

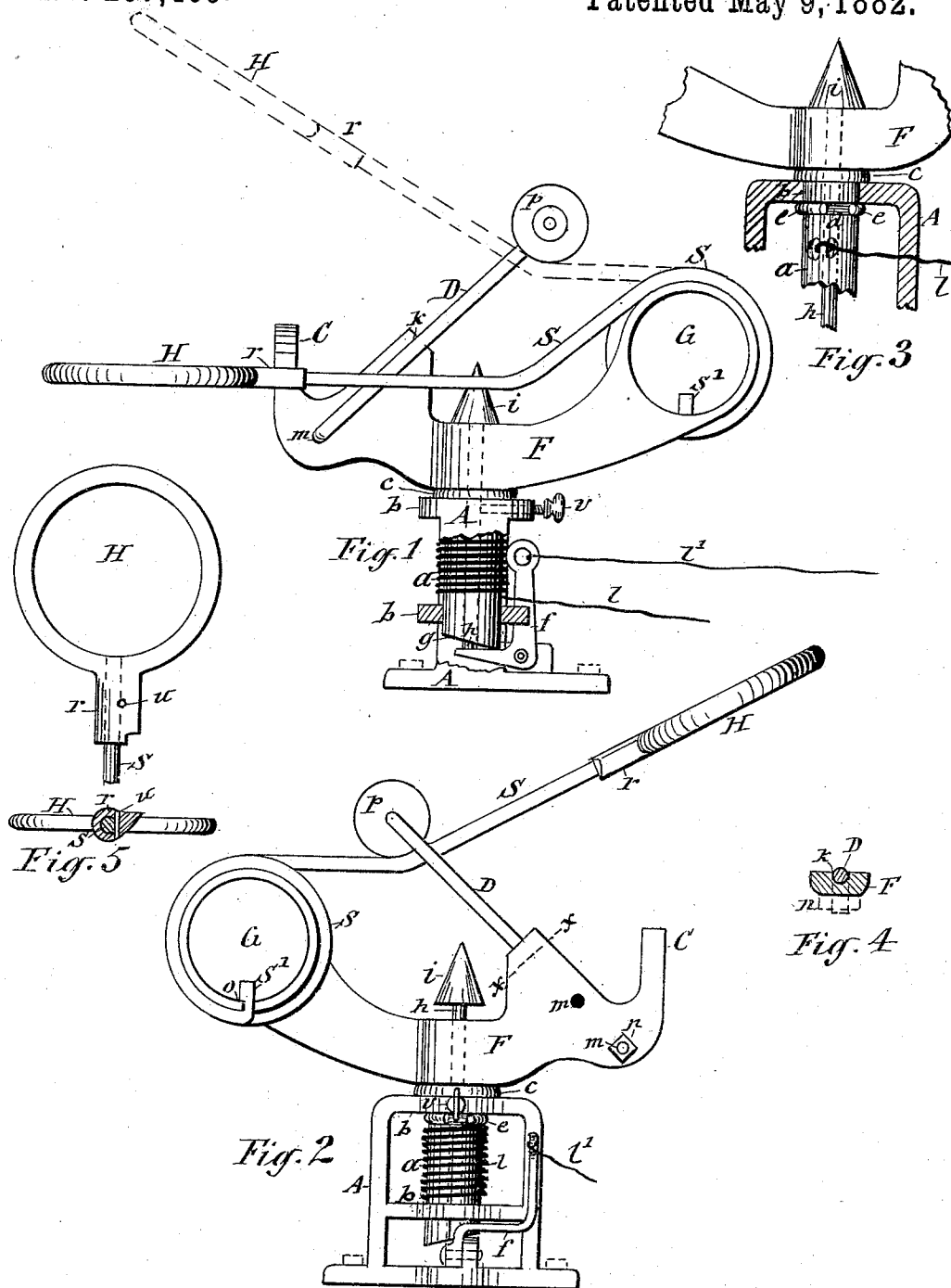
(No Model.)

M. E. CARD.

BALL TRAP.

No. 257,469.

Patented May 9, 1882.



