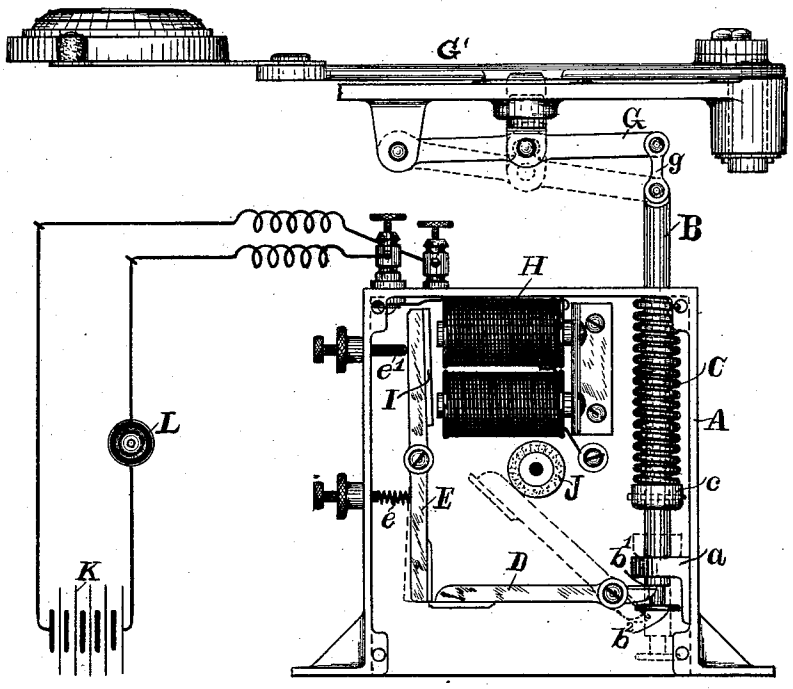
(No Model.)

P. NORTH.

ELECTRICAL RELEASING DEVICE FOR TARGET TRAPS.

No. 469,905. Patented Mar. 1, 1892.



WITNESSES.

Frank. Miller.

Albert H. Bates.

INVENTOR.

Paul North

By his attorney

E. L. Thurston

UNITED STATES PATENT OFFICE.

PAUL NORTH, OF CLEVELAND, OHIO.

ELECTRICAL RELEASING DEVICE FOR TARGET-TRAPS.

SPECIFICATION forming part of Letters Patent No. 469,905, dated March 1, 1892.

Application filed May 6, 1891. Serial No. 391,744. (No model.)

To all whom it may concern:

Be it known that I, PAUL NORTH, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Target-Trap-Releasing Devices, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, which is a front elevation of my improved device with the cover or front plate of the casing removed.

My invention relates to electrical releasing devices for target-traps. I am aware that several different forms of electrical trap-releasing devices have been heretofore devised; but in order to use any of the prior devices it was necessary either to provide a trap especially constructed with reference to such use or to alter the construction of the traps now commonly used by adding brackets thereto upon which the releasing device or parts thereof could be supported and by removing the target-trigger and substituting therefor a trigger of special construction, or in some other manner changing said traps, all of which add to the cost of an electrical equipment to those who have target-traps, while at the same time they unfit the traps for use with the old forms of releasing devices now commonly employed.

My object is to provide an electrical trap-releasing device which can be used with any of the common forms of target-traps now on the market without making any change whatever therein. Thus clubs or other target-trap owners may provide themselves with my electrical releasing equipment and use the same with their old traps without being put to the trouble or expense of altering the same, and if any accident should happen upon the field to the electrical releasing device or its battery the traps may thereafter be released by the old means without any of the annoyance which would follow from a breakdown of an electro-releasing device in a trap constructed with especial reference thereto.

I will now describe in detail the releasing device shown in the drawing, referring to the parts thereof by letters.

A represents a casing within which the mechanism hereinafter described is contained.

B represents a rod which is slidable longitudinally through orifices in the boss *a* and the top wall of the casing. To the upper end of this rod there is attached, as shown in the drawing, one end of a link, cord, or chain, the other end of which is attached to the trigger G of the target-trap G′.

C represents an expanding coil-spring, which surrounds the rod B and thrusts endwise against the top wall of the casing and a collar *c* upon the rod. When permitted so to act, the spring forces the rod B downward until said collar strikes the boss *a*.

D represents a catch-lever so pivoted to the casing that it has one long arm and one short arm. The short arm of the lever is adjacent to the lower end of the rod B, and when said rod has been drawn upward said lever engages beneath a shoulder *b′* on said rod.

