

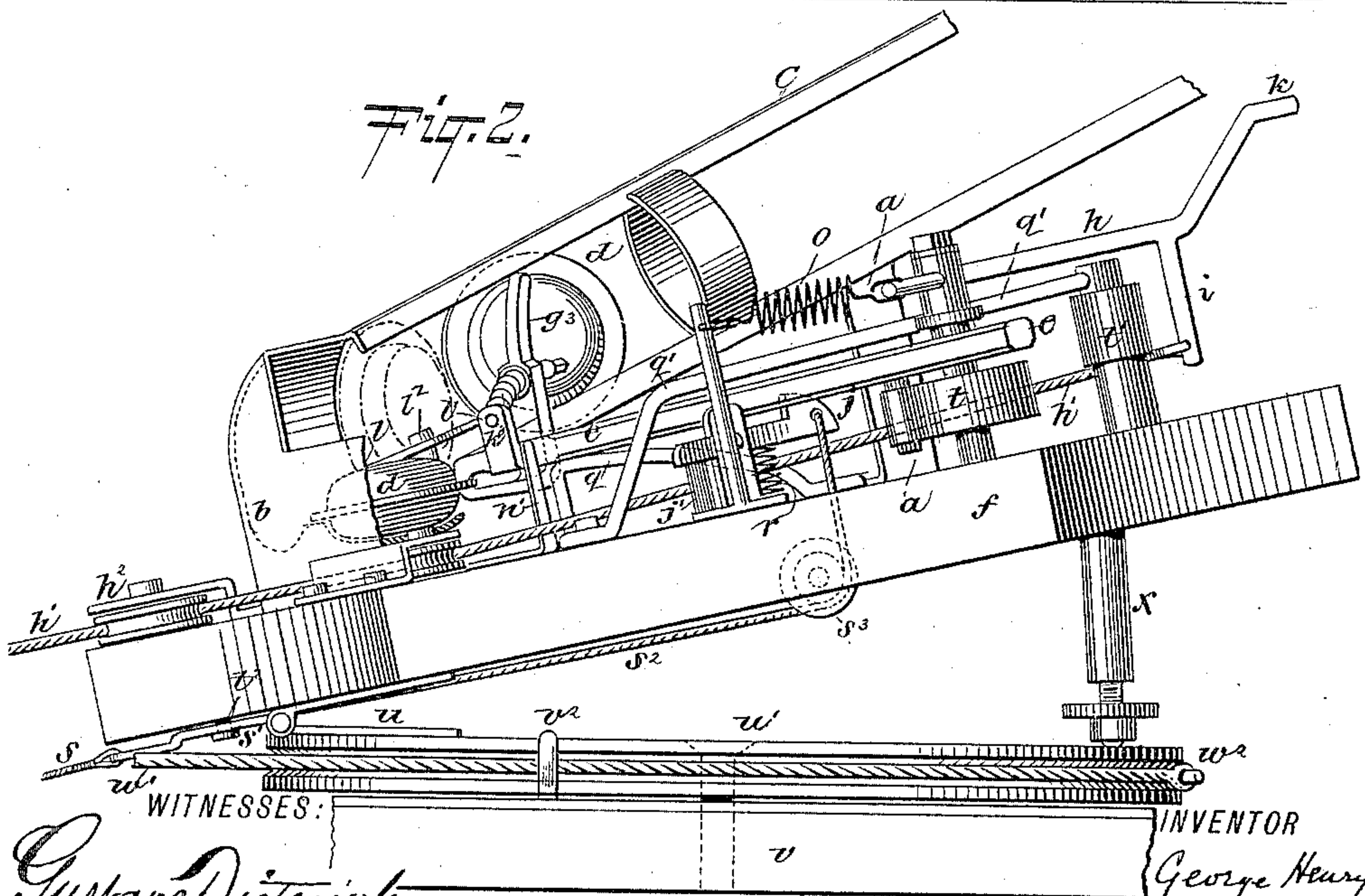
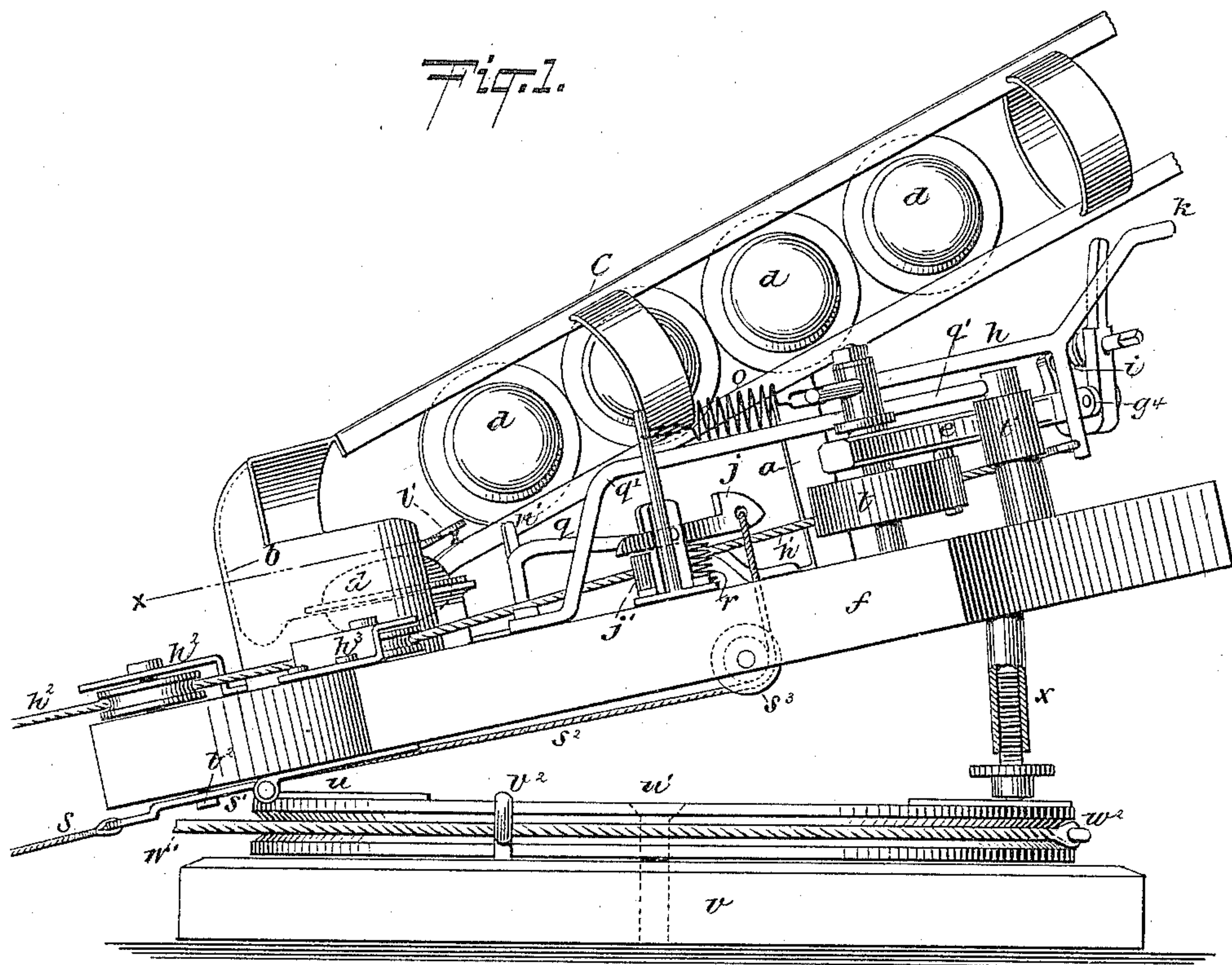
(No Model.)

