

No. 679,289.

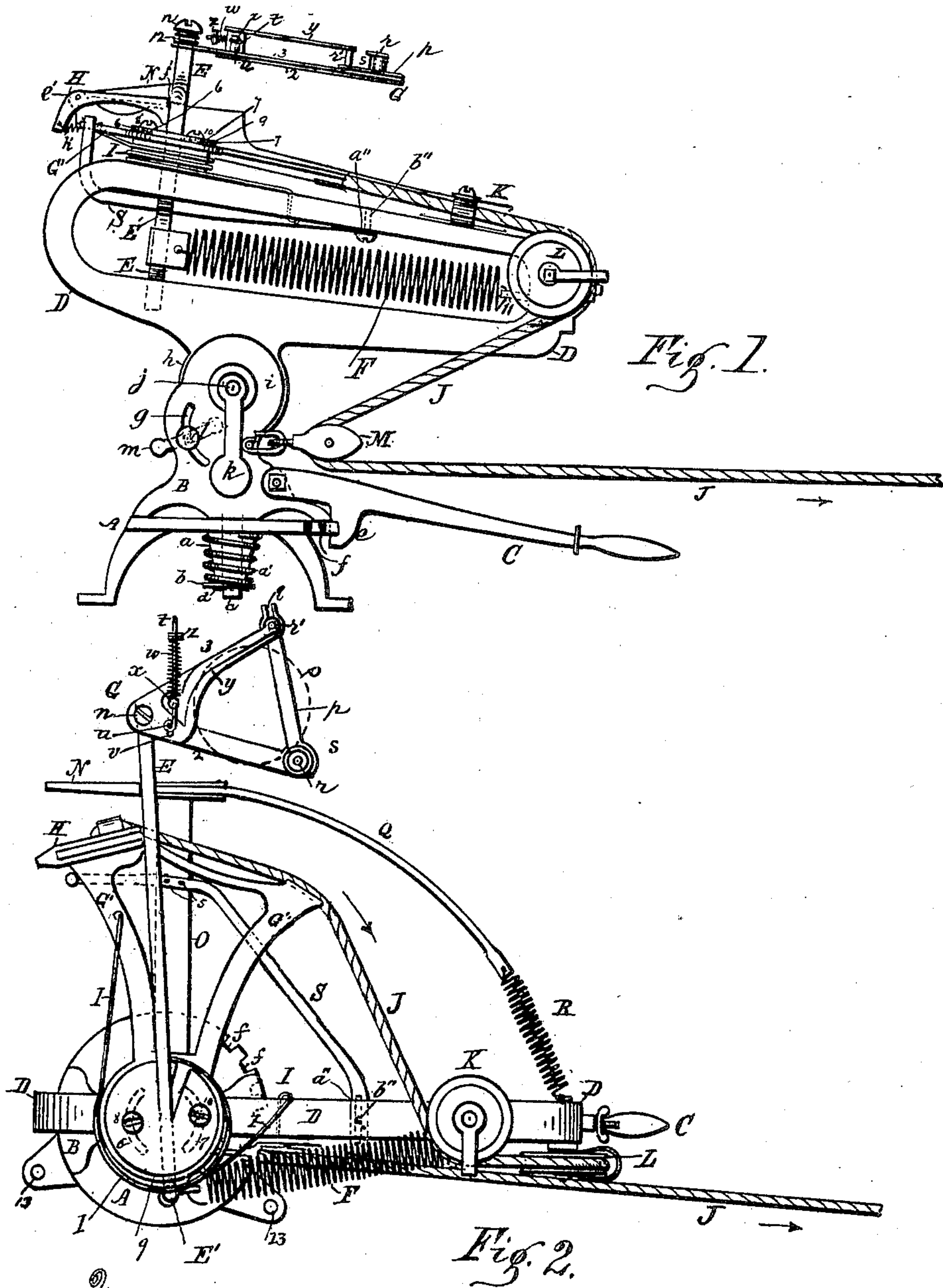
Patented July 30, 1901.

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TARGET TRAP.

(No Model.)

(Application filed Dec. 8, 1900.)

2 Sheets—Sheet 1.



Witnesses.

