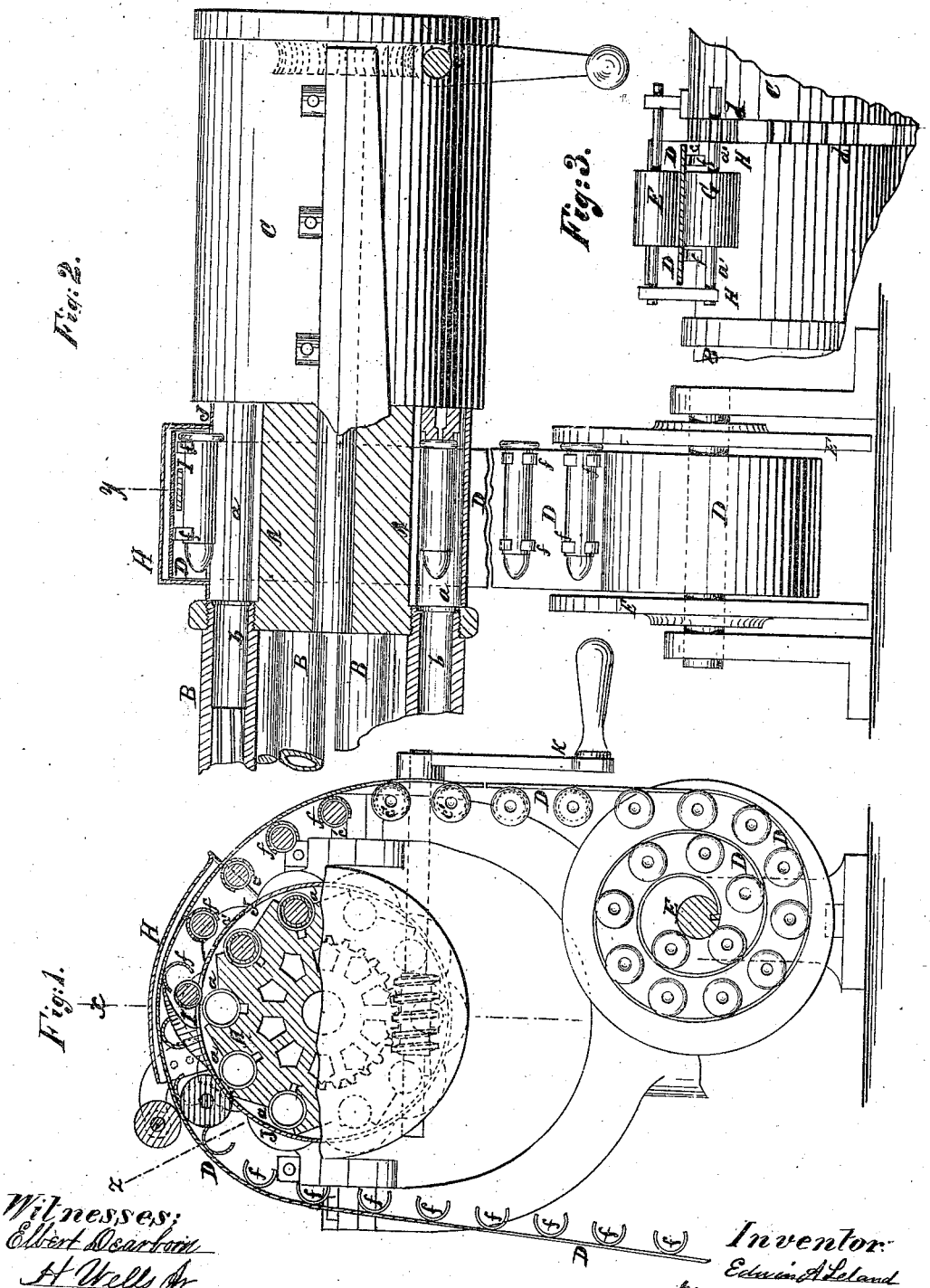
E. A. LELAND.
Machine-Gun.

No. 199,915. Patented Feb. 5, 1878.



Witnesses:
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UNITED STATES PATENT OFFICE.

EDWIN A. LELAND, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO THOMAS C. MILES AND J. B. KIDDOO, OF SAME PLACE.

IMPROVEMENT IN MACHINE-GUNS.

Specification forming part of Letters Patent No. **199,915**, dated February 5, 1878; application filed July 27, 1875.

To all whom it may concern:

Be it known that I, EDWIN A. LELAND, of the city, county, and State of New York, have invented certain Improvements in Mitrailleurs, of which the following is a specification:

This invention is designed to provide a more rapid, simple, and effective means of supplying cartridges to the barrels or discharge-chambers of a mitrailleur than has hitherto been available.