3 Sheets—Sheet 1.

G. H. HOCKEY.
SELF FEEDING TARGET TRAP.

No. 446,519.

Patented Feb. 17, 1891.



WITNESSES:
Gustave Dietrich
William Goebel.

INVENTOR
George Henry Hockey
BY
Edward George Marks
ATTORNEY.

(No Model.)

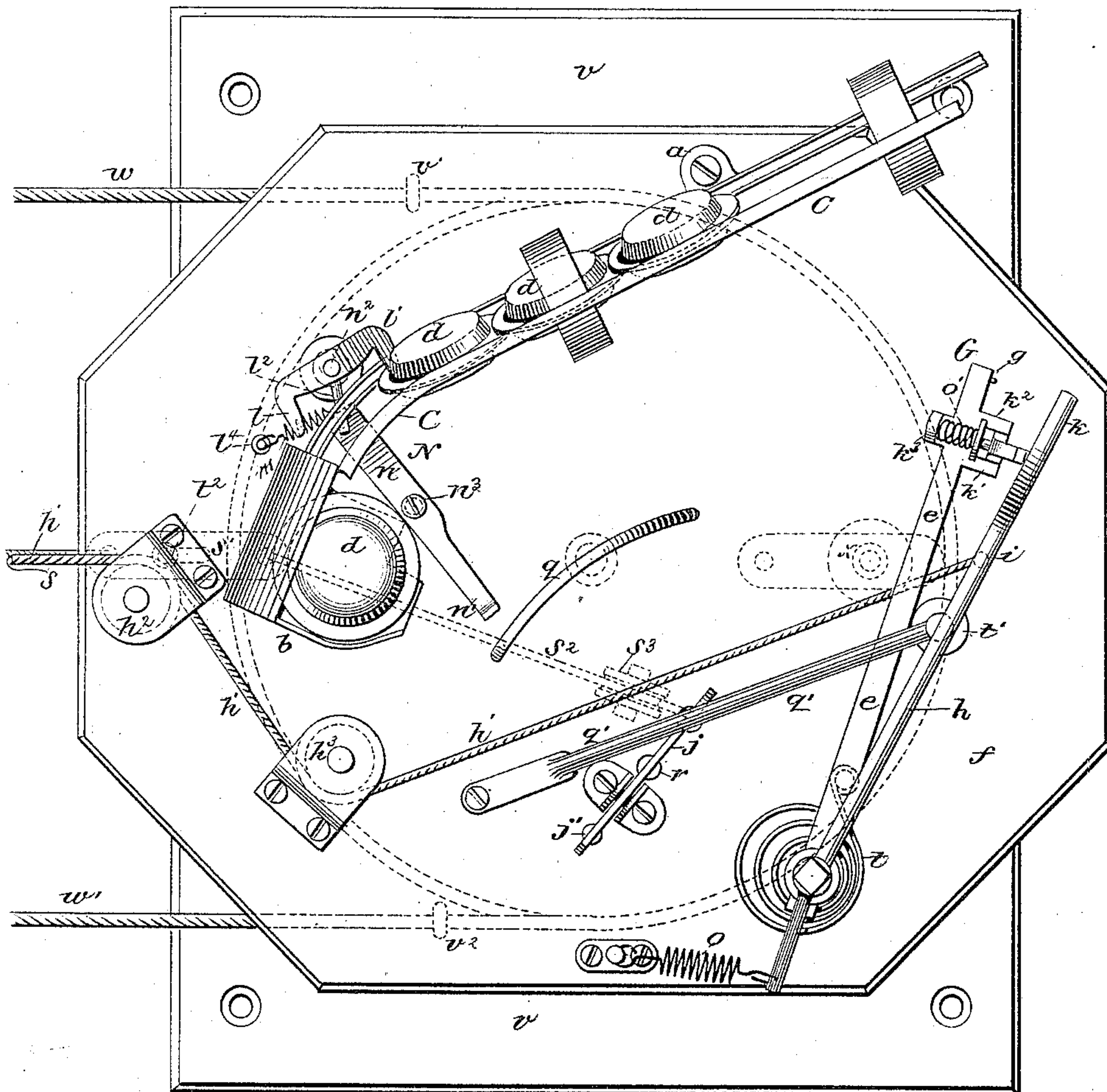
3 Sheets—Sheet 2.

G. H. HOCKEY.
SELF FEEDING TARGET TRAP.

No. 446,519.

Patented Feb. 17, 1891.

Fig. 3.



WITNESSES:

WITNESSES:
Gustave Dietrich.
William Goebel.

INVENTOR

George Henry Hockey

BY

Edward George Marks
ATTORNEY.

