

No. 621,440.

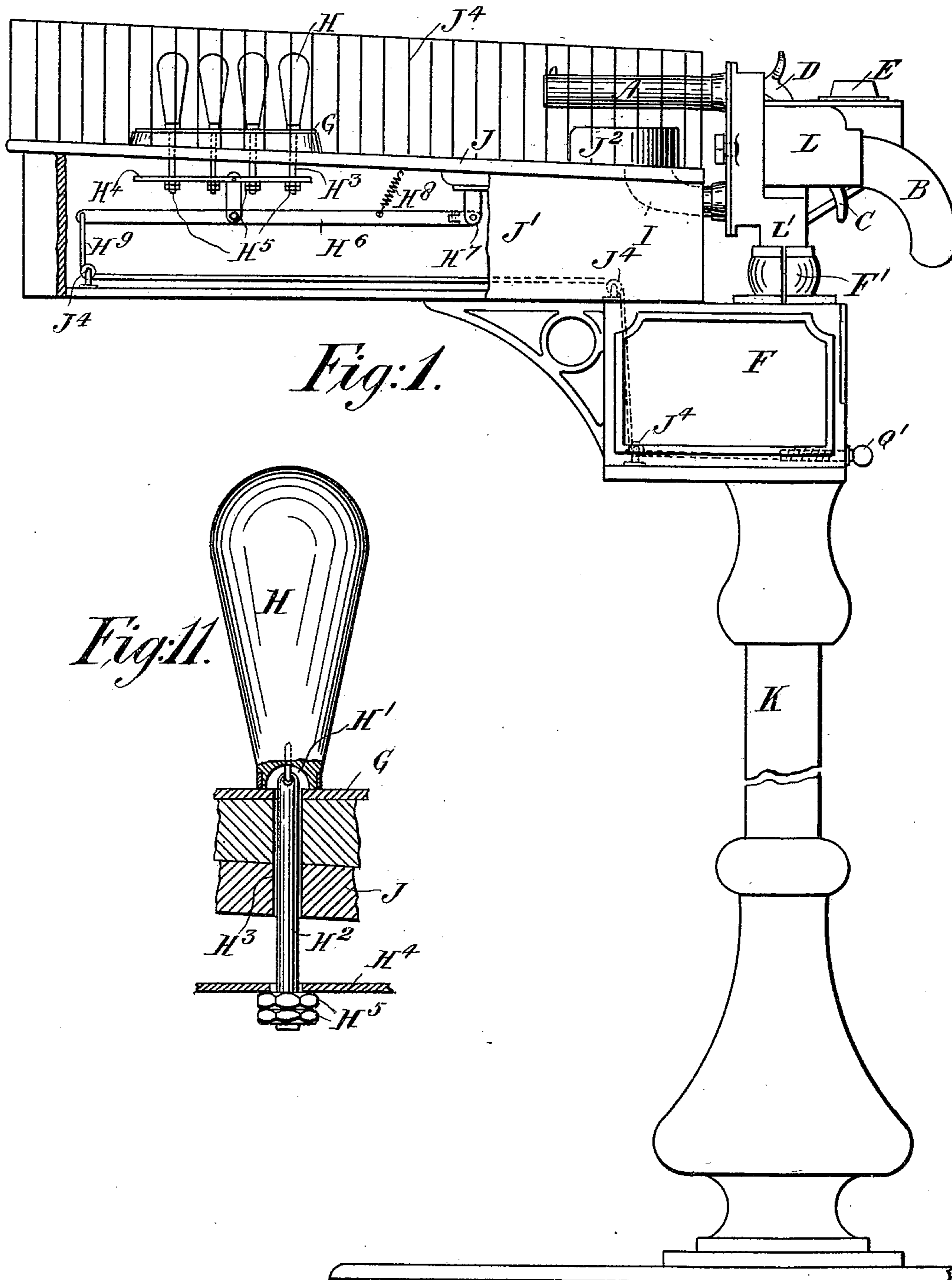
Patented Mar. 21, 1899.

H. D. BAILEY & H. B. BUDGETT.
TOY PISTOL AND GAME APPARATUS.

(Application filed Dec. 20, 1897.)

(No Model.)

4 Sheets—Sheet 1.



Witnesses
Hugh M. Willoughby
George William Rose

Inventors
Harry Downing Bailey & Harry Brodwin Budgett
per
Herbert Leffman Jones
Attorney

