

(No Model.)

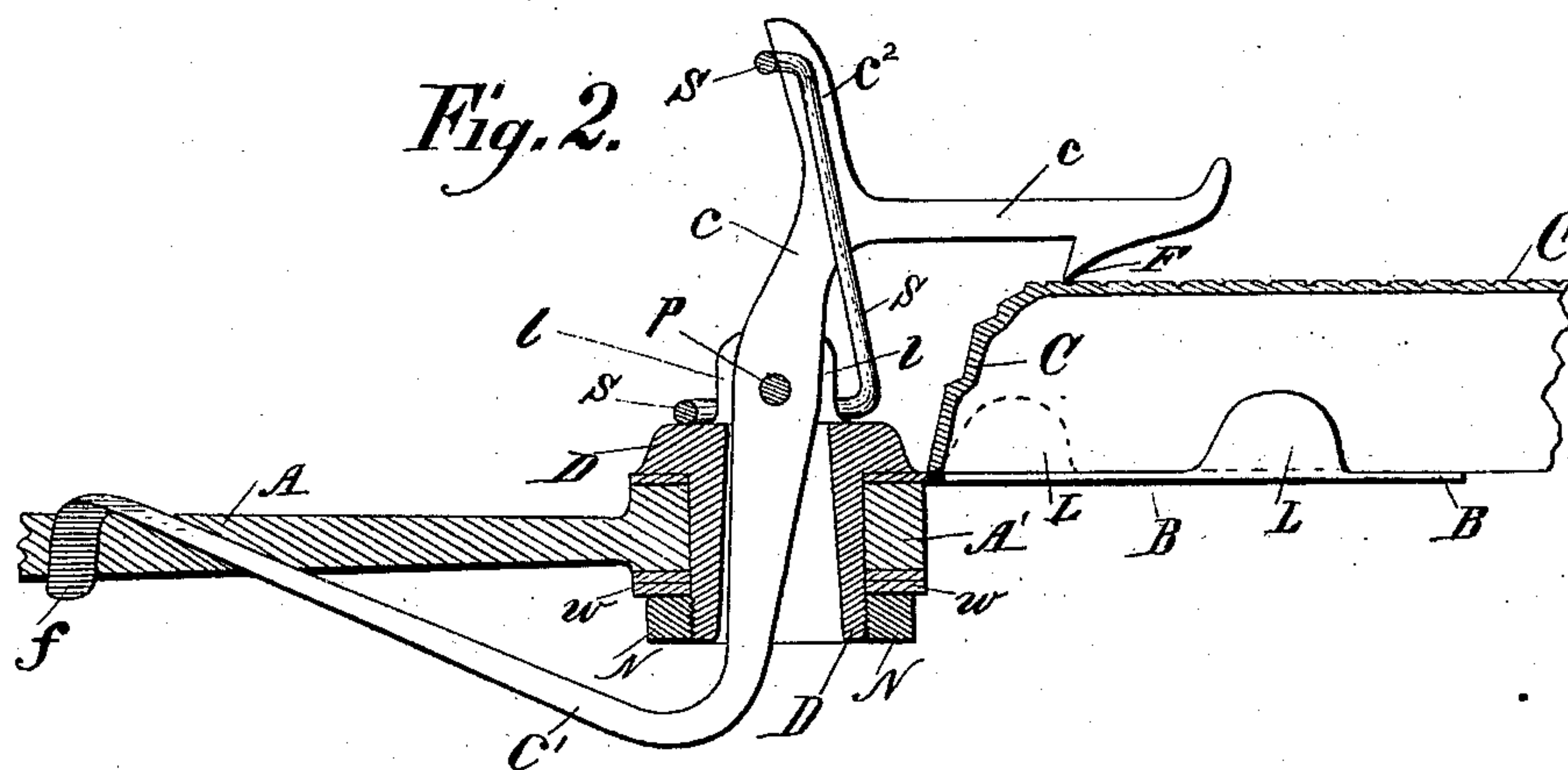
