DeW. C. FARRINGTON.

Traverse Mechanism for Machine-Guns.

No. 198,367. Patented Dec. 18, 1877.

Fig. 2

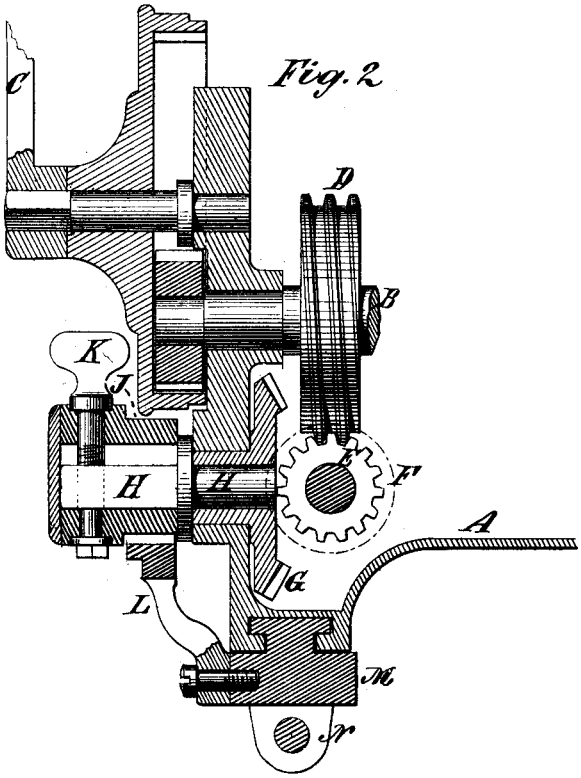


Fig 3

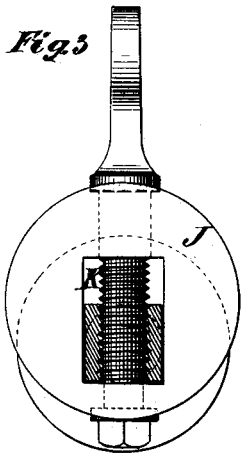


Fig. 1

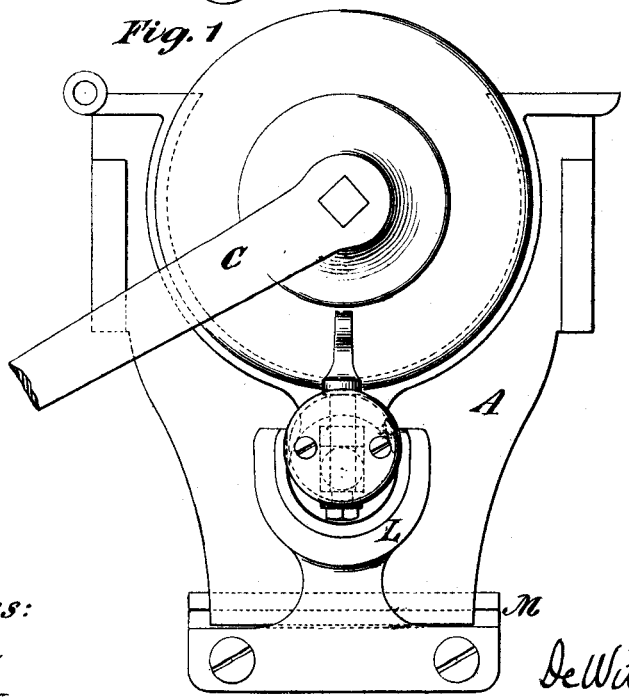
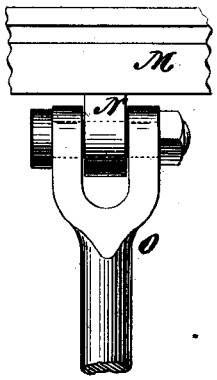


Fig. 4



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UNITED STATES PATENT OFFICE.

DE WITT C. FARRINGTON, OF LOWELL, MASSACHUSETTS.

