

S. A. HUNTLEY.
 TARGET THROWING DEVICE.
 APPLICATION FILED MAY 31, 1911.

1,030,852.

Patented June 25, 1912.

2 SHEETS—SHEET 1.

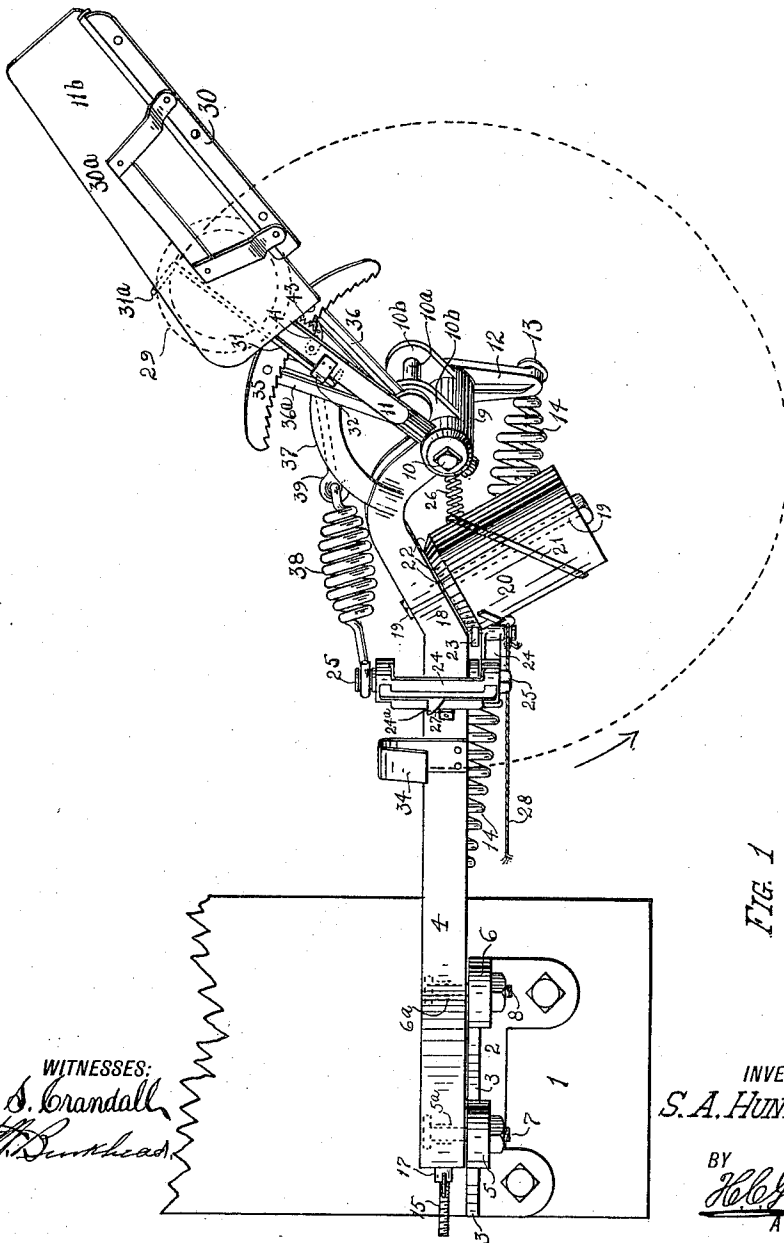


FIG. 1

WITNESSES:
 M. S. Randall
 C. H. Denshead

INVENTOR
 S. A. HUNTLEY

BY
 H. E. Gardiner
 ATTORNEY

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2 SHEETS-SHEET 2.