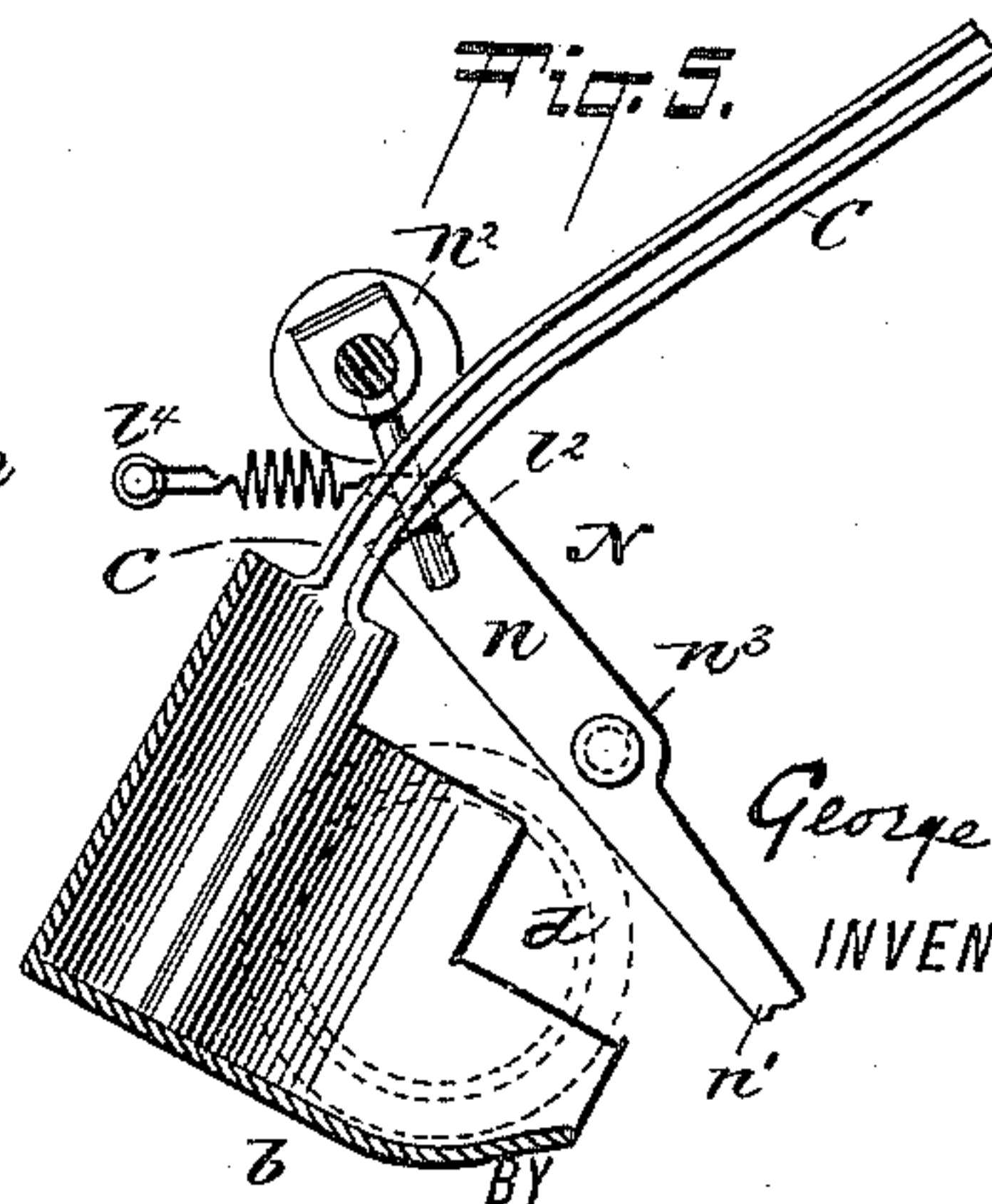
