(No Model.) 2 Sheets—Sheet 1.

T. R. COOK.

MACHINE GUN.

No. 560,842. Patented May 26, 1896.

Fig. 1.

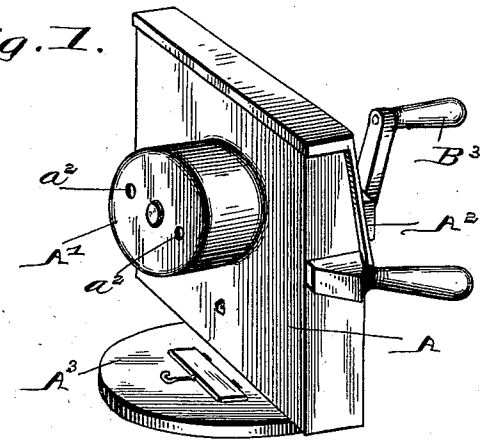


Fig. 5.

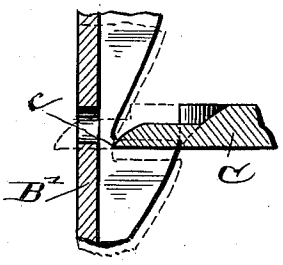
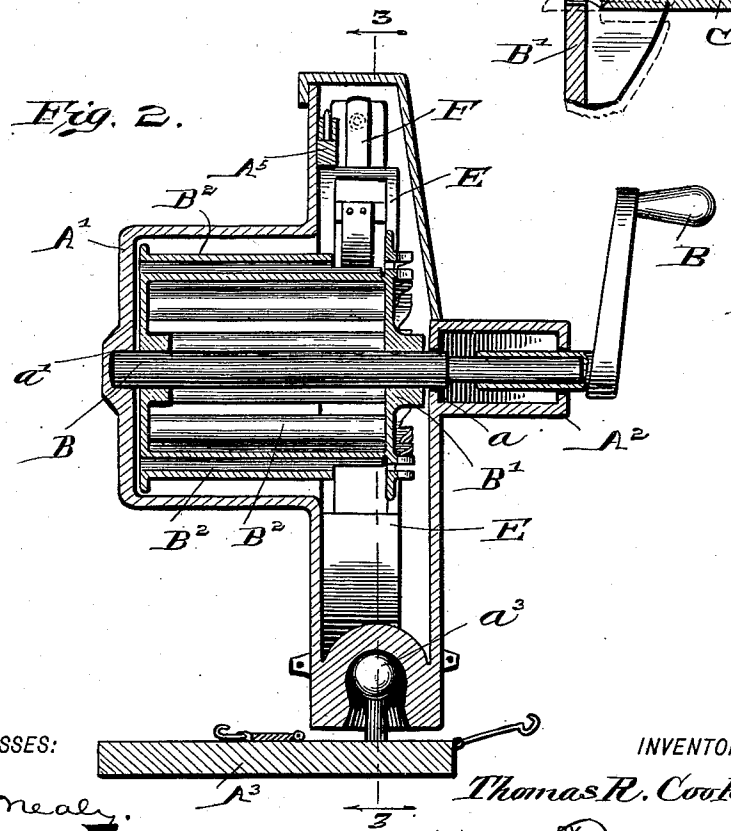


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