FIG. 3

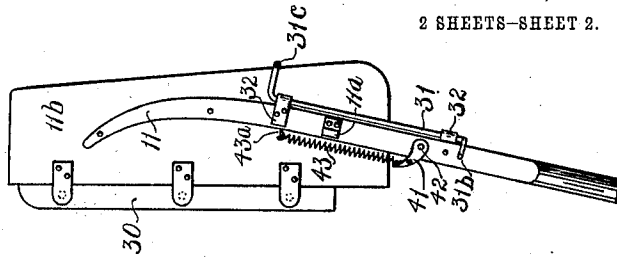


FIG. 4

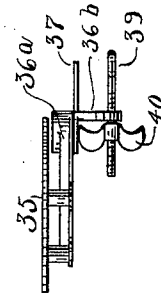
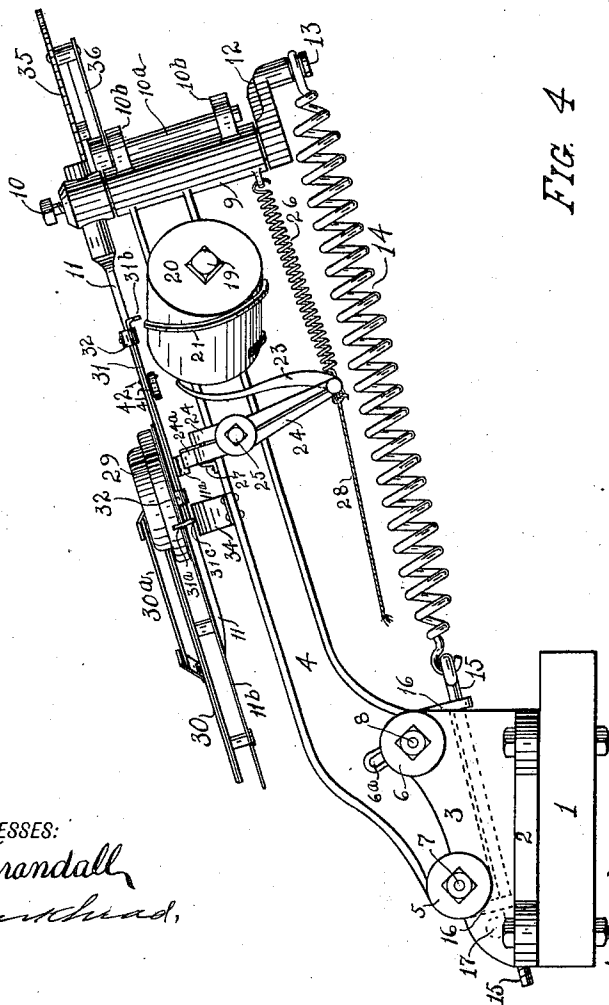


FIG. 2



WITNESSES:

M. S. Grandall
A. B. Brumhead

INVENTOR

S. A. HUNTLEY

BY

H. B. Gardiner
 ATTORNEY

UNITED STATES PATENT OFFICE.

STEPHEN A. HUNTLEY, OF SIOUX CITY, IOWA, ASSIGNOR OF ONE-THIRD TO J. C. DYE
AND ONE-THIRD TO J. C. SMITH, BOTH OF SIOUX CITY, IOWA.

TARGET-THROWING DEVICE.

1,030,852.

Specification of Letters Patent.

Patented June 25, 1912.

Application filed May 31, 1911. Serial No. 630,423.

To all whom it may concern:

Be it known that I, STEPHEN A. HUNTLEY, a citizen of the United States, residing at Sioux City, in the county of Woodbury and State of Iowa, have invented certain new and useful Improvements in Target-Throwing Devices, of which the following is a specification.

My invention relates to devices for throwing targets in the air, particularly to a releasing means for the target and to a mechanism employed for controlling the direction in which the target is thrown when delivered from the device, and it consists essentially in combining with the usual supporting shank and throwing or swinging arm which receives the target, a rod having a retractable upturned end which frees the target, and a mechanism which releases the arm and engages the rod, the parts being arranged and constructed as hereinafter more particularly described and pointed out in the appended claims.

Figure 1 is a plan view of the device as seen after the target is thrown. Fig. 2 is a view in side elevation with the arm set. Fig. 3 is a detail view illustrating in reverse plan the action of the dog and spring on the arm and the attachment of the rod releasing the target. Fig. 4 is a detail view of toothed bracket showing the attachment of the spring.

In the drawing, 1 is a beam of any kind suitably embedded in the ground and carrying a bracket 2 secured thereto, the bracket having an upwardly directed rib 3 which is provided with round openings at 5 and 6.