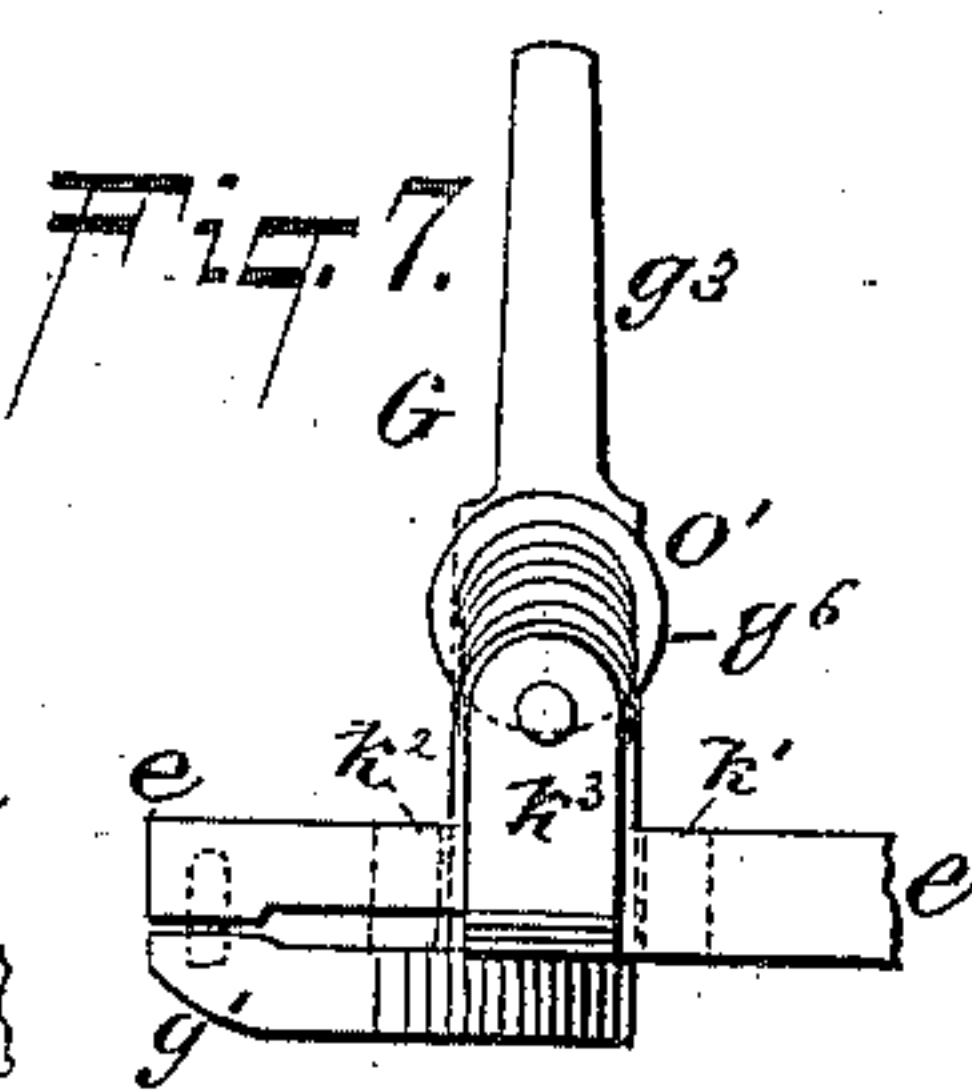
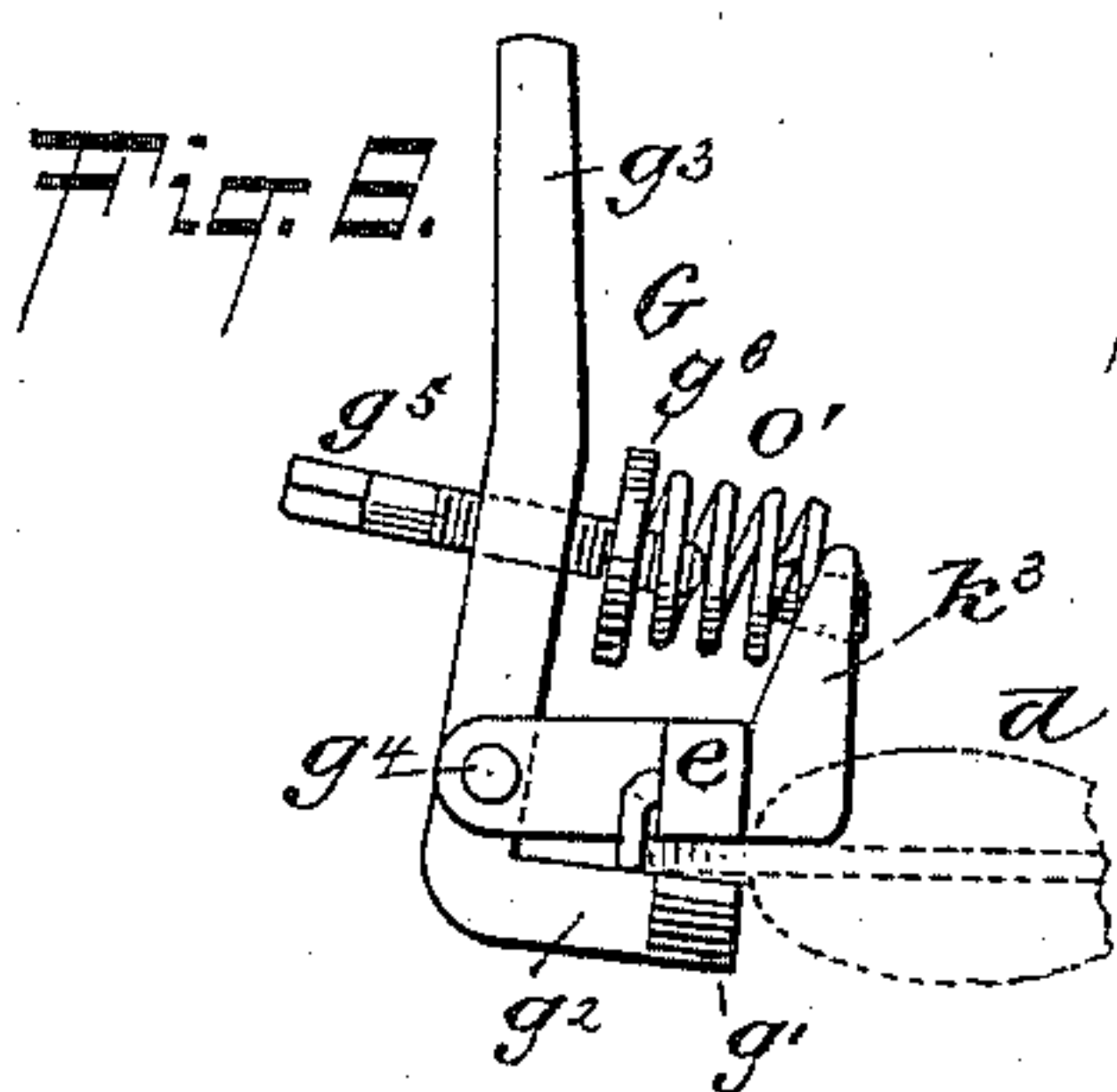