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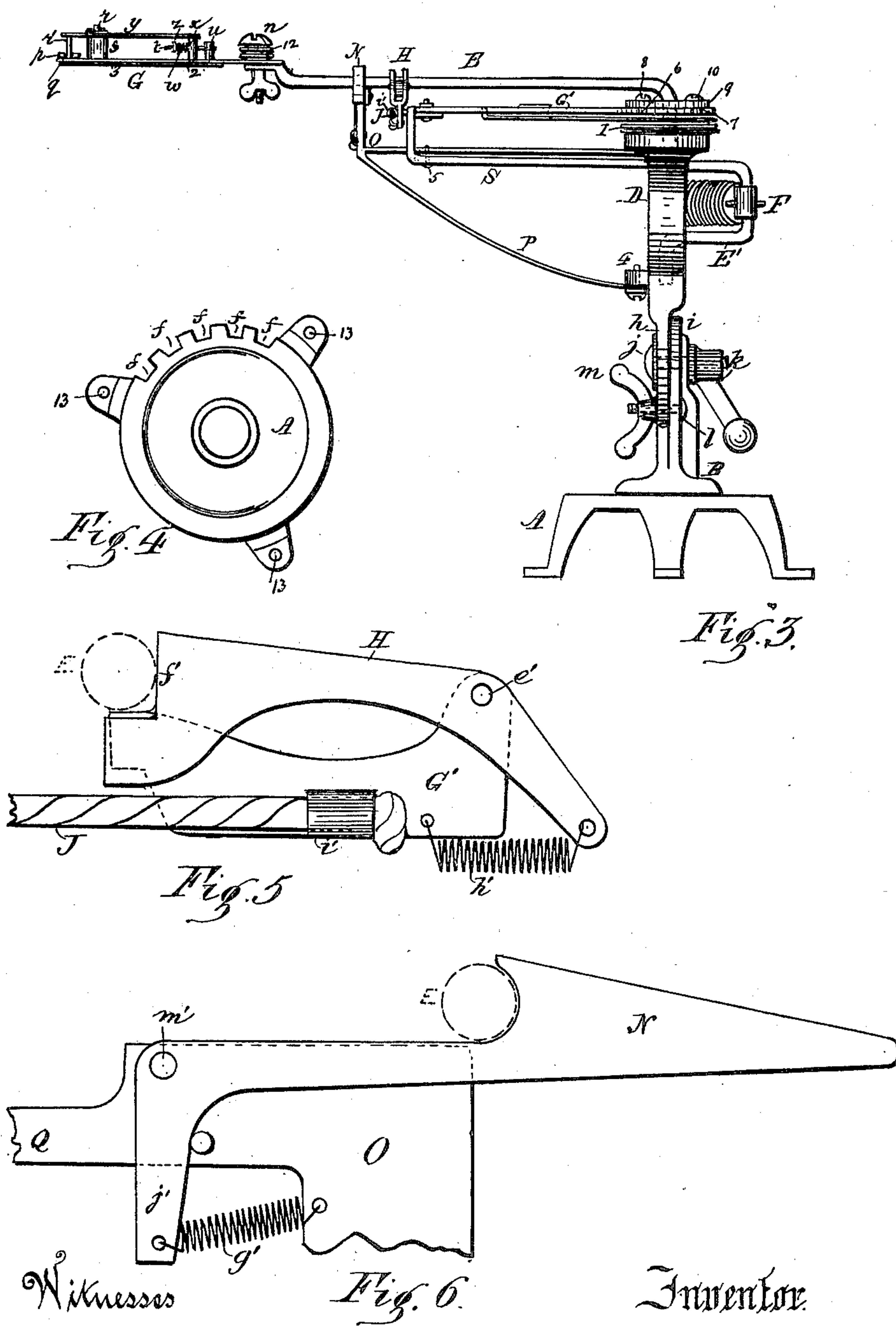
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UNITED STATES PATENT OFFICE.

JOHN BOWRON, OF HAMILTON, CANADA.

TARGET-TRAP.

SPECIFICATION forming part of Letters Patent No. 679,289, dated July 30, 1901.

Application filed December 8, 1900. Serial No. 39,172. (No model.)

To all whom it may concern:

Be it known that I, JOHN BOWRON, a citizen of the Dominion of Canada, residing at Hamilton, in the county of Wentworth, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Artificial Target-Traps; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same.

My first improvement relates to adjusting devices for conveniently raising and lowering the trap, consisting of two circular plates, in one of which is a curved slot, through which a bolt passes from the other plate, tightened by a wing-bolt, by which to adjust the plate of the target-thrower; second, devices for regulating the position of the target-holder to throw the target at various angles or throws; third, an extension-arm constructed with a spring-hook to catch the arm of the thrower on its rebound after the target has been thrown; fourth, devices for assisting in throwing the target, consisting of an arm attached to the head of the machine, on the outer end of which is a double upwardly-inclined plate, which is pivoted and held up by a spring to form a catch to draw back the target-rod (by means of a cord on pulleys) until it reaches a point on a line with the main spring of the machine, which then acts on the said rod to throw the target.

The advantages attained by the said improvements are quick and speedy setting of the trap, saving of hired help at shooting matches, and that one boy with my device can do the work of three boys with the old style of machines.