4 is a shank adjustably secured to the rib by a bolt 7 which passes through the opening 5 and a corresponding opening 5^a in the shank, and a bolt 8 which passes through the opening 6 and a slot 6^a in the shank arranged concentric to the center of the opening 5^a. The free end of the shank is provided with a vertically directed boss 9 which forms a bearing for the shaft or pin 10 carrying the swingable throw arm 11 on which is carried the target as later described. A crank 12 is secured to the lower end of the shaft 10 and is provided with a crank pin 13 to which is attached a strong spiral spring 14 having the opposite end connected to a threaded rod 15 carried by lugs 16 extending from the shank. A nut 17 is provided on the rod so that the tension on the spring

can be adjusted as desired. The shank is offset at 18 to form a shoulder which carries a stationary pin 19 on which is rotatably mounted a cylinder or drum 20 having a cam or ridge 21 thereon inclined or spiral in form and acts as a guide for an engaging piece as shortly referred to. The inner end of the drum is supplied with ratchet teeth 22 which are engaged by the turned end of a bar 23 carried by a lever 24 pivotally secured by the pin 25 to the shank. The lever has its upper end extended as a bracket around the shank and forming a stop 24^a on the upper side of the shank, which engages, when the arm is set, with a lug 11^a extending from the under side of the arm. A spring 26 is attached at one end to the lower end of the lever and at the other end is secured to the boss 9. A lug 27 extends upwardly from the shank and holds the lever so that it will always engage with the lug 11^a on the under side of the throw arm 11, except when moved by the attendant or when the arm is swung around to the set position. A cord 28 is secured to the lower end of the lever and is used for setting off or releasing the arm. The throw arm 11 is formed with a long, flat head 11^b secured to its outer end and exposing a horizontal upper face on which the target 29 rests. The rear edge of the head is fitted with a plate 30 having an arched extension 30^a beneath which the top of the target passes while the bottom part of it rolls over the inner edge of the arched extension. This construction is customary in a device of this class and the description is accordingly not given in detail.

31 is a rod secured to the arm by straps 32 riveted to the arm and adapted to turn in the straps. The rod 31 has one end turned upwardly around the adjoining side of the head 11^b so that the extremity thereof 31^a is so located that it passes immediately to the side of the target when the target is in position on the head. The opposite end of the rod 31^b is bent at right angles and extends downwardly to engage the cam 21, as presently described. The portion 31^a holds the target in place on the head until depressed when the arm and head are swinging. At the same end of the rod is a member 31^c extending downwardly so as to engage when the arm is set a hook or lug 34 secured to the top of the shank. By the con-

tact of the rod with the lug the opposite end 31^a is held in its upper position where it holds the target on the head until the rod is depressed below the level of the head by the action of the cam 21, on the opposite end of the rod.

An internally toothed bracket 35 is secured to bars 36 and 36^a, integral with and at right angles to a pin 10^a pivotally supported in lugs 10^b extending from the boss 9. The bars are arranged concentric with the pin and approximately on a level with the peripheral face of the drum. A curved arm 37 extends from the bar 36^a and is adapted to abut against the side of the shank, forming a stop for the toothed bracket. A spiral spring 38 is hooked at one end to the pin 25 and at the opposite end to a threaded rod 39 carried by a lug 36^b on the bar 36^a. A nut 40 is provided on the rod so that the tension of the spring may be adjusted. The toothed bracket 35 is engaged by a dog 41 pivoted to the arm 11 at the point 42, a spiral spring 43 connecting the dog with the arm by means of a hook, 43^a, secured to the arm and adapted to hold the dog in engagement with the teeth of the bracket.

The operation of the device is now described, assuming the throw arm 11 has been turned to the position shown in Fig. 2 of the drawing: The attendant, when he desires to throw the target, grasps the cord 28 and pulls on it, which motion swings the lever 24 so as to pass it from engagement with the lug 11^a. This immediately releases the throw arm and it is swung quickly around by the action of the spring 14 which will be readily understood. Simultaneously with this motion the drum is rotated by the action of the bar 23 and the spring 26, the free end of the bar being forcibly abutted against the teeth as the lower end is pulled back against the spring, and the contraction of the spring gives an upward and forward movement to the bar. As the arm swings it brings the downwardly directed end 31^b of the rod 31 into engagement with the spiral cam of the drum, at which instant the rod is turned so that the extremity 31^a of the rod is depressed and the target is thrown into the air. In whatever position the drum is situated when the arm is released the end 31^b of the rod 31 must pass over some part of the cam, which trips the rod and releases the target. The release of the arm tends to give the target a centrifugal motion and the changing position of the spiral cam with reference to the end 31^b causes the target to be always thrown at an undetermined angle. The cam thus serves as a means not only for releasing the target but for giving an uncertain direction to the target when released, which is of the greatest importance. As the arm swings around it is caught and held by the engagement of the dog 41 with the teeth

of the bracket, and the spring 38 prevents it from swinging back in the opposite direction, while the arm 37 abutting the shank works against the spring, this arrangement preventing the vibrations or reverse swinging of the arm.