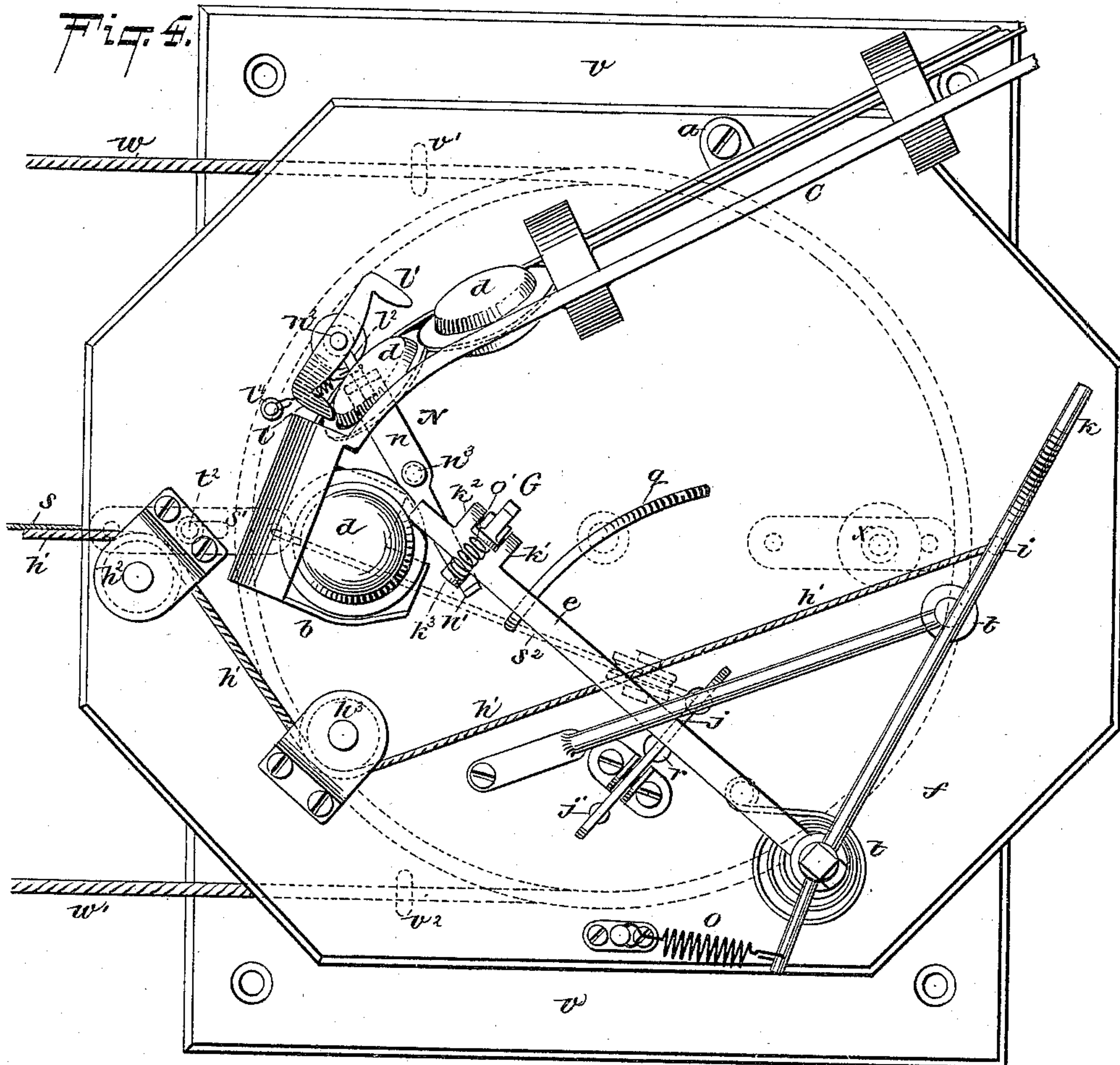
(No Model.)