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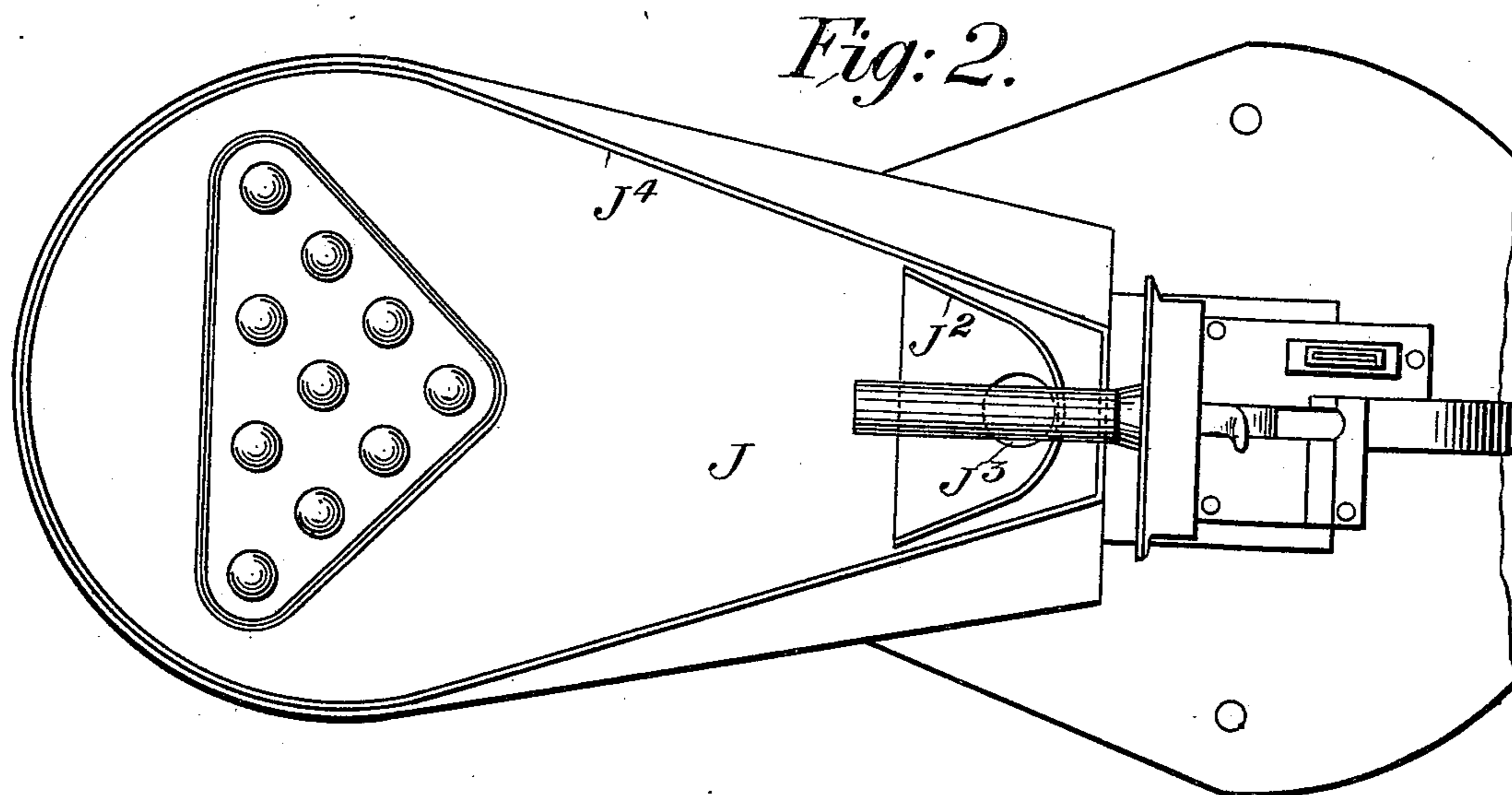


Fig: 9.

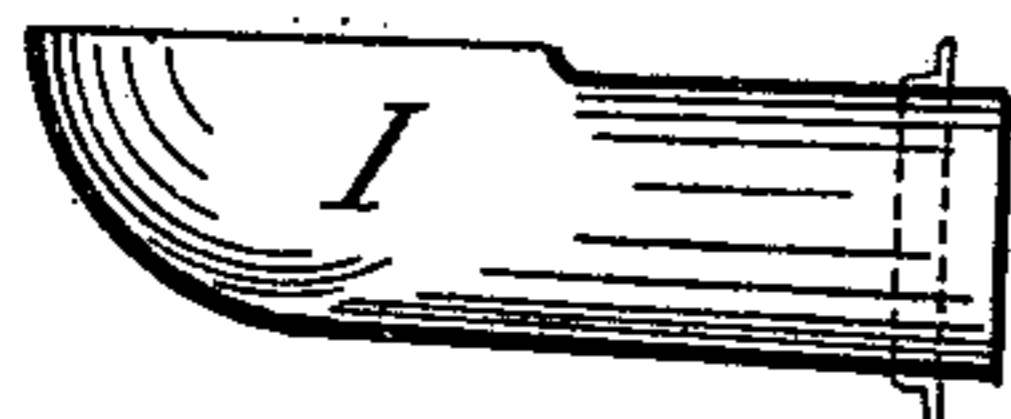


Fig: 5.