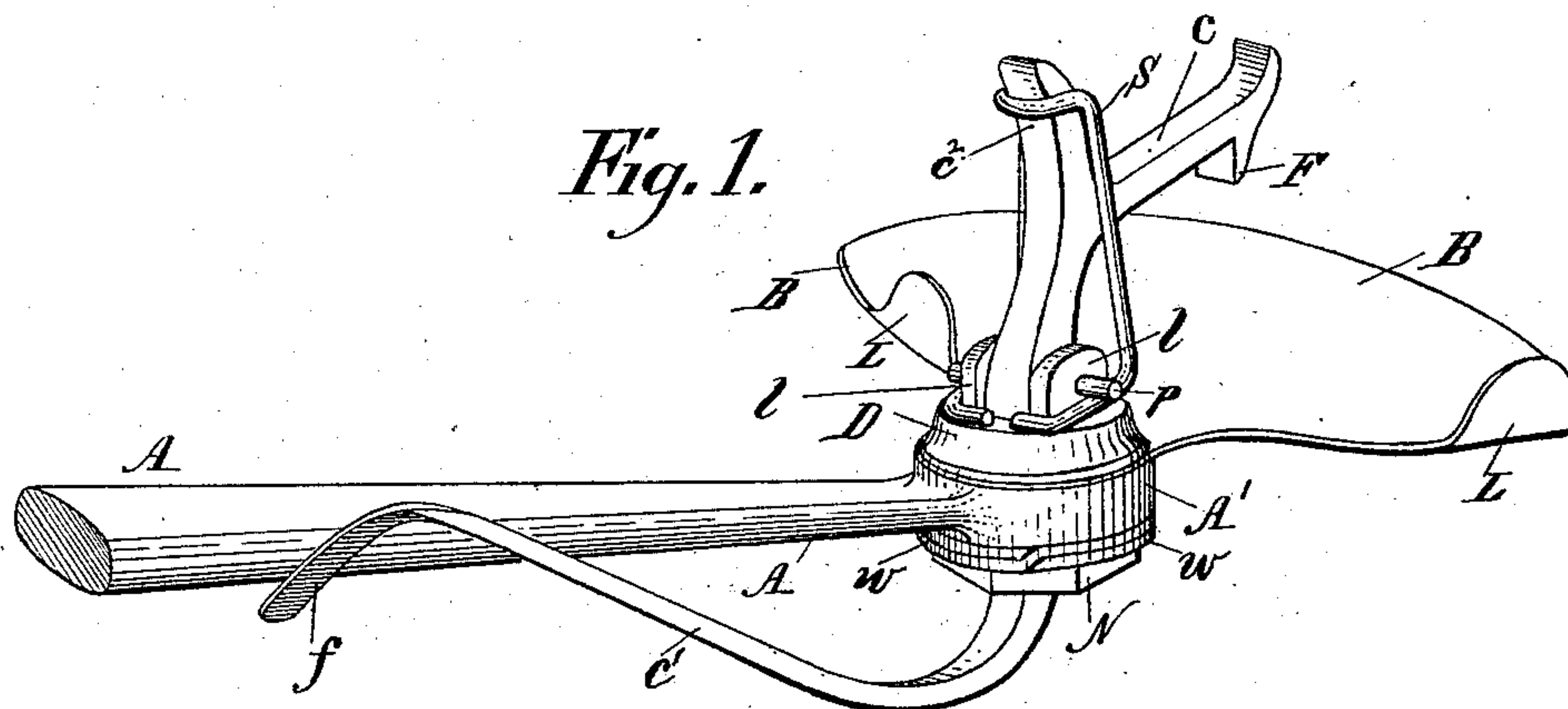
2 Sheets—Sheet 1.

