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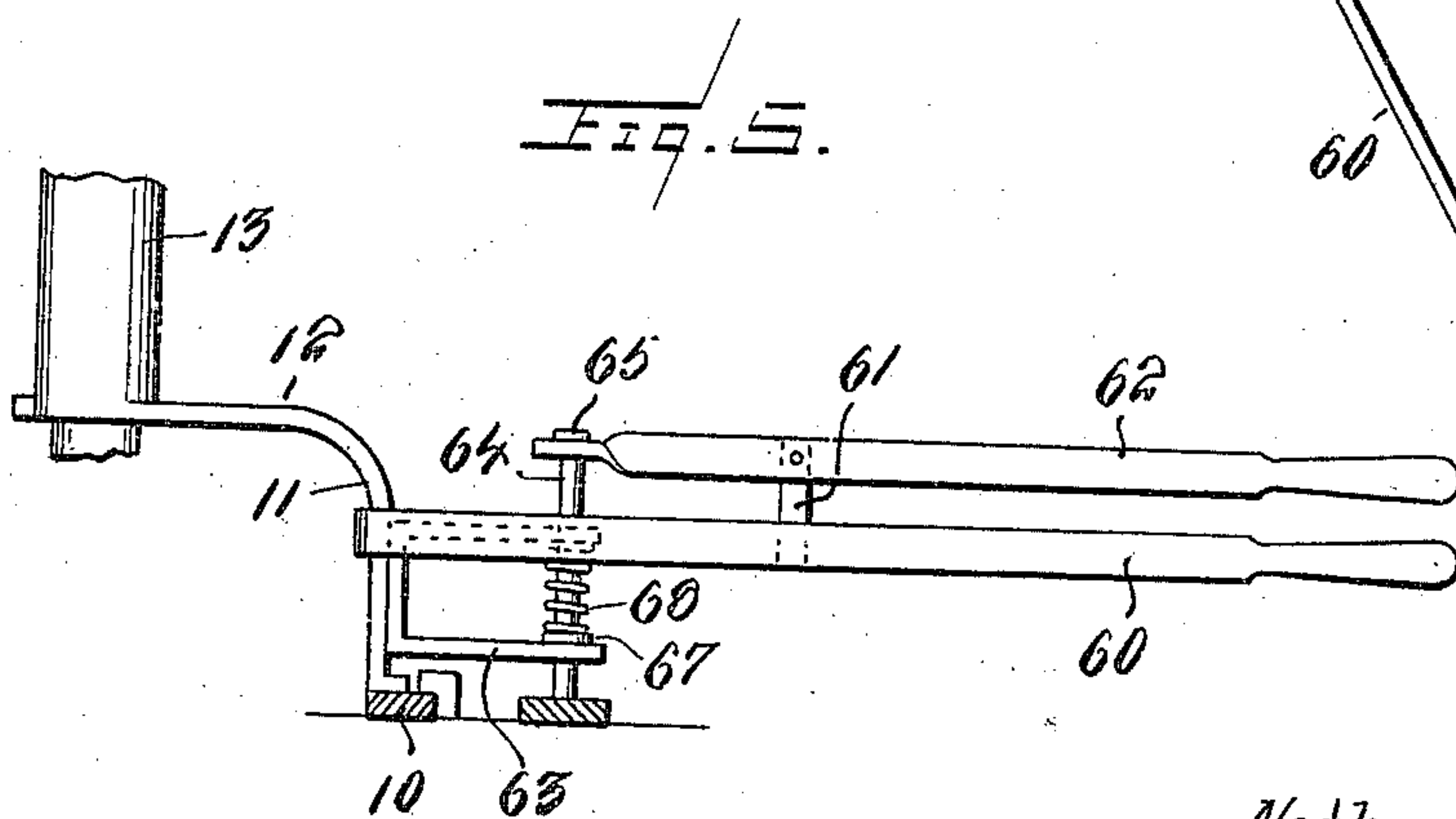