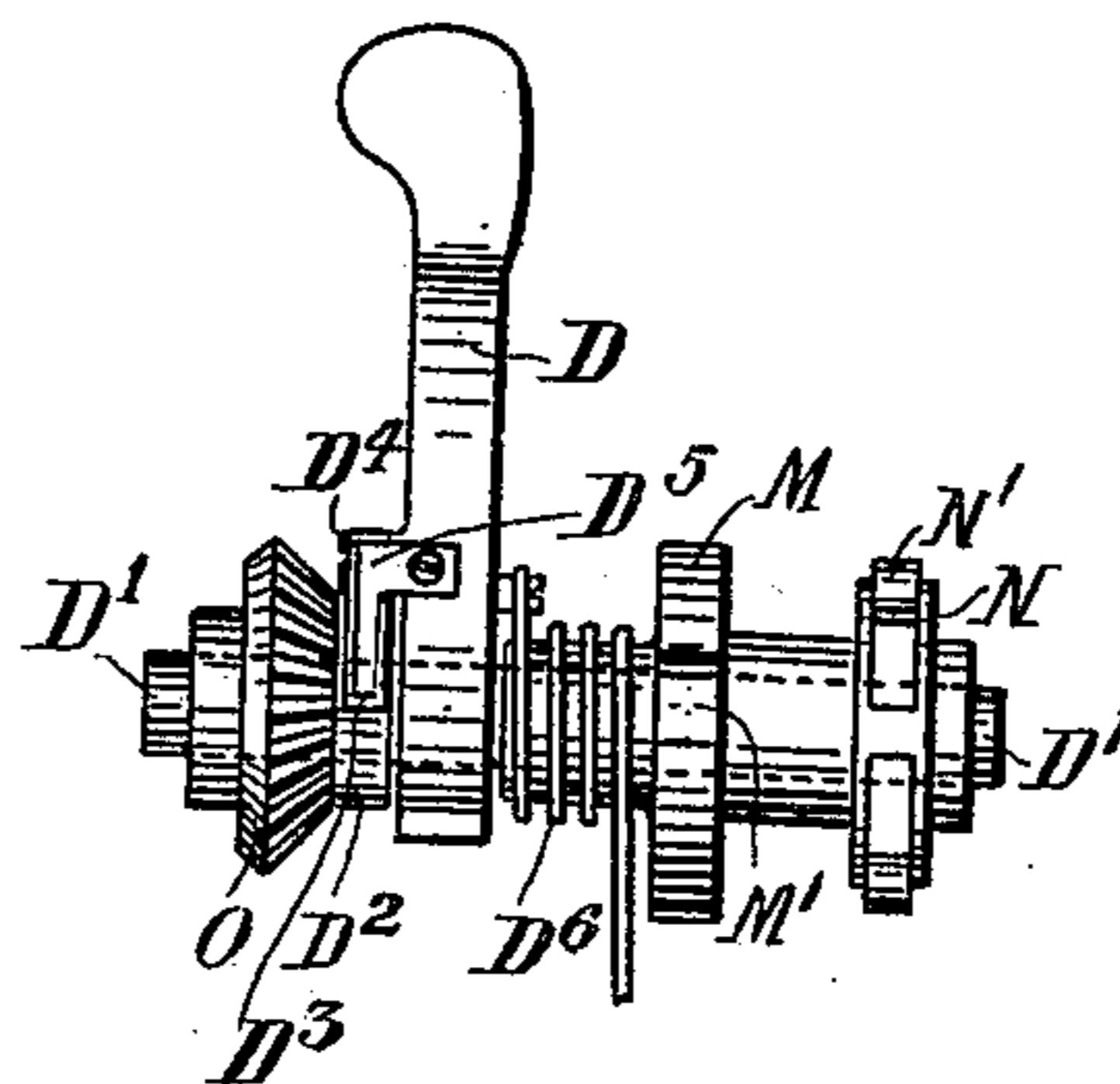
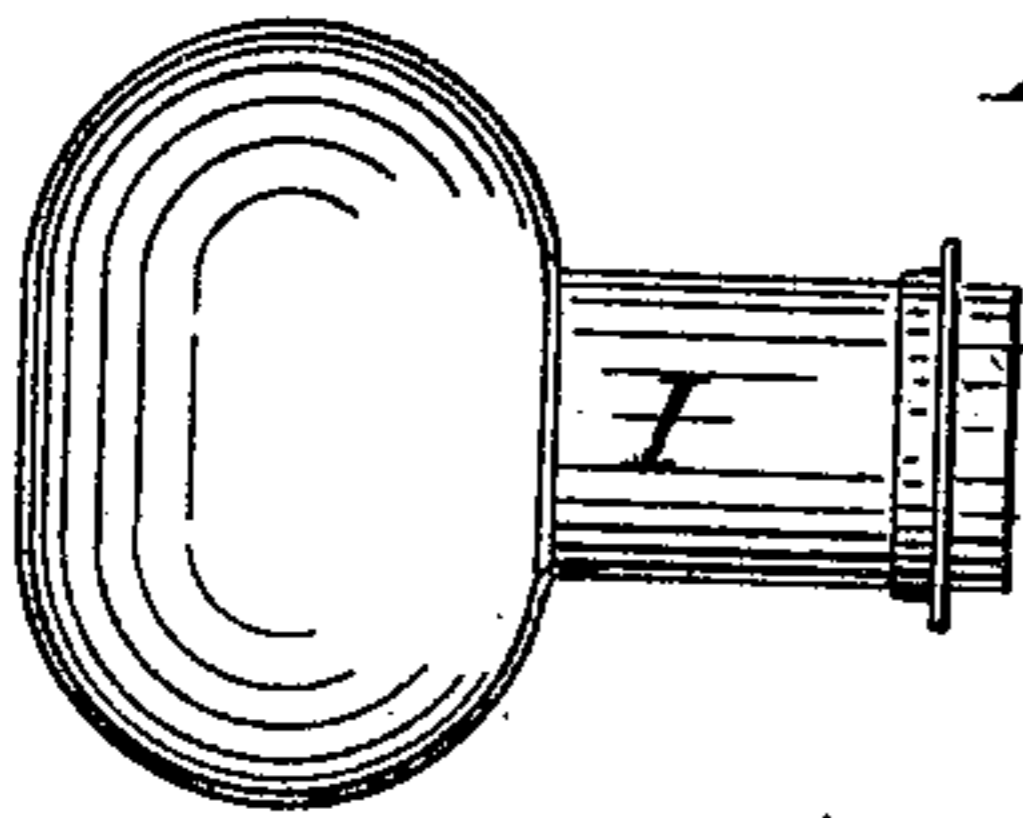


Fig: 10.



Witnesses
Hugh J. Willoughby
George William Rose

Inventors
Harry Dornier Bailey & Harry Brozden Budgett
per
Herbert Septon Jones
Attorney

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Fig. 3.