WITNESSES—
C. H. Duell
Wm. L. Raymond

INVENTOR—
Milton E. Card
per Duell, Laessle & Co.
Attys.

UNITED STATES PATENT OFFICE.

MILTON E. CARD, OF CAZENOVIA, NEW YORK.

BALL-TRAP.

SPECIFICATION forming part of Letters Patent No. 257,469, dated May 9, 1882.

Application filed February 9, 1882. (No model.)

To all whom it may concern:

Be it known that I, MILTON E. CARD, of Cazenovia, in the county of Madison, in the State of New York, have invented new and useful Improvements in Ball-Traps, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to ball-traps used by sportsmen for throwing glass balls designed for flying targets.

The invention consists in a novel construction and combination of the constituent parts of the ball-trap, as hereinafter fully described, and specifically set forth in the claims.

Referring to the annexed drawings, Figures 1 and 2 are elevations of the ball-trap, showing opposite sides of the revolving frame and the front and end of the standard on which the said frame is mounted, a portion of the standard being broken away in Fig. 1 to better illustrate the tripping device. Fig. 3 is a detail view of the connection of the revolving frame with the standard. Fig. 4 is a transverse section taken on line *xx* in Fig. 2, and Fig. 5 are detail views, illustrating the attachment of the ball-holder to the spring-arm.

Similar letters of reference indicate corresponding parts.

A represents the standard of the ball-trap; and it consists of a suitable base adapted to be bolted down and firmly secured in its position, from which base rise two posts, which are united at the top and near their base by cross-plates *b b*.

Vertically through the center of each of the cross-plates is a circular eye, in which is journaled the spindle *a* of the revolving frame F, said parts being cast in one piece, and provided with a shoulder, *c*, on the upper end of the spindle, by which the frame F rides on top of the standard A. Said frame and standard are coupled together by means of an elastic severed metallic ring, *e*, sprung into a circumferential groove, *d*, in the spindle *a* at the under side of the cross-plate *b* of the standard, as best seen in Fig. 3 of the drawings. The frame F extends laterally in opposite directions from its before-described pivotal connection with the standard, and has integral with one of its ends an open cylinder, G, which projects

from the side of the frame and is disposed in a vertical plane. Upon this cylinder is wound one end of the spring-arm S, terminating with a hook, *s'*, which is turned toward the axis of the cylinder G and engages a notch, *o*, at the free edge of said cylinder. The hook *s'* is maintained in the notch *o* by the arresting-arm D, hereinafter described, which arm limits the thrust of the spring-arm to such an extent as to prevent the coiled end thereof from retracting sufficiently to throw the hook *s'* out of its said engagement.

When it is desired to remove the spring-arm from the frame F for repairs or renewal it becomes necessary to either detach the arresting-arm from the frame F or spring the spring-arm to one side sufficiently to clear the arresting-arm. When this is done the spring-arm S can be swung back sufficiently to turn its coiled end on the cylinder G, and thereby throw the hook *s'* out of the notch *o*, and so soon as this is effected the spring-arm can be slipped off the end of the cylinder G.

To the free end of the spring-arm S is connected the ball-holder H, in the form of a ring made integral with a socket, *r*, which slips over the end of the spring-arm, and is secured thereon by means of a pin or key, *u*, passing transversely through said socket and through the side of the spring-arm, as shown in Fig. 5 of the drawings.

The side of the socket *r* is provided with a horizontal shoulder or projection, which is beveled on its under side.

The other end of the frame F is provided with a rigid or stationary laterally-disposed hook or catch, C, adapted to engage with the shoulder of the socket *r*, before described, and retain the free end of the spring-arm S by forcing the latter down onto and swinging it laterally into said hook. The spring-arm S is thrown off the aforesaid catch C by the following instrumentalities:

