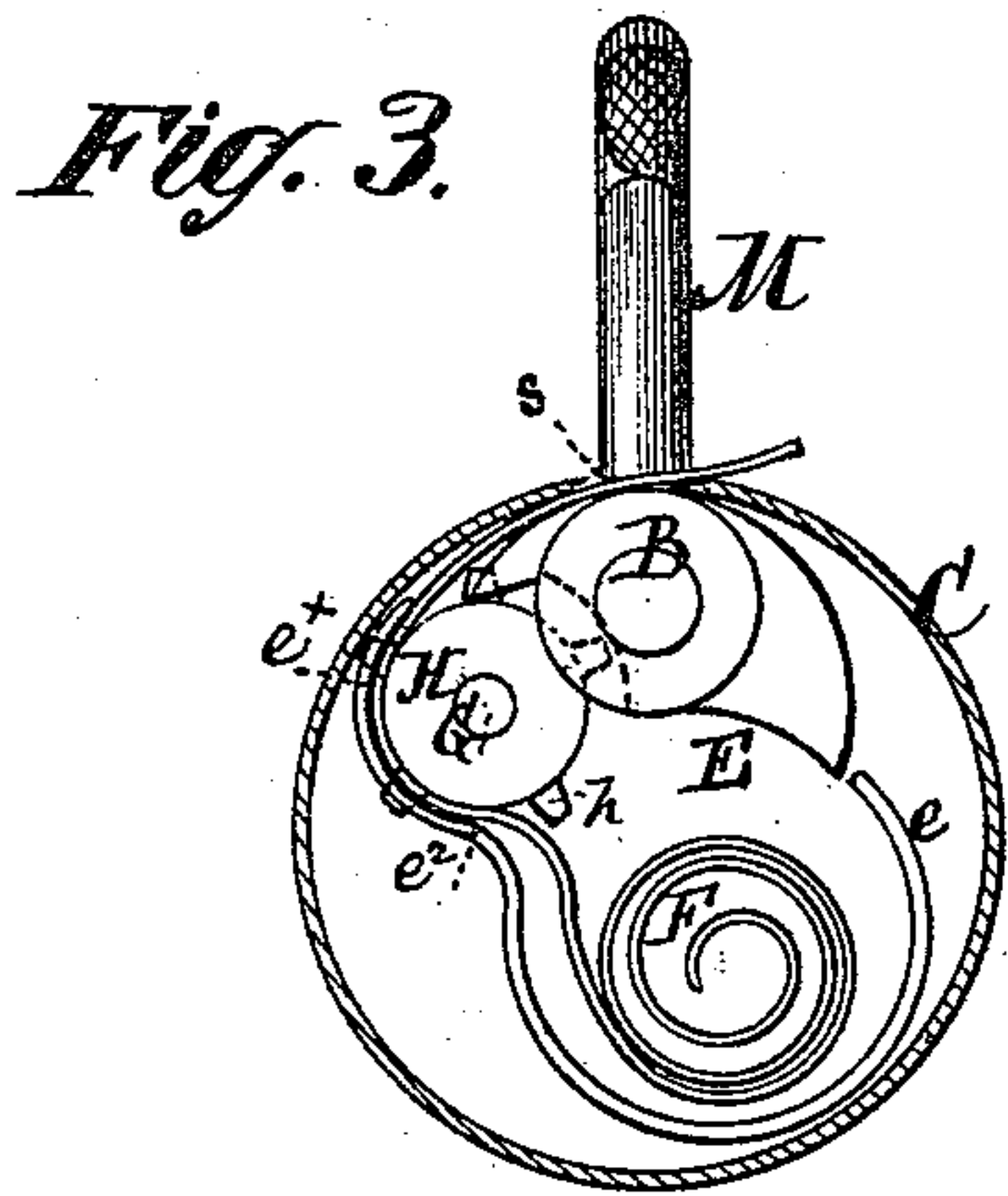
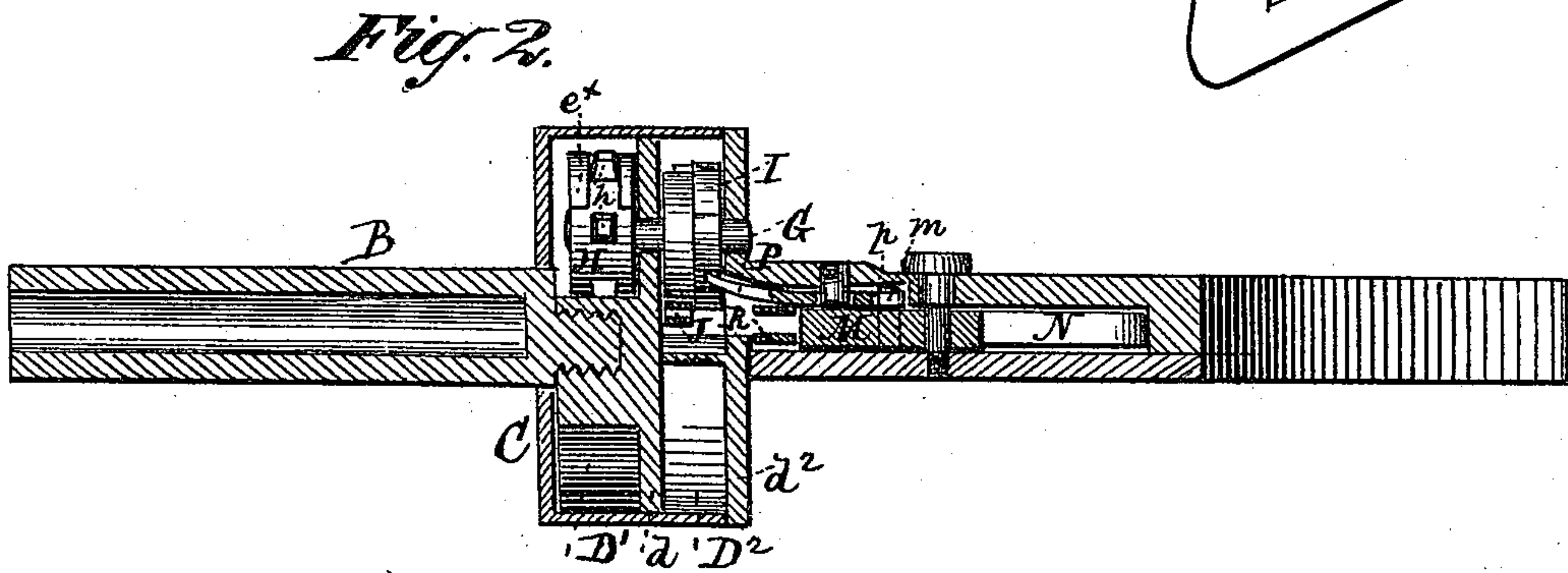