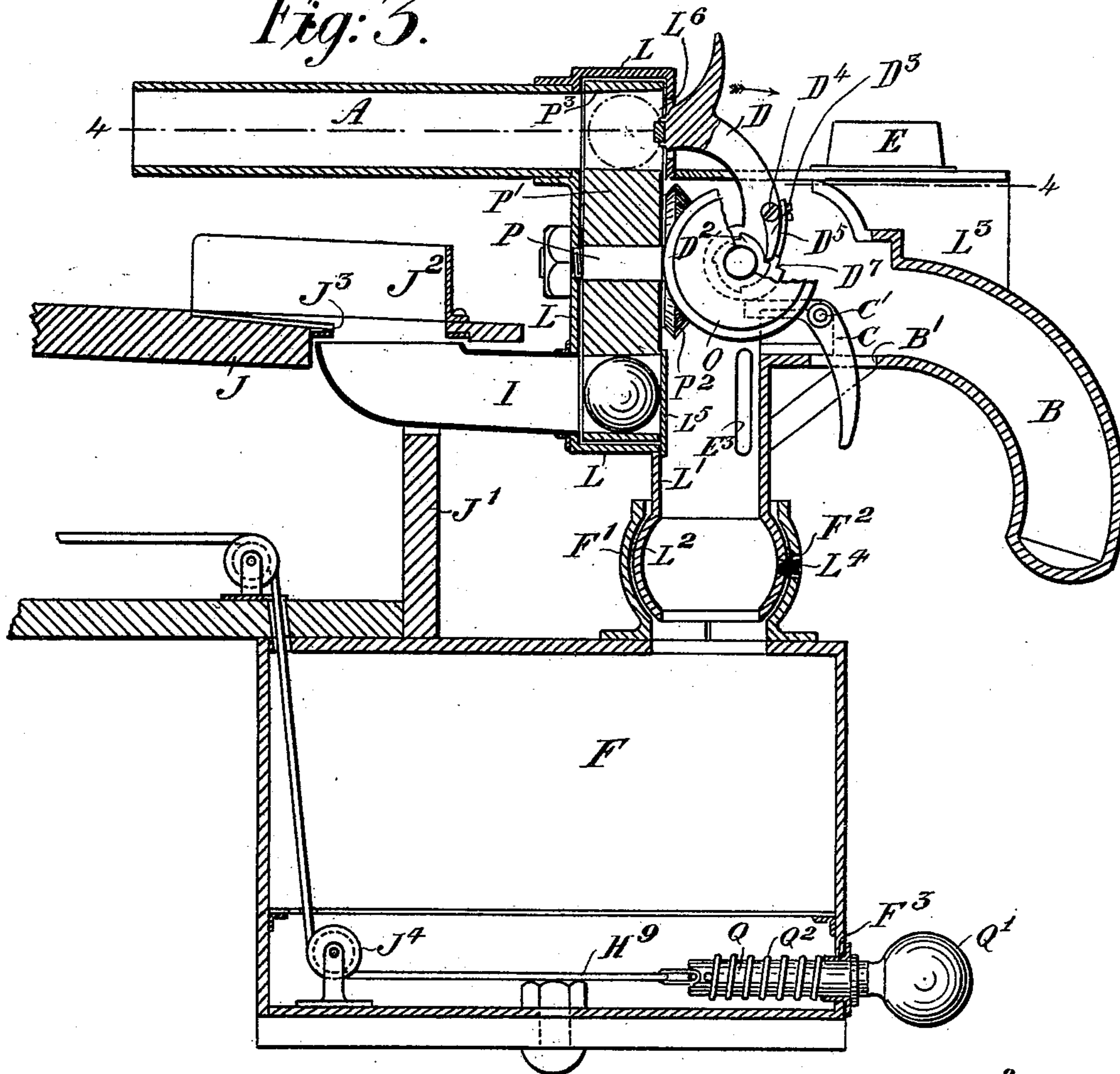
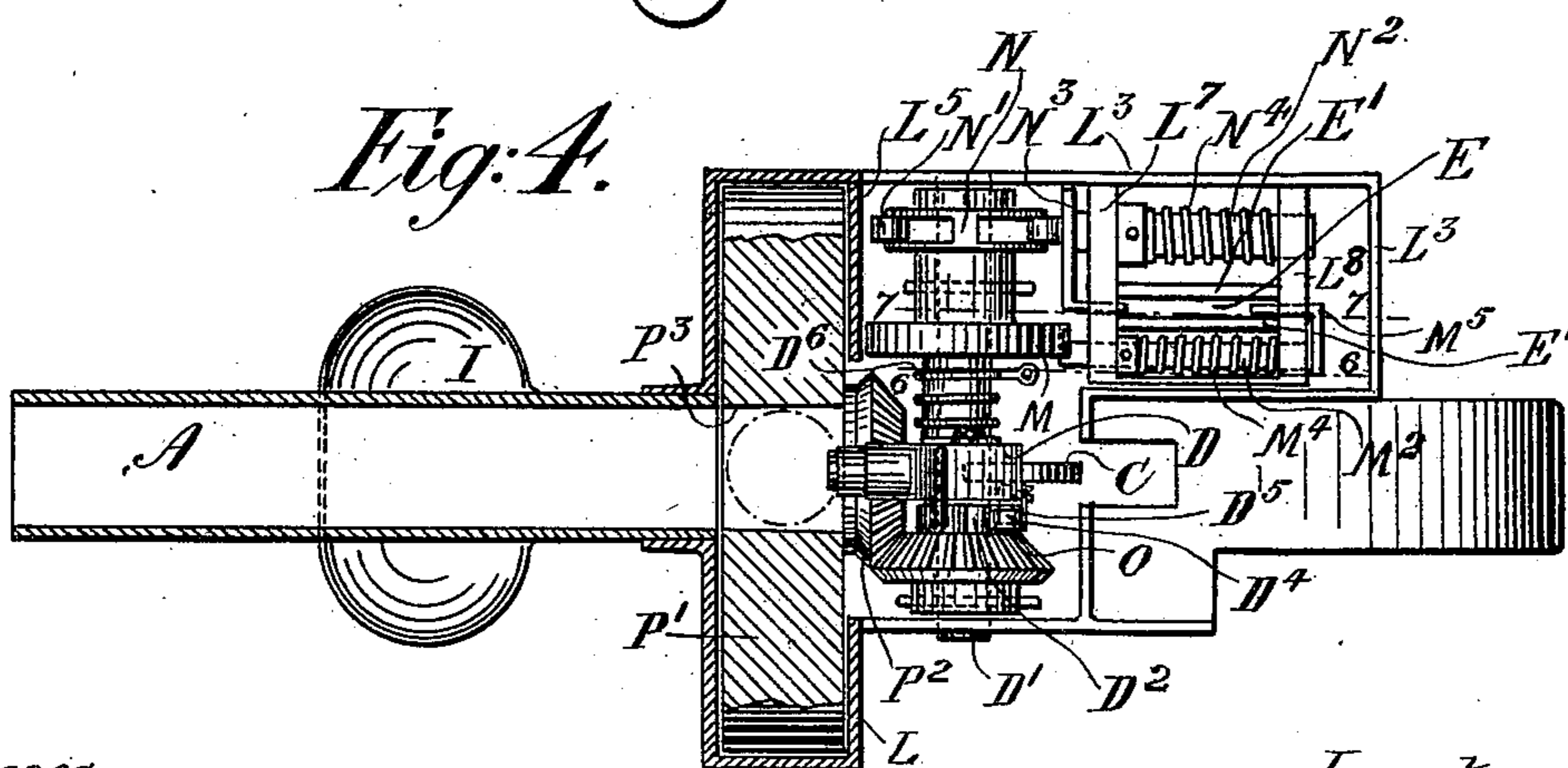


