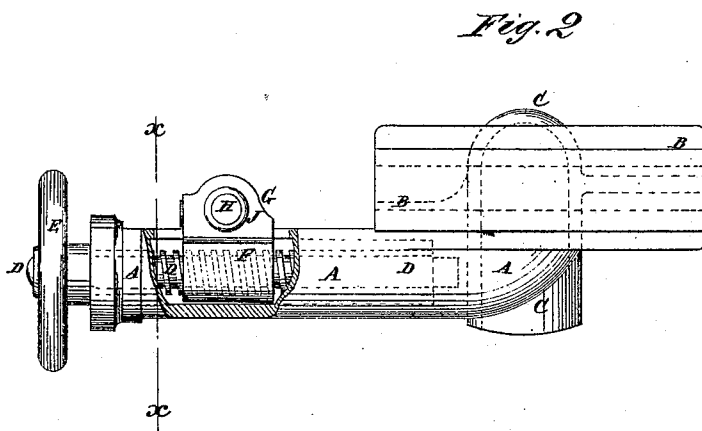
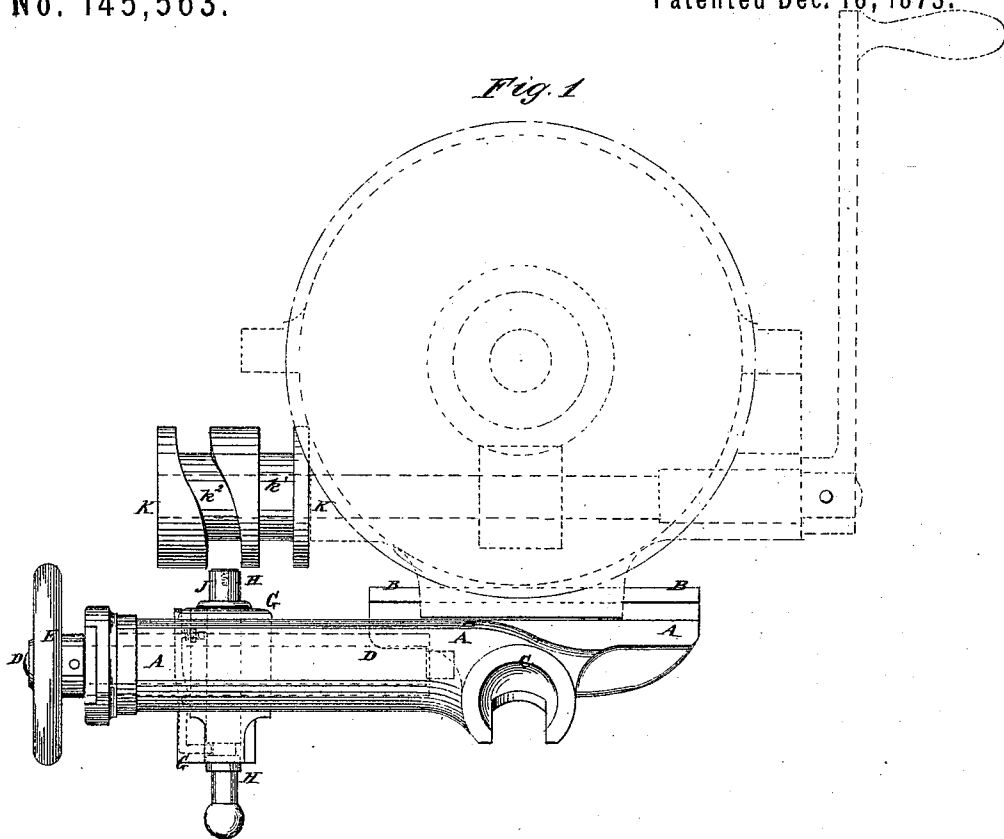


R. J. GATLING.
Traversing Mechanisms for Machine-Guns.
No. 145,563.

Patented Dec. 16, 1873.