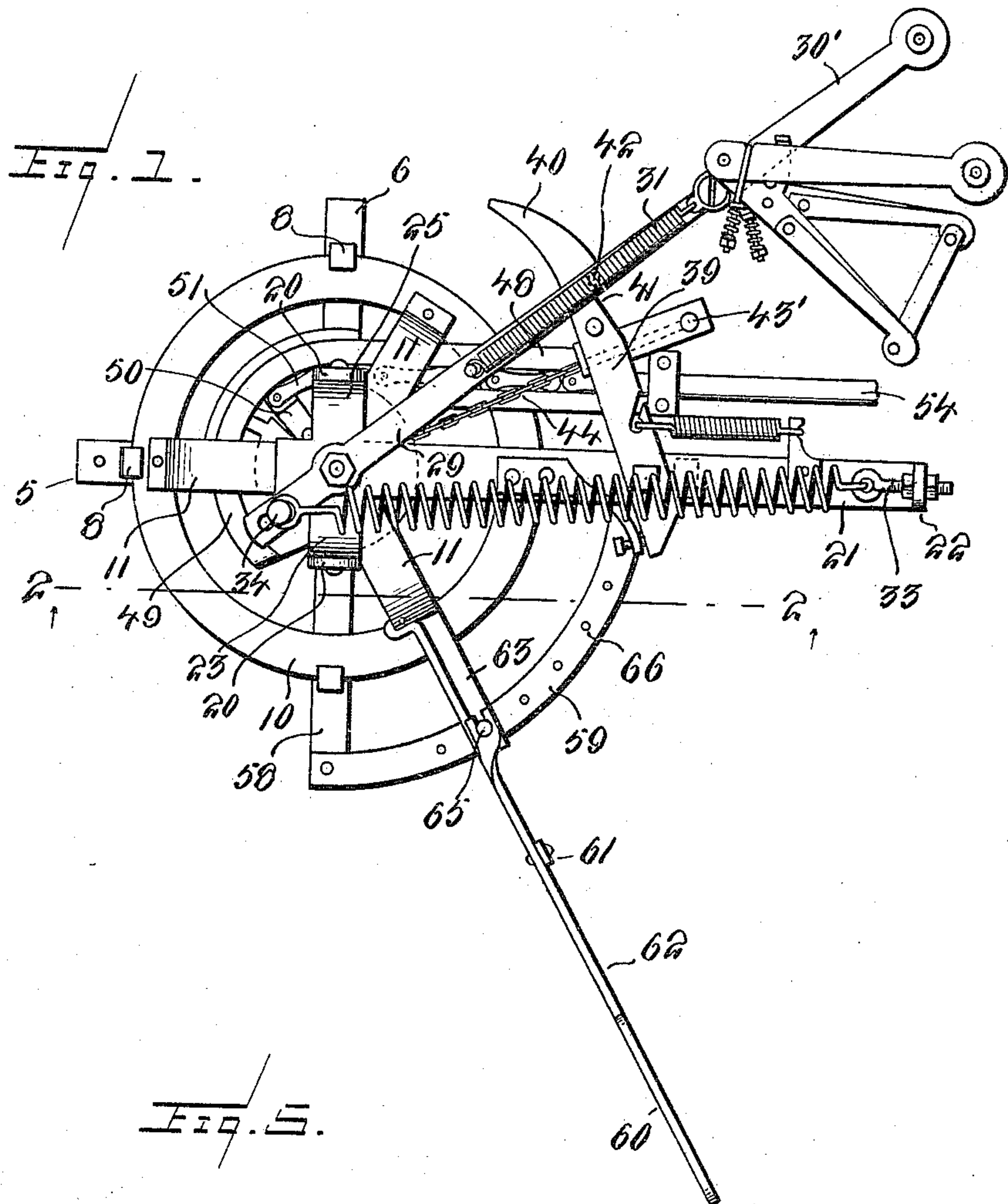
TARGET TRAP.

