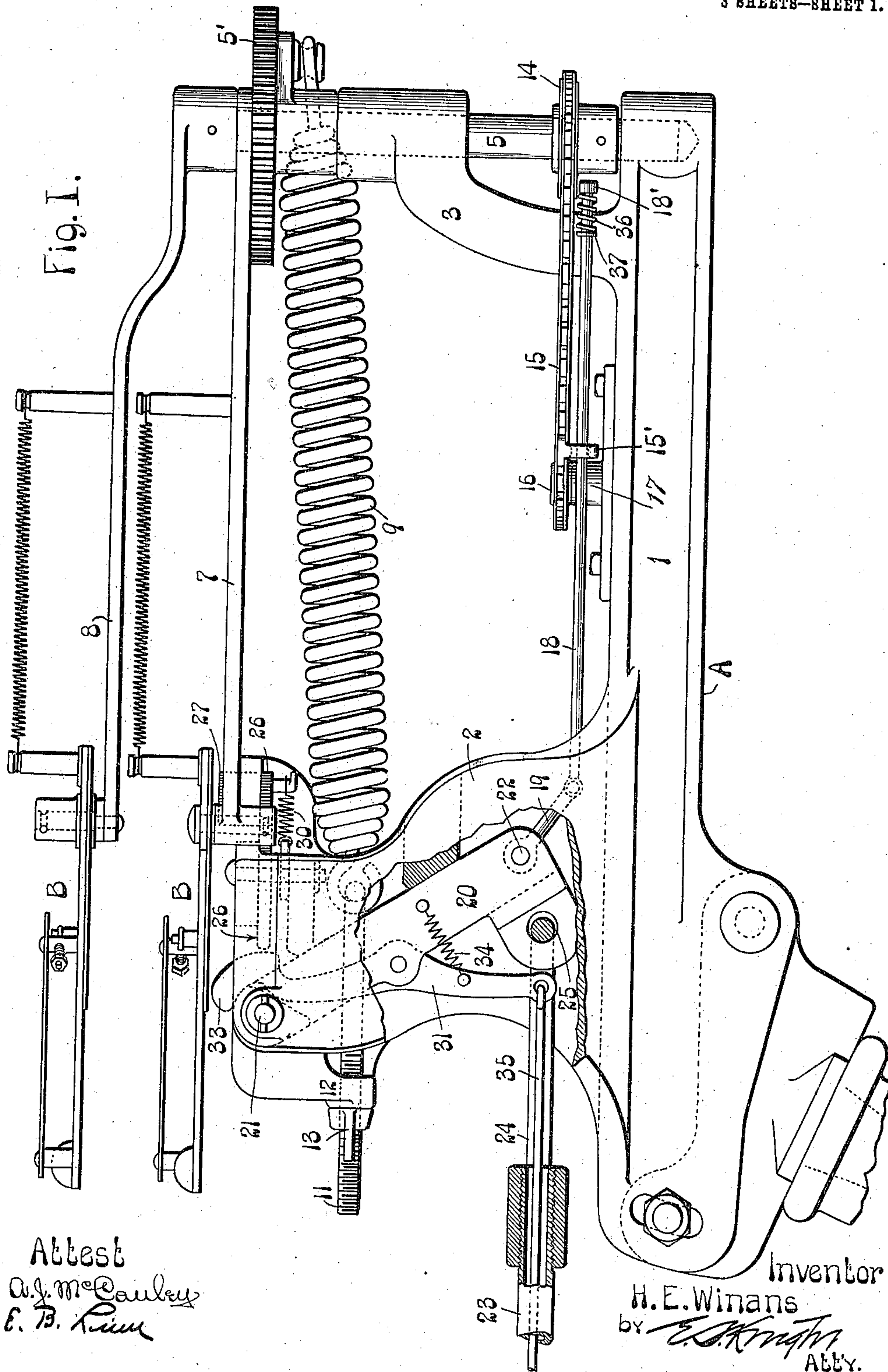


H. E. WINANS.
 TARGET TRAP.
 APPLICATION FILED DEC. 6, 1909.

963,347.

Patented July 5, 1910.