P. MARQUA.

BALL TRAP.

No. 301,908.

Patented July 15, 1884.



Attest:

C Shappell  
Notary

Inventor:

Philip Marqua  
By Robert H. H. H.  
Atty.

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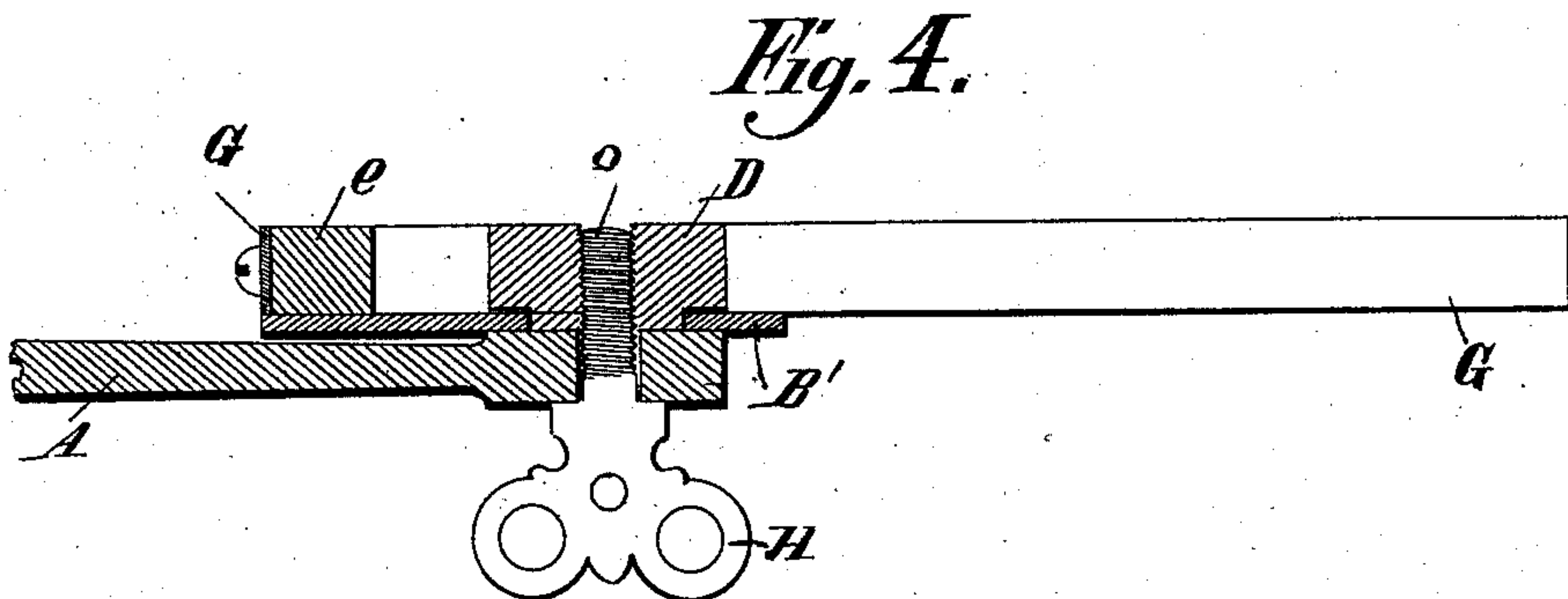
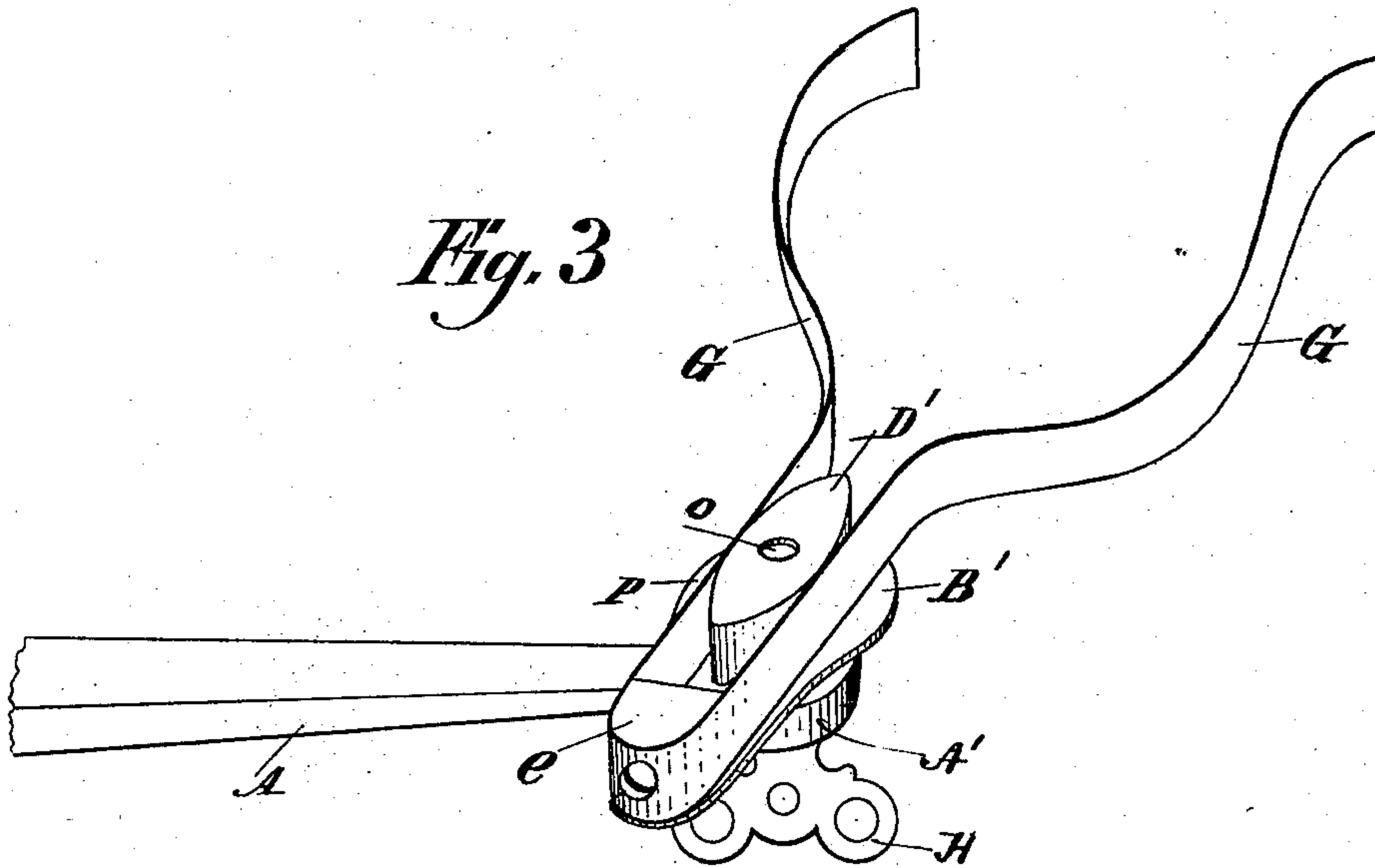
2 Sheets—Sheet 2.

