

J. A. CRENSHAW.

TARGET TRAP.

APPLICATION FILED AUG. 26, 1908.

917,850.

Patented Apr. 13, 1909.

2 SHEETS—SHEET 1.

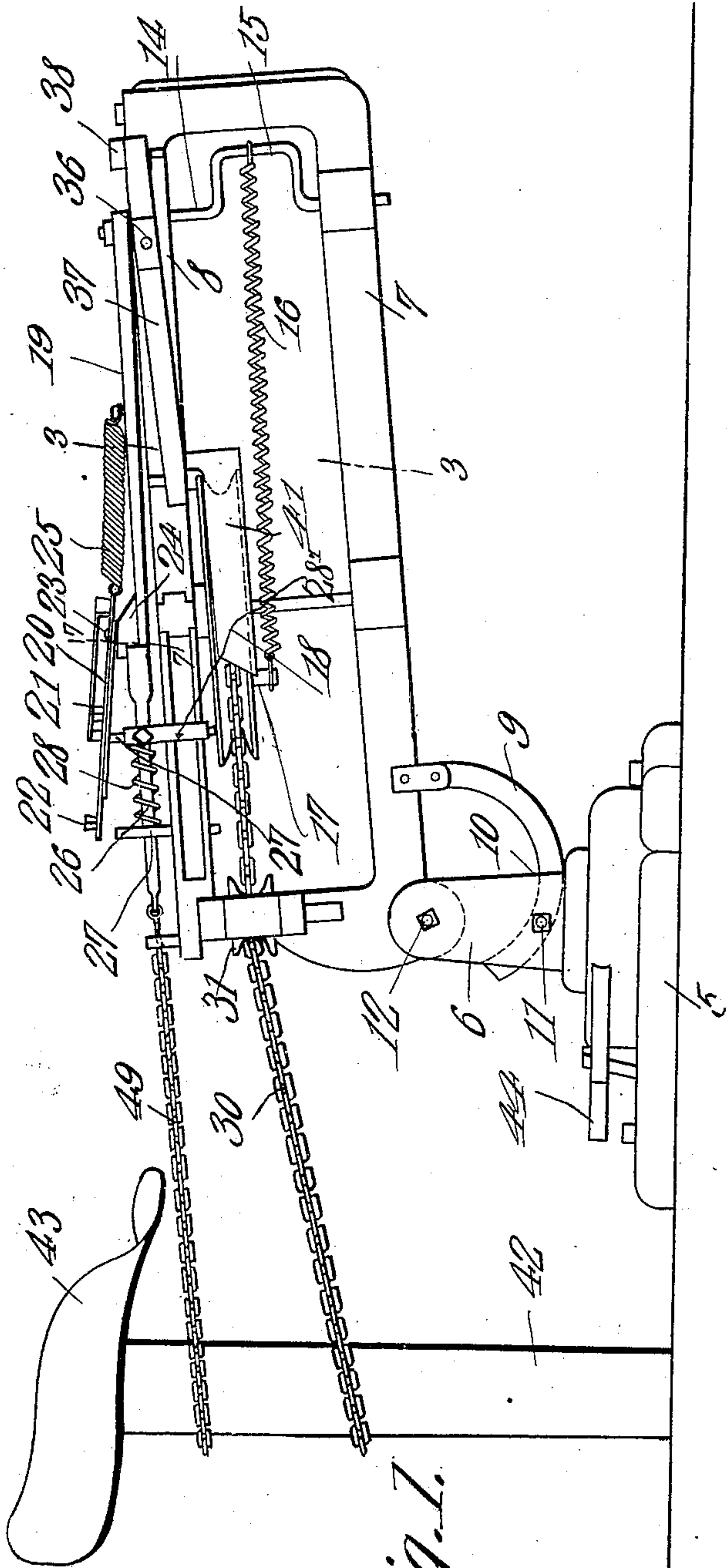


Fig. 1.