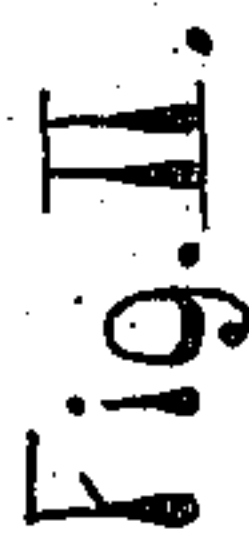
3 SHEETS—SHEET 1.



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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. III.

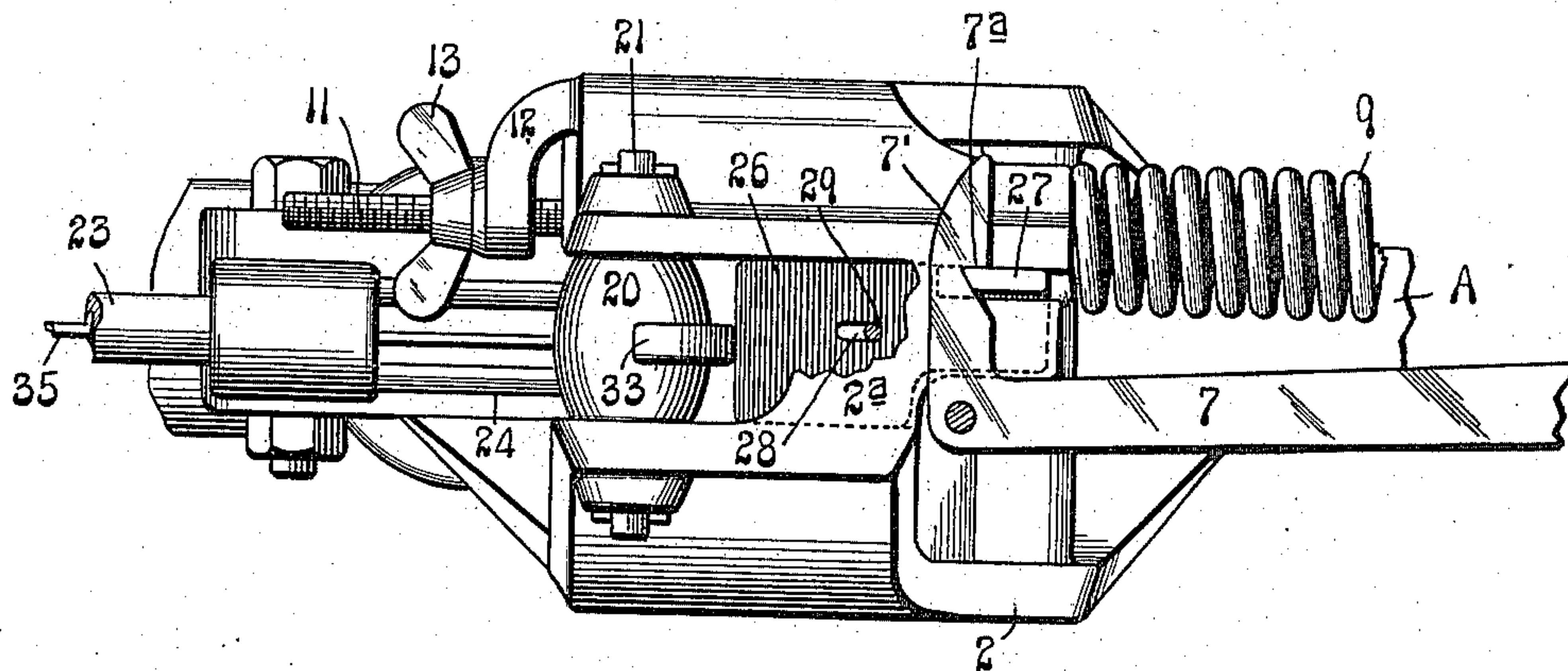
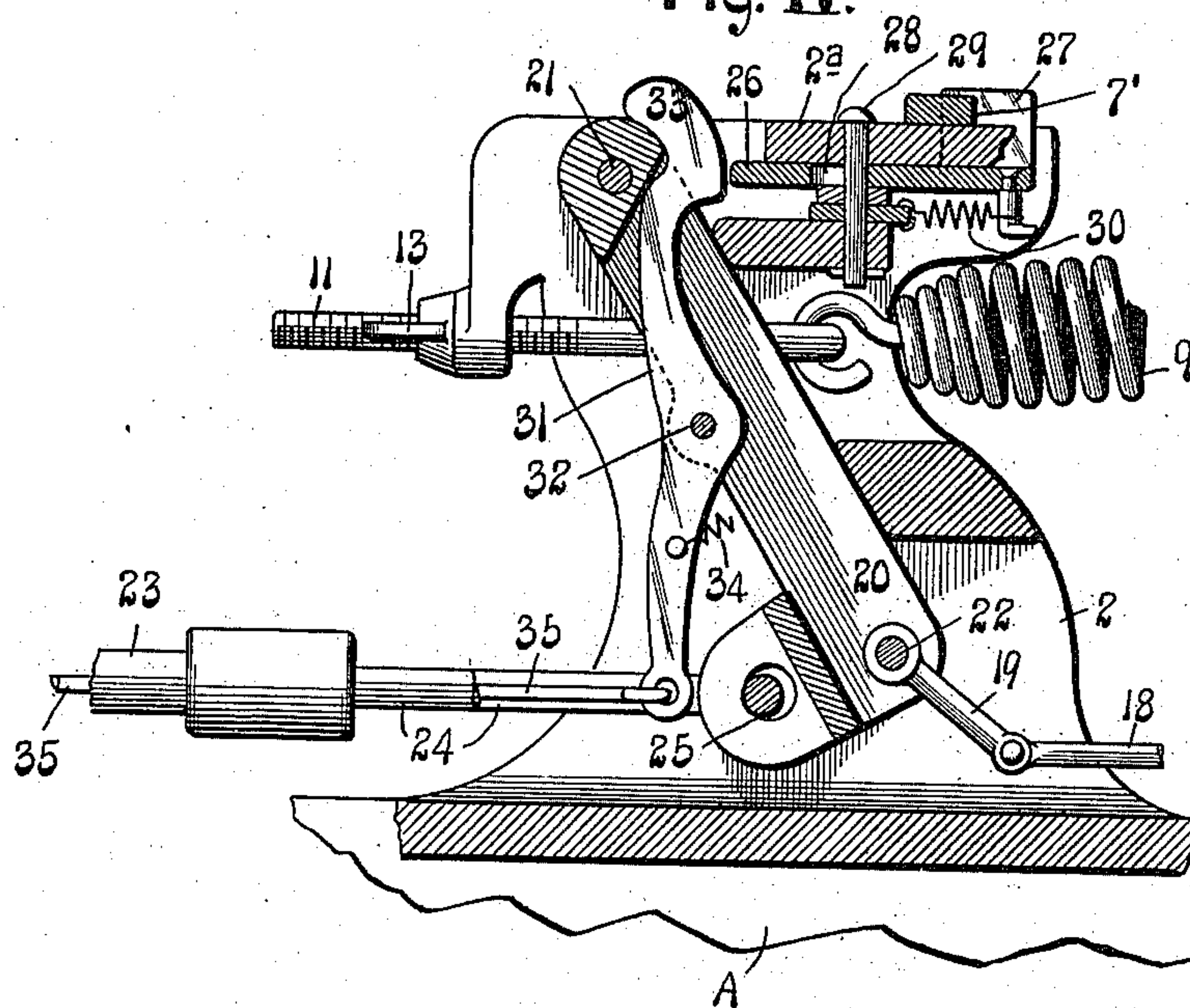


Fig. IV.



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UNITED STATES PATENT OFFICE.

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TARGET-TRAP.

963,347.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HENRY E. WINANS, a citizen of the United States of America, residing at Belleville, in the county of St. Clair and State of Illinois, have invented certain new and useful Improvements in Target-Traps, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to target traps for throwing disk targets into the air and it has for its object the production of a trap of this description whereby "doubles", or, in other words, two targets may be thrown simultaneously from the trap.

