

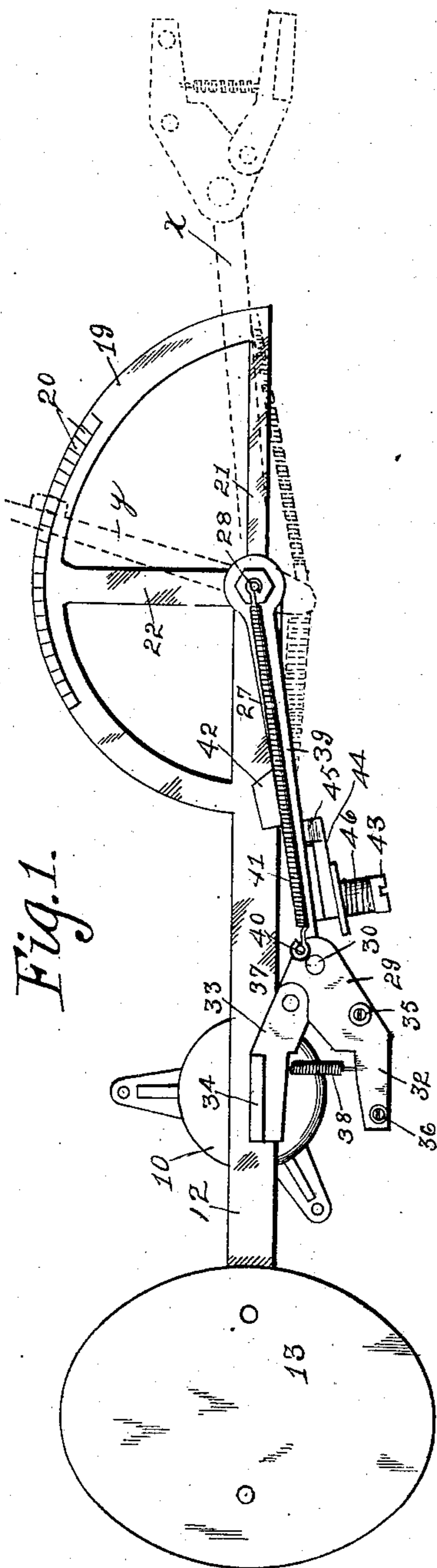
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PATENTED JAN. 1, 1907.

J. W. HAUGHAWOUT.

TARGET TRAP.

APPLICATION FILED MAR. 1, 1904.