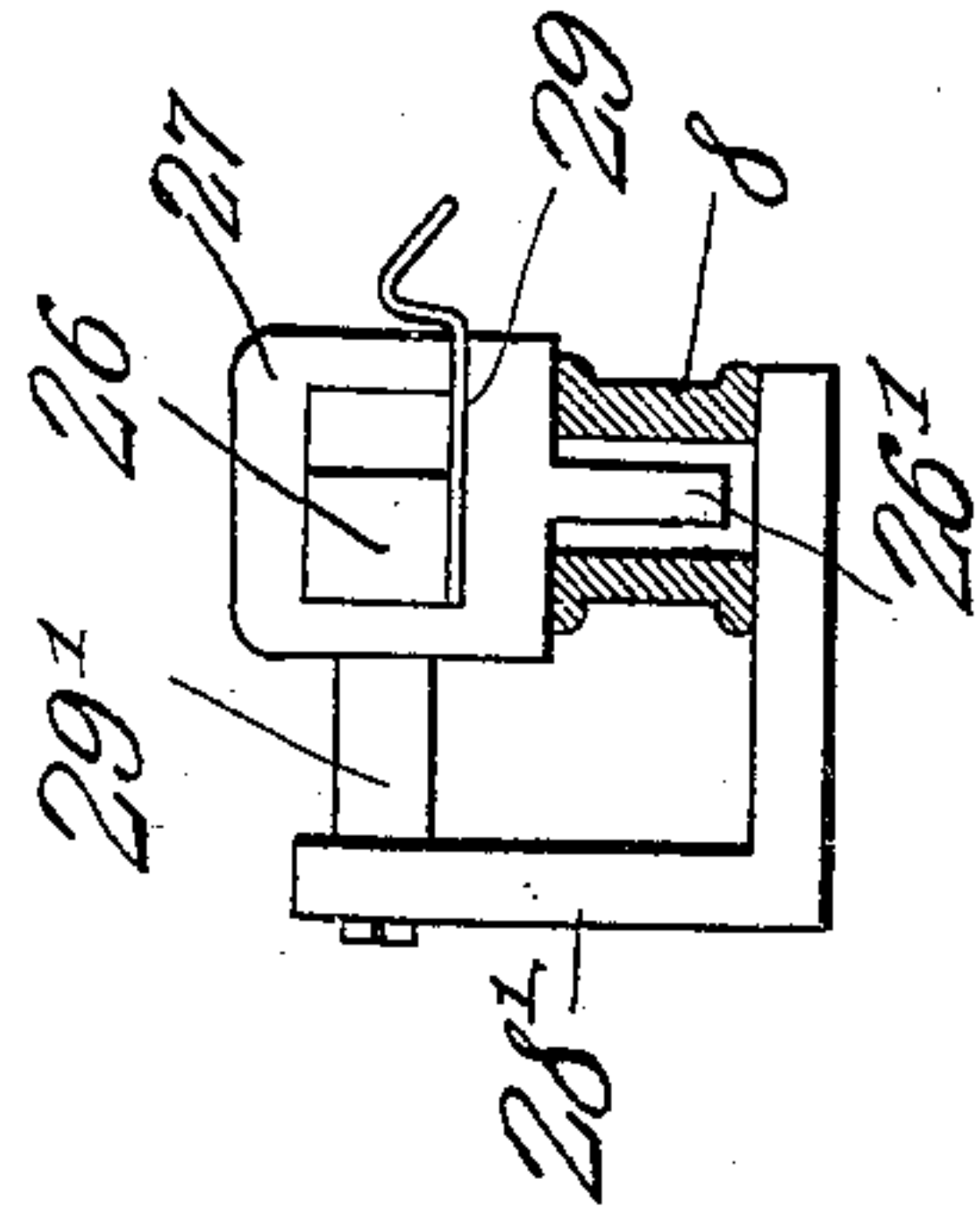


Fig. 7.