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BALL TRAP.

No. 301,908.

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*Attest.*  
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*Inventor.*  
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# UNITED STATES PATENT OFFICE.

PHILIP MARQUA, OF CINCINNATI, OHIO.

## BALL-TRAP.

SPECIFICATION forming part of Letters Patent No. 301,908, dated July 15, 1884.

Application filed April 11, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, PHILIP MARQUA, a citizen of the United States, residing at Cincinnati, Ohio, have invented new and useful Improvements in Sending-Traps for Flying Targets, of which the following is a specification.

My invention relates to "traps" or sending apparatus used in projecting clay targets or "pigeons" into the air for sporting purposes, its object being to render the same more efficient and produce a more perfect flight of the target, and also to adapt the same to a sending of a "tongueless" target. Such traps, as at present used, employ a pivoted arm carrying the target usually secured thereto by a tongue, and by the partial rotation of the arm upon its pivot and the sudden arresting of its movement the target is projected into the air with an independent rotary motion. The flight thus imparted is not always uniform or satisfactory, but may be rendered so by imparting to the target a sudden impulse at the instant of projection independently of the carrying-arm.

One of the objects of my invention is to produce a trap capable of imparting this sudden and independent impulse; and to this end it consists in mounting upon the main sending-arm an independent pivoted carrier, which, by the movement of the arm and at the instant of arrest, is swung around upon its pivot by its own centrifugal force, and suddenly thrown into line with the main arm as an extension thereof, releasing the target at the culmination of the instantaneous independent impulse which imparts additional force both in projection and rotation. This feature of my invention may be independently used with traps adapted to targets either with or without tongues.

The remaining features of my invention relate more especially to the means for projecting a tongueless target, and consist in holding and releasing apparatus, as hereinafter more fully described.

In the drawings accompanying and illustrating this specification, I have shown a form of apparatus in which all these features are embodied.

Figure 1 is a perspective view of the appa-

ratus complete; Fig. 2, a vertical longitudinal section of the same. Figs. 3 and 4, similar perspective and sectional views of a modified construction.

In the drawings, A designates the ordinary sending-arm of a trap, the latter being of any approved construction, and requiring here no special illustration or description. To the outer end of the arm A, I attach a pivoted extension, B, which forms the carrier of the target C, a shallow cylindrical cup of fragile material, which in the present case, Fig. 2, is shown tongueless. The carrier is an approximately triangular or semicircular holder, preferably formed of sheet metal, having a turned-up edge at two or more points, as at L L, forming guide-stops for the target when placed in position upon the bottom of the holder B. In the present case I employ, also, a spring-catch in the form of a bell-crank lever pivoted upon the carrier, with one arm, c, bent forward as a trigger, resting upon the target and holding it by pressure downward upon the carrier, and the other arm, c', extending rearward beneath the main arm A, in such relation that in the independent pivotal movement of the carrier when the latter reaches its ultimate position, the arm c' is brought beneath the main arm A, and by a suitably-curved extremity, f, acting against the main arm as a cam, the trigger end c is forced upward against the force of a spring, S, and the target released.