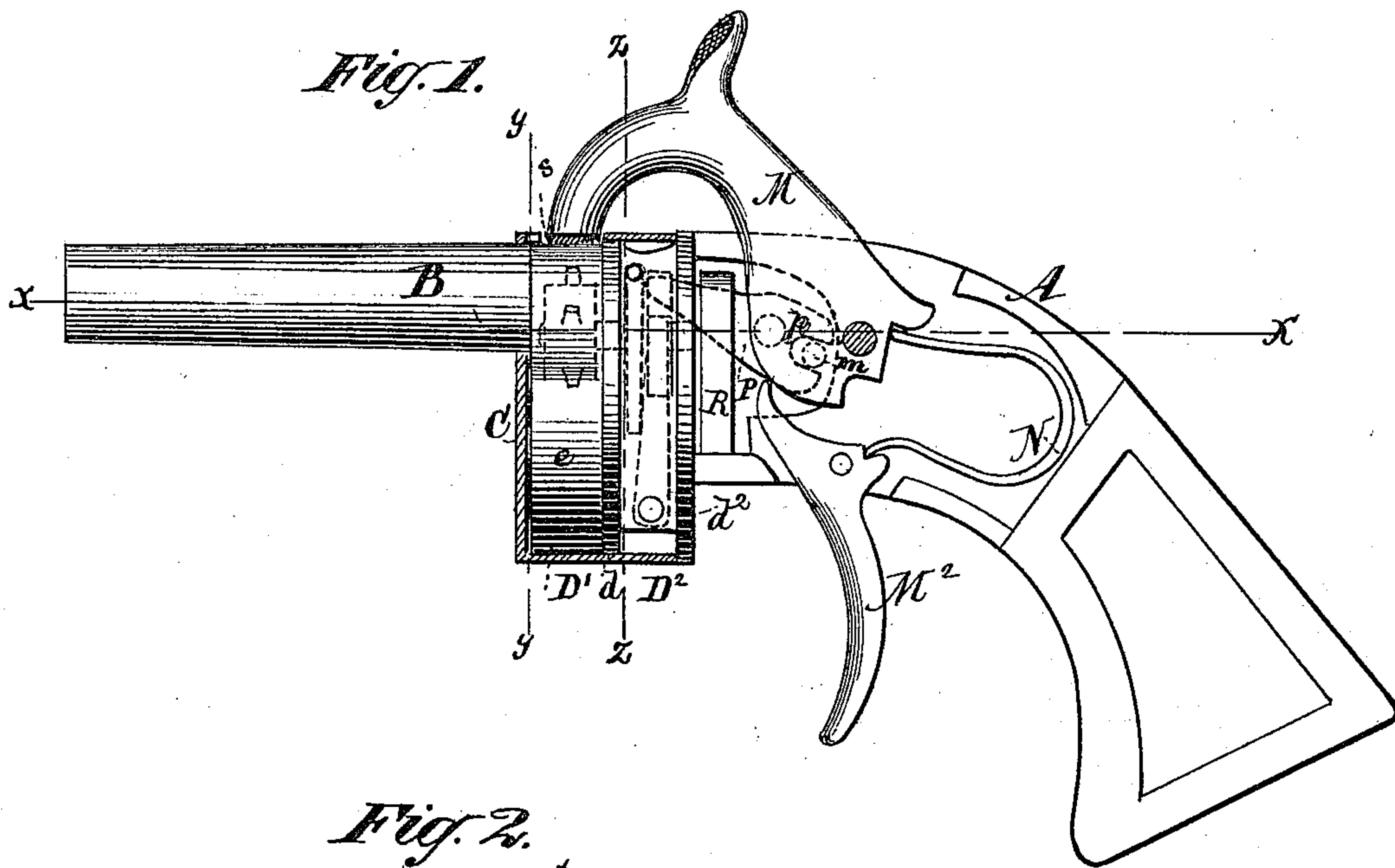