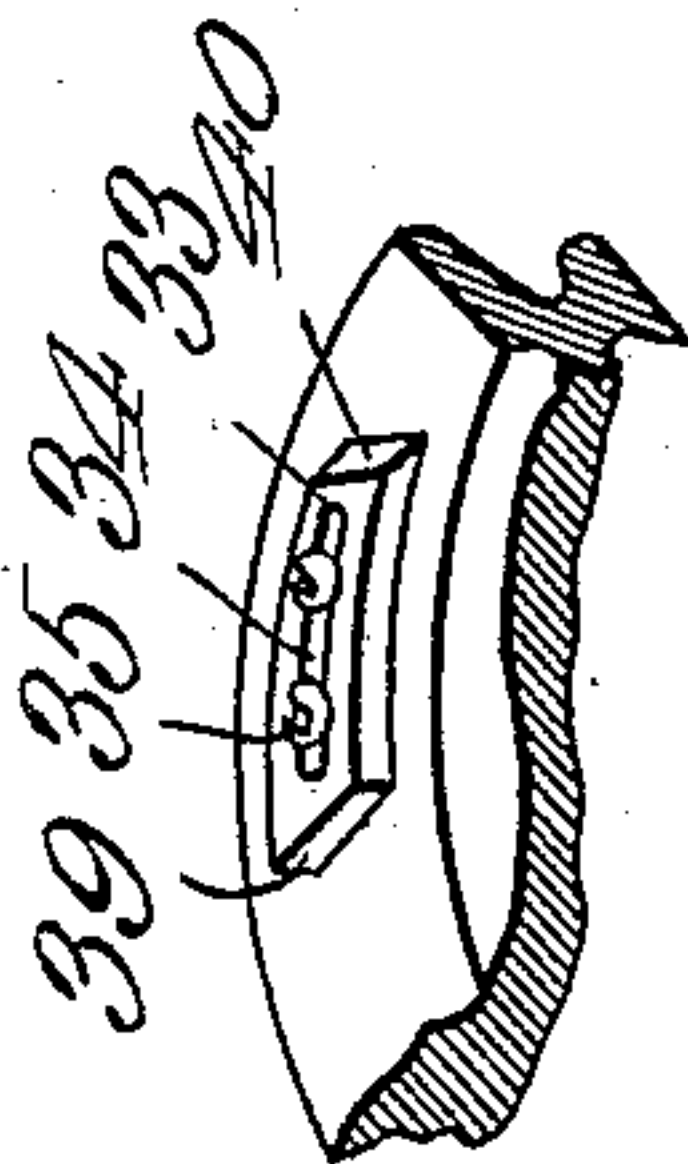


Fig. 4.