APPLICATION FILED AUG. 13, 1910.

985,651.

Patented Feb. 28, 1911.

2 SHEETS—SHEET 1.



Witnesses
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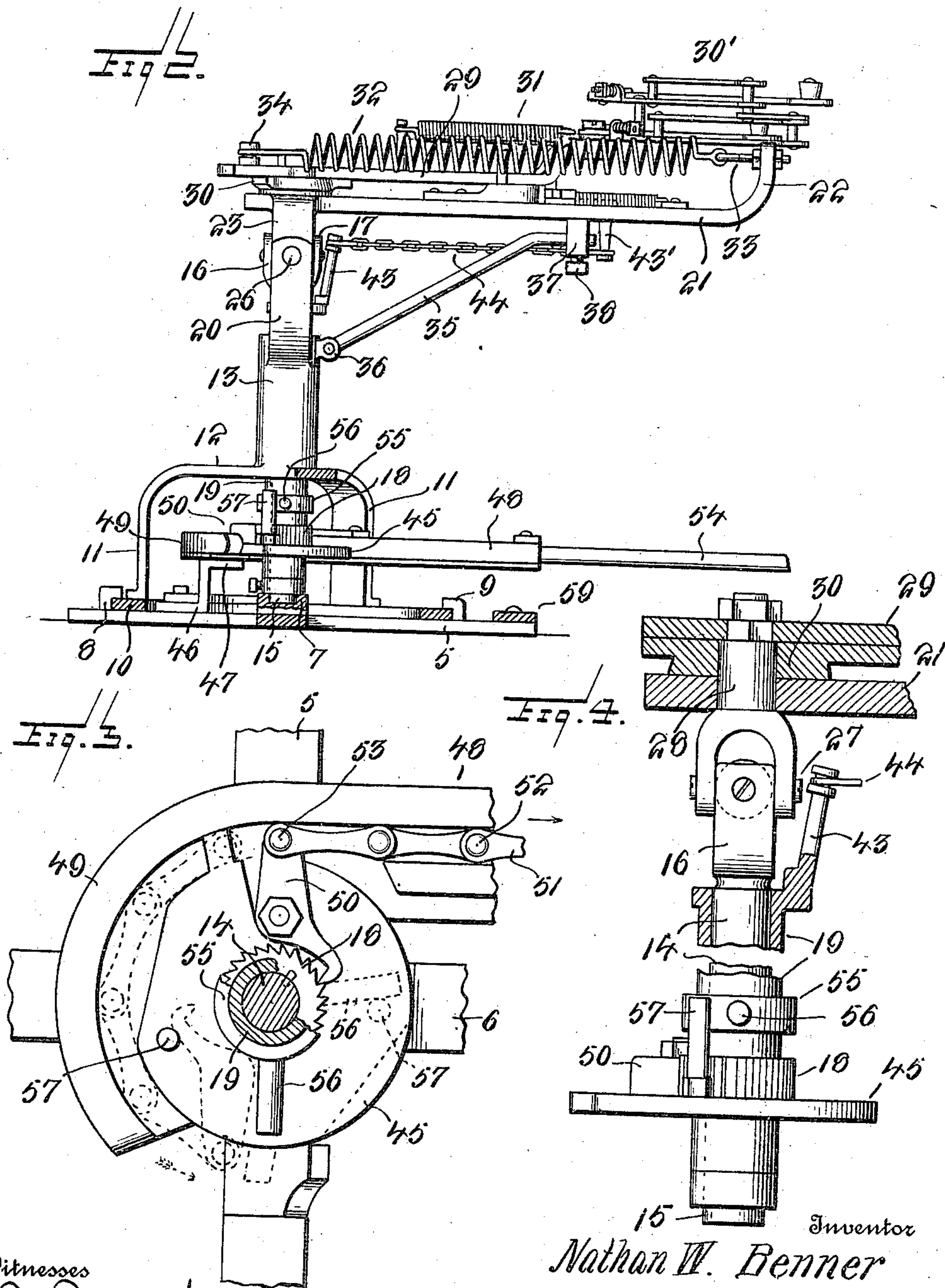
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UNITED STATES PATENT OFFICE.