Witnesses

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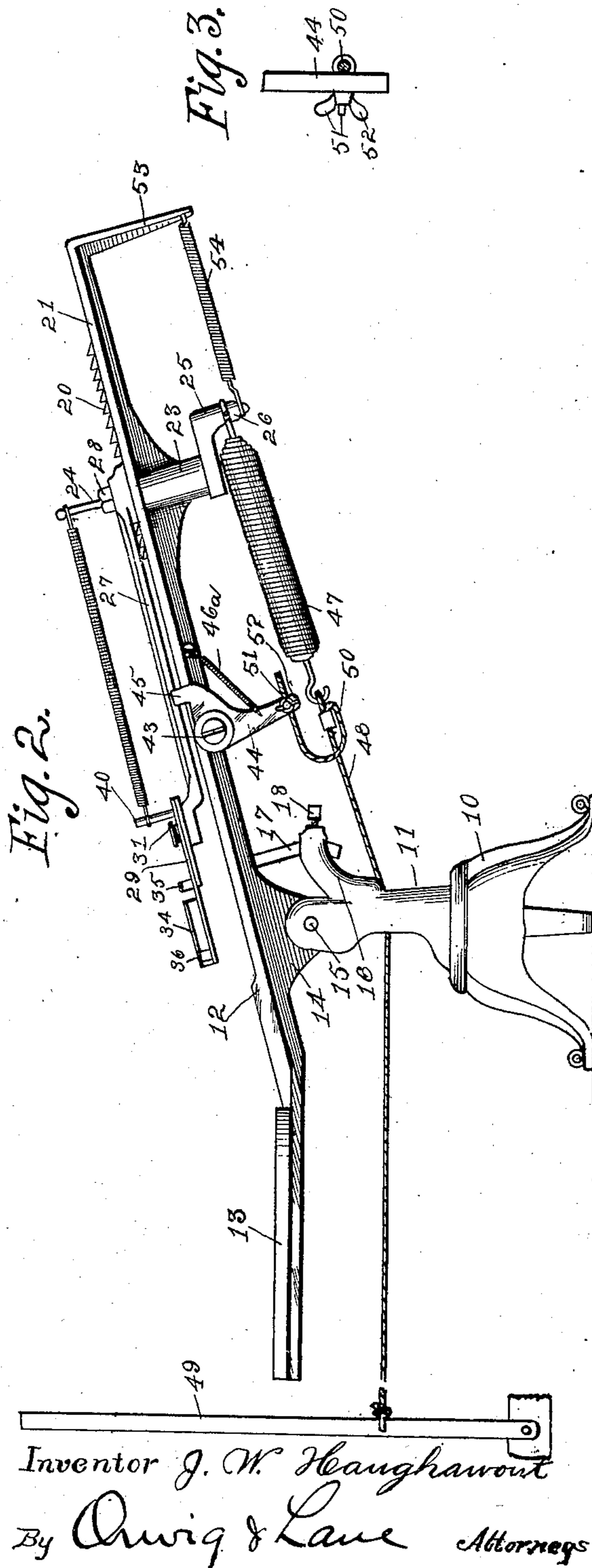
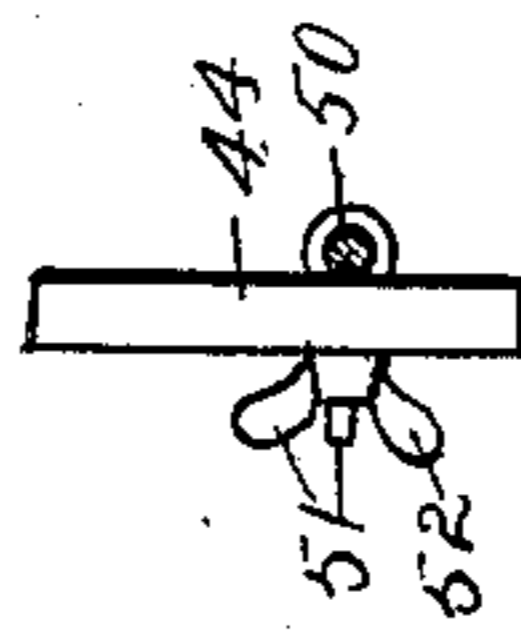


Fig. 3.



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TARGET-TRAP.

No. 840,323.

Specification of Letters Patent.

Patented Jan. 1, 1907.

Application filed March 1, 1904. Serial No. 196,066.

To all whom it may concern:

Be it known that I, JOHN W. HAUGHAWOUT, a citizen of the United States, residing at Fort Dodge, in the county of Webster and State of Iowa, have invented a certain new and useful Target-Trap, of which the following is a specification.

The objects of my invention are to provide a target-trap of simple, durable, and inexpensive construction in which the arm makes a complete revolution on its axis as said arm is operated by the driving-spring, and is so constructed that advantage is taken of the momentum of the arm to force it past the dead-center, and, further, to provide a mechanism whereby the arm, which is thrown past the dead-center point at its outer limit of movement, will be prevented from a return movement even through the tension on the driving-spring is not released, and it is further my object to provide a spring for drawing the arm to its point of starting when the tension of the driving-spring is released.

A further object is to provide a mechanism which is connected with the rope which operates the driving-spring and is adjustably connected with the trigger, so arranged that by adjusting the length of this rope relative to the trigger the distance for throwing the disk can be determined, for if this rope is of greater length the trigger will not be released until the spring is drawn out to a greater distance than if the rope is made shorter, for the length of this rope relative to the trigger determines the point at which the trigger is released, and, further, to provide a table designed to be attached to the rear end of the pivotally-mounted frame, upon which the boy who is to place the disks in the carrier of the throwing-arm can rest his arms.

A further object is to provide a device of this class in which the draft on the driving-spring will be constantly in the center of the pivotal support, so that the drawing of the rope to operate the driving-spring will not swing the frame in either direction.