IMPROVEMENT IN TRAVERSE MECHANISMS FOR MACHINE-GUNS.

Specification forming part of Letters Patent No. **198,367**, dated December 18, 1877; application filed May 31, 1877.

To all whom it may concern:

Be it known that I, DE WITT C. FARRINGTON, of Lowell, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Traverse Mechanism for Machine-Guns, of which the following is a specification:

The object of this invention is to provide an automatic and an adjustable traverse—*i. e.*, a traverse mechanism which can be readily adjusted to the desired sweep of the gun, and which, when once adjusted, will operate automatically as the gun is discharged; and the invention consists in the use of an adjustable eccentric, connected with the main shaft by suitable gearing, as more fully hereinafter set forth.

In the accompanying drawings, which illustrate the invention, Figure 1 is a rear elevation of the breech of the gun. Fig. 2 is a longitudinal vertical section. Fig. 3 is an enlarged detail view, showing the adjustable eccentric and the thumb-screw for regulating it; and Fig. 4 is a rear view of the traverse-block and the swivel which connects it with the elevating-screw.

A is the frame, which carries the lock mechanism and the feeding devices. B is the arbor or main shaft, operated by the crank C and an intermediate multiplying-gear, and carrying the worm-wheel D. This worm-wheel meshes with the worm-gear E, the shaft of which carries a bevel-pinion, (represented by the pitch-line F,) which engages the bevel-gear G, and thus drives the counter-shaft H. The outer end of this shaft H is made square, and over this square end is fitted the cylindrical eccentric-block J, which, by reason of the rectangular slot therein, can be adjusted to a greater or less degree of eccentricity upon its shaft. This adjustment is effected by means of the thumb-screw K, which fits a female screw in the shaft H, and thus by its rotation moves the block J backward or forward with reference to the axis of such shaft. This eccentric-block is situated between the two prongs of the forked standard L, which comes up from the traverse-block M. These prongs serve as abutments, against which the eccentric works to give the required throw to the breech of the gun. The breech of the gun rests upon the T-shaped way formed upon the upper face of the traverse-block, the lower face of the breech being grooved, so as to fit the flanges of its track, and reciprocating thereon in a lateral direction.

The traverse-block M is to be swiveled upon the upper end of the elevating-screw, (not shown in the drawings,) so that it can change direction slightly as the gun traverses upon its main pivot, and thus prevent binding; and between the traverse-block and the elevating-screw there is to be a transverse joint, formed by a bolt passing through the lug N and the ears of the forked swivel-pin O. This joint is designed to give the requisite inclination to the traverse-block as the gun is elevated or depressed.

The operation of this mechanism is as follows: The counter-shaft H is caused to revolve by means of its geared connections with the main shaft, carrying with it the eccentric-block J; and the working of this eccentric-block against the prongs of the standard L, which serve as abutments, imparts a lateral reciprocation to the breech of the gun, the extent of which is regulated by the degree of eccentricity which is given to the block J, and may, whenever desired, be reduced to zero by simply centering the eccentric-block.

This constitutes an automatic traverse, and one, moreover, in which, by a simple adjustment of the screw of the eccentric, the lateral sweep can be regulated at pleasure, even while the gun is in action.

It will readily be understood that the object of this traverse mechanism is simply to spread the shots delivered by the gun, as circumstances may require, and has nothing to do with any change of the line of fire. This latter is to be effected in any of the usual modes, the entire mechanism of the gun being swiveled upon its carriage or tripod, so as, when unclamped, to be turned in any direction, at the will of the gunners.

What is claimed as new is—

1. The automatic traverse for machine-guns, consisting of an adjustable eccentric operated

from the main shaft, and in combination with suitable abutments, substantially as described.

2. The combination, in a machine-gun, of the main shaft with its worm-wheel and gear, the intermediate gears, and the eccentric, with its adjusting-screw, operating against abutments, the parts being constructed and arranged to operate substantially as described.

3. In combination with the adjustable eccentric and suitable abutments, the swiveled traverse-block, which supports the breech of the gun.

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