Witnesses

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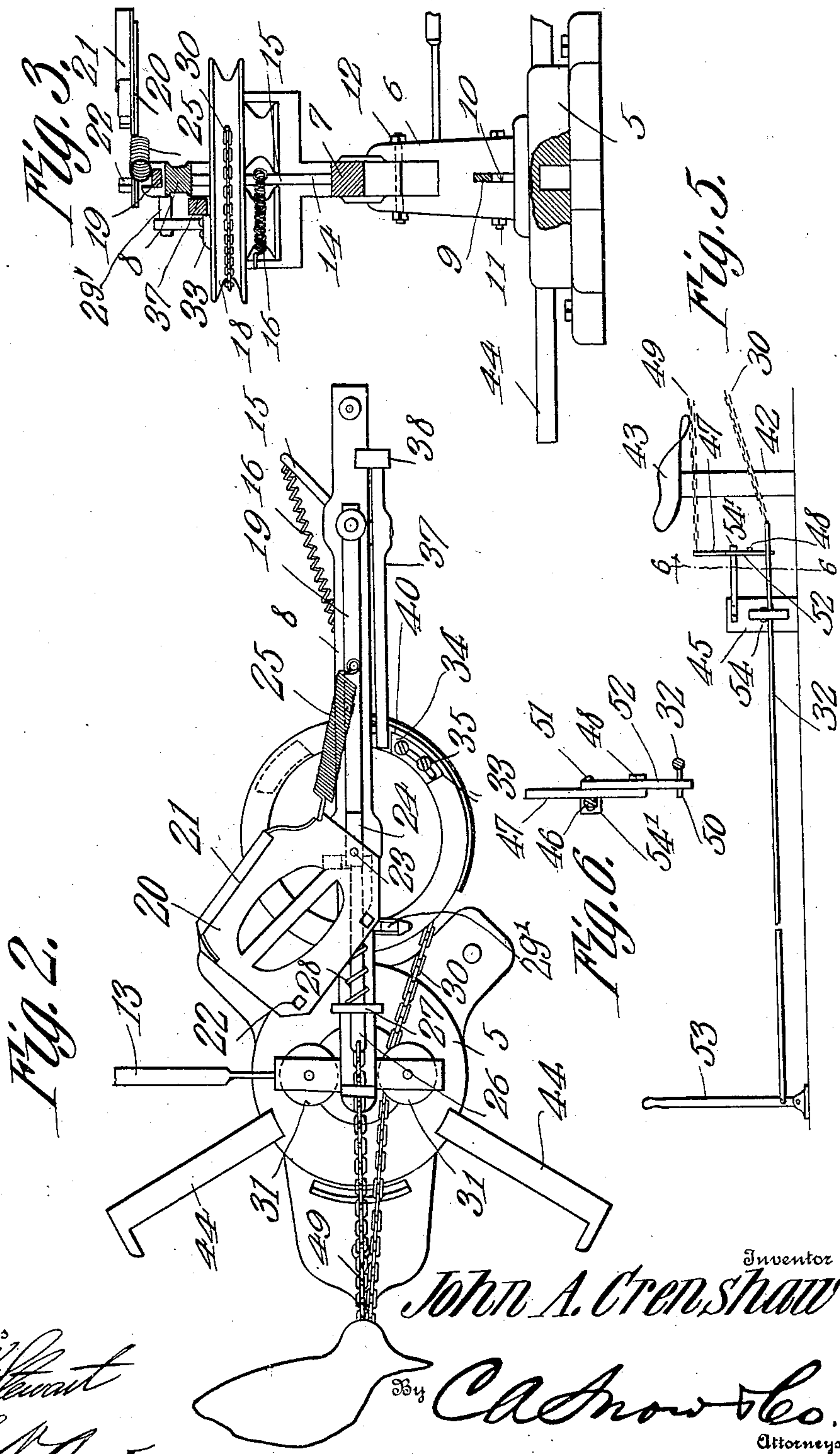
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# UNITED STATES PATENT OFFICE.

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## TARGET-TRAP.

No. 917,850.

Specification of Letters Patent.

Patented April 13, 1909.

Application filed August 26, 1908. Serial No. 450,385.

*To all whom it may concern:*

Be it known that I, JOHN A. CRENSHAW, a citizen of the United States, residing at Coleman, in the county of Sumter and State of Florida, have invented a new and useful Target-Trap, of which the following is a specification.

This invention relates to target traps of that general class especially designed for throwing or sailing clay pigeons and used by sportsmen, sharp-shooters and other persons practicing marksmanship.

The object of the invention is to provide a strong, durable and thoroughly efficient trap of the character described in which a single spring is employed for actuating the target throwing arm.

A further object is to provide a target trap including a supporting frame mounted for rotation on a base or standard and having a tensioning device journaled thereon and operatively connected with the throwing arm for actuating the latter when the latch mechanism is released.

A further object is to provide a pivoted locking lever one end of which extends in the path of movement of the throwing arm, while the opposite end thereof engages an adjustable stop on the pulley or tensioning device for maintaining the power spring under tension, said locking lever being actuated by engagement with the throwing arm to release the tensioning device.