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TARGET-TRAP.

985,651.

Specification of Letters Patent.

Patented Feb. 28, 1911.

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To all whom it may concern:

Be it known that I, NATHAN W. BENNER, a citizen of the United States, residing at Mahanoy City, in the county of Schuylkill and State of Pennsylvania, have invented new and useful Improvements in Target-Traps, of which the following is a specification.

This invention relates to improvements in target traps such as are usually employed for throwing clay pigeons and the like.

One object of the invention is the provision of a trap including a base having a pedestal rotatably mounted thereon and means combined with the base and pedestal adapted to adjustably secure the pedestal in different positions on the base to vary the direction of the line of flight of the thrown target.

Another object is the provision of an improved means for moving the throwing arm to set position and releasing the same to swing in the arc of a circle.

With these and other objects in view, which will more fully hereinafter appear, the present invention consists in certain novel details of construction and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings, and more particularly pointed out in the appended claims; it being understood that various changes in the form, proportion, size, and minor details of the device may be made, within the scope of the appended claims, without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, forming part of the specification; Figure 1 is a plan view of the device. Fig. 2 is a sectional end elevation approximately on the line 2—2 of Fig. 1 and looking in the direction of the arrow. Fig. 3 is a detail plan view of a portion of the operating chain and its guide also showing the standard in vertical section and the means for actuating said standard to turn. Fig. 4 is a detail side elevation partly in section of the sleeve for actuating the latch also showing the standard in side elevation and means for actuating the same to turn and further showing the inner end portion of the throwing arm and its support in longitudinal section. Fig. 5 is a detail side elevation of the device for adjust-

ably securing the pedestal to different portions of the base.

Similar numerals of reference are employed to designate corresponding parts throughout.

The base comprises a pair of cross bars designated by the numerals 5 and 6, the said cross bars bearing one upon the other and fixedly secured together at their medial portions, and provided with a socket as shown in Fig. 2 and designated by the numeral 7.

Extending upwardly from the terminal portions of the cross bars 5 and 6 are lugs 8, the upper end portions of which are turned inwardly as shown at 9, the said intumed portions being spaced from the upper faces of the cross bars and cooperating with the said upper faces to provide guides.

Arranged on the upper faces of the cross bars is a metal annulus designated by the numeral 10. The peripheral portion of this annulus is arranged between the guides formed by the intumed portions 9, and the upper faces of the cross bars 5 and 6, and is designed to rotate in said guides. Extending upwardly from the upper surface of the annulus 10 are a plurality of spaced legs designated by the numeral 11. The upper end portions of the legs 11 are bent inwardly as shown at 12 and are connected to a vertically extending tubular pedestal designated by the numeral 13. The axis of the pedestal 13 is in alinement with the axis of the socket 7, and extending through the pedestal 13 is a cylindrical standard 14. The lower end of the cylindrical standard 14 is reduced as shown at 15 in Fig. 2 and journaled in the socket 7. The upper end portion of the standard 14 extends above the tubular pedestal 13 and terminates in a pair of spaced and vertically extending arms 16 and 17.

Keyed to the standard 14 and at a point intermediate the annulus 10 and lower end of the tubular pedestal 13 is a ratchet wheel 18, the function of which will appear later. Arranged in the tubular pedestal 13 and loosely receiving the standard 14, is a sleeve 19, the lower end of which bears on the upper surface of the ratchet wheel 18, while the upper end of which extends above the upper end of the tubular pedestal 13 and at a point adjacent to the lower ends of the jaws 16 and 17. Rising outwardly and up-

wardly from diametrically opposite points on the upper end portion of the tubular pedestal 13 are spaced arms one of which is shown in Fig. 2 and designated by the numeral 20.