My invention consists in certain details in the construction, arrangement, and combination of the various parts of the device whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a top or plan view of the com-

plete device, showing the throwing-arm in dotted lines at its outer limit of movement and also showing a second position of the arm in dotted lines and the relation of said arm to the ratchet-faced semicircular portion for taking advantage of the recoil. Fig. 2 is a side elevation of the complete device, and Fig. 3 is a detail view of the fastening device for holding the rope for operating the trigger in position adjustably relative to said trigger.

Referring to the accompanying drawings, I have used the reference-numeral 10 to indicate the base of my trap, and the reference-numeral 11 to indicate the post, which is rotatably mounted in the base 10 and to the upper portion of which the frame 12 is pivotally attached. This frame 12 is of the ordinary construction. The table 13 is attached at the rear end of the frame and at such an angle to the body portion of the frame that the table will be substantially parallel with the ground when the frame is in its normal position. Upon this table the boy who loads the carrier rests his arms while the device is being operated. There is an extension 14 beneath the frame and integral with it, through which the pivot 15 in the top of the post 11 passes in such a way as to pivotally mount the entire frame.

Extending forwardly from the post 11 is an arm 16 having an opening extending through its forward portion, said opening being curved and designed to admit the curved lower end of the support 17, which is attached to the frame 12 in the front of the support 14. A set-screw 18 is screwed into the forward end of the arm 16 and is designed to engage the support 17 and maintain said support in position relative to the arm 16, and thus maintain the frame in position in its pivotal movement, so that the frame may be adjusted to any desirable angle for shooting relative to the ground-surface. At the forward end of the frame and at the left side thereof, looking at the frame from the position of the operator, I have provided a substantially semicircular ratchet-faced frame 19, having a series of ratchet-teeth 20 on its upper central portion. This frame 19 is held integral with the frame 12 by means of the arms 21 and 22 and the inner end of the semicircular portion, all cast integral with the frame 12. At the extreme forward end of the frame is a bearing 23, extending downwardly from and at

substantially right angles to the frame 12. In this bearing 23 the pin 24 is rotatably mounted, said pin having the crank 25 attached to its lower end, said crank having the crank-arm 26 extending downwardly from its outer end. Mounted on the pin 23 is the arm 27, which is held in position on said pin by means of the nut 28. This is also designed to engage the upper portion of the arm and maintain the pin 24 and its attachments in position. Pivotally attached to the end of the arm which is away from the pin 24 is the carrier 29, which is held relative to the arm 27 by means of the pivot 30. On this pivot 30 is a coil-spring 31, which is designed to rest on the under surface of the head of said pivot and on top of the hand 29 to hold said carrier against vertical movement relative to the arm 27. The carrier comprises two projections, which extend outwardly from the arm 27. These projections I have numbered 32 and 33 for the sake of convenience. The projection 33 has an upwardly-extending flanged member 34, against the back portion of which the disk to be thrown is placed, and the flange on said disk is designed to project over said disk when it is in position in the hand. On the projection 32 I have mounted two pins 35 and 36 with rubber surfaces, against which the disk is designed to rest. The projection 33 is connected with the projection 32 by means of the pivot 37, and the spring 38 connects the projections 32 and 33 with each other, and said spring is so arranged that when the carrier reaches its extreme outer limit of movement the projections 32 and 33 will spring away from each other slightly as the disk is thrown out of the carrier.

Extending upwardly from the pin 24 is a pin 39, and extending upwardly from the rear of the carrier 29 is a pin 40. Connecting the upper portions of the pins 39 and 40 is a coil-spring 41, designed to maintain the carrier 29 in position relative to the arm 27. Attached to the under surface of the arm 27 is the thin metallic catch 42, which is designed to engage the ratchet-teeth 20 as the arm 27 passes over said ratchet-teeth, as shown in the second position of the arm in dotted lines in Fig. 1. The purpose of this will be hereinafter more fully set out. Pivotally mounted on the pin 43 is the trigger 44, having the upwardly-extending projection 45 thereon, which projection is designed to engage the arm 27 and retain it against rotary movement until the trigger is released and the projection 45 thrown out of engagement with the arm 27. There is a spring 46 on the pin 43, which engages the inner surface of the head of the pin and the outer surface of the trigger, which spring is designed to allow the trigger some lateral movement and prevent shock to the frame as the arm swings around and engages said