Reference being made to the accompanying drawings, Figure 1 represents a side elevation of a target-trap embodying my invention. Fig. 2 is a plan view of the same. Fig. 3 is an end elevation. Fig. 4 is a plan view of the base detached. Fig. 5 is a side view of the spring-catch detached for pulling back the movable crank-rod to which the target-holder is attached. Fig. 6 is a side view of the spring-hook for catching and holding the target-rod on its rebound after the target is ejected.

In the drawings, A represents a circular platform or base which supports the upper part of the machine. B is a plate which swings

horizontally on the top surface of the said platform or base A and is held there by a pin *c*, made to pass down from it through a collar *a* on the under side of the said platform. A washer *b* is placed at the bottom of the said collar and a cross-pin *d* is passed through the upright pin *c* under the washer *b* and a coiled spring *a'* made to surround the collar *a* and impinge on the washer to push down the pin and tighten the said movable plate B on the platform A.

C is a lever pivoted at one end of the swinging plate B and provided with a downward projection *e*, which is made to fit in any one of a series of notches *f*, cut in the outside edge of the circular platform A, to hold the upper portion of the trap in any desired position. The upper part of the said movable frame B is circular-shaped and provided with a curved slot *g*, and D is a long open frame having a circular-shaped projection *h* on its lower side, which sets against the similar projection *i* of the platform B. A screw-bolt *j* is passed through both projections, and they are clamped and tightened together by a nut-lever *k*, and to alter and hold the thrower at any angle a bolt *l* is passed through the curved slot *g* and tightened by a wing-nut *m*. The frame D, which carries all the upper machinery, can therefore, with the target-holder, be placed at any angle and be securely held at any desired position.

E is a movable rod having its lower end pivoted in the lower portion of the frame D and provided with a crank-bend *E'* in the central opening or space in the frame D, to which is fastened one end of a strong spiral spring F, the outer end of which is secured to a loop *ll* on the opposite end of the said frame D, so as to act on the said rod E for the purpose of giving a motive force to throw the target-rod violently around after it is drawn back on a line with the spring to eject the target. The outer end of the said rod E has a triangular-shaped frame G pivoted to it by a pivot-pin *n* for holding the target *o* and which may be called the "target-holder." The sides are formed of two plates 23, made to expand to admit the target, and the outer ends are connected with a cross-piece *p*, secured at one end by a pin *r*, which is long enough to have a rubber roller *s* around it

above the plate to facilitate the easy ingress and egress of the target, and the opposite end of the said cross-piece *p* has a slot *q* cut in it to straddle a pin *r'* on the opposite end of the target-holder to allow the outer end of the target-holder to expand to receive the target, and the sides of the holder are made to converge somewhat to hold the target by means of a wire *t*, one end of it being attached to a pin *u*, secured to the under side of the plate 2, and which passes up through a slot *v* in the opposite or top plate 3, and a tightening spiral spring *w*, made to surround the said wire *t* from a pin *x* (which connects the top plate 3 and the curved target-holder plate *y*) to stop-nuts *z* on the outer end of the said wire *t*. This device allows the holder to slightly open to receive the target and close upon it sufficiently to hold it until it is discharged.

The means for swinging the target-rod E to throw the target and stop mechanism to hold the said rod after the target is thrown or set off may be described as follows: G' is a movable arm secured on the vertical portion of the target-rod E, which passes through it, and at the outer end of it is an upwardly-inclined catch-plate H, which is made to catch on the said rod E to pull it half-way around sufficiently for the spring F to act on it and shoot off the target, and a spiral spring I is coiled around its base, one end being fastened to the said arm and the other end to the frame D, which thus brings the arm back to its normal position after setting off the target. The said arm G' is pulled back by means of a rope or cord J, which is attached to it and made to pass over the sheaves K L on the frame D and a pulley M, attached to the movable block B. Pulling on the said cord J moves the said plate and target-holder over the center of the large spring F, which then acts on the rod E and forcibly throws it around to complete its circle and send the target off in the air a distance from the device at any desired angle.

A device is made for catching the target-arm rod E on its completion of the circle after throwing the target, which is indicated on the drawings, by a hook N, attached to the end of a bracket O, which is secured to the frame D and strengthened by a brace P on the under side, secured at the lug 4 of the said frame D. The said hook has a connecting base-rod Q attached at the right end to a spiral spring R, said spring being secured to one end of the frame D to allow of sufficient play of the hook on the rebound of the target-holder rod E after the target is discharged.

S is a curved rod attached to the under side of the bracket O by rivets 5 and having in its inner end a slot *a''*, through which a screw *b''* is made to pass into the frame D. By this means the bracket O can be steadied and its exact position regulated or changed at will. The left end of the said rod S projects forward past the bracket O and terminates with

an upward bend at the outside of the movable arm G', against which it impinges to retain the said arm and its catch H in their normal position when at rest, as in Fig. 2.