TOY PISTOLS, &c.

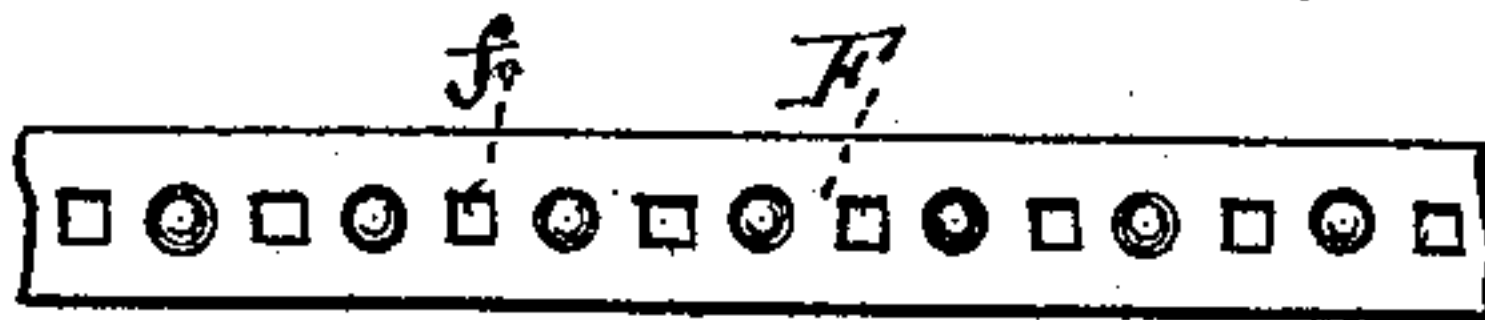
No. 171,430.