I wish to point out that my invention relates entirely to the attachment and formation of the rod 31 and the application of the drum to the shank controlling the depression of the end of the rod.

I am aware that depressible rods are at present utilized in target devices of a similar nature, but these are released or depressed by the attendant at whatever instant happens or he sees fit. Consequently if one be familiar with target practice it will be seen that he can give easy or hard shots as he likes, which is not particularly desirable when parties are competing. With my device this possibility is minimized in a great degree as it is impossible to judge exactly what distance the drum will rotate when one pulls the cord. Accordingly one cannot tell exactly the direction in which the target will be thrown as the drum completely controls this, and the rotated position of the drum when engaged by the rod cannot be determined.

Having described my invention, what I claim as new and desire to secure by Letters Patent, is,—

1. In a target throwing device, the combination with a supporting shank and a target throwing arm carried by the shank, of a rod having a retractable end carried by the arm and adapted to retain the target on the arm when the arm is swinging, and means for retracting the rod, as and for the purpose specified.

2. In a target throwing device, the combination with a shank, a throwing arm carried by the shank and a target on the arm, of a rod having a retractable end carried by the arm, said end being designed to retain the target on the arm when the arm is thrown, and adjustable means engageable with the rod to retract the same when the arm swings, as and for the purpose specified.

3. In a target throwing device, the combination with a shank, a throwing arm swivelly secured to the shank and a target carried by the arm, of retractable means carried by the arm preventing the escape of the target from the arm in the direction thrown, and means carried by the shank and designed to engage with the retractable means carried by the arm to retract the same and release the target, as and for the purpose specified.

4. In a target throwing device, the combination with a shank, a throwing arm carried by the shank and a target located on the arm, of a rod having a retractable end

engaging with the edge of the target and retaining it on the arm when the arm swings, and means carried by the shank and designed to engage with the rod and retract the end thereof to release the target, as and for the purpose specified.

5. In a target throwing device, the combination with the shank, a spring actuated swingable arm carried by the shank, a target carried by the arm and releasable means retaining the arm in a set position, of a rod carried by the arm and having a retractable end engageable with the target restraining the same on the arm when the arm swings, means for releasing the arm to swing and rotatable means engageable with the rod to retract the end thereof, said rotating means being actuated by the releasable means aforesaid, as and for the purpose specified.

6. In a target throwing device, the combination with a shank; a spring actuated throwing arm carried by the shank, releasing means for retaining the arm in a set position, and a target carried by the arm, of a rod rotatably secured to the arm, said rod having one end directed upwardly to the side of the arm and retaining the target thereon when the arm swings and the opposite end turned downwardly toward the shank, a drum having an inclined cam

thereon engageable with the downwardly turned end of the rod, and means for rotating the drum when the arm is released to swing, as and for the purpose specified. 35

7. In a target throwing device, the combination with a shank, a spring actuated throwing arm carried by the shank, releasable means for retaining the arm in a set position, and a target carried by the arm, of a rod rotatably secured to the arm, said rod having one end directed upwardly at the side of the arm and adapted to retain the target on the arm when the arm swings, and the opposite end directed downwardly, a drum rotatably mounted on the shank and provided with a spiral cam and having ratchet teeth on the end thereof, a bar carried by the arm releasing means and engaging with the ratchet teeth of the drum and a spring for holding said bar in engagement with the teeth, whereby the drum is turned when the releasing means are actuated, as and for the purpose specified. 40 45 50

In testimony whereof I have hereunto signed my name in the presence of two subscribing witnesses. 55

STEPHEN A. HUNTLEY.

Witnesses:

H. C. GARDINER,
JOHN C. DYE.