A further object is to provide improved means for setting the trap, the operating lever of the setting mechanism also serving to actuate the latch releasing mechanism.

A still further object of the invention is generally to improve this class of devices so as to increase their utility, durability and efficiency.

Further objects and advantages will appear in the following description, it being understood that various changes in form, proportions and minor details of construction may be resorted to within the scope of the appended claims.

In the accompanying drawings forming a part of this specification: Figure 1 is a side elevation of a target trap constructed in accordance with my invention, showing the throwing arm in position to receive a clay pigeon or target. Fig. 2 is a top plan view of the same. Fig. 3 is a vertical sectional view taken on the line 3—3 of Fig. 1. Fig.

4 is a detail perspective view of a portion of the wheel or pulley showing the manner of mounting the segmental stop plate in position thereon. Fig. 5 is a side elevation of the operating lever and its associated parts. Fig. 6 is a transverse sectional view taken on the line 6—6 of Fig. 5 and looking in the direction of the arrow. Fig. 7 is a detail transverse sectional view taken on the line 7—7 of Fig. 1.

Similar numerals of reference indicate corresponding parts in all of the figures of the drawings.

The improved target trap forming the subject matter of the present invention comprises a base or support 5 upon which is mounted for rotation a standard 6, the latter having its upper end bifurcated to form spaced ears between which is pivotally mounted an adjustable supporting frame carrying the target throwing arm and its associated parts.

The supporting frame comprises spaced parallel arms 7 and 8 to one of which is secured a segment 9, the free end of which passes through a slot 10 in the standard 6 and forms a guide for the tilting supporting frame when the latter is adjusted vertically of the standard, said frame being locked in adjusted position by a clamping screw or similar fastening device 11 extending through the standard and bearing against the segment 9, as best shown in Fig. 1 of the drawings.

One end of the pivot bolt 12 is extended laterally and provided with an operating handle 13 by means of which the free end of the supporting frame may be raised or lowered. Journaled in suitable bearings in the arms 8 and 7 is a shaft 14 having its intermediate portion bent laterally to form a crank arm and to which is secured the adjacent end of a coiled spring 16, the opposite end of the spring 16 being secured to a pin 17 depending from a tensioning device or pulley 18. Secured to and mounted for rotation with the shaft 14 is a throwing arm 19 on the free end of which is pivotally mounted the target carrier 20.

The carrier 20 may be of any approved design but is preferably in the form of a flat plate having a vertically disposed flange 21 on one longitudinal edge thereof and one or more retaining pins or rollers 22 extended vertically from the opposite longitudinal edge of the plate. The plate 20 is pivotally



mounted at 23 on a block or support 24 carried by the free end of the carrier arm, said carrier being yieldably connected with the throwing arm by means of a coiled spring 25, one end of which is secured to the throwing arm, while the opposite end thereof is connected with the carrier at a point adjacent the pivot 23.

The throwing arm 19 is actuated by the spring 16 to throw or sail the targets or clay pigeons when the latch 26 is released, said arm making a complete revolution.

Secured to the upper arm 8 of the supporting frame near the pivoted end of the latter are spaced guides 27 in which is slidably mounted the latch 26, the free end of the latch being normally and yieldably supported in the path of movement of the throwing arm, by means of a coiled spring 28.

Secured to the forward end of the latch 26 is a spring plate or catch 29, the free end of which is beveled so as to guide the adjacent end of the carrier arm into the socket formed by the plate or catch, thereby to lock the arm in operative position.

The tensioning device 18 is preferably in the form of a pulley having a peripheral groove formed therein for the reception of an operating cord or chain 30, one end of the chain being secured to an anchoring lug or pin in the grooved face of the pulley, while the opposite end thereof passes between a pair of idle rollers 31 on the rear end of the supporting frame and is connected with the adjacent end of a longitudinally movable rod 32.