3 Sheets—Sheet 3.

G. H. HOCKEY.
SELF FEEDING TARGET TRAP.

No. 446,519.

Patented Feb. 17, 1891.



WITNESSES:
Gustav Dietrich
William Goebel

George Henry Hockey
INVENTOR

Edwards George Mann
ATTORNEY.

UNITED STATES PATENT OFFICE.

GEORGE HENRY HOCKEY, OF BRISTOL, ENGLAND.

SELF-FEEDING TARGET-TRAP.

SPECIFICATION forming part of Letters Patent No. 446,519, dated February 17, 1891.

Application filed March 27, 1889. Serial No. 305,041. (No model.) Patented in England September 20, 1887, No. 12,713.

To all whom it may concern:

Be it known that I, GEORGE HENRY HOCKEY, a subject of the Queen of Great Britain, residing in the city and county of Bristol, England, have invented a new and useful Self-Feeding Target-Throwing Machine for Shooting Practice, (for which I have obtained a patent in Great Britain, No. 12,713, bearing date September 20, 1887,) of which the following is a specification.

My invention relates to improvements in target-throwing machines from which targets of metal or other suitable material are thrown through the air, so that they can be shot at by persons desiring to become proficient in shooting at objects moving rapidly through the air; and the objects of my improvement are, first, to enable two or more targets to be thrown from the machine without the shooter or his attendant having to go the machine to place another target "in place" and compress the spring, which in all machines of this kind forms the means by which the target may afterward be ejected from the machine; second, to afford facilities for changing the direction of the flight of any target thrown from the machine without having to approach the machine to make the required alteration. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the machine in its normal condition, with a target in place ready to be caught hold of by the jaw. Fig. 2 is a side elevation of the machine when the jaw has grasped the target and the cocking-bar has returned to its normal position. Fig. 3 is a plan of the machine as shown in elevation in Fig. 1. Fig. 4 is a plan of the machine as shown in elevation in Fig. 2. Fig. 5 is a detail drawing in plan of the check, together with a horizontal section on the line X X of the receiver, showing the lower grooved rail of the magazine. Figs. 6 and 7 are detail drawings of the jaws.

Similar letters refer to similar parts throughout the several views.

Fixed to the base or stand of the thrower and supported in front by the stay *a* is a magazine, chute, tube, or reservoir *C*, hereinafter called the "magazine," inclined downward toward a receptacle *b*, fixed at that end

of the thrower at which the targets are seized by the jaw. This magazine is constructed with grooved rails, in which the rims of the targets run, so as to guide the targets correctly to the receptacle *b*. The targets *d* are placed in the upper end of the magazine *C*.