Fig. 4.



Witnesses
Hugh J. Willoughby
George William Rose

Inventors
Harry Downing Bailey & Harry Budgett
per
Herbert Septimus Jones
Attorney

No. 621,440.

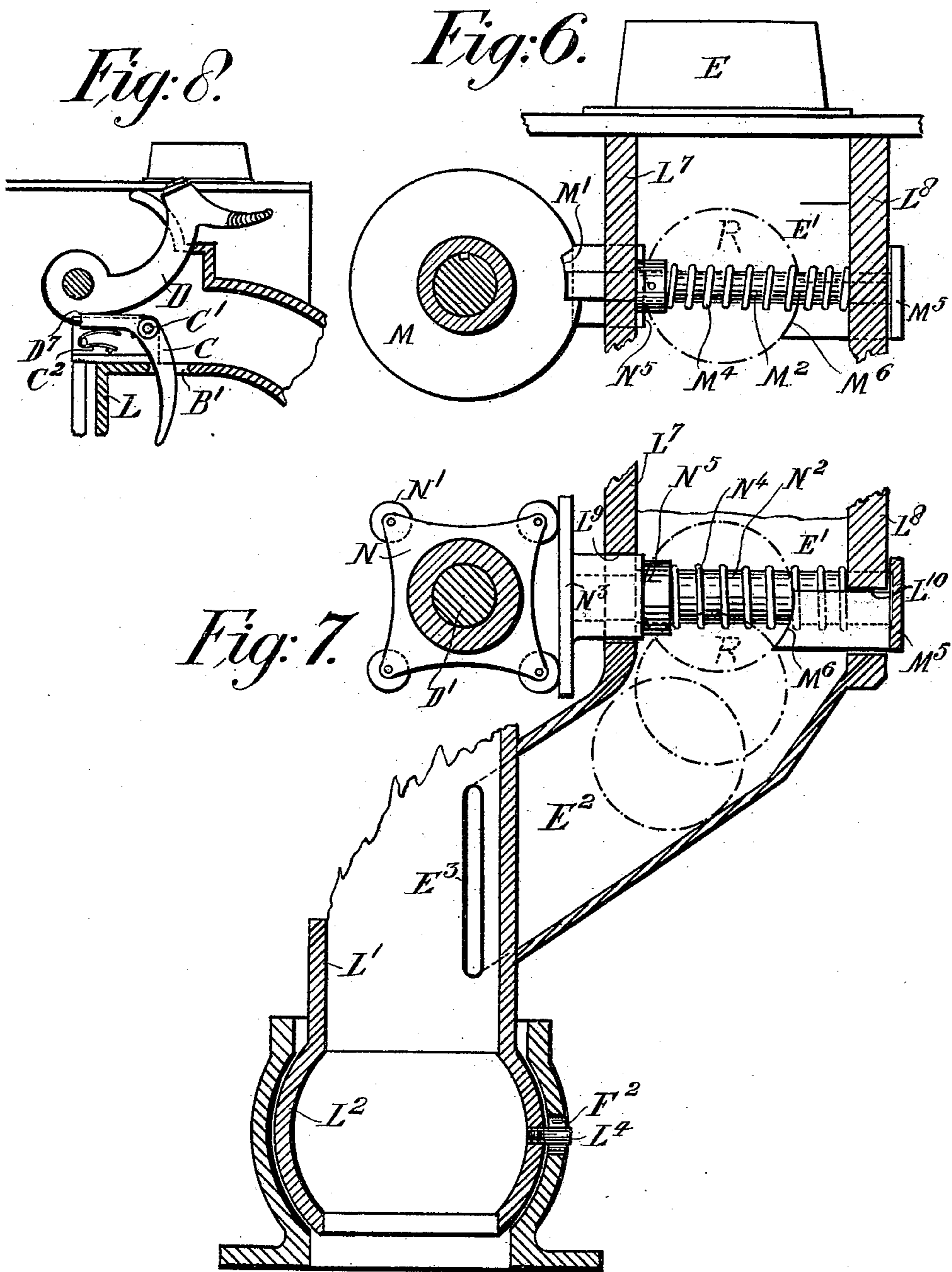
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Witnesses
Hugh J. Willoughby
George William Rose

Inventors
Harry Dornier Bailey and Harry Brodwin Budgett
per
Herbert Septim Jones
Attorney

UNITED STATES PATENT OFFICE.