Patented Dec. 21, 1875.



*Witnesses*

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# UNITED STATES PATENT OFFICE.

EDVARD SAVORAL, OF NEW YORK, N. Y.

## IMPROVEMENT IN TOY PISTOLS, &c.

Specification forming part of Letters Patent No. 171,430, dated December 21, 1875; application filed September 28, 1875.

*To all whom it may concern:*

Be it known that I, EDVARD SAVORAL, of New York, in the county and State of New York, have invented certain Improvements in Toy Fire-Arms; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention relates to that class of toy fire-arms in which a fulminate ribbon or tape is employed for producing an explosion.

The invention consists in a novel construction, arrangement, and operation of a chamber or magazine for holding the fulminate-ribbon; a device for feeding the ribbon from the magazine to the point of explosion; and a lock mechanism for operating the feeding device by the cocking of the hammer.

The toy fire-arm is similar in general form and appearance to a gun or pistol provided with a single barrel and a revolving cylinder. The portion between the stock and barrel, which resembles the cylinder, is constructed to contain the magazine and the ribbon-feeding device, and is provided with a cap or casing, which is removable in order to afford access to the parts. The fulminate is arranged in a coil with its axis parallel with the barrel, and is fed transversely to the length of the barrel by means of a wheel carried by a spindle, to which is attached a ratchet which receives motion from a pawl operated by the hammer. The feeding device is provided with a brake to prevent it from turning too loosely, and with a spring-pawl to prevent retrograde motion, and the pawl which rotates the feeding device is provided with a spring to insure its proper engagement with the feed-ratchet. The cap or casing may be hinged so as to be opened without entirely removing it.

The accompanying drawing represents a toy pistol constructed according to my invention.

Figure 1 is a side view, with the cap or casing in section. Fig. 2 is a longitudinal horizontal section taken in the line  $x x$  of Fig. 1. Fig. 3 is a transverse vertical section taken in the line  $y y$  of Fig. 1. Fig. 4 is a transverse vertical section taken in the line  $z z$  of Fig. 1. Fig. 5 is a detail view.

The stock A and barrel B are of the usual form, and the portion between them is covered with a cap or casing, C, which when in place,

resembles in form and general appearance the revolving cylinder of an ordinary pistol. The cap or casing C is removable in order to allow access to the interior portion, which portion may be made in one piece with the stock, or attached thereto in any suitable manner. This portion is of a length about double the width of the fulminate-ribbon, and is divided by a suitable partition,  $d$ , into two parts,  $D^1$   $D^2$ . In the forward part,  $D^1$ , is the chamber or magazine E, the sides of which are formed by a rim or band,  $e$ , the rear end by the partition  $d$ , and the front end by the cap or casing C when it is in place. The fulminate-ribbon F is rolled into a coil and placed in the magazine with one end protruding therefrom through an opening,  $e^2$ , and passing around the feed-wheel, with the face of which it is held in contact by the pressure of the elastic forked end  $e^x$  of the rim or band  $e$ . (See Figs. 2 and 3.) The fulminate-ribbon F is provided with perforations  $f$  for the purpose hereinafter described. This ribbon is not claimed in this application, but is made the subject of another application. The rear part,  $D^2$ , has its rear side formed by a circular plate,  $d^2$ , which forms the rear end of the cylinder when the cap C is in place. In the partition  $d$  and disk or plate  $d^2$  a spindle, G, has its bearings, said spindle being arranged parallel with the barrel B. On the front end of the spindle, forward of the partition  $d$ , is the feed-wheel H, on the face of which are teeth, pins, or projections  $h$  for engagement with the perforations in the ribbon, by which means the accurate feeding of the ribbon is insured.