Figure I is a side elevation of my improved target trap with portions broken away to afford a view of parts back of them. Fig. II is a top or plan view of the trap with parts broken out. Fig. III is a top or plan view of the latch mechanism with parts broken out. Fig. IV is a longitudinal section taken through the trap, at the location of the latch mechanism.

In the accompanying drawings:—A designates the main frame of my trap, which includes a suitably supported arm 1 surmounted by a double walled standard 2 located near the rear end of the arm and a post 3 located near the front end of the arm, which latter member serves as a support for a bearer arm 4, (see dotted lines Fig. II), extending horizontally and laterally therefrom.

5 designates a main vertical shaft journaled in the arm 1 and the post 3, and 6 is an auxiliary vertical shaft journaled in the bearer arm 4 and arranged parallel with the first named shaft. The two shafts 5 and 6 are rendered coöperable with each other through the medium of inter-engaging gear wheels 5' and 6' fixed respectively to the shafts 5 and 6 and which are adapted to rotate in reverse directions when the main vertical shaft 5 is rotated, as will hereinafter appear.

7 is a throw arm fixed to the main vertical shaft 5 and 8 is a throw arm fixed to the secondary vertical shaft 6 and extending rearwardly therefrom at a higher elevation than the first named throw arm 7, each throw arm being equipped with a target carrier B that may be of any ordinary or

preferred construction and for which no invention *per se* is herein claimed.

9 and 10 designate throw springs, each having one of its ends attached to one of the gear wheels 5' or 6', or to the shaft to which the gear wheel is affixed by means of a suitable arm fixed either to the gear wheel, or the shaft, the spring 9 being shown as having connection with the main shaft 5, while the spring 10 has connection with the secondary shaft 6. The throw springs are connected at their rearward ends to the standard 2 by tension rods 11 which extend through arms 12 projecting from the standard, and are equipped with thumb nuts 13 adapted to be adjusted upon the tension rods for the purpose of varying the degree of tension in the throw springs.

For the purpose of rotating the main vertical shaft 5 in order that it may act to impart swinging movement to the throw arm carried thereby and a similar movement, but in a reverse direction, to the secondary shaft 6 and its throw arm, I provide operating mechanism for said main shaft as follows: The main shaft has fixed to it a belt wheel 14 that receives a belt 15, preferably a chain belt, and which is also operable upon an idler wheel 16 journaled to a post 17 surmounting the main frame arm 1.

18 is a pull rod or pull connection that is adapted to be operated by means to be hereinafter described for the purpose of actuating the belt, in order that rotation of the shafts 5 and 6 may be accomplished through the medium of the belt, and the throw springs 9 and 10 expanded by stretching them due to pulling action exerted upon the springs, by connections to the shafts adapted to travel in arcs of circles extending partially around the axes of the shafts.

20 designates a setting lever which is slotted longitudinally and which is located between the walls of the standard 2. The upper end of this lever is pivoted at 21 to said standard, while the lower end of the lever has connected to it at 22 a link 19 pivoted to the pull rod 18 which serves as an operating means for the belt 15. The pull rod 18 extends loosely through a lug 15' attached to the belt 15 and which is provided at its front end with a head 18' through the medium of which movement is imparted to said belt when the pull rod is drawn rear-

wardly for the purpose of setting the throw arms, at which time the lug 15' is located forwardly from the position in which it is seen in Fig. I.

23 is a pipe that leads to the trap from a point distant therefrom and through the medium of which the setting lever 20 is operated, the pipe being united to the setting lever by a yoke 24, or other suitable rigid connecting member which is suitably fastened to the pipe and extends through an eye 25 in the lower end of the lever.

It will be apparent from the foregoing that the setting lever may be either drawn rearwardly or moved forwardly through the medium of the pipe 23.

The throw arm 7, which is carried by the main shaft 5 and is, therefore, capable of being brought to a position of rest directly above the main arm 1 of the trap spring is provided with a laterally projecting finger 7' located at the free end and which contains a notch 7^a.