The machine is provided with a check *N*, which governs the flow of targets from the magazine *C* to the receptacle *b*. This check is composed of a lever *n*, pivoted to the base *f* at *n*³, having a vertical extension at either end. In the vertical extension nearest the magazine is a hole in which loosely works a rod *l*², which is bent at right angles to itself and the base *f* and by means of bearings is kept in position while capable of turning about the center *n*². On the upper end of the vertical portion of *l*² is firmly fixed at its middle point *n*² a bar inclined, as is the magazine *C*. On either end of this bar, and integral with it, are two stops *l* and *l'*, which are capable of moving alternately over the lower grooved rail of the magazine *C*. At a point on the horizontal part of the rod *l*² or to the vertical extension of *n*, through which it loosely projects, is fastened a spring, the other end of which is fastened to the base *f* at *l*⁴, which spring tends to keep the stops *l* and *l'* in the normal position in Figs. 1 and 3, so that a target cannot pass them from the magazine *C* into the receptacle *b*.

Pivoted at one end of the base *f* is a horizontal throwing-arm *e*, acted upon by the main spring *t*, and furnished at its other end with jaws *G* and three lugs, two of them *k'* *k*², in the plane parallel with the base *f*, being on one side and the third *k*³, being vertical to the base *f*.

The jaws *G* are shown in detail in Figs. 6 and 7. The upper jaw is formed by the free end of the throwing-arm *e*, and the lower jaw is the piece *g'* of the double-bent lever *g' g*² *g*³, which is pivoted at *g*⁴ between the lugs *k'* *k*². Passing through *g*³, which is hereinafter called the "finger," is a set-screw *g*⁵, carrying a disk *g*⁶, the object of the said set-screw being to regulate the tension of the spring *o'*, which bears against the said disk *g*⁶ and also against the lug *k*³, the action of this spring tending to keep the jaws *G* closed.

h is a cocking-bar pivoted to *f* on the same pivot as the throwing-arm *e*, but above it at

a short distance from one end. At this end it is connected with a spring o , the other end of which is fastened securely to f , and which tends to keep said cocking-bar in the normal position, as shown in the drawings. At a short distance from the other end of said cocking-arm and integral with it is an arm i , and beyond i said cocking-bar ends in a bent extension k . Attached to the arm i is a cord h' , which passes through the guide-pulleys h^3 h^2 .

q and q' are guide-rods to guide the throwing-arm e correctly, so that the jaws G may be brought in the proper position to grasp the target, which is in the receptacle b .

j is a pawl or catch pivoted between supports fixed to the base f , and is held in position by the spring r and the fixed post j' . Attached to the pawl j is a cord, wire, or chain s^2 , which passes downward through a hole in f , round the guide-pulley s^3 to the end nearest it of the slotted link s' , which said slotted link s' is on the under side of the base f , and is free to slide and revolve about the pivot t^2 . To the end of the link s' , farthest from that to which s^2 is attached, there is connected another cord, wire, or chain s .

t' is a buffer against which the throwing-arm e bears when in its normal position.

The base f is hinged at u to a turn-table w' , which is pivoted to the table or bed v , which when the thrower is in use is held stationary. On the said table or bed v are guides v' and v^2 , through which and round the turn-table w' are cords w and w' , anchored at the back of the turn-table at w^2 .

x is an elevator, by which the angle of f to the horizontal plane may be controlled.

Targets are first placed in the magazine C through the upper end, and one is also placed in the receptacle b . The bottom target in C will come in contact with the stop l' . When the cord h' is pulled, the cocking-bar h begins to turn on its pivot in the direction of the pull and the bent extension k presses against the upper end of the finger g^3 , causing the jaws G to open. The projecting arm i now comes in contact with the throwing-arm e , causing said throwing-arm to move on the pivot in the same direction as the cocking-bar h , the jaws G in the meanwhile remaining open, and in this condition are made to describe an arc until the free end of the throwing-arm e comes in contact with the receptacle b , when the rim of the target d in said receptacle b is between the jaws G . The spring-pawl j now acts automatically, and the throwing-arm e is held by it in this position. The pull on the cord h' is now relaxed, and under the influence of the spring o the cocking-bar h flies back to its normal position, as shown in the drawings, and the pressure exerted by k on g^3 being thus removed the spring o is able effectively to exert its force in a direction opposite to that exerted through k , and the lower jaw g' is forced upward against the rim of the target, which it presses against the under surface of the