spring when it returns to its point of starting. This also prevents to a large extent the danger of bending or breaking the trigger as the arm comes around to its point of starting. Attached to the lower portion of the trigger 44 and to the side of the frame is a coil-spring 46^a, designed to normally hold the trigger in a locked position for maintaining the arm at its point of starting. Attached to the crank-arm 26 is the throwing-spring 47. This spring is rotatably connected with the lower end of the crank-arm 26, and the rear end of the spring is connected with the operating-rope 48, which is preferably made of steel cable and which passes through an opening in the central portion of the post 11, which opening is preferably lined with brass, to the operating-lever 49, which is pivotally mounted some distance at the rear of the frame of my device. The lower end of this lever 49 is pivotally mounted some distance below the ground-surface in a hole dug for that purpose. The base 10 is also mounted in a hole, so that the operating-rope 48 is very near to the ground-surface.

Attached to the rope 48 and adjacent to the spring 47 is a trigger-operating rope 50, which rope is adjustably connected with the lower end of the trigger 44 by means of the eyebolt 51, which is held in position relative to the trigger 44 by means of the thumb-screw 52, the idea being to adjust the length of the rope so that the trigger will be pulled when the driving-spring 47 has been thrown out to a certain predetermined point, so as to regulate the distance which the disk is to be thrown by adjusting the rope 50 relative to the trigger 44. Extending downwardly and at right angles to the forward end of the arm 21 is an extension 53. Connecting the lower end of the extension 53 and the lower end of the crank-arm 26 is the return-spring 54, designed to return the throwing-arm 27 to its point of starting and to maintain it in position against the trigger 44 when the driving-spring 47 is released. The driving-spring 47 is designed to be extended by operating the lever 49 and to force the throwing-arm 22 against the trigger 44, so that as the trigger is released the throwing-arm will move out to the position marked X (shown in dotted lines in Fig. 1) and throwing from substantially that position, and the force of this spring will carry the throwing-arm 27 to a point very near that shown in dotted lines marked Y on Fig. 1, and if the lever 49 has not been released by the operator and the spring 47 is maintained in an extended position the metallic plate 42 will engage one of the ratchet-teeth 20, and said arm will be prevented from being thrown back to the position of the arms shown in dotted lines marked X, which is on the dead-center and from which position the arm will not be drawn in either direction by the springs 54

and 47, but when the arm is in the position shown in dotted lines and marked Y in Fig. 1. As soon as the spring 47 is released by the lever 49 the spring 54 will draw the throwing-arm back to the position shown in Fig. 2 of the drawings, and the mechanism will be ready for a second throw. If the spring 47 is released, as soon as the trigger 44 is released and the arm has started to throw the arm will be moved completely around to the point of starting by the same force which causes the arm to throw, and the force with which the throwing-arm 27 will strike the trigger 44 will be considerable, and the spring 47 will be very beneficial in preventing the shock of the blow caused by the return movement of the throwing-arm to be greatly diminished. In operating the lever 49 it will be seen that inasmuch as the rope 48 and the spring 47 are substantially in line with the central portion of the post 11 this post will be at a dead-center, and in consequence of this fact the lever when pulling the rope 48 will not swing the frame 12 in either direction, and yet the person whose arms are upon the table 13 can easily swing the frame and post 11 on the base 10 in either direction with ease, and thus determine the direction in which the disk is to be thrown.

In actual use the boy that places the disks to be thrown into the hand 29 sits upon a stool immediately at the rear of the table 13, astride of the rope 48, with his arms upon the table 13, so that he does not conflict in any way with the rope 48 and is in position to rapidly place disks in the hand 29. In connection with the use of this device it may be said that the above construction removes to a very large extent the constant shock to the target-trap by the complete revolution of the throwing-arm, which is prevalent in target-traps, which have been in common use and the arm of which makes but half a revolution and returns to its point of starting after having thrown the disk.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States therefor, is—

1. A target-trap comprising a frame having a ratchet-faced portion, a rotatably-mounted throwing-arm adapted to move in a complete circle, a catch carried by said throwing-arm for engagement with said ratchet-faced portion after the throwing-arm has reached its throwing position, a mainspring for initially actuating said throwing-arm, a trigger for maintaining said mainspring in a fixed position while said mainspring is being placed under tension, and a second spring for actuating said throwing-arm after said mainspring has been relaxed; said second spring being adapted to carry the throwing-arm to said trigger in completing its path of circular travel.