On the rear portion of the spindle, between the partition  $d$  and plate  $d^2$ , is a ratchet-wheel, I, having its teeth  $i$  corresponding in number and distance apart with the projections on the feed-wheel. The ratchet-wheel I is provided with a brake, consisting of a V-shaped spring, J, one branch of which is secured to the connecting-plate  $d^x$  between the partition  $d$  and disk  $d^2$ , and the other branch bears against the face of the ratchet-wheel, and thus prevents it from being rotated too easily. The ratchet-wheel I is also provided with a spring-pawl, K, one end of which is secured to the connecting-plate  $d^x$ , and the other end engages with the teeth  $i$  to prevent a retrograde move-



ment of the ratchet. (See Fig. 4.) The hammer M and trigger M<sup>2</sup> are of the usual construction, and may both be operated by a U-shaped spring, N, serving as mainspring and trigger-spring.

On one side of the interior of the stock a lever, P, is pivoted, so as to oscillate in a plane parallel with that of the hammer. The front end of this lever works in a slot in the plate or disk d<sup>2</sup> and engages with the ratchet-teeth i. In its rear end is a fork, notch, or slot, p, with which engages a pin or stud, m, projecting laterally from one side of the hammer M. The lever P lies flat against the side of the stock, but is elastic, so that it may be forced outward therefrom. It is held against the side of the stock by the pressure of a spring, which may be of any suitable description, but is here shown as an inverted V-shaped spring, R, arranged in front of the hammer, with one end fixed and the other bearing against the outer side of the lever.

The toy fire-arm, constructed as above described, operates as follows: When the hammer is drawn back to cock the piece, the pin or stud m, working in the notch or slot p, elevates the rear end of the lever P and depresses the front end, which by its engagement with a tooth, i, rotates the ratchet I until another tooth has reached the end of the spring-pawl K, so as to prevent the ratchet from receding. This movement brings the hammer to a cocked position, and at the same time the engagement of the feed-wheel H with the fulminate-ribbon uncoils said ribbon and feeds it transversely of the barrel through an opening in the cap C, so as to bring one of the fulminate-pellets immediately over the anvil s to receive the blow of the hammer. When the trigger is pulled and the hammer descends to explode the fulminate-pellet, the front end of the lever

P slides over the back of the next tooth i, and is forced by the spring R into engagement with the face of the tooth, so as to further rotate the ratchet and spindle, and feed the ribbon when the hammer is again raised to a cocked position. The feeding mechanism may be arranged on either side of the pistol, and feed in either direction. If desired, the spindle G may extend through the plate d<sup>2</sup> and be provided with a knob for turning it, so as to feed the ribbon independently of the hammer.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a toy fire-arm, a ribbon chamber or magazine of circular or approximate form, having its axis parallel with the axis of the barrel to provide for the feeding of a coil of fulminate-ribbon in a direction transverse to the barrel, substantially as herein described.

2. The combination, with a fire-arm, in which fulminate-ribbon is employed, of a rotating feed-wheel, H, provided with teeth or projections h, substantially as and for the purpose herein described.

3. The combination, with the ratchet I, spindle G, and feed-wheel H, of the lever P, pivoted between its ends and having a fork or notch, p, at its rear end, and the pin or stud m on the hammer M, working in said fork or notch, whereby, on cocking the hammer, the feed-wheel is rotated, and the ribbon is fed to the point of explosion, as herein shown and described.

4. The combination, with the magazine and feed mechanism, of the removable cap C, forming a casing for the same, substantially as herein described.

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Witnesses:

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