Secured to the upper surface of the pulley 18 is a stop plate 33 having a segmental slot 34 formed therein for the reception of screws or similar fastening devices 35, by means of which the stop plate may be fastened in position on the pulley.

Pivotally mounted at 36 on the upper arm 8 of the supporting frame is the intermediate portion of a gravity actuated locking lever 37, the short end of which is provided with a trip lug 38, while the long end of the lever is arranged to bear against the stop plate 33 and lock the pulley against rotation after the latter has expanded or placed the spring 16 under tension.

One end of the stop plate is provided with a square shoulder 39 for engagement with the long end of the locking lever, while the opposite end thereof is inclined or beveled at 40 so as to permit the same to readily pass beneath the adjacent end of the locking lever when the wheel is rotated to effect the expansion of the spring, the long end of the lever 37 dropping by gravity in engagement with the shoulder 39 as soon as the stop plate is in the position shown in full lines in Fig. 2 of the drawings.

A plate or shield 41 is secured to the supporting frame and partially encircles the

grooved face of the pulley, thereby to form a guard for the chain 30 and assist in preventing accidental displacement of the same.

Mounted at the rear of the trap is a post or standard 42 having a seat 43 upon which the operator may sit when operating the machine, there being spaced foot rests 44 extending laterally from the base of the standard 6 so that the operator may rotate the supporting frame and thus direct the flight of the clay pigeon or target. Arranged at the rear of the post 42 is a shorter post 45 having an arm 46 extending laterally therefrom and on which is pivotally mounted a lever 47. The lower end of the lever 47 is provided with an inwardly extending lug or finger 48, while the upper end thereof is secured to the adjacent end of a chain or cable 49, the opposite end of said chain or cable being connected with the rear end of the sliding latch 26. Mounted for rocking movement on the lever 47 and preferably retained in position on said lever by the pivot pin 51 is an auxiliary lever 52, which latter extends in the path of movement of a trip pin or arm 50 extending laterally from the rod 32 and is actuated by said trip arm or pin when the main operating lever 53 is moved in the direction of the seat 43. The rear end of the rod 32 is pivotally connected with the operating lever 53, while the intermediate portion thereof bears against a roller 54 journaled in a suitable bracket carried by the post 45. A stop 54' is also preferably secured to the end of the arm 46 for limiting the forward movement of the lever 47.

It will thus be seen that when a rearward pull is exerted on the lever 53 the cord or chain 30 will rotate the pulley 18 and place the spring 16 under tension so that when the latch 26 is released, said spring will cause the throwing arm to describe a circle and thus discharge a target from the carrier 20, the spring 25 serving to prevent injury to the carrier when the latter is swung outwardly by centrifugal force during the movement of the throwing arm. This spring 25 also serves to impart a slight vibratory movement to the carrier so as to spin the clay pigeon or target and give the latter the desired curve or direction of flight. It will also be observed that when the operating lever 53 is moved in the direction of the seat 43 the pin 50 will come in contact with the auxiliary lever 52 and cause the latter to bear against the lug 48 thus moving the upper end of the lever 47 rearwardly and exerting a longitudinal pull on the chain or cable 49 to effect the release of the latching mechanism. The pin 50 having passed under the lever 52 will allow the spring 28 to throw the latch 26 back in position to again engage the throwing arm, as will be readily understood.

The guides 27 are provided with depending pins or extensions 26' which enter slots or



recesses formed in the upper arm 8 of the supporting frame, said guides having a limited lateral movement on the arm 8 so as to yield slightly when the throwing arm comes in contact therewith.

Secured to the bottom of the arm 8 is a bracket 28' on the upper or free end of which is mounted a buffer 29', the latter being formed of rubber or other yieldable material and adapted to receive the impact of the adjacent keeper 27 when the throwing arm comes in contact with the catch 29, thereby to prevent jar or injury to said latch and also to the target carrier.