What will subsequently be termed an arm support is shown to include an elongated body portion designated by the numeral 21, said body portion being rectangular in cross section and terminating at one end in an upturned extension 22. The opposite end portion of the body 21 is provided on its opposite sides with downwardly extending arms 23, which fit between the arms 20 of the tubular pedestal 13 and are provided with transverse openings to aline with similar openings in the arms of the pedestal, these alining openings receiving pivot pins 26.

Loosely fitted in openings in the jaws 16 and 17 of the standard are the opposite terminals of a cross-shaped bearing block 27. It might here be stated that the distance between the jaws 16 and 17 of the standard is considerably less than the distance between the jaws of the supporting arm and pedestal, and it might be further stated that the pivotal points of the cross bearing block 27 are substantially in a plane with the pivot pins 26. A head piece is shown to include a cylindrical shank portion 28, one end of which terminates in a pair of spaced jaws having openings for the reception of the end portions of the cross bearing block adjacent to those end portions in engagement with the jaws 16 and 17. With this construction it will be manifest that a universal joint is established between the head piece and standard 14. The inner end portion of the body 21 of the arm support is, at a point between the jaws 23 and 24 provided with an opening for the loose reception of the cylindrical body portion 28 of the head. Fixedly secured to the upper end portion of the cylindrical body portion 28 is the inner end of the throwing arm 29, and interposed between the throwing arm and inner end of the support is a bushing 30, surrounding the cylindrical portion 28 of the head. The outer end portion of the throwing arm 29 is provided with a target holder 30', the said target holder being pivoted to the throwing arm and yieldingly held against lateral movement on said throwing arm by means of a helical retractile spring 31, the opposite ends of which are secured to the target holder 30' and medial portion of the throwing arm 29.

The main spring is designated by the numeral 32 and is of the helical retractile type, having one end secured to an eye bolt 33 extending inwardly from the upturned extension 22 of the arm support, the opposite end of said spring being secured to a stud 34, extending upwardly from the inner

terminal of the throwing arm 29. By the provision of the bushing 30 it will be manifest that the throwing arm will rotate in a plane above the plane of the arm support 21.

Owing to the pivotal connection between the arm support and pedestal 13, it is evident that some means must be provided to support the arm support in a horizontal position as shown in Fig. 2 or at various angles to the pedestal in order that the angle of the line of flight may be varied. In the present instance this means is shown to include a truss bar 35, one end of which is pivoted to a lug 36 extending laterally from the upper end portion of the tubular pedestal 13, the free or opposite end portion of the truss bar 35 being bent and extending to the medial portion of the body 21. Depending from the medial portion of the lower face of the body 21 is a lug 37, having a transverse opening for the reception of the free end of the truss bar 35, the lower end of said lug having a threaded opening communicating with the transverse opening, the said threaded opening receiving a set screw 38, the inner end of which is adapted to bind on the free end portion of the truss bar 35. With this construction it will be manifest that the supporting arm 21 and likewise the throwing arm 29 may be adjustably secured at various angles to the pedestal 13.

Reference now to Fig. 1 discloses the fact that pivoted at one end to the medial portion of the upper face of the supporting arm 21 is a latch 39, one side of the free end portion of which is beveled as shown at 40, the inner end of said beveled portion terminating in a detent 41. The latch extends transverse the supporting arm its free end portion underlying the throwing arm 29 when the latter is in set position and the detent 41 receiving a pin 42 depending from the outer end portion of the throwing arm 29. Extending upwardly and outwardly from the upper end portion of the sleeve 19 is a pin 43, the upper end of which is in alinement with the lower end portion of the pin 43', depending from the latch, connection between the pins 43 and 43' being established by means of a chain or other flexible element designated by the numeral 44. Rotatably mounted on the standard 14 and directly below the ratchet wheel 18 is a plate or disk 45, considerably greater in diameter than the ratchet wheel 18, and the function of which will appear later. Rising from one of the cross arms of the base is a bracket 46, the upper end of which is provided with a laterally extending arm 47, arranged a trifle below the horizontal plane of the plate or disk 45.

