

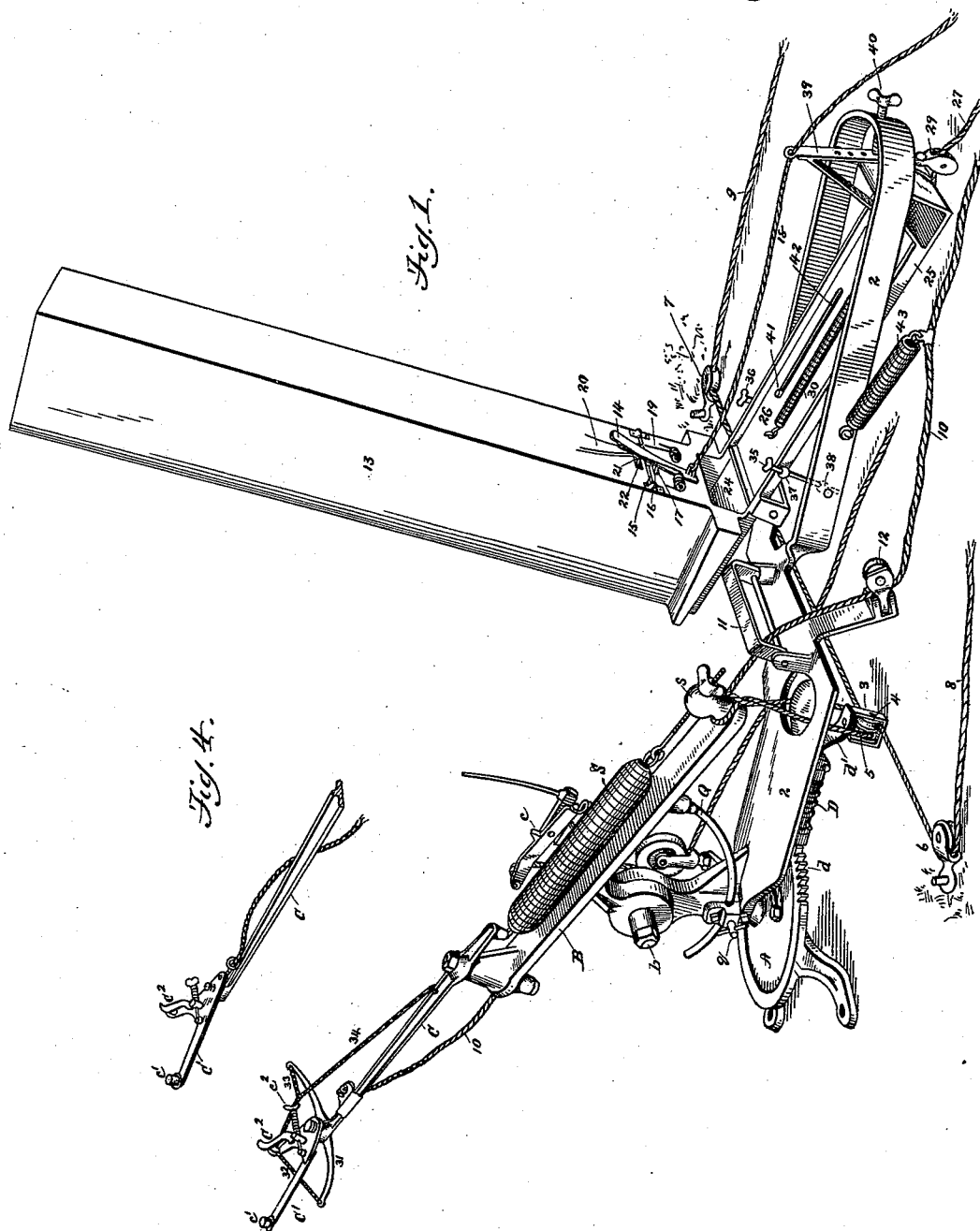
(No Model.)

2 Sheets—Sheet 1.

W. C. DONALDSEN.
TARGET TRAP.

No. 525,317.

Patented Aug. 28, 1894.