In operation a target or clay pigeon is placed on the carrier 20 and a rearward movement imparted to the lever 53 which rotates the wheel 18 and places the spring 16 under tension, in the manner before described. As the wheel 18 is rotated the inclined end of the stop 33 will pass under the adjacent end of the lever 37 and elevate the latter so as to cause said lever to bear against the shoulder 39 and lock the wheel against rotation in a reverse direction. In order to discharge the clay pigeon or target from the carrier a forward movement is imparted to the lever 53 thus releasing the latch and allowing the spring 16 to actuate the throwing arm, which latter travels in the arc of a circle, as before stated. As the throwing arm rotates, said arm will bear against the trip 38 and elevate the long end of the locking lever so as to disengage said lever from the stop 33 and permit the pulley to rotate to the position of starting shown in Fig. 3 of the drawings and in which position the spring may be again placed under tension by exerting a rearward pull on the lever 53, in the manner before described.

The throwing arm 19 makes a complete revolution at each operation of the device, the spring latching member engaging and supporting the free end of the throwing arm in alinement therewith after each complete movement of said arm.

It will thus be seen that there is provided a comparatively simple and thoroughly efficient trap in which but a single actuating spring is employed for effecting the movement of the throwing arm.

From the foregoing description it is thought that the construction and operation of the device will be readily understood by those skilled in the art and further description thereof is deemed unnecessary.

Having thus described the invention what is claimed is:

1. In a target trap, a supporting frame, a throwing arm pivotally mounted on the frame, a target carrier mounted on the throwing arm, a tensioning element disposed at a point removed from the pivotal axis of the throwing arm, a spring connecting the pivoted end of the throwing arm and tensioning

element, means for rotating said element to place the spring under tension, means for locking the throwing arm in operative position, and means for releasing the locking means.

2. In a target trap, a supporting frame, a crank shaft journaled in the frame, a throwing arm secured to the crank shaft, a target carrier mounted on said arm, a spring secured to the crank shaft, a tensioning element disposed at a point removed from the pivotal axis of the throwing arm and operatively connected with the spring, means for rotating said element to place the spring under tension, means for locking the throwing arm in operative position, and means for releasing the locking means.

3. In a target trap, a base, a standard mounted for rotation on the base, a supporting frame mounted for tilting movement on the standard, a target throwing arm pivotally mounted on the supporting frame, a tensioning device disposed at a point removed from the pivotal axis of the throwing arm, a spring connecting the pivoted end of said throwing arm and tensioning element, a target carrier secured to the throwing arm, means for rotating said element to place the spring under tension, means for locking the throwing arm in operative position, and means for releasing the locking means.

4. In a target trap, a supporting frame, a throwing arm pivotally mounted on the frame, a target carrier mounted on the throwing arm, a crank arm journaled in the frame and forming the pivotal axis of the throwing arm, a tensioning element disposed at a point removed from the pivotal axis of the throwing arm, a spring connecting the tensioning element and the intermediate portion of the crank arm, means for rotating said element to place the spring under tension, means for locking the throwing arm in operative position, and means for releasing the locking means.

5. In a target trap, a standard, a supporting frame pivotally mounted for tilting movement on the standard, a crank shaft, a tensioning device mounted for rotation on the supporting frame between the crank shaft and the pivoted end of the frame, a spring connecting the tensioning element and crank shaft, a target throwing arm rigidly secured to and movable with the crank shaft, a target carrier mounted on the free end of the throwing arm, means for locking the throwing arm in operative position, means for rotating said element to place the spring under tension, and means for releasing the locking means.

6. In a target trap, a supporting frame, a throwing arm pivotally mounted on the supporting frame, a target carrier secured to the throwing arm, a tensioning element, a spring connecting the throwing arm and tensioning



element, a stop carried by the tensioning element, a locking lever pivotally mounted on the frame and having one end thereof arranged to engage the stop and its opposite end disposed in the path of movement of the throwing arm, means for locking the throwing arm in operative position, means for rotating said element to place the spring under tension, and means for releasing the locking means, said locking lever being disposed in the path of movement of the throwing arm and actuated by the latter to elevate the lever from engagement with the stop on the tensioning element.