The construction of the parts in the present case is as follows: The outer end of the sending-arm A is formed into an enlarged cylindrical head, A', perforated vertically. A hollow stud, D, is fitted to this perforation, serving as a pivot and retaining-bolt for the plate or carrier B, which is similarly perforated. The pivot D passes through the head A', and is secured above by its enlargement, and below by a screw-nut, N, with an intervening spring-washer, w. The bell-crank trigger passes through the opening of the stud D, being pivoted above between two lugs, l l, rising from the upper end of the stud at the sides of the perforation. The pivot-pin p, passing through the lugs and trigger, is extended laterally, and forms a holder for the spring S, which is bent horizontally around the lugs, and rises thence



vertically behind and engages with a vertical extension,  $c^2$ , of the trigger-arm.

The operation is as follows: The trap being set, the target is placed in position upon the holder and secured beneath a tooth,  $F$ , of the forward extension of the trigger-arm. The holder is then thrown back to an acute angle with the arm  $A$  upon the side from which the movement of the latter proceeds. By the swinging of the main arm the carrier is impelled by its own centrifugal force to rotate upon its pivot in the same general plane and direction, and at the moment of arrest of the main arm by its provided stop the carrier is suddenly swung outward to its extreme position, and by the action of the trigger mechanism the target is at the same instant released, the swing of the carrier and the centrifugal force of the target acting against the holding-flange or tongue  $L$  as an abutment, imparting to the target a rapid whirling motion, which, with the sudden access of projecting force at the moment of release, gives a perfect and absolutely controllable flight, regulated by the degree of impelling force.

In the modified form of apparatus shown in Figs. 3 and 4, the carrier consists of two arms formed to clasp the target around its marginal wall, and to release it by spreading apart. The construction is as follows: The clasp-arms  $G$   $G$ , formed to embrace and hold the target, as described, are secured at their rear ends to a stud or block,  $c$ , rising from a plate,  $B'$ , pivoted to a stud or block,  $D'$ , which in turn is pivoted upon the enlargement  $A'$  of the main arm  $A$ . The stud  $D'$  is somewhat elliptical in horizontal section, with its lower portion cylindrical, forming the pivot for the plate  $B'$ —an arrangement permitting the stud to be adjusted with its longer axis in any desired relation to the main arm  $A$  without interfering with its function as a pivot for the plate  $B'$ . The adjustment is effected and the stud secured to the enlargement  $A'$  by means of a thumb-screw,  $H$ , constituting also the pivot of the stud  $D'$ , the object of the adjustment being to place the elongated stud  $D'$  in such relation to the axis of the main sending-arm that when the pivoted carrier (consisting in this case of the plate  $B'$  and the arms

$G$  secured thereto) is swung around by its centrifugal force the arms will be separated by impinging against the extremities of the stud  $E$  and release the target at the proper moment.

I claim and desire to secure by Letters Patent—

1. In a trap or sending apparatus for flying targets, a sending-arm provided with a pivoted extension constituting the target-carrier, which, by the motion and arrest of the sending-arm, is independently rotated upon its pivot by centrifugal force into a position elongating the main arm, and projects the target by a sudden rotary impulse, substantially as set forth.

2. In a trap or sending apparatus for flying targets, a sending-arm provided with a pivoted extension carrying the target, and having an independent rotation by centrifugal force, in combination with target holding and releasing mechanism automatically actuated to release the target at the moment of extreme extension of the sending-arm, substantially as set forth.

3. In a sending apparatus for flying targets, in combination with a pivoted sending-arm having a pivoted target-carrying extension, a spring-catch adapted to hold the target and release the same automatically at the proper instant of time, as set forth.

4. In a target-sending apparatus, in combination with the main arm  $A$  and pivoted carrier  $B$ , the trigger  $c$ , provided with the releasing-arm  $c'f$ , and holding-spring  $S$ , substantially as and for the purpose set forth.

5. In a target-sending apparatus, the combination of the main arm  $A$  and pivoted extension  $B$ , provided with automatic holding and releasing devices, with the adjustable spring-washer  $w$ , for regulating the frictional resistance to centrifugal action of the carrier, substantially as set forth.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

PHILIP MARQUA. [L. s.]

Witnesses:

L. M. HOSEA,  
R. M. MOORE.