

H. I. DAVIS.
TARGET TRAP.

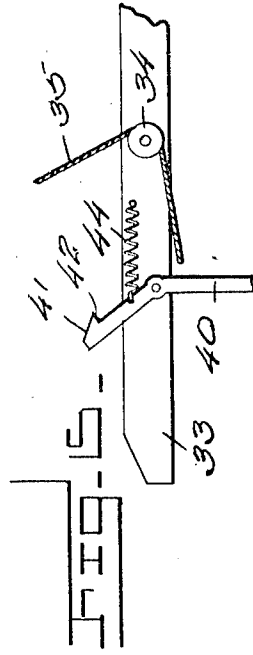
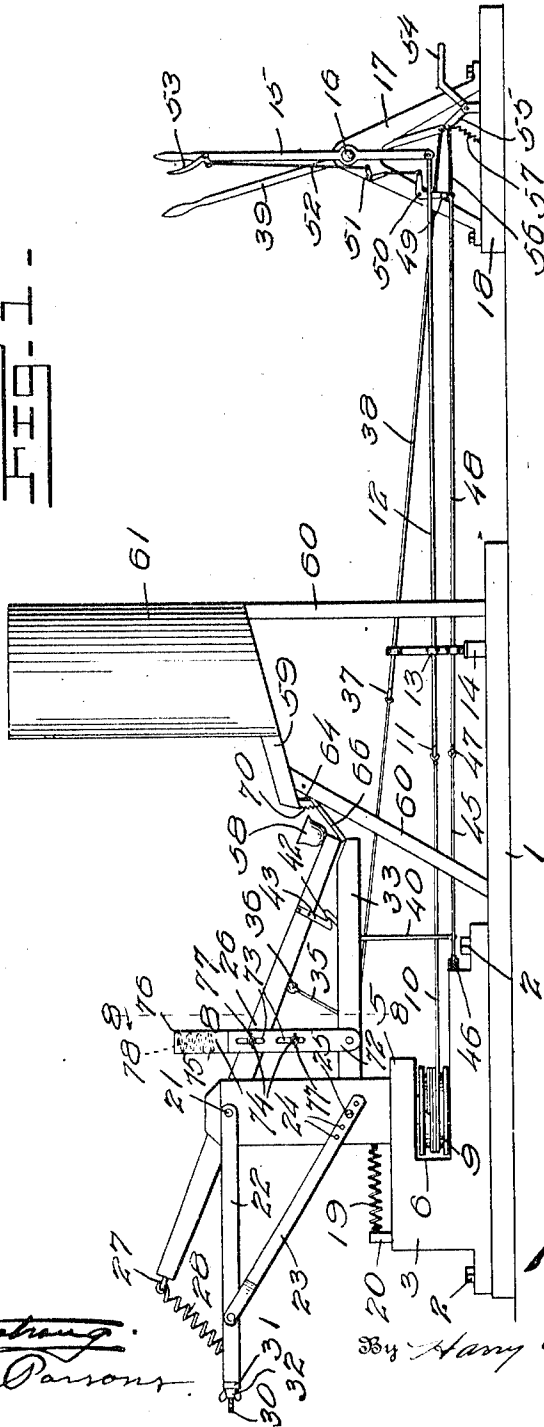
APPLICATION FILED AUG. 15, 1911.

1,012,526.

Patented Dec. 19, 1911.

4 SHEETS-SHEET 1.

FIG-1-



Witnesses
R. H. Thompson
W. H. Parsons

Inventor
H. I. Davis,
By *Harry Ellis Chandler*
Attorney

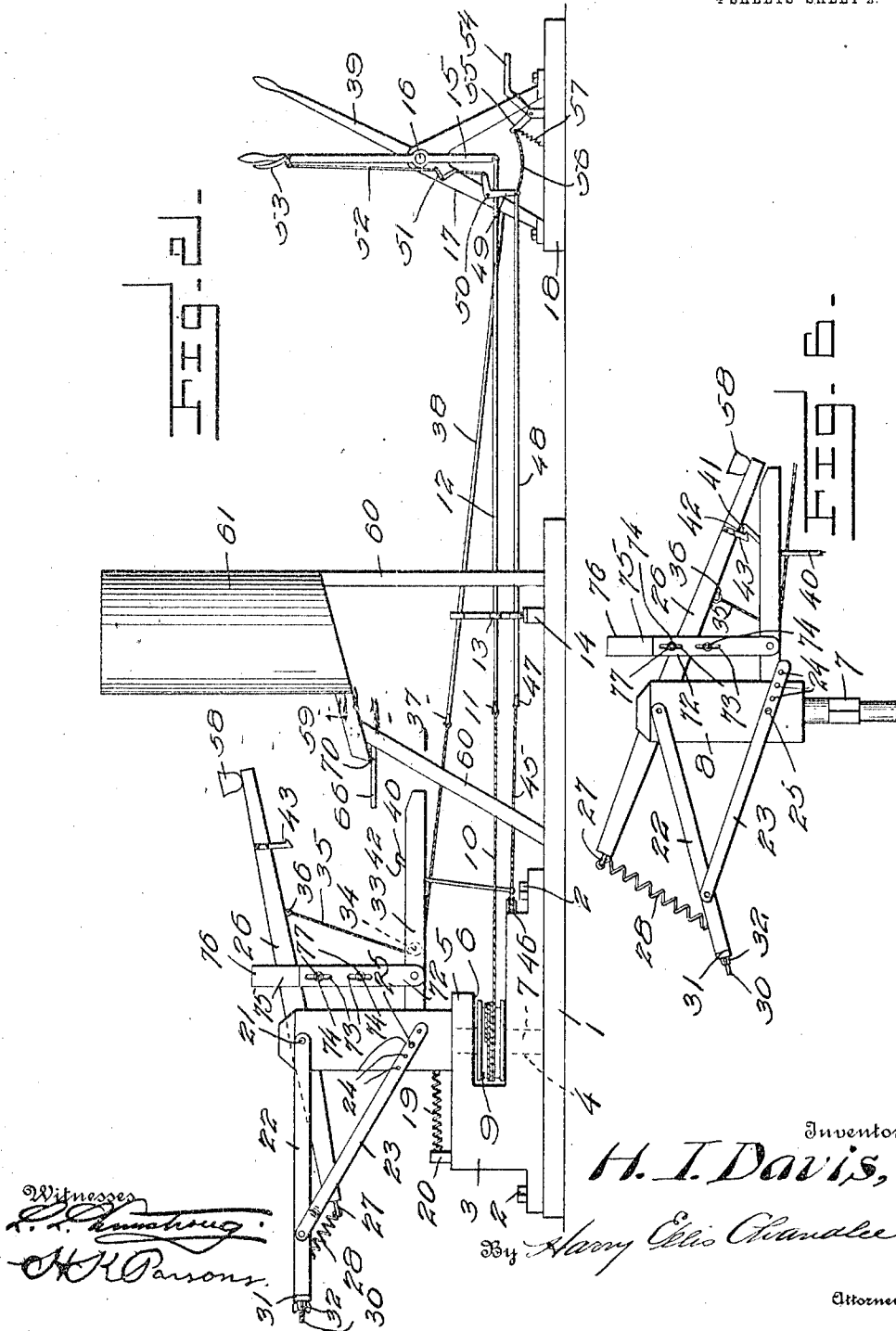
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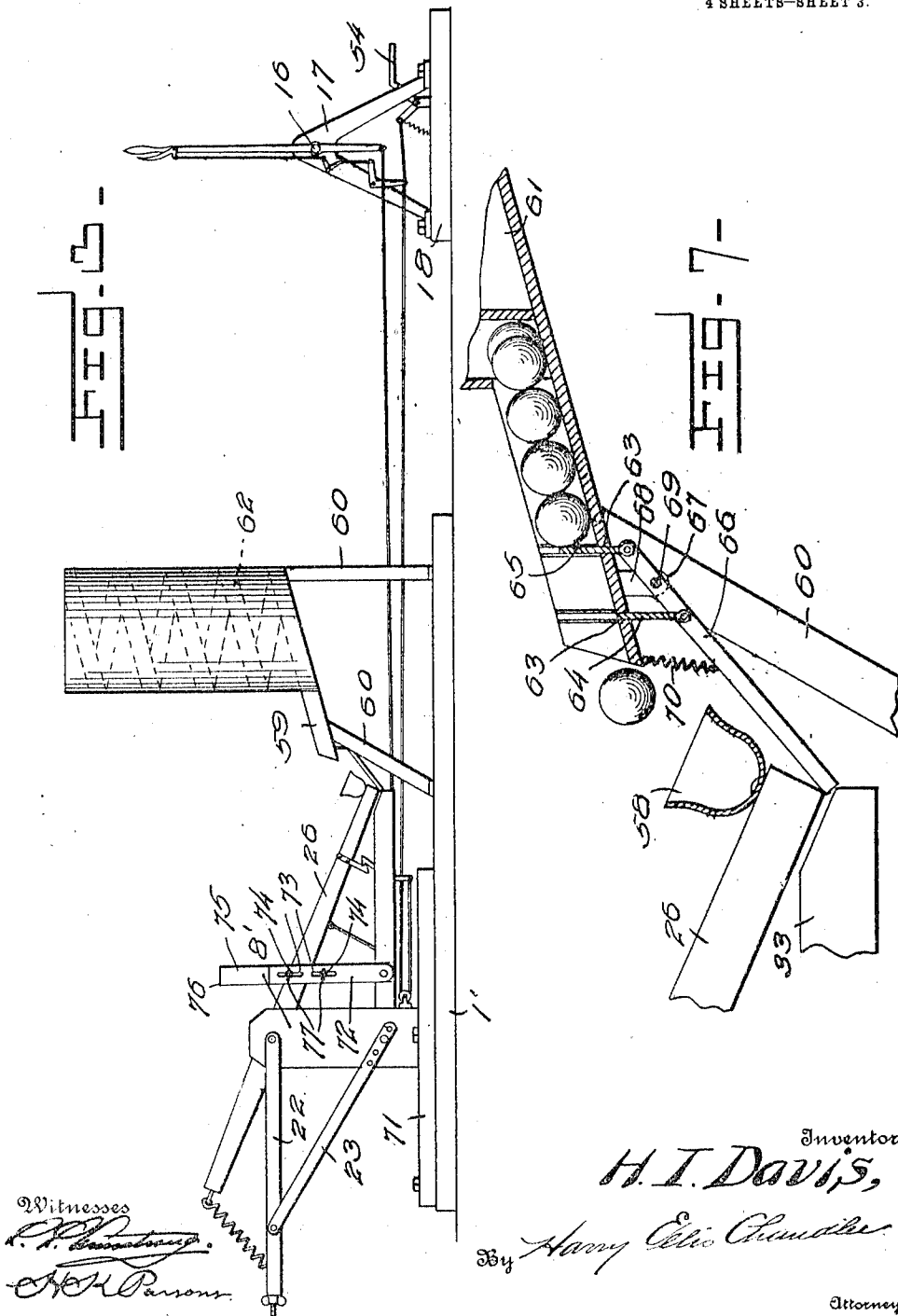
4 SHEETS-SHEET 2.



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 4 SHEETS-SHEET 3.

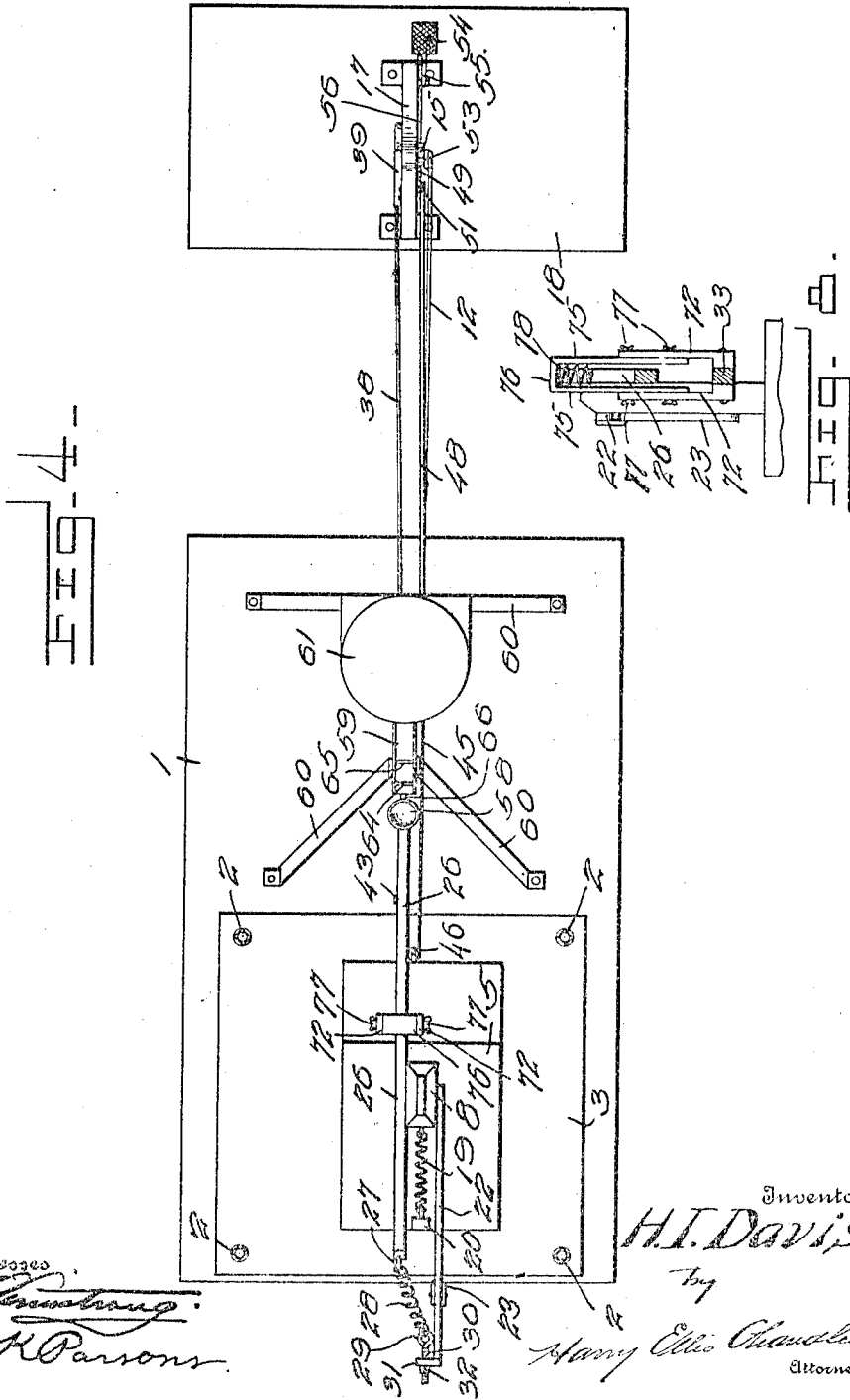


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4 SHEETS-SHEET 4.



Witnesses
[Signature]
W. H. Parsons

Inventor
H. I. Davis,

by
Harry Ellis Chandler
 Attorney

UNITED STATES PATENT OFFICE.

HARRY IRVIN DAVIS, OF BEAVER CREEK, MINNESOTA.

TARGET-TRAP.

1,012,526.

Specification of Letters Patent.

Patented Dec. 19, 1911.

Application filed August 15, 1911. Serial No. 644,128.

To all whom it may concern:

Be it known that I, HARRY I. DAVIS, a citizen of the United States, residing at Beaver Creek, in the county of Rock and State of Minnesota, have invented certain new and useful Improvements in Target-Traps, of which the following is a specification.

My invention relates to improvements in target traps, and has for its leading object the provision of an improved form of target trap for use in shot gun or rifle practice which will serve to satisfactorily throw a clay pigeon or target into the air as a target for the gunner instead of employing a live target as was formerly the custom.

The further object of my invention is the provision of an improved form of clay target throwing device which will be of simple and durable construction and which may be quickly and readily adjusted to determine both the height, angle, and direction in which the target will be thrown and which may be readily shifted to cause the target to go in different directions thus rendering the breaking of the said target by the gunner more difficult.

Another object of my invention is the provision of an improved form of target trap having a magazine for supplying the target to the throwing ejecting arm, which target and magazine shall be of such construction as to automatically control the movement of the target to the throwing arm to cause a target and but a single target to be in position to be thrown at all times when the trap is set.

Other objects and advantages of my improved target trap will be readily apparent by reference to the following description taken in connection with the accompanying drawings, and it will be understood that I may make any modifications in the specific structure shown and described within the scope of my claims without departing from or exceeding the spirit of the invention.

Figure 1 represents a side elevation of my complete trap, in use the parts being illustrated as set ready to throw a target into the air. Fig. 2 represents a similar side elevation of my invention showing the position occupied by the various parts at the termination of the target ejecting movement thereof. Fig. 3 represents a side elevation of a slightly modified construction of my invention adapted to throw the target in

but one direction. Fig. 4 represents a top plan view of the invention as illustrated in Fig. 1. Fig. 5 is an enlarged detailed view of the lever supporting arm looking oppositely to Fig. 1. Fig. 6 represents a view of the rotatable post and parts carried thereby showing the adjustment of said parts to secure a longer and lower throw of the target. Fig. 7 represents a detailed view of the means for controlling the passage of the target from the hopper into the throwing arm receptacle, and Fig. 8 represents a vertical sectional view on the line 8—8 of Fig. 1.

In the drawings, I have illustrated my device proper as comprising a base 1 having secured thereon by the bolts 2 the bearing block 3 having the vertical bearing passage or recess 4 formed therein and having a flange or shoulder 5 projecting above the said bearing passage 4 and having a continuation of the said passage formed there-through, a space 6 being included between the shoulder 5 and the main portion of the block 3. Rotatably engaged in the said bearing passage or recess 4 is the reduced lower end 7 of the supporting pivot post 8 of my improved trap. Said post has formed therein a peripheral groove 9 which is disposed to lie within the space 6 when the post is mounted in position on the block 3. A flexible connection 10 has one end secured to the post and is wrapped a plurality of times around in the groove 9, the other end of said connection being secured to the hook 11 formed on the rod 12 passing through the guide eye 13 carried by the brace 14 mounted on the said base 1, and the other end of said rod 12 is pivotally secured to the lower end of the lever 15 which is pivotally mounted on the spindle 16 supported by the bracket 17 mounted on a supplemental base 18 disposed a suitable distance from the target trap proper. A helical spring 19 has one end secured to the lower portion of the post and has the other end secured to the lug 20 rising from the block 3, said spring serving to resist rotation of the post 8. Said post has passed therethrough the pivot pin 21 and pivotally mounted on one of the projecting ends of the said pin 21 is the arm 22 having pivoted thereto near its outer end the brace 23 which has a plurality of apertures 24 formed therein, a screw 25 passing through one of the apertures 24 of the brace 23 and having its end engaged in the post 8

near the lower portion thereof to secure the lower end of the brace and thus the arm 22 in adjusted position, the passing of the screw 25 through different apertures 24 serving to hold the arm 22 at different adjusted positions on its pivot 21 as is clearly shown in the drawings. Pivotaly mounted on the other end of the said pivot pin 21 is the ejector or target throwing arm 26 of my invention having a short portion extending forward from the pivot pin and terminating in a hook 27 on which is engaged one end of the helical spring 28 which has its other end engaged by the eye or hook 29 of the threaded bolt 30 which passes through a lug 31 secured to the outer end of the arm 22 and has a wing nut 32 engaged thereon, the turning of the wing nut serving to shift the bolt 30 and thus to adjust the tension of the spring 28.

To draw the longer end of the lever 26 downward against the force of the said spring 28, I secured fixedly to the post 8 near the bottom thereof the brace 33 to which is pivotaly secured the sheave 34 around which passes the flexible connection 35 which has one end secured to the eye 36 on the under face of the lever 26 and has the other end secured to the eye 37 of the rod 38 which extends through one of the guide eyes 13 of the brace or support 14 and has its other end secured to the lower end of the lever 39 which is mounted on the pivot 16. It will thus be seen that the rocking of the lever 39 will serve to shift the rod 38 and thus to draw on the connection 35 and pull the longer end of the lever 26 downward, while to secure the end of the lever in depressed position I have provided the trigger 40. Said trigger is pivoted to the outer end of the brace 33 and has a beveled upper end 41 below which is formed the engaging recess 42 adapted to engage the abutment plate 43 which is secured to the lever 26, a spring 44 having one end secured to the brace 33 and the other end secured to the trigger above its point of pivot serving to pull the trigger into locking engagement with the plate 43. To release the trigger against the tension of the spring 44 to allow the spring 38 to throw the longer arm of the lever 26 upward, I secure to the lower end of the trigger the connection 45 which passes around the sheave 46 secured to the block 3 forward of the lower end of the trigger and then passes reversely and is secured to the eye 47 on the end of the rod or connection 48. The other end of said connection 48 is pivotaly secured to the lower end of the lever 49 which in turn is pivoted at 50 to the bracket 17. The said lever 49 is adapted to be either manually shifted or shifted by the foot to release the trigger and allow the arm 26 to fly upward. To manually control the said lever 50 I form thereon

the rearwardly and upwardly extending bell crank portion 51 to which is secured the connection 52 extending upward to the bell crank controlling handle 53 pivoted to the lever 15 near the upper end thereof, pressure on the handle portion of said lever 53 drawing on the connection 52 to shift the lever 49 to release the trigger.

To allow the gunner to set off the target by his foot when desired, I pivot to the base 18 the pedal 54 having an upwardly extending end 55 connected by the link 56 with the lever 49, pressure on the pedal serving to draw the lower end of the lever rearwardly and thus to draw on the connections 48 and 45 to throw the lower end of the trigger 40 forward and cause the upper end thereof to disengage the plate 43 of the lever 26 and allow said lever to fly upward. To normally hold the handle in raised position, I secure to this projection 55 the helical spring 57 which has its other end connected to the base 18.

To cause the end of the lever 26 to readily engage and throw the clay balls or targets for use in connection with my target trap, I secure to the end of said lever the cup or bowl shaped metal receptacle 58, while to feed the target to said ball receptacle 58, I employ the guide trough or chute 59 which is supported in inclined position by the braces 60 rising from the base 1. Said trough or chute may be connected with any suitable hopper for containing the targets 61, but in the drawings I have shown the preferred hopper which is made in the form of a spiral track 62 for containing the balls, this form of hopper enabling me to contain a maximum number of balls in compact space without any liability of the balls becoming packed together and thus the failure of the device to operate. To control the flow of the balls into the receptacle 58 and to prevent a plurality of balls from passing out of the end of the chute 59, I form in the bottom of the said chute a pair of slots 63 in which are slidably engaged the gates 64 and 65. Said gates being pivotaly secured at their lower ends to one end of the controlling lever 66, while passing through the said lever 66 between the lower ends of the two gates and also passing through the ears 67 of the brace 68 is the pivot pin 69 for pivotaly supporting the lever 66 in position. A spring 70 having one end secured to the discharge chute and the other end to the lever serves to normally hold the forward end of the lever upward and to hold the gate 64 in position to close the discharge opening of the chute.

By reference to the drawings it will be seen that as the end of the lever 26 is drawn downward it will contact with the forward end of the gate controlling lever 66 and will depress that end of the lever, the depression

of the forward end of the lever 66 drawing downward the gate 64 while pressing the gate 65 upward. Said gate will be forced upward sufficiently to prevent downward movement of any of the targets 61 before the gate 64 has been sufficiently lowered to allow the lowermost targets 61 to roll from the chute 59 into the receptacle 58, and consequently but one, the lowermost ball or target 61 may pass outward from the chute. When the arm 26 is released to throw the target into the air, the spring 70 will shift the lever 66 and thus the gates 64 and 65 to draw the gate 65 downward and again raise the gate 64. This movement of the gates will allow one of the targets to pass downward into engagement with the gate 64, the space between the two gates being just sufficient to receive one target. In this manner by the time the forward end of the lever 66 is pressed downward the gate 64 will be lowered to allow one ball or target to pass downward while the gate 65 will prevent the other targets from following.

In the modified construction of my invention the general features of construction and the operation of the device as is heretofore described with the exceptions that the supporting post 8' of the device has basal flanges 71 which are secured directly to the base 1' and the lever and various connections for pivotally swinging the post are omitted, this form of the device being adapted merely to send the targets in one general direction, although permitting of the adjustment of the target throwing lever according to the height and distance at which it is desired to have the target shot.

From the foregoing description taken in connection with the accompanying drawings, the construction of my improved target trap will be readily apparent, and it will be seen that rocking of the lever 39 will serve to draw on the connections 10 and 12 to rotate the post 8 against the tension of the spring 19 to vary the direction in which the target will be discharged, while the swinging of the lever 15 will serve to shift the throwing lever 26 into target receiving position and the trigger 40 will lock the lever 26 in set position against the tension of the spring 28, these various parts being carried by the post 8 and consequently rotated therewith. To release the lever 26 and thus to cause the target to be thrown into the air it is merely necessary to press on the pedal 54 or to grasp the lever 53 to release the trigger. Upon the releasing of the trigger the spring 28 will cause the lever 26 to swing on its pivot until the lever lies in alignment with the spring, when the spring will serve to check the movement of the lever and the inertia of the target 61 contained in the receptacle 58 will cause the said target to continue its movement and

thus to fly out of the receptacle into the air where it may be shot at by the gunner.

It will thus be seen that I have provided a thoroughly efficient and satisfactory target trap which will serve to throw the target into the air and to automatically reload, which may be easily controlled, and which may be readily adjusted to control either the height to which the targets are thrown or the distance they may travel and may also be readily adjusted to vary the direction in which the target will move when thrown by the ejector lever, and that on account of its simplicity of construction and its efficiency of operation, my improved target trap will readily commend itself to all gunners as being an extremely simple and practical device which they may control either by the foot when desired merely for practice work or which may be controlled by another person disposed adjacent the gunner when it is desired to use my improved target trap in shooting matches.

To aid in checking the upward movement of the throwing arm 26, I secure to each side of the arm 33 carried by the post 8 the standard 72 which projects upward on each side of the arm 26 and have formed in their upper portions the longitudinally extending or vertical slots 73. Slidably engaged in said slots are the set bolts 74 which pass through the arm 75 of the yoke member 76 and have engaged on the outer ends the wing nuts 77, tightening of the wing nuts drawing the arms 75 into clamping engagement with the standards 72 to hold the yoke in desired adjusted position. Secured to and depending from the central portion of the yoke 76 is the somewhat expanded helical spring 78 against which the lever 26 strikes as it is thrown upward the spring 78 thus forming a buffer for the lever, as is clearly illustrated in the accompanying drawings.

I claim:

1. A target trap, comprising a base, a post rotatably mounted upon the base and having an annular groove formed therein, a pivot passing through the post, a lever pivotally mounted upon the post and bearing a receptacle on one end, an arm mounted upon the pivot, a brace pivoted to the arm and having its other end adjustably secured to the post for holding the arm in pivotally adjusted position, and a spring having one end secured to the arm and the other end secured to the pivotally mounted lever for so shifting the lever as to discharge a target from the receptacle carried thereby.

2. A target trap, including a pivotally supported lever bearing a receptacle on one end, a stationary chute mounted adjacent said end of the lever for discharging into the receptacle, said chute having a pair of spaced transversely extending slots formed

in the under side thereof, a pivoted lever having its point of pivotance disposed intermediate of said slots, gates pivoted to the lever and extending upward and slidably engaged in the slots, said lever having one end projecting into the path of movement of the end of the throwing lever, and a spring for normally holding said end of the lever upward, whereby depression of the end of the throwing lever will cause the same to bear against the end of the other lever to depress said end of the lever and shift the gates.

3. A target trap, including a base, a post rotatably mounted upon the base, a throwing lever pivoted to the post, a brace secured to the post and bearing a spring pressed trigger, connections between the post and the pivotally supported lever for rotating the post, a supplemental lever pivoted to the said rotation controlling lever, and connections between the supplemental lever and the trigger for shifting the trigger out of engagement with the throwing lever to release the same.

4. A target trap, including a post, a pivot passing through the post, a throwing lever pivotally mounted upon one end of the pivot, a supporting arm rotatably mounted upon the other end of the pivot, a brace pivoted to the said arm and adjustably secured to the post for regulating position of the arm, a spring having one end secured to the end of the throwing lever and the other end adjustably secured to the end of the arm for normally holding the throwing lever and the arm in alinement with each other, and means for depressing the free end of the lever against the force of the spring whereby when the free end of the lever is released the spring will serve both to throw the lever upward and also to limit the movement of the lever on its pivot to cause the same to stop with a sudden jerk to satisfactorily throw a target.

5. A target trap, comprising a base, a post rotatably mounted upon the base, and hav-

ing an annular groove formed therein, means wound in the groove and adapted to be shifted to cause the post to rotate, a spring having one end secured to the post and the other to the base for resisting rotation of the post, a throwing lever pivotally secured to the post, said lever having an abutment plate secured thereto, a brace fixedly secured to the post and bearing a trigger having a recess for engaging the abutment plate, a sheave rotatably secured to the said brace, and a flexible connection having one end secured to the throwing lever and passing around the sheave, whereby a pull on the said connection serves to depress the throwing lever into position where the trigger will engage the abutment plate carried by said lever.

6. A target trap, including a post, a throwing lever pivoted to the post, means for actuating the throwing lever, a trigger for locking the lever against the force of the said actuating means, a target receiving receptacle secured on one end of the lever, a spiral hopper having a discharge chute disposed to empty into the discharge chute when the lever is held by the trigger, said chute having a pair of spaced slots formed in the bottom thereof, a pivoted lever having its point of pivotance disposed intermediate the said slots, and having its end adapted to be engaged by the throwing lever, and gates pivoted to said lever and projecting upward through the slots in the chute, whereby engagement of the throwing lever with the end of the other lever will rock the latter to so shift the gate as to withdraw one to allow a target to pass into the receptacle while the other gate moves to prevent downward passage of the other targets.

In testimony whereof I affix my signature in the presence of two witnesses.

HARRY IRVIN DAVIS.

Witnesses:

F. E. WELKER,
A. H. FARAGHER.