upper jaw, and at the same time slightly raises the target out of the receptacle b . During the travel of the throwing-arm e under the influence of the pull exerted through the cocking-bar h , and a little while before the jaws G reach the target in the receptacle b , the throwing-arm e comes in contact with n' , one of the vertical extensions of the lever n , which as the arm e continues to move toward the receptacle b is made to move on its pivot n^3 , thus causing the vertical portion of the rod l^2 to turn on its axis, and thereby causing the bar carrying the stops l and l' to turn about its center n^2 in such a manner as to bring the stops l and l' into the position shown in Figs. 2 and 4, and thereby allowing the targets in the magazine to descend by gravity until the lowest one is stopped by the lower stop l . The throwing-arm e , being now held, as above described, by the pawl j , continues to beat against n' , and no target is able to pass from the magazine C into the receptacle b . The distance between l and l' is such that only one target can be between them at one time. If it is now desired to propel into the air the target which is in the jaws G , the cord s is pulled. If now the length of the slotted link s' is in a line with the pull on the cord s , the said link s' slides on the pivot t^2 in the direction of the pull, thereby exerting a pull through the cord or chain s^2 on the pawl j such that the action of the spring r is overcome and said pawl is pulled down. If the length of the link s' is at an angle to the pull on the cord s , the said link first moves round the pivot t^2 until its length is in a line with the pull on the cord s when it slides on the said pivot and the pawl j is pulled down, as above described. The throwing-arm e being now released from the catch of the pawl j , the main spring t is able to exert its force and the arm e rebounds to its normal position carrying with it the target in the jaws G , and coming in contact with the buffer t , whereby the motion of the arm e is suddenly stopped, the target slips from the jaws by its own inertia, and is thus forcibly thrown from the machine. Immediately the arm e begins to move under the influence of the main spring, as just described, the pressure on n' is released and the spring m is able to efficiently exert its force in the opposite direction, and the check n returns to its normal position, as shown in Fig. 1. The stop l being thus removed from in front of the leading target in the magazine, this target drops by gravity into the receptacle b , where it is caused to fall into a horizontal position by meeting the curved back of the said receptacle, while simultaneous insertion of the stop l^2 over the lower grooved rail of the magazine prevents that target which is now the leading one from any movement toward the receptacle.

In order to allow an increased number of targets to be placed in the magazine, it may be extended, preferably, in a spiral form.

While the machine is in use the turn-table

w' is held stationary by firmly holding the ends, one or both, of the two cords w and w' . It will be obvious that targets may be thrown by the machine either straight forward or right or left, for if the cord w' only is pulled then the turn-table u' , carrying the rest of the machine, will turn to the right, and on working the machine by the cords h' and s the targets will be thrown to the right, whereas by pulling the cord w alone in place of the cord w' the targets will under similar conditions be thrown to the left of the thrower.

By raising or lowering the front of the base f by means of the screw-elevator x the flight of the targets can be arranged at various angles to the horizontal plane.

Until the supply of targets in the magazine c is exhausted no need exists for the operator to approach the thrower. Hence a more or less rapid succession of discharges is obtained without the necessity of handling the thrower after each discharge.

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

1. In a target-thrower, the combination, with a magazine, of a pivoted throwing-arm provided at its free end with a jaw for receiving and retaining a target, and a cocking-bar for swinging said throwing-arm and opening said jaw, substantially as set forth.

2. In a target-thrower, the combination, with a magazine, of a spring-actuated throwing-arm provided at its free end with a jaw for receiving and retaining a target, a cocking-bar adapted to open said jaw, and a pawl for holding said throwing-arm in its set or cocked position.

3. In a target-thrower, the combination, with a pivoted throwing-arm provided at its free end with a spring-actuated jaw, of a pivoted cocking-bar having its free end arranged to bear against and open said jaw, a spring-actuated pawl for holding or retaining the said throwing-arm in its set or cocked position, and springs secured to said throwing-arm and cocking-bar for returning them to their normal positions.

4. In a target-thrower, the combination, with a magazine, of a pivoted throwing-arm provided at one end with a jaw, a cocking-bar, a pawl for holding the throwing-arm in its set or cocked position, and a stop located

near said magazine for delivering the targets to said throwing-arm one at a time, substantially as set forth.

5. A target-thrower constructed with a magazine or chute consisting of two grooved rails, one above the other, in which grooves the targets travel and are retained in their upright position, and a receptacle into which said grooved rails lead and into which the targets drop into a horizontal position from said rails, substantially as described.

6. In a target-thrower, the combination, with a magazine or chute leading into a receptacle at its lower end, of a throwing-arm having a jaw formed on its free end adapted to move toward and grasp the target located in said receptacle, the cocking-bar h , adapted to operate said jaw and move said throwing-arm, the pawl j , located below said throwing-arm when the latter is in position to receive a target, and the check located beside said magazine for the purpose of controlling the exit of the targets from said magazine, substantially as set forth.

7. A target-thrower constructed with a throwing-arm e , pivoted at one end to the base f and having secured at its opposite end the lower jaw g' , the latter being extended and formed into the finger or tail-piece g^3 , which latter has the spring o' bearing against it for holding said lower jaw in its closed position.

8. In a target-thrower, the combination, with a throwing-arm, of a spring-actuated pawl for holding the latter in its cocked position, a slotted link s' , and a pin t^2 , passing through the slot in the link and into the base, and a connecting device between the pawl and said link, substantially as described.

9. In a target-thrower, the combination of a table v , having pivoted thereon a turntable u' , carrying the base of the thrower and fitted with cords w and w' , passing through guides v' and v^2 , whereby the base or stand carrying the thrower can be moved on its axes to the right or left by an operator holding the free ends of said cords, substantially as hereinbefore described.

GEORGE HENRY HOCKEY.

Witnesses:

J. PAGE WOOD,
H. BORDERMAN.