HARRY DORNING BAILEY AND HARRY BROGDEN BUDGETT, OF LONDON,
ENGLAND.

TOY PISTOL AND GAME APPARATUS.

SPECIFICATION forming part of Letters Patent No. 621,440, dated March 21, 1899.

Application filed December 20, 1897. Serial No. 662,697. (No model.)

To all whom it may concern:

Be it known that we, HARRY DORNING BAILEY, engineer, of Norbury, Grove Park Gardens, Chiswick, London, in the county of Middlesex, and HARRY BROGDEN BUDGETT, mining engineer, of 26 Great St. Helen's, in the city of London, England, subjects of the Queen of Great Britain, have invented a certain new and useful Improvement in Toy Pistols and Game Apparatus Connected Therewith; and we do hereby declare that the following is a full, clear, and exact description of the same.

Our invention relates to toy pistols and game apparatus connected therewith, and has for its object to provide an improved construction of pistol for projecting balls against a target or a number of skittles or figures or the like.

Another object of our invention is to provide means whereby the spent ball will be automatically returned to the pistol, so as to reload the same after every shot.

A further object of our invention is to construct an improved apparatus for resetting the skittles or figures in an upright position when the pistol is used in connection with this particular description of game.

Our invention will be clearly understood from the following description, in conjunction with the accompanying drawings, which illustrate our improved apparatus for playing the game of skittles.

Figure 1 is a side elevation, partly sectional, of a complete apparatus. Fig. 2 is a plan of the same. Fig. 3 is a sectional view of the pistol and adjoining parts. Fig. 4 is a horizontal section on the line 4 4, Fig. 3. Fig. 5 is a rear elevation of the hammer-spindle with the parts mounted thereon. Fig. 6 is a section on the line 6 6, Fig. 4. Fig. 7 is a section on the line 7 7, Fig. 4, with a vertical section of the pistol-pivot added. Fig. 8 is a side elevation showing the hammer and trigger when the former is cocked. Fig. 9 is a side elevation, and Fig. 10 a plan, of the scoop or chute through which the spent balls are conveyed to the pistol in order to reload the same. Fig. 11 is a side elevation, partly sectional, of one of the skittles. Figs. 3 to 11 are drawn to an enlarged scale.

Like letters of reference denote the same parts throughout the drawings.

A is the pistol-barrel; B, the handle; C, the trigger; D, the hammer; E, the coin-chute; F, the money-box; G, the skittle-board; H, the skittles, and I the scoop or chute for conveying the spent balls back to the pistol. The skittle-board G is mounted upon the top plate J of a casing J', secured to the money-box F, the whole being supported upon any suitable stand, such as the pillar K. (Indicated in Fig. 1.) The plate J is inclined and is provided with a curved fence J² and at its lower end has an orifice J³ leading to the scoop I. A cage J⁴ (shown only in Figs. 1 and 2) incloses the skittles and pistol-barrel, so as to prevent the balls escaping from the apparatus.

Referring now to Figs. 3 to 10 of the drawings, the main framework of the pistol, of which the barrel A, the handle B, and the scoop I form part or to which they are connected, consists of a casing L, a part L³ of which incloses the coin-freed mechanism. Said casing or framework has a downwardly-projecting tubular portion L', the bottom part of which is of a spherical shape, as shown at L², and is received within a socket F', secured on the top of the money-box. It will be seen, therefore, that the pistol, with the coin-freed mechanism and reloading-scoop, is freely supported by means of the ball-and-socket joint L² F'. The movement of said pistol is, however, restricted by means of a pin L⁴, screwed into the ball L², which pin projects through an orifice F², of suitable size, provided in the socket F'. Other restraining means may be employed, if desired. A suitable amount of play is allowed between the scoop I and the fixed parts J J' of the apparatus, as will be seen from the inspection of Fig. 3, in order to permit of the pistol being rocked in a vertical plane to the extent allowed by the restraining means. The forward or upper opening of the scoop is elliptical in plan and made with a flaring mouth, as clearly shown in Figs. 9 and 10, so that when the pistol is moved sidewise some portion of the mouth of the scoop is always below the orifice J³ to receive the spent ball.

The hammer D is loosely mounted upon a

spindle D', supported in bearings in the casing, the movement of said hammer being restricted by a spring D⁶, coiled around the spindle, one end of said spring being secured to the hammer and the other end thereof being secured to the casing. Secured to said spindle is a wheel M, provided with a slot M' in its periphery and a four-armed star-wheel N, having antifriction-rollers N', supported in the ends of its arms. These two wheels form a portion of the coin-freed mechanism proper. On the other side of the hammer a ratchet-wheel D² is firmly mounted on the spindle, which ratchet-wheel coöperates with a pawl D³, pivoted at D⁴ to the hammer and controlled by means of a spring D⁵, also secured to the hammer. O is a bevel-wheel secured to the spindle D' outside the ratchet-wheel D².