7. In a target trap, a supporting frame, a crank shaft journaled in the frame, a throwing arm secured to and mounted for rotation with the crank shaft, a target carrier pivotally mounted on the throwing arm, a pulley journaled on the supporting frame, a spring connecting the crank shaft and pulley, a locking lever adapted to engage the pulley for locking the latter against rotation, means for locking the throwing arm in operative position, and means for rotating the pulley to effect the tension of the spring, said throwing arm being arranged to disengage the locking lever from the pulley.

8. In a target trap, a supporting frame, a throwing arm pivotally mounted on the frame, a tensioning device disposed at a point removed from the pivotal axis of the throwing arm, a power spring connecting the tensioning device and the pivoted end of the throwing arm, a target carrier pivotally mounted on the throwing arm, a spring connecting the target carrier and throwing arm, means for locking the throwing arm in operative position, means for rotating said element to effect the tension of the power spring, and means for releasing the locking means.

9. In a target trap, a standard, a supporting frame pivotally mounted on the standard and including spaced bars, a crank shaft journaled in said bars, a throwing arm rigidly secured to one end of the crank shaft, a target carrier mounted on the free end of the throwing arm, a vertical shaft spaced from the crank shaft, a pulley mounted for rotation on the vertical shaft, a spring connecting the pulley and crank shaft, means for locking the throwing arm in operative position, means for rotating the pulley to place the spring under tension, and means for releasing the locking means.

10. In a target trap, a base, a revoluble standard mounted on the base, a supporting frame mounted for tilting movement in the standard, means for locking the supporting frame in adjusted position, a crank shaft journaled in the supporting frame, a throwing arm rigidly secured to one end of the crank

shaft, a target carrier mounted on the throwing arm, means for locking the throwing arm in operative position, a pulley journaled on the frame and provided with a depending pin, a power spring connecting the pin and crank shaft, a slotted stop plate secured to the upper face of the pulley, means for rotating the pulley to place the spring under tension, a gravity actuated locking member arranged to engage the stop plate for locking the pulley against rotation, means for releasing the throwing arm, said locking lever being actuated by engagement with the throwing arm to release the pulley.

11. In a target trap, a supporting frame, a throwing arm mounted for rotation on the frame, a target carrier mounted on the throwing arm, a spring actuated latch adapted to engage the throwing arm for locking the latter in operative position, a tensioning device, a power spring connecting the tension device and throwing arm, an operating lever, a rod connected with the operating lever, a flexible connection between the tensioning device and rod, a latch operating lever, a flexible connection between the latch operating lever and latch, and means carried by the rod and adapted to actuate the latch operating lever to release said latch.

12. In a target trap, a supporting frame, a crank shaft journaled in the frame, a throwing arm secured to the crank shaft, a target carrier mounted on the throwing arm, a pulley journaled on the frame, a spring connecting the pulley and crank shaft, a latch disposed in the path of movement of the throwing arm for locking the latter in operative position, a main operating lever for rotating the pulley to effect the tension of the power spring, a rod pivotally connected with the operating lever, a flexible connection between the pulley and rod, pivotally connecting latch operating levers arranged in advance of the main operating lever and operatively connected with the latch, a pin carried by the rod and adapted to bear against one of said latch operating levers for actuating the other to release the latch, an adjustable stop secured to the upper face of the pulley, and a locking lever arranged to bear against the stop for locking the pulley against rotation, said locking lever being disposed in the path of movement of the throwing arm and actuated by the latter to release the pulley.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JNO. A. CRENSHAW.

Witnesses:

E. W. CRENSHAW,  
H. J. CRENSHAW.