It may be observed that the movable arm G' is provided with two semicircular-shaped slots 6 7 at its head or place of bearing on the frame D, over which is a circular crown-plate 9, through which the two screws 8 10 pass and also through the slots 6 7 into the head of the frame D. By this means the said arm G' is allowed to be moved back in a quarter-circle, drawing the target-rod E with the target until the spring F acts upon the latter to complete the rotation of the target-rod and forcibly eject the target.

12 is a tension-spring around the screw pivot-pin *n*, which secures the target-holder G to the target-throwing rod E, and it may be more fully explained that the catch H is pivoted to the arm G' by the pivot-pin *e'*, and its top edge from there back to the notch *f'* is a rising inclined plane and is formed to be depressed at that part when the target-arm E swings around over it at each throw of a target. A spiral spring *h'*, connecting the lower end of the catch H to the arm G', pulls the rear part of the catch up again to its position after the rod E rides over it.

i' is a hollow projection on the end of the arm G' under the catch H, through which the cord J passes to operate or pull back the said arm preparatory to each throw of the target.

The hook N, to catch and retain the target-rod E, at the termination of each throw of the same, is pivoted to the bracket O by a pivot-pin *m'*, and has also a rising inclined top surface for the rod E to ride over, and is depressed as the rod E comes in contact with its inclined plane, and as soon as the said rod E passes the highest point of the incline, the spiral spring *g'*, which is attached to the downward projection *j'* at the rear part of the hook N, and the bracket O, pulls the said catch up again, and holds the rod in place until the other catch H draws the rod back to the spring F, to throw another target.

The practical operation of the device may be described as follows: The machine is secured to any solid platform by bolts passed through the holes 13 of the legs on the base A. The target *o*, which is a circular hollow disk, is placed on the target-holder G, as shown by the dotted lines, Fig. 2, the angle of the holder being adjusted by the wing-nut and bolt *m l* and the position of the upper parts by the projection *e* on the lever C being placed in the desired notch *f* on the base A, the relative positions of the parts being as shown at Figs. 1 and 2. In setting off the target *o* the rope J (which is attached to the movable arm G', to which the catch H is secured) is made to pass around its outer periphery, thence to the sheaves K and L, to the pulley M, and from there to any desired distance from the trap. The rope being pulled, the arm G' is drawn back. The catch

H on its outer end draws the target-rod E (with the target-holder attached) until the said target-rod passes the center-line of the main motive-spring F, when by means of the crank portion E' of the spring which is attached thereto the said target-rod is thrown around to complete its revolution, and ejecting the target to be fired at on the wing. The spring I, attached to the arm G', pulls the latter back again to its place, and the target-rod E on the completion of its revolution is caught by the hook N to retain it in its proper position for the next throw of a target. The spiral spring R, attached to the frame D, and the rod Q, which is connected to the said catch N, act as a tension-buffer to ease off the strain on the parts on the rebound of the arm E.

Having thus described my device and its advantages, what I claim is—

1. In a target-trap, in combination with a frame mechanism carrying a target-rod, of a movable arm, through which the said target-rod passes, provided with curved slots, a crown-plate placed over them and two screws made to pass through the said crown-plate, and through the slots into the frame, by which the said arm is capable of being moved a little over a quarter of a circle, as and for the purpose specified.

2. In a target-trap, the combination with a frame carrying a target-rod, and spring to actuate the same, of a spring-catch, secured at the end of a bracket attached to the main frame, and a rod with a coiled spring at the end of it, secured to the main frame, for holding the target-rod after the target is thrown, substantially as and for the purpose specified.

3. In a target-trap, the combination with a frame and supporting mechanism, of the crank-throwing arm, the movable arm carrying the catch to draw the target-rod backward, a bracket attached to the main frame carrying a catch to hold the target-rod after throwing the target, and a spring secured to the movable arm, and the frame for pushing forward the movable arm after each throw of the target, substantially as specified.

4. In a target-trap, the combination with a frame for carrying the target mechanism, of a spring-catch inclined upward in its top side, attached to a movable arm pivoted to the head of the trap, a spiral spring attached to the outer end of the catch and to the said arm so as to incline the rear part of the catch upward so as to engage with the target-rod to draw it back by means of a rope attached to the said movable arm, far enough to allow the main actuating-spring to act upon it to throw the target, substantially as described.

5. In a target-trap, the combination with a frame for carrying the target mechanism, of a hook pivoted to a bracket secured firmly to the head of the machine, and formed with a rising inclined top surface for the throwing-rod to ride over and be held thereby, and a spiral spring attached to a projection in rear of the hook, to draw the point of the hook up to catch the throwing-rod after it rides over the hook, on its rebound after the throw of a target, substantially as described.

Dated at Hamilton, Ontario, the 10th day of October, 1900.

JOHN BOWRON.

In presence of—

ERNEST M. LEVITT,
WM. BRUCE.