WITNESSES
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J. Clough.

INVENTOR
William C. Donaldson
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Attorneys.

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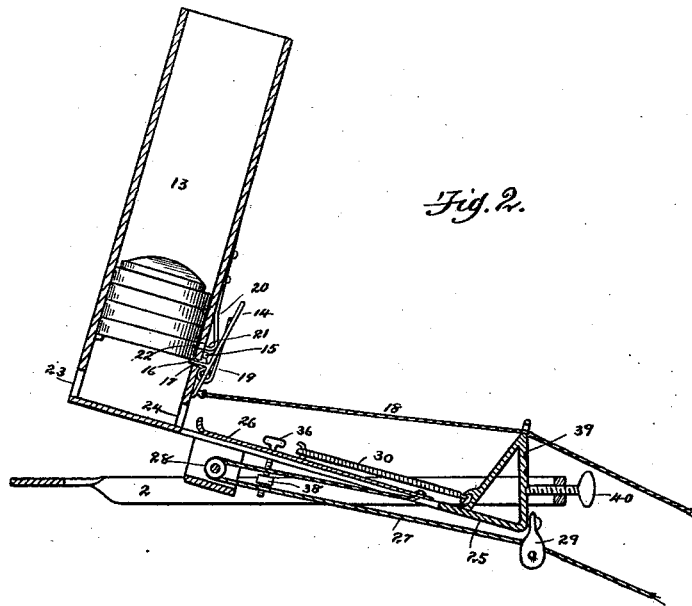


Fig. 2.

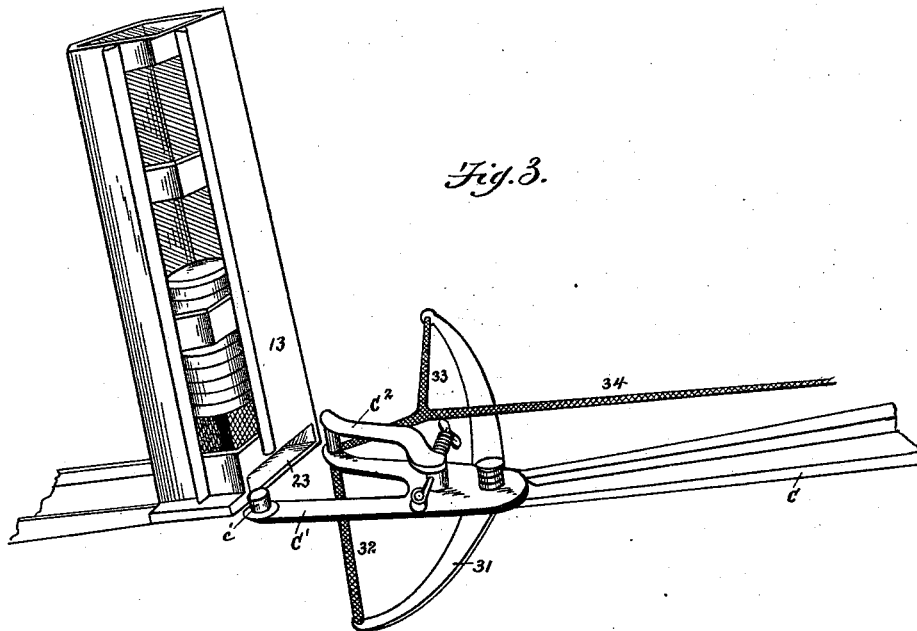


Fig. 3.

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UNITED STATES PATENT OFFICE.

WILLIAM C. DONALDSEN, OF WINDSOR, CANADA, ASSIGNOR OF ONE-HALF
TO WILLIAM H. BRADY, OF DETROIT, MICHIGAN.

TARGET-TRAP.

SPECIFICATION forming part of Letters Patent No. 525,317, dated August 28, 1894.