2. A target-trap comprising a frame, a ro-

tatably-mounted throwing-arm mounted upon said frame to rotate in a complete circle, a mainspring for carrying said arm to a throwing position, a trigger for maintaining said arm in a fixed position while said mainspring is being placed under tension, means for placing said mainspring under tension, and a second spring connected with said arm and adapted to carry said arm from its throwing position in completing its path of circular travel to a position against said trigger.

3. A target-trap comprising a frame, a throwing-arm rotatably mounted upon said frame and adapted to move in a complete circle, a mainspring for carrying said arm to a throwing position, means for momentarily placing said mainspring under tension, and a second spring actuating after said mainspring is relaxed to carry said throwing-arm throughout the remainder of the circle of its travel from its throwing position to its starting-point.

4. A target-trap comprising a frame, a throwing-arm rotatably mounted on said frame and adapted to move in a complete circle, a mainspring for actuating the throwing-arm through a portion of its movement, means for placing said mainspring under tension momentarily only, a second spring for actuating the arm through the remainder of its movement in a circle after said mainspring is relaxed, and a trigger to receive the engagement of the throwing-arm at its starting-point.

5. A target-trap comprising a frame, a throwing-arm rotatably mounted upon said frame adapted to move in a complete circle, a spring for actuating said throwing-arm, a trigger for holding said throwing-arm until said spring is placed under tension, means for placing said spring under tension, and a flexible connection between said means for placing said spring under tension and said trigger; said flexible connection being adjustably secured to said means for placing said spring under tension.

6. A target-trap, comprising a frame, a pivotally-mounted throwing-arm capable of moving in a complete circle, a spring for actuating the throwing-arm through a portion of its movement, a second spring for actuating the arm through the remainder of its movement, a trigger designed to be engaged by the throwing-arm at its point of starting, a rope connected with said trigger and with the first-mentioned spring for releasing the trigger at a certain predetermined point, and means for extending the spring and operating the trigger.

7. A target-trap, comprising a pivotally-mounted frame, a pivotally-mounted throwing-arm capable of moving in a complete circle, a spring for actuating the throwing-arm through a portion of its movement, a

second spring for actuating the arm through the remainder of its movement, a trigger designed to be engaged by the throwing-arm at its point of starting, a rope connected with said trigger and with the first-mentioned spring for releasing the trigger at a certain predetermined point and a lever for extending the spring and operating the trigger.

8. A target-trap, comprising a horizontally-vibratable frame, a table at the rear of the frame adapted for the loader of the trap to rest his arms upon, a pivotally-mounted throwing-arm, and means for operating the throwing-arm.

9. A target-trap comprising a rotatably-mounted throwing-arm capable of moving in a complete circle, a spring for actuating said throwing-arm, a trigger for holding the throwing-arm against movement due to the spring, and means for placing the spring under tension and connected with the trigger for operating it, said connection being adjustable to permit the tension placed upon the spring to be varied.

10. In a target-trap, a frame, a ratchet-faced semicircular portion near the forward end and at one side of the frame, a pivotally-mounted throwing-arm, a thin metallic

catch attached to the under surface of said arm for engaging the teeth of the ratchet-faced portion as the arm is swung on its pivot, a trigger for maintaining the throwing-arm at its point of starting, a spring pressing against the outside of the trigger for preventing the shock on the frame as the throwing-arm is forced against the trigger, and means for operating the throwing-arms.

11. A target-trap comprising a frame having a ratchet-faced portion, a throwing-arm rotatably mounted on said frame, a catch carried by said throwing-arm for engagement with said ratchet-faced portion after said throwing-arm has passed its throwing position, a spring connected with the throwing-arm for actuating it, a rope connected to said spring, a trigger for maintaining the throwing-arm in a fixed position while said spring is being placed under tension, and means adjustably connected to said rope and attached to said trigger adapted to actuate said trigger after said spring has been placed under tension.

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Witnesses:

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