Secured to the casing L in the same plane with the spindle D' and midway between the barrel A and the scoop I is a pivot P, upon which a cylinder P' can revolve, and secured to said cylinder is a bevel-wheel P², which engages with the bevel-wheel O. The cylinder P' is provided with a suitable number of chambers P³, substantially cylindrical, the front ends of which are of the same diameter as the bore of the barrel A and the scoop I, opposite which each of said chambers comes in succession as the cylinder P' rotates. The thickness of said cylinder is a little greater than the bore of the barrel, so that the chambers thereof will each contain a single ball of the size intended to be projected by the pistol. The rear openings of the chambers are covered by a plate L⁵, secured to the casing L, and by portions of the casing itself, an orifice L⁶ being provided at the top opposite the end of the barrel, through which the front of the hammer passes when the pistol is discharged. The front of the hammer is preferably provided with a hardened plug, as shown, to take the wear. In order to prevent the balls rolling out of the upper chamber prior to the discharge of the pistol when the barrel A is depressed, said chambers are made slightly conical, the large end of the cone being at the rear, so that when the barrel is depressed to the utmost extent permitted by the device for restraining the movement of the pistol the floor of the uppermost chamber P³ will be approximately horizontal and the ball therein will remain in proper position against the orifice L⁶ to be struck by the forward end of the hammer D.

The trigger C, the tail of which projects through a slot B' in the handle, is pivoted at C' to the casing and can engage with a notch D⁷ in the hammer D when the latter is pulled against the force of the spring D⁶. This will be clearly understood from Fig. 8, which shows the hammer in its cocked position. Fig. 8 also shows the trigger-spring C², which holds the trigger in the notch of the hammer.

The coin-freed mechanism is most clearly shown in Figs. 4, 6, and 7, in which M² N² are bars sliding in bearings in plates L⁷ L⁸, se-

cured to the casing. The front end of the bar M² is adapted to engage in the slot M' of the wheel M, and the front end of the bar N² is provided with a plate N³, with which the rollers N' of the star-wheel N engage when the spindle D' is rotated. The sliding bars M² and N² are continuously pressed forward by means of the springs M⁴ N⁴, held between collars on their respective bars and the plate L⁸, as shown. The coin-chute E is continued inside the casing by means of two plates E' E', located between the plates L⁷ L⁸, said plates being at a distance apart a little greater than the thickness of the coin the insertion of which is required to govern the operation of the mechanism. The plate N³ is turned at right angles and projects rearwardly through an orifice L⁹ in the plate L⁷ between the plates E', forming the sides of the coin-chute, the rear face N⁵ of said plate N³ being flat. Secured to the rear end of the sliding bar M² is a similar plate M⁵, which projects through an orifice L¹⁰ in the plate L⁸ between the sides E' of the coin-chute opposite the face N⁵ of the plate N³. The front face M⁶ is made concave to fit the periphery of the coin, the length of the plate being such that the greatest distance between the face M⁶ thereof and the face N⁵ when the star-wheel N and the wheel M are in the position shown in Figs. 6 and 7 is equal to the diameter of the coin. Below the bars M² N² the coin-chute is continued by the tube E², which ultimately delivers the coin through the orifice E³ into the vertical tube L'. Said vertical tube and the ball L² are of such a diameter internally as will permit the coin to fall freely through the same into the money-box F.

Our improved skittle apparatus, intended for use with the pistol above described, is shown in Figs. 1, 3, and 11. To each skittle is pivotally attached in a recess H' in the base thereof a rod H², which can slide easily through an orifice H³ in the plate J and the skittle-board G. The ends of the rods H² pass loosely through orifices in a plate H⁴ and are provided with lock-nuts H⁵ on the under side thereof. The plate H⁴ is connected by a link to a lever H⁶, pivotally supported at H⁷ from the top plate J of the casing J', the weight of said lever and plate H⁴ being sustained by the spring H⁸. Secured to the front end of the lever H⁶ is a flexible connecting-cord H⁹, which passes around guide-pulleys J⁴ and is connected to a bar Q, inclosed at the bottom of the money-box F. Said bar Q passes through an orifice F³ and terminates in a handle Q', being provided with a spring Q² to return it to its normal position when pulled.

Having described the construction of our improved apparatus, we will now proceed to show how the same is operated.

The number of teeth in the ratchet-wheel D² being the same as the number of chambers P³ in the cylinder P', and the number of teeth in the bevel-wheel O and P² being equal, it follows that every time the pawl D³ on the

hammer D enters a fresh tooth on the ratchet a fresh chamber will be brought opposite the rear orifice of the barrel A of the pistol. If when no coin has been inserted in the mechanism the hammer D be pulled back in the direction of the arrow, Fig. 3, the pawl D³, engaging with the ratchet-wheel D², rotates the spindle D'. Since, however, the front end of the bar M² is in engagement with the notch M' of the wheel M, the spindle is prevented from rotating, except to a very small extent, and the hammer cannot be cocked. When, however, a coin of proper size is inserted in the chute E, it is caught and retained between the faces M⁶ and M⁵ of the plates M⁵ and N³, attached to the bars M² N², as shown in Figs. 6 and 7, the coin being denoted by the letter R in dot-and-dash lines. Under these circumstances the rotary movement of the spindle D', permitted by the slot M' when the hammer is pulled back, will, through the agency of the star-wheel N, engaging with the plate N³, press said plate backward against the force of the spring N⁴, and the backward movement will be transmitted through the coin R and the plate M⁵ to the bar M², the front end of which will thereby be withdrawn from engagement with the notch M'. A further rotation of the spindle D' is thereby permitted until the hammer D reaches the position shown in Fig. 8 and the trigger C engages with the notch D⁷, the hammer being then fully cocked. The rotation of the spindle D' rotates the cylinder P' by means of the bevel-wheels O and P² on its pivot P and brings a fresh chamber containing a ball into position at the rear of the barrel A. If the trigger is now pulled, the hammer is released and moves around the spindle under the force of the spring D⁶ to its normal position and the front of said hammer strikes the ball in the uppermost chamber of the cylinder P and projects the same through the barrel A. The spent ball, falling off the skittle-board G onto the sloping plate J, rolls to the bottom of the slope, being guided, if necessary, by the fence J², and finally drops through the orifice J³ into the scoop I, through which it enters the bottom chamber of the cylinder P', which will be opposite the rear orifice of the scoop I. The handle Q' is now pulled, which, through the flexible connection H⁹ on the lever H⁶, pulls down the plate H⁴, and thereby restores any skittles which may have been knocked over by the ball to their upright position. It will be seen that the rod H² slides longitudinally through the orifice H³, and consequently when a skittle has been knocked over and said rod is pulled there can be no hitch or jamming, which would prevent the skittle from being set upright. The release of the coin from the mechanism is accomplished while the hammer is being cocked for the first time in the manner following—that is to say, as long as the plate N³ is being moved to the rear by star-wheel N the coin R is gripped between the