Application filed January 31, 1894. Serial No. 498,677. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM C. DONALDSEN, a citizen of the United States, residing at Windsor, county of Essex, Province of Ontario, Canada, have invented a certain new and useful Improvement in Target-Traps; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to traps for throwing targets of the kind known to sportsmen as "clay pigeons," and it has for its object attachments to be added to the ordinary trap used for that purpose, by means of which the clay disks or pigeons can be loaded into the arm from which they are to be thrown, from the stand at which the marksman takes his position. A further attachment enables me to shift the position of the arm by which the pigeons are thrown, in any direction that may be desired, and to shift it from the place where the marksman stands. A still further attachment enables me to spring the trap and throw the pigeon from the place where the marksman stands.

In the drawings, Figure 1 shows the trap in perspective. Fig. 2 shows the magazine for holding a number of pigeons, and indicates the manner in which they are transferred from the magazine to the arm of the trap. Fig. 3 shows the position of the magazine and the arm at the time the disk is transferred from the magazine to the arm. Fig. 4 is a modification of the throwing arm.

I employ this invention in connection with an ordinary bird throwing trap, such as is shown in Fig. 1, in which, upon a base A, arranged to be secured firmly either to a floor or to the ground, is swiveled an adjustable bar B, arranged to have horizontal rotation around a vertical standard rising from the base A, and vertical rotation around, or partially around, a pin *b* on the vertical standard. At the forward end of the bar B is swiveled an arm C, which carries at its forward end swiveled to it a pair of fingers C' and C². At the forward end of the finger C' is a pin *c'*, against which the disk of the tar-

get rests. The finger C² is made double; the under part of it embraces the lower part of the clay disk, and the upper part rests above the flange of the clay disk. The double finger C² is held in position with respect to the finger C' by an adjustable spring tension produced by a spring and thumb screw *c*². In loading the pigeons into the fingers, the arm C is turned backward until it rests behind the spring catch *c*. The pigeon is then placed between the fingers C' and C², and is released from the trap by drawing down sharply the catch *c*. The arm C, under the impelling force of the spring S, rapidly turns on the pivot by which it is held to the bar B, and the clay disk, during some portion of the throw of the arm C, leaves the fingers and flies off into the air, furnishing a mark for the sportsman. The angle of elevation of the bar B is adjusted by means of a quadrant Q, and set screw *q*; and the angle that the arm takes with respect to the base A is adjusted by turning the entire arm and parts connected with it about a vertical standard that springs from the middle of the base A, and after it has been adjusted in its desired position, it is held in adjustment by the spring dog D, that engages with one of the notches *d* in the edge of the base table A. The spring dog D is released from the notch *d* by lifting the lever *d'* and drawing the dog back from the notch *d*.

The parts thus far described are well known and in common use, and are those to which I attach my improvements. First, to shift the bar and frame work attached to it around their vertical axis, I secure to the standard which springs from the center of the table A, a plate 2, that extends backward and to one side of the main axis of the trap, and is fashioned into a general framework for all of the attachments which pertain to the changing of the angle of the trap, and to loading the fingers with the disk. From the under part of the table 2 depends a hanger 3, in which are a pair of pulleys, 4 and 5, the pulleys being directly under the handle *d'* of the dog D. I pass a cord around some part of the bar B, as, for instance, around the rear standard *s*, to which the spring S is attached, using this part of the arm B, because it is directly over

the handle d' of the dog D; and I make the middle of the cord fast to this part of the arm B. The two ends of the cord I pass downward, leading one of them around the pulley 5 to the right, and the other around the pulley 4 to the left; I pass the ends of the cords through the sheaves 6 and 7, one of which is secured to some firm object on the right, and the other to some firm object on the left of the machine, and lead the two ends of the cord back to the sportsman's stand. If the sportsman now draws taut upon the cords 8 and 9, he will first draw the handle d' upward, releasing the dog from the notch d , and he can now, by straining one of the cords 8 or 9 more than the other, shift the bar B and the frame work attached to it, around their vertical axis through a considerable angle, and, releasing the ends of the cords, the dog will engage with one of the notches d and hold the bar and frame work in the newly chosen position.