What will subsequently be termed a guide is designated by the numeral 48. This mem-

ber is preferably formed of metal the body portion of which is straight and extends between the legs 11 of the pedestal, the body portion terminating in a curved portion 49, which surrounds a portion of the plate or disk 45. The upper face of the guide is channeled longitudinally, such channel extending through the straight and curved portions of the guide, the inner wall of the curved portion surrounding the plate or disk 45 being removed so that a space will exist between the periphery of the plate or disk 45 and outer wall of the channel corresponding approximately to the space between the side walls of the channel in the straight portion of the guide. The curved portion 49 of the guide is fixedly secured to the laterally extending arm 47 of the bracket, the outer end of the straight portion of the guide extending well beyond the base of the trap. Pivoted to the plate or disk 45 is the medial portion of a pawl 50, the engaging end of which is adapted to engage with the teeth of the ratchet 18, the opposite end of the pawl extending beyond the periphery of the plate or disk.

What will subsequently be termed an operating chain is designated by the numeral 51. The links are connected together by means of vertical pivots 52, the width of said links corresponding approximately to the width of the channel in the guide 48. The inner end of the operating chain is pivotally secured to the extending end of the pawl as shown at 53, the outer end of said chain being pivotally connected with an operating rod 54, the said operating rod being reciprocated by a suitable lever arranged at a distance from the trap, and not shown. With this construction it will be manifest when the parts are in position as shown by dotted lines in Fig. 3 that an outward pull on the chain will cause the engaging end of the pawl to move into engagement with the teeth of the ratchet 18, and as the outward pull on the chain continues the standard 14 will be turned and likewise the throwing arm 29 until the latter engages with the latch 39, as shown in Fig. 1, whereupon the parts will assume the positions shown in full lines in Fig. 3. It will be manifest when the parts are in the position just-named that by moving the rod 54 inwardly the operating chain will likewise move inwardly in the channel of the guide 48 and in the space between the periphery of the plate or disk and curved outer wall of the portion 49. Since the chain is of a size to nicely fit within the channel and the space, it will be manifest that the chain while following the curvature of the portion 49 as the inward movement of the rod 54 continues, will turn the disk or plate 45 and likewise move the pawl from engagement with the teeth of the ratchet 18 until

the parts occupy the position shown by dotted lines in Fig. 3.

In order to provide for the release of the throwing arm during inward movement of the chain, the following construction is employed:—By reference now to Figs. 2 and 3 it will be seen that secured to the lower end of the sleeve 19, and at a point below the ratchet 18 is a collar 55 and extending radially from this collar is a pin 56. Extending vertically upward from the plate or disk 45 and adjacent to the periphery thereof is a pin 57 extending upwardly to a point above the collar 55 and so positioned that when the disk or plate is rotated by the inward movement of the chain it will abut against the pin 56 and as the inward movement of the chain continues will turn the said pin 56, whereby the sleeve 19 will be turned and likewise the pin 43 at the upper end of said sleeve. The turning of the pin 43 at the upper end of the sleeve will draw the chain 44 and rock the latch 39 from engagement with the pin 42 depending from the throwing arm. The cross bars 5 and 6 of the base are provided at one end with extensions one of which is shown in Fig. 1 and designated by the numeral 58. The extensions extend well beyond the periphery of the annulus 10, and connection between the extensions is established by means of an arcuate-shaped rack bar 59. Fixedly secured to one of the legs 11 of the pedestal is one end of a radially extending lever 60, the free end of which extends well beyond the rack bar 59. Extending upwardly from the medial portion of the lever is an arm 61, and pivoted to the upper end portion of the arm 61 is the inner end portion of a handle 62. Extending laterally from the leg to which the lever 60 is secured is a guide arm 63, which extends parallel with the lever 60 and to a point in alignment with the rack bar 59. Slidingly fitted in alining openings formed in the lever 60 and guide arms 63 is a keeper 64, the upper end of which extends through the inner end portion of the handle 62 and is provided with a head 65. By reference now to Fig. 1 it will be seen that the rack bar 59 is provided with a plurality of spaced openings 66, which are adapted to independently receive the lower end of the keeper 64. The keeper is provided with a washer 67, arranged to bear on the upper face of the guide arm 63 when the lower end portion of the keeper is received by one of the openings in the rack bar and surrounding the keeper with its opposite terminals bearing on the lower side of the operating lever 60 and washer 67 is a helical thrust spring 68, the function of which is to yieldingly hold the keeper in any of the openings of the rack bar. With this construction it will be manifest when the handle 62 is depressed