rear face N⁵ of said plate and the front face M⁶ of the plate M⁵. When, however, the operative arm of the star-wheel N reaches a horizontal position, the plate N³ will have attained its extreme rearmost position and the hammer of the pistol will also be at half-cock. As the spindle D' continues to rotate while the hammer is being brought to the position of full-cock the plate N³ begins to move forward under the influence of a spring N⁴ and the plate M⁵ follows it under the influence of the spring M⁴. When the bar M² has moved forward so far that its front end engages with the periphery of the wheel M, the forward movement of the plate M⁵ will of course be arrested. The plate N³ continues, however, to move forward until, when the hammer is fully cocked, the star-wheel N takes a position similar to its initial position, as shown in Fig. 7. Consequently the distance between the faces N⁵ and M⁶ will be increased and the coin will fall from between them into the chute E². The release of the coin does not immediately prevent the hammer from being recocked, since the bar M² is not in engagement with the notch M' of the wheel M. Consequently no impediment is offered to the rotation of the spindle D' during the operation of cocking until the said spindle has made one complete turn, after which the front end of the bar M² will again engage with the notch M'.

The number of times which the pistol can be discharged during one complete turn of the hammer-spindle D' will depend upon the throw of the hammer. In the drawings the hammer requires to be moved through an arc of about ninety degrees in order to cock it. The ratchet-wheel D² has four teeth and the cylinder P' is provided with four chambers. Consequently the wheel M returns to its initial position when the hammer has been cocked and released four times, and for one coin inserted in the mechanism four shots can be obtained. It is obvious that by making two notches in the periphery of the wheel M only two shots and by making four notches in said periphery only one shot would be obtained for every coin inserted in the mechanism; also, by increasing the number of chambers in the cylinder P' concurrently with the number of teeth on the ratchet-wheel D² and the number of arms on the star-wheel N and limiting the throw of the hammer a greater number of discharges could be obtained for one revolution of the hammer-spindle D'. Our invention is of course not restricted in this particular.

The range of movement of the pistol, owing to the ball-and-socket joint by which it is supported, is very considerable. This does not, however, interfere with the reloading, owing to the shape of the scoop or ball-chute I, (clearly shown in Fig. 10,) which will receive a ball from the table J through the orifice J³ in any position which the pistol can assume.

In order to insure the satisfactory reloading of the pistol, we sometimes with a four-cham-

bered pistol, as shown in the drawings, use four balls, some one or other of which will always be in the tubular portion of the scoop I, so that as soon as the cylinder P' rotates, bringing an empty chamber opposite the end of the scoop, a ball will be ready to enter said chamber.

We have shown our improved pistol combined with a number of skittles, against which the ball is projected when the pistol is discharged. We may, however, employ the same with any suitable form of target which would be located at the front end of the plate J, the resetting apparatus being dispensed with.

What we claim is—

1. In a toy pistol, the combination with the barrel, of a chute having a bell-mouth and inclined bottom through which spent balls can return to the pistol, and a revoluble cylinder provided with chambers for holding balls to be projected, said chambers communicating in succession with the chute and with the barrel as the cylinder revolves.

2. In a toy pistol, the combination with the barrel, of a hammer for projecting balls through said barrel, a chute having a bell-mouth and inclined bottom through which spent balls can return to the pistol, a revoluble cylinder provided with chambers for holding balls to be projected, and means whereby the pulling back of the hammer revolves the cylinder and causes said chambers to communicate in succession with the chute and with the barrel.

3. In a game apparatus a pivotally-mounted pistol, a target, an inclined base for said target having an orifice at the lower end thereof, and a chute secured to the pistol the open end of said chute being located immediately under

the orifice in the target-base through which chute spent balls are returned into the pistol.

4. In a game apparatus a pivotally-mounted pistol, an inclined base supporting a target, an orifice in the lower end of said base, and a chute mounted upon and movable with the pistol said chute having a flaring open end located immediately beneath the orifice in the target-base, as and for the purpose set forth.

5. In a game apparatus the combination of a pivotally-mounted pistol, a number of skittles, a support for said skittles, rigid rods pivotally secured to the bases of said skittles and passing loosely through orifices in the skittle-support, a plate located under said support and engaging with the ends of said rods, and means for pulling said plate vertically downward, as and for the purpose set forth.

6. In a game apparatus the combination of a pivotally-mounted pistol, a number of skittles, a support for said skittles, rigid rods pivotally secured to the bases of said skittles and passing loosely through orifices in the skittle-support, a plate located under said support and engaging with the ends of said rods, a spring-supported lever pivoted to the support, a link connecting the plate thereto, and means for rotating the lever on its pivot against the force of its supporting-spring, as and for the purpose set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

HARRY DORNING BAILEY.
HARRY BROGDEN BUDGETT.

Witnesses:

ALFRED K. GOULD,
FREDERICK WILLIAM LE TALL.