Vertically through the center of the spindle *a*, and through the portion of the frame F directly over the spindle, is extended a channel, in which slides a pin or rod, *h*, having fixed to its upper end a conical head, *i*, which projects above the frame F. The lower end of the rod *h* protrudes through the base of the spindle *a*, and across it is extended a bell-crank

or elbow lever, *f*, pivoted on the base of the standard. By pulling on a cord or line, *l*, connected to the free end of the lever *f* the opposite end of said lever is caused to push the rod *h* upward. This brings the conical head of said rod to press against the side of the spring-arm *S* and crowd the same out of its engagement with the hook *C*, before described. So soon as thus released the spring-arm *S* exerts a violent upward thrust, which throws the ball placed in the ball-holder *H*. The direction of the ball is controlled by arresting the motion of the spring-arm *S* at the proper point. This is effected by an arm, *D*, which is adjustably connected to the frame *F*, and has its extremity in the path of the spring-arm, and provided with a rubber pad, *p*, which receives the concussion incident to the sudden arrest of the spring-arm.

The fixed end of the arresting-arm *D* consists of a plain rod, which lies in a groove, *k*, in the side of the frame *F*, and has its end bent at a right angle and passing through a hole, *m*, in said frame, and provided at the opposite side thereof with a clamping-nut, *n*.

In order to admit of varying the direction of the ball propelled by the spring-arm *S*, I provide the frame *F* with two or more holes, *m*, for the attachment of the arresting-arm *D*. The shorter the projection of the arresting-arm the sooner the arrest of the spring-arm *S*, and the nearer to a perpendicular line will be the direction of the ball. The direction of the ball is also to a great extent controlled by means of an inclined face, *g*, on the base of the spindle *a*. The lower portion of said face, when brought over the free end of the tripping-lever *f*, arrests the action of said lever, and the elevated portion of the face *g* liberating said lever and allowing it to press upward the tripping-rod *h*, and thus throw the spring-arm *S* off the catch *C*, only when the spindle *a*, with its revolving frame *F*, stands in the aforesaid position.

The frame *F* is revolved by means of a string, *l*, secured to and wound around the spindle *a*. A draft on the wound-up line imparts the rotary motion to the aforesaid frame.

v represents a set-screw passing through one of the journal-bearings *b*, and adapted to engage the spindle *a*.

When it is desired to hold the frame *F* stationary on its standard *A* the set-screw *v* is brought to bear on the spindle *a*, and thus prevent the movement of the same.

It will be observed that by the described

construction and combination of the constituent parts of my improved ball-trap I render the same exceedingly strong, compact, and simple in construction and most efficient in operation.

Having described my invention, what I claim is—

1. The combination of the frame *F*, provided with the stationary laterally-disposed hook *C*, and the spring-arm *S*, having the ball-holder *H*, provided on the side of its socket *r* with a horizontal shoulder beveled on its under side, the tripping-rod *h*, extended vertically through the center of the spindle *a*, and provided with the cone *i*, and the lever *f*, extended under the base of the spindle, substantially as shown and set forth.

2. The spindle *a*, having the inclined face *g* at its lower end, in combination with the tripping-rod *h*, extended vertically through said spindle, and the tripping-lever *f*, extended under the base of the spindle, substantially as and for the purpose set forth.

3. The combination of the frame *F*, provided with the arresting-arm *D*, and with the open cylinder *G*, the latter having a notch, *o*, in its free edge, and the spring-arm *S*, wound around said cylinder and terminating with a hook, *s'*, turned toward the axis of the cylinder and engaging the notch *o*, said spring-arm being maintained in its connection on the cylinder by the arresting-arm depriving the spring-arm of sufficient play to effect its disengagement from the notch *o*, as specified and shown.

4. The frame *F*, provided with the groove *k* and holes *m*, and the arresting-arm *D*, lying in said groove, and having its lower extremity bent at a right angle and passing through one of the holes *m*, and provided with the clamping-nut *n*, substantially as described and shown.

5. In combination with the spring-arm *S*, the ball-holder consisting of the ring *H*, having integral with it the socket *r*, and provided on the side of said socket with a horizontal shoulder beveled on its under side, substantially as described and shown, for the purpose specified.

In testimony whereof I have hereunto signed my name and affixed my seal, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 31st day of December, 1881.

MILTON E. CARD. [L. S.]

Witnesses:

K. HEY,

C. H. DUELL.