26 is a latch plate slidably mounted beneath the top member 2^a of the double walled standard 2 and which is provided at its forward end with an upwardly extending sear 27 adapted to enter the notch 7^a in the finger of the throw arm 7 when said throw arm is brought into alinement with the main frame 1 of the trap frame. The latch plate 26 is restricted in movement longitudinally of the trap by a pin 29 that extends downwardly through the top of the standard 2 and through the slot 28 in the latch plate and said latch plate is normally held in a retracted position by a draw spring 30, (see Figs. I and IV).

31 designates a latch operating lever within the setting lever 20 and pivotally connected intermediate of its ends to said setting lever at 32. At the upper end of the latch operating lever is a cam 33 adapted to engage the rear end of the latch plate 26 and force the latch plate forwardly for the purpose of disengaging its sear from the finger of the throw arm 7.

34 is a retracting spring connecting the lower arm of the latch operating lever 31 to the setting lever 20 and by which the upper arm of said lever is normally held in such position as to permit of the latch plate 26 occupying a position that provides for its sear being permitted to perform its office of holding the throw arm 7 from movement previous to the springing of the trap after it has been set.

35 is a pull rod connected to the lower arm of the latch operating lever 31 and extending through the pipe 23 to its end farthest removed from the trap and at which the trap operator is stationed when the trap is being used.

The operation of my trap in practical service is as follows: In the drawings, the

trap is illustrated as it appears when set, the throw arm 7 being restrained from movement due to the engagement of the sear of the latch 26 with the finger 7' of said throw arm, the throw arm 8 being also restrained due to such engagement and the fact that it is operable only upon the operation of the throw arm 7 and the throw springs 9 and 10 being stretched so that they are under tension. The only act now necessary on the part of the operator to spring the trap is that of exerting a pull upon the pull rod 35 whereby the latch operating lever 31 is so moved that its cam 33 will act, by pressure against the latch plate 26, to carry said latch plate forwardly and disengage its sear from the finger 7' of the throw lever 7. The throw arm 7 is therefore released from restraint, as is also the throw arm 8 previously restrained by the same agency as that which restrained the throw arm 7, and the throw springs exert their power to rotate the shafts 5 and 6 and consequently the two throw arms carried thereby. It will be seen that due to the construction set forth, the shafts 5 and 6, and the intermeshing gear wheels 5' and 6' carried thereby, are rotated in opposite direction, (as indicated by the arrows Fig. II), and that as a consequence, the two throw arms move in diverse directions and that targets seated in the carriers with which the throw arms are equipped will be discharged from said carriers at the proper moments and in the same general direction. That is, forwardly. The pull rod 33 after being operated is released and assumes its normal position.

It will be noted on reference to Fig. I that the two throw arms of my trap are located at different elevations and that consequently there is no liability of interference between the arms or parts carried thereby when the arms partake of their movements in target throwing action. To restore the throw arms to set position, the operator imparts a longitudinal movement to the pipe 23 in a direction away from the trap and, by so doing, draws the setting lever 20 forwardly with the result of causing it to exert a pull upon the connection 18. This connection in turn acts upon the belt 15 to exert a pull thereon and cause said belt to impart rotation to the main vertical shaft 5, it being understood that the point of attachment of the connection 18 to the belt would, at the beginning of the setting operation, be located at a considerable distance forward from the point at which such attachment appears in the drawings. It will be readily appreciated that upon a requisite movement of the belt 15, due to the actuation of the bolt operating members referred to, the shaft 5, and likewise the shaft 6 coöperable therewith, will be sufficiently rotated to carry the throw arms into the positions illus-

trated in the drawings, the throw springs 9 and 10 placed under tension, and the throw arms placed under restraint through the medium of the latch plate 26 and its sear that engages the finger of the throw arm 7. When the pipe 23 is operated the latch operating lever 31 is carried with the setting lever 20 and the pull lever 35 is carried along with the latch operating lever 31 which is inactive in the setting operation, its cam 33 merely passing the latch plate 26. The operator, after setting the trap in the manner explained, moves the pipe 23 forwardly returning the latch operating lever and pull rod to normal position and to restore the setting lever 20 to inactive position and permit the belt 15 to partake of the movement necessary in the operation of the throw arms for target throwing action.