In order to draw the arm C back into engagement with the spring catch c , I make fast to the arm C near its forward end a cord 10, lead this backward through a guide or guard 11, through a pulley 12 that is swiveled to the auxiliary frame 2, and thence leads to the sportsman's station. The pulley 12 is swiveled to the frame 2 because I find that, if not so swiveled, the cord will not work freely through it at all of the various angles in which the frame may be placed, but that, when so swiveled, the pulley 12 adjusts itself to the position taken by the main bar B, and the cord works easily. Upon pulling back the cord, 10, the arm C is pulled around its swivel until it catches behind the spring catch c in the position ready to be loaded. To enable me to load from the sportsman's stand, and to load consecutively for a number of times—say twenty-five, thirty, or as many times as may be desired,—I place upon the frame 2 a magazine 13 of the size proper to receive within its interior a number of the clay disks or other disks, for targets. Near the bottom of the magazine 13 is an escapement mechanism, shown best in Fig. 2. This escapement mechanism consists of a lever 14, hinged to the outside of the magazine by hinge 15. On one side of the hinge 15, and forming a part of the lever 14, is a stop 16 that works through an opening 17 in the walls of the magazine. To the lower end of the lever 14 is attached a cord 18 that reaches to the sportsman's stand, and enables him to draw the lower end of the lever out against the tension of the spring 19; on the opposite side of the hinge 15 is a spring hook 20, the hooked end of which, 21, works through an opening 22 in the walls of the magazine, and is spaced from the stop 16 sufficiently to permit the edge of a single disk to rest below the hook 21 and on the stop 16. When the cord 18 is drawn and the lower end of the lever 14 pulled outward from the walls of the magazine, drawing the stop 16 from under the lower edge of the disk, the spring

hook 21, by the same movement, is forced inward by the rocking motion of the lever 14 on its pivot, and stops all the disks except the lower one from dropping downward in the magazine, and permits the lowest disk to drop down opposite a passageway 23, 24, through which the disk can be pushed from the magazine outward.

On the plane of the bottom of the magazine 13, and supported by the main framework 2, is a table 25, upon which travels an expelling slide 26. To the lower side of the expelling slide 26 is secured a cord 27 that passes around a sheave 28 underneath and near the forward end of the table 25, and leads back through proper guide sheaves 29 to the stand occupied by the sportsman. Normally, the expelling slide 26 is held by a spring 30 just above the table 25, and with its expelling end entirely outside of the magazine 13. A pull on the cord 27 pulls the expelling end of the slide 26 through the magazine, and pushes out from the magazine that one of the targets that has been dropped by the previously described action of the escapement lever 14. If the arm C, previous to the expulsion of the target from the magazine, has been drawn into its position to be loaded, as shown in Fig. 3, the target will be forced between the fingers C' and C^2 in the position it occupies when the arm is loaded in the ordinary way.

As the fingers C' and C^2 are swiveled to the arm C, I find that it is desirable to provide for their accurate alignment, so that the fingers will take their proper position in front of the opening 23, and will not lie at an angle thereto. To insure their proper action, I place on the pin by which the fingers C' and C^2 are swiveled to the arm C, a cross bar 31, and from the ends of the cross bar I lead a spring 32, 33, preferably of rubber, to the outer or free end of the finger C^2 , and carry a branch of this rubber spring 34 back to the arm C near its pivot. This spring should give great freedom of movement to the fingers C' and C^2 , but should be strong enough to bring the fingers finally to rest with the finger C' and the arm C in substantial alignment, that being the position they should occupy when loaded and ready to be sprung.

In place of the cross bar 31 and the rubber springs 32, 33, 34, I have employed a device shown in Fig. 4, in which the cord 10, instead of being made fast to the arm C near its forward end, passes through an eye near the forward end of the arm C, and is made fast to an extension projecting rearwardly from the finger C' .