E represents a lever also pivoted to the casing and occupying normally a substantially-vertical position, as shown, in which position its lower end will lie above and be engaged by the end of the long arm of the lever D.

e represents a coil-spring compressed between the side of the casing and lower arm of the lever E and operating to automatically move the lever into substantially the position in which it is shown in the drawing.

e′ represents a set-screw passing through the wall of the casing, with which the extent of the movement of the lever E may be regulated, or, to more exactly describe the purpose of this stop in the form shown—to wit, as a set-screw—the purpose is to adjust the distance of the armature on the upper end of the lever E from the electro-magnet, to be hereinafter described.

H represents an electro-magnet connected in an electric circuit the wires of which may be extended to any convenient station at which the device may be operated.

I represents an armature secured to the lever E in front of the electro-magnet H.

At K is shown the conventional representation of a battery.

At L is shown a push-button or other circuit-closing device with which the electric circuit may be completed and the electro-magnet made operative for its intended purpose.

From the arrangement of the levers shown it is apparent that there is comparatively lit-

tle pressure of the lever D against the lever E and that said lever E may be readily withdrawn from the position shown, in which it locks said lever D, although the spring C or other power employed to move the rod B may be very strong.

When the parts are in the position shown and the entire device is fixed in the proper relation to the trap, an operator has but to close the electric circuit, when the upper end of the lever E is drawn to the left a sufficient distance to release the lever D, whereupon the spring C forces the rod B downward and in so doing swings the lever D upon its pivot until its long arm strikes a rubber stud J, secured to the casing. In its downward movement the rod B pulls upon the chain *g*, with the result of pulling the trigger of the trap and thereby releasing the throwing-arm, just as if said cord were pulled by hand or by any other means.

On the lower end of the rod B is a shoulder b^2, which extends so far to one side that it will lie beneath the short end of the lever D in whatever position said lever may be. When, therefore, it is desired to reset this mechanism, the rod is pulled upward, which causes the shoulder b^2 to engage with the short end of the lever D, thereby drawing said lever toward the horizontal position. The long end of the lever D in moving in this position forces back the lower end of the lever E until, having arrived at the position shown, the spring *e* forces the lever E above the end of the lever D, and the parts are thereby automatically locked in the position shown.

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

1. In an electrical target-trap-releasing device, the combination, with the trap G′, of a casing adapted to be fixed in proper relation to the trigger of a target-trap, a spring-actuated sliding rod B, which is supported by said casing, a link, cord, or chain adapted to connect one end of said rod with the target-trap trigger, with a series of levers adapted to hold said rod against the pressure of its spring, and an electro-magnet suitably placed with reference to one of said levers and adapted to draw one arm of said lever toward itself and thereby release said rod, substantially as and for the purpose specified.

2. In an electrical target-trap-releasing device, the combination, with the trap G′, of a casing adapted to be fixed in proper relation to the trigger of the target-trap, a spring-actuated sliding rod B, which is supported by and projects through the walls of said casing, a link, cord, or chain adapted to connect the projecting end of said rod with the target-trap trigger, with an electro-magnet supported within said casing and suitably connected in an electrical circuit, a lever D, pivoted to said casing substantially parallel to said rod, with one end adjacent to the pole of the electro-magnet, and a lever E, which is also pivoted to said casing and extends between and is engaged upon its upper side by both the rod B and lever D when the device is set, substantially as and for the purpose specified.

3. In an electrical target-trap-releasing device, the combination, with the trap G′, of a casing adapted to be fixed in proper relation to the trigger of a target-trap, a spring-actuated sliding rod B, supported on said casing and having the shoulders *b b′*, a link, cord, or chain adapted to connect the end of said rod with the trap-trigger, with the lever D, one end of which lies between said shoulders *b b′*, a stop J, the catch-lever E, adapted to engage with lever D, and an electro-magnet adapted to withdraw the lever E from its engagement with lever D, substantially as and for the purpose specified.

4. In an electric target-releasing device, the combination, with a target-trap G′, of the trap-releasing lever G, attached by link *g* to rod B, having collar *c*, spring C, surrounding rod B, set-lever D, resting when the trap is in a set condition under the shoulder on the rod B and with its other end beneath lever E, pivoted armature-lever E, carrying armature I, spring *e*, interposed between the lower end of lever E and the casing A, set-screw *e′*, bearing on lever E and passing through the outer casing, for regulating the distance of the armature-bar from the magnet H, magnet H, working in conjunction with armature-bar I, battery K, push-button L, the necessary circuit closing and opening means, and a casing A, provided with shoulders $b′ b^2$, substantially as and for the purpose described.

PAUL NORTH.

Witnesses:
E. L. THURSTON,
ALBERT H. BATES.