I incorporate in my target trap a device not previously mentioned and which is associated with the connecting rod 18 to serve as a buffer when the throw arms of the trap are sprung for target throwing action. It is a well known fact that the throw arms of target traps partake of considerable vibration immediately after they have been actuated to throw targets, and that the pull connections utilized in the traps not infrequently become broken if attempts are made to reset the traps before the vibration of the throw arms has ceased.

To obviate the liability of breakage of the connections in my trap, I place upon the pull rod 18 a buffer spring 36 located in rear of the head 18' of said pull rod and mount loosely on the rod in rear of the spring a washer 37. It will be readily appreciated that when the pull rod is drawn rearwardly to operate the belt 15 for trap setting action, the buffer spring 36 receives any shock incident to vibration of the throw arms and said belt may, therefore, be operated immediately after targets have been thrown from the target carriers without any liability of breakage of parts of the trap that are actuated through the medium of the pull rod.

I claim:

1. A target trap comprising a plurality of coöperable laterally swinging throw arms, each provided with a target carrier at its outer end, and means for operating said throw arms simultaneously.

2. A target trap comprising a plurality of coöperable laterally swinging throw arms movable in opposite directions, and each provided with a target carrier at its outer end, and means for operating said throw arms simultaneously.

3. A target trap comprising a plurality of throw arms geared to each other in common, and each provided with a target carrier, and means for operating said throw arms simultaneously.

4. A target trap comprising a plurality of

coöperable laterally swinging throw arms, each provided with a target carrier at its outer end, means for moving said throw arms simultaneously to set positions, and means for actuating the throw arms after they have been set to discharge targets from their carriers simultaneously.

5. A target trap comprising a plurality of coöperable laterally swinging throw arms, each provided with a target carrier at its outer end, power means for actuating the throw arms simultaneously and in which power is stored in the act of setting the throw arms for target throwing action, and means for moving said throw arms to set positions and storing power in said power means.

6. A target trap comprising a plurality of coöperable throw arms each provided with a target carrier, power means for actuating said throw arms in which power is adapted to be stored in the act of setting the throw arms, means for moving said throw arms simultaneously to a set position, and a latch device by which said throw arms are collectively held in the set position.

7. A target trap comprising a plurality of shafts geared to each other and arranged for simultaneous rotation, throw arms fixed to said shafts and provided with target carriers, and means for operating said shafts to provide for movement of said arms simultaneously.

8. A target trap comprising a plurality of shafts, gear wheels carried by said shafts intermeshing with each other, throw arms carried by said shafts and each provided with a target carrier, and means for operating said shafts to cause them to impart simultaneous movement to all of said throw arms.

9. A target trap comprising a plurality of coöperable laterally swinging throw arms, each provided with a target carrier at its outer end, a plurality of throw springs for actuating said throw arms, and means for moving said throw arms to set positions previous to their actuation by said throw springs.

10. A target trap comprising a main shaft, a secondary shaft arranged parallel with said main shaft, throw arms carried by said shafts, gear wheels carried by said shafts and intermeshing with each other, power means for operating said shafts and throw arms simultaneously after they have been moved to set positions, and means for moving the throw arms to set positions.

11. A target trap comprising a laterally swinging throw arm provided with a target carrier at its outer end, a shaft by which said throw arm is carried, an endless belt for operating said shaft, and a pull connection fitted to said belt and by which it is actuated.

12. A target trap comprising a throw arm, 130

a shaft by which said throw arm is carried, a belt for operating said shaft, a lug carried by said belt, and a pull rod operable in said lug by which said belt is moved to rotate
5 said shaft.

13. A target trap comprising a laterally swinging throw arm, a shaft by which said throw arm is carried, an endless belt for rotating said shaft and provided with a lug, a
10 pull connection connected with the lug for operating said belt, and a buffer for preventing shock to said pull connection.

14. A target trap comprising a throw

arm, a shaft by which said throw arm is carried, an endless belt for rotating said
15 shaft, a pull rod having a connection slidably connected to said shaft rotating belt, and a buffer carried by said pull rod and adapted to engage the connection to said belt, substantially as and for the purpose set
20 forth.

H. E. WINANS.

In the presence of—
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EDNA B. LINN.