To this end the invention consists in a novel combination of a belt provided with a system of cartridge-holders with the breech-loading mechanism of a mitrailleur; also, in the combination of spring cartridge-holders provided upon the belt with an inclined tooth or picker for removing the cartridges from the said holders, and causing the same to pass to the breech-loading mechanism of the arm; also, in a novel combination of a reel with the belt constructed with cartridge-holders and arranged in due relation with the aforesaid breech-loading mechanism; also, in a novel combination of actuating-rolls and gearing with the aforesaid cartridge-carrying belt and the arm to which it is applied.

The drawings represent my invention as applied to the well-known Gatling gun, Figure 1 being a transverse sectional view taken in the line *y* of Fig. 2; Fig. 2, a longitudinal sectional view taken in the line *x* of Fig. 1, and Fig. 3 a partial longitudinal sectional view in the line *z* of Fig. 1.

A is the breech of a Gatling gun, and B the barrels thereof, C being the casing containing the mechanism whereby the cartridges are forced forward from the receivers *a* of the breech A into the chambers *b* of the barrels. As these parts and their arrangement and operation are well known, no detailed description of them is here necessary.

D is a belt, preferably of sheet-brass or other flexible metal. This belt D is coiled upon a reel, E, arranged underneath the breech A, and supported in suitable bearings in the carriage of the arm, the axis of the reel being parallel with that of the gun. From the reel the belt is carried upward and over the breech A between two rollers, F G, the latter, G, of which has a spur-pinion, *c*, on the end of its shaft *a'*, which gears into racks *d*, projecting at intervals from the breech A. The rollers F G have their bearings in a fixed cap, H, attached to the case C. Upon the inner side of the belt D, at suitable intervals apart, are cartridge-holders *f*, each of which is composed of two three-quarter circular clasps of spring metal, arranged coincident with each other, at such distance apart that a cartridge thrust lengthwise into the holder will be grasped by its two ends, as shown at *c'* in Fig. 1, the position of the cartridges as thus attached to the belt being transverse to the latter, and parallel with the receivers *a* of the breech. The rollers F G are of such length that, in the operation hereinpresently described of the apparatus, the holders *f* will, so to speak, pass astride of the inner roller G, which is thus prevented from interfering with the operation of the belt, the shaft *a'* of the said roller G being arranged below the path traversed by the holders *f*. I is an inclined beak, tooth, or picker fixed to a shell, J, arranged around the breech A, and projecting into the space traversed by the central part of the cartridge held in the holders *f* of the latter during the operation of the same.

In the use and operation of the invention, the gun is worked by the crank K, and the breech A and barrels B are rotated, in the usual manner, simultaneously with the usual operation of the breech-loading and breech-closing mechanism. The rotation of the breech, however, through the racks *d* and spur-pinion *c*, gives an intermittent movement to the belt, slowly unwinding the same from the reel, and bringing the cartridges, with which its holders have been previously supplied, successively in contact with the picker I, arranged above the uppermost receiver of the breech. This picker, passing above each cartridge as the latter moves toward it, forces the same down and out from the holder in which it has been placed, and by which it was carried above the uppermost receiver aforesaid of the breech. When the cartridge has been thus placed in the breech it is forced forward to the chamber of the adjacent barrel, closed in by the breech-closing devices, and fired in the usual manner, the empty shell being ejected also in the ordinary way.

It will be seen, therefore, that by this means the cartridges may be very rapidly and effectively fed to the gun, and that when one magazine or belt is exhausted it may be readily replaced by another ready charged, so that the least possible interruption is experienced in the continuous working of the arm. Moreover, the feeding mechanism being arranged low down and out of the way, danger of injury thereto, either in the field or during transportation, &c., is materially reduced, as compared with that incident to the Gatling gun, as ordinarily constructed with a feeding device.

It will be understood that while my invention is especially applicable to the Gatling gun, it may be also applied with more or less advantage to other mitrailleurs or battery-guns of any suitable construction.

What I claim as my invention is—

1. The combination of a belt constructed with a system of cartridge-holders, the breech-loading mechanism of a mitrailleur, and mechanism for transferring the cartridges from the belt to the receiver of the breech, substantially as and for the purpose specified.

2. The spring cartridge-holders *f*, provided upon the belt D, in combination with the picker I, arranged to force the cartridges from the said holders to the receivers *a* of the breech, substantially as herein set forth.

3. The combination of the reel with the belt provided with the cartridge-holders, and with the breech-loading mechanism of a mitrailleur, the whole being arranged for operation substantially as and for the purpose herein set forth.

4. The combination of the rolls F G, gearing intermittently with the revolving breech of a mitrailleur, with the belt constructed with a system of cartridge-holders, substantially as and for the purpose set forth.

EDWIN A. LELAND.

Witnesses:

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