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Fig. 3

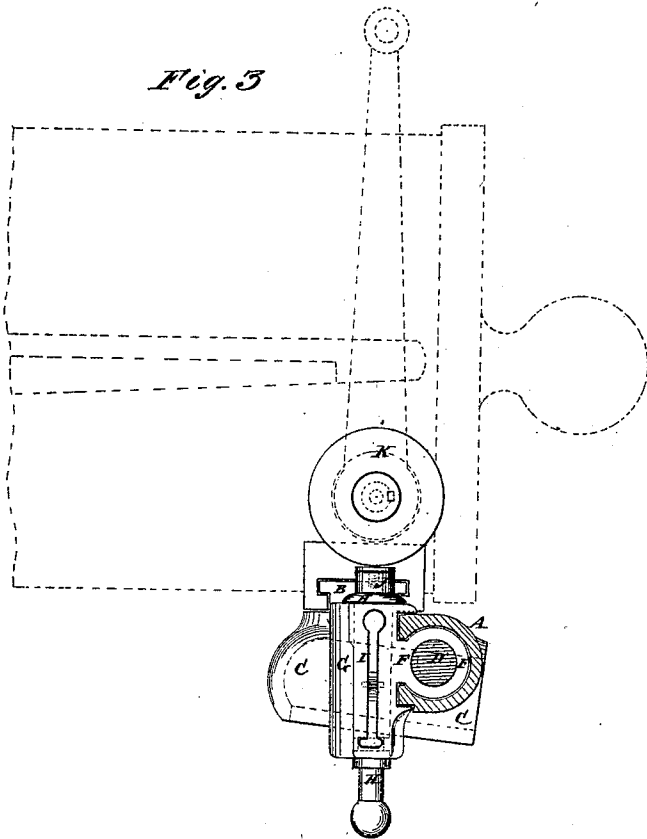


Fig. 5

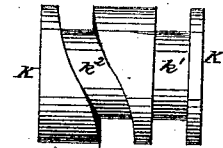


Fig. 6

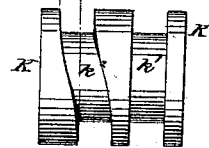


Fig. 4

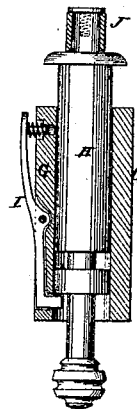
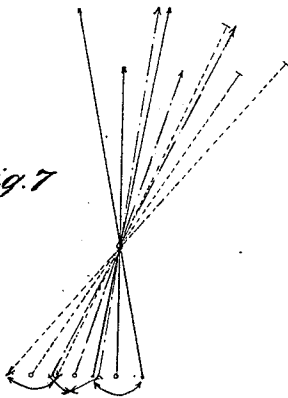


Fig. 7



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UNITED STATES PATENT OFFICE.

RICHARD J. GATLING, OF HARTFORD, CONNECTICUT.

IMPROVEMENT IN TRAVERSING MECHANISMS FOR MACHINE-GUNS.

Specification forming part of Letters Patent No. 145,562, dated December 16, 1873; application filed October 25, 1873.

To all whom it may concern:

Be it known that I, RICHARD J. GATLING, of Hartford, in the county of Hartford and State of Connecticut, have invented a new and useful Improvement in Traversing Mechanism for Machine Gun, of which the following is a specification:

Figure 1, Sheet 1, is a rear view of my improved traversing mechanism. Fig. 2, Sheet 1, is a detail top view of a part of the same, part being broken away to show the construction. Fig. 3, Sheet 2, is a cross-section of the same taken through the line *x x*, Fig. 2. Fig. 4, Sheet 2, is a longitudinal section of the pin-socket, showing the pin in place. Figs. 5 and 6, Sheet 2, are detail side views of different sizes of the grooved cylinder. Fig. 7, Sheet 2, is a view illustrating the manner in which the shot are thrown.

Similar letters of reference indicate corresponding parts.

The invention will first be fully described, and then pointed out in the claims.

A is a bar or cylinder, upon the upper side of the inner end of which is formed a T-flange, B, to enter a T-groove upon the lower side of the gun, so that the rear end of the gun may slide upon the said flange to give the sweep. In the lower side of the inner end of the cylinder A is formed a transverse groove, C, the cavity of which is a little more than a half-cylinder, to receive the ball formed upon the upper end of the screw, by which the breech of the gun is raised and lowered in sighting it. The cylinder A is perforated longitudinally to receive the screw D, which has a hand-wheel, E, attached to its outer end, and which is swiveled to the said cylinder A. The forward side of the cylinder A is slotted to receive the neck of the nut F, which fits upon the screw D, and is cast upon the rear side of the vertical socket G, in which is fitted a pin, H, which is supported by a lever-catch, I, the toe, formed upon the lower end of which passes in through a hole in the lower part of the socket G, and enters a ring-groove in the lower part of the pin H, to support said pin in place, two grooves being formed in said pin, so that it may be supported in gear and out of gear. The upper end of the lever-catch I is held out by a small spring interposed between it and the socket

G, as shown in Fig. 4. The upper end of the pin H has a friction-sleeve, J, placed upon it to diminish friction, and enters a groove in the cylinder K, which is attached to the forward end of the crank-screw, by which the gun is moved upon its pivot, to discharge it and give it the sweep. In the cylinder K are formed two grooves, $k^1 k^2$, to receive the end of the pin H. The groove k^1 is straight, as shown in Figs. 1, 5, and 6, and is designed for use when direct firing is required.

When it is desired to sweep a portion of the field with the shot, the end of the pin H is inserted in the cam-groove k^2 , which has a cam incline formed in it upon each side of the cylinder K, so that, as the said cylinder is revolved, the gun may be oscillated horizontally to give it the required sweep.

The sweep of the gun may be varied by varying the length of the cylinder K, and consequently of the cams or inclines of the groove k^2 . The cylinder shown in Fig. 6 is designed to sweep through the space of one degree, the one shown in Fig. 1 through one and a half degrees, and the one in Fig. 5 through two degrees.

By this construction, if the gun is being fired at a body of troops within the range represented by the full lines in Fig. 7, by turning the screw D a little, the sweep of the gun may be changed so as to be represented by the dotted lines with arrow-heads, and by turning the screw still more, the sweep will be represented by the dotted lines without arrow-heads. In the same way the sweep of the gun may be shifted to the left by turning the screw D in the other direction, so that the sweep of the gun may be changed to follow a moving body of troops without moving the trail, which always necessitates a resighting of the gun.

In the same way, when the gun is used for direct firing, the line of fire may be changed to the right or left by turning the screw D in one or the other direction.

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

1. The grooved cylinder K $k^1 k^2$, in combination with a guide-pin, H, for controlling the line of fire and the sweep of the gun, substantially as herein shown and described.

2. The combination of an adjustable socket, G, guide-pin H, and grooved cylinder K $k^1 k^2$, for changing the sweep and line of fire of the gun, substantially as herein shown and described.

3. The flanged, grooved, perforated, and slotted cylinder or bar A, and the adjustable socket G, provided with a nut, F, in combina-

tion with the screw D, guide-pin H, and grooved cylinder K $k^1 k^2$, substantially as herein shown and described, and for the purpose set forth.

RICHARD J. GATLING.

Witnesses:

EDGAR T. WELLES,
DAVID L. ABERDEIN.