and the lower end of the keeper moved from engagement with the rack bar that the annulus 10 will be rotated on the base, and consequently the position of the supporting arm and throwing arm will be changed, so that when the parts are in position as shown in Fig. 1 and after the pedestal has been turned in the manner just described the target will be thrown in a new direction.

From the foregoing, it is evident that I have provided a device which is comparatively simple in structure and inexpensive to manufacture, embodying few parts and these so arranged that the danger of derangement will be reduced to a minimum.

I claim:—

1. A target trap comprising a base, a tubular pedestal supported by the base, a standard loosely fitted in the pedestal and journaled at one end in the base, a throwing arm secured at one end to the standard, an arm support secured to the pedestal, a latch bar pivoted to the support to engage the throwing arm, a sleeve loosely interposed between the standard and pedestal, a connection between the sleeve and latch, mechanism for turning the standard in one direction to move the throwing arm into engagement with the latch, and means actuated by the said mechanism to move the latch from engagement with the throwing arm.

2. A target trap comprising a base, a tubular pedestal supported by the base, a standard loosely fitted in the pedestal and journaled at one end in the base, a throwing arm secured at one end to the standard, an arm support adjustably secured to the pedestal, a latch bar pivoted to the support to engage the throwing arm, a sleeve loosely interposed between the standard and pedestal, a connection between the sleeve and latch, reciprocating mechanism for turning the standard in one direction to move the throwing arm into engagement with the latch, and means actuated by the said mech-

anism to move the latch from engagement with the throwing arm.

3. A target trap comprising a base, a tubular pedestal supported by the base, means for adjustably securing the pedestal to the base, a standard loosely fitted in the pedestal and journaled at one end in the base, a throwing arm having pivotal connection with the standard, an arm support pivoted to the pedestal, and means for adjustably securing the arm support to the pedestal, a latch pivoted to the arm support to engage the throwing arm, a sleeve loosely interposed between the standard and pedestal, a flexible connection between the sleeve and latch, mechanism for turning the standard in one direction to move the throwing arm into engagement with the latch, and means actuated by the said mechanism to move the latch from engagement with the throwing arm.

4. In a target trap the combination with a base, a standard having one end journaled on said base, and a toothed wheel keyed to the standard; of a horizontally disposed channeled guide member supported from said base and having one end portion curved and extending around said standard, the inner wall of said curved portion being removed, a plate journaled on the standard and having its periphery in juxtaposition to the outer wall of the curved portion of said guide member, a pawl pivoted to the plate and having one end adapted to engage said toothed wheel, and an operating chain having one end connected with the pawl and including a plurality of pivoted links movable in said guide member and in the space between the curved end portion of the latter and plate.

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

NATHAN W. BENNER.

Witnesses:

NELSON F. DAVIS,
FRANK J. BASTIAN.