The table 25 is made adjustable with respect to the frame 2 at both its front and its rear end, in order that it may correspond both in elevation and in angularity with the arm C. When the bar B is adjusted through an oblique angle, it not only changes its angle of obliquity to the table A, but it also changes the absolute elevation of the fingers C' and C^2 above the table A, and it is therefore nec-

5 necessary to adjust the loading mechanism to
 correspond with this changed elevation, and
 to correspond with the angle which the arm
 C has now taken. The table 25, upon which
 10 rests the magazine 13 and the loading mech-
 anism, is supported at its forward end by two
 screws 35 and 36, the stems of which pass
 through eyes,—one of which, 37, is seen at
 15 the side of the table 25,—and also through
 nuts, one of which, 38, is indicated inside of
 the framework 2. The nut 38, and the cor-
 responding nut on the opposite side of the
 table, are swiveled to the framework to per-
 20 mit the proper engagement of the screw with
 it, as the relative obliquity between the table
 25 25 and the framework 2 changes. At the rear
 end of the table 25 is a standard 39, provided
 with a number of holding holes or notches,
 in which a set screw 40 engages. The set
 25 screw 40 passes through the framework 2.
 Thus, both the forward end and the rear end
 of the table 25 are adjustable, and both its
 elevation and its obliquity can readily be
 changed. The slide 26 is prevented from be-
 30 ing brought too far forward along the table
 25 by a stop 41 that rises from the table 25
 through a slot 42 in the slide. Without this
 stop there is a liability of crushing the disk.
 In order that the cord 10 may not interfere
 35 with the free movement of the arm C, I pro-
 vide a spring 43, one end of which is made
 fast to the framework 2, and the other end of
 which is made fast to the cord 10, leaving
 enough of the cord 10 in front of it to give
 40 perfect freedom of movement to the arm C.
 When the arm C is drawn back to be loaded,
 the operator not only draws against the arm,
 but also draws against the spring 43, and as
 soon as the operator releases the cord, the
 45 spring 43 contracts and draws forward the
 cord 10, so that the only portion of the cord
 10 acting against the free movement of the
 arm C, is that portion lying in front of the
 spring 43 and between it and the end of the
 50 arm C. As this is only a small part of the
 cord, it offers very little resistance to the free
 movement of the arm C, and allows it to
 swing freely to deliver the target.

Having thus described my invention, what
 50 I claim as new, and desire to have secured to
 me by Letters Patent, is—

1. In a disk throwing trap, a throwing arm

adapted to grasp the disk, a magazine for hold-
 ing a number of disks, means for expelling the
 disks consecutively from the magazine and 55
 for forcing the expelled disks into the throw-
 ing arm of the trap, substantially as and for
 the purpose described.

2. In a disk throwing trap, in combination
 with a disk throwing arm and a support upon 60
 which it is pivotally supported, a ratchet, a
 dog engaging therewith adapted to prevent
 the arm from swinging on its pivotal support,
 means actuated from a distance for disengag-
 65 ing the dog and ratchet, and swinging the
 arm on said pivotal support, and reengaging
 the dog and ratchet, substantially as and for
 the purpose described.

3. In combination with a disk throwing
 trap, an auxiliary framework, a magazine 70
 mounted on said framework, means for ad-
 justing said magazine to correspond in height
 and angularity with the disk throwing arm,
 substantially as described.

4. In combination with a disk throwing 75
 trap, an auxiliary frame work, means for
 changing from a distance the horizontal, an-
 gular direction of the disk throwing arm of
 said trap, a cord adapted to set said trap from
 a distance, and a swiveled guide pulley 80
 through which said cord operates, substan-
 tially as and for the purpose described.

5. In combination with a disk throwing
 trap, having a swiveled delivery arm, and
 disk holding fingers swiveled on said deliv- 85
 ery arm, a re-adjusting spring which brings
 the fingers in proper alignment with the arm,
 substantially as described.

6. In combination with a disk throwing
 trap, a swinging delivery arm, disk holding 90
 fingers pivoted to said delivery arm, an ad-
 justing spring which properly aligns the fin-
 gers with the delivery arm, a magazine, means
 for dropping the disks to the bottom of the
 magazine one by one, and means for forcing 95
 the disks from the bottom of the magazine
 into the fingers of the throwing arm, substan-
 tially as described.

In testimony whereof I sign this specifica-
 tion in the presence of two witnesses.

WILLIAM C. DONALDSEN.

Witnesses:

F. W. DONALDSON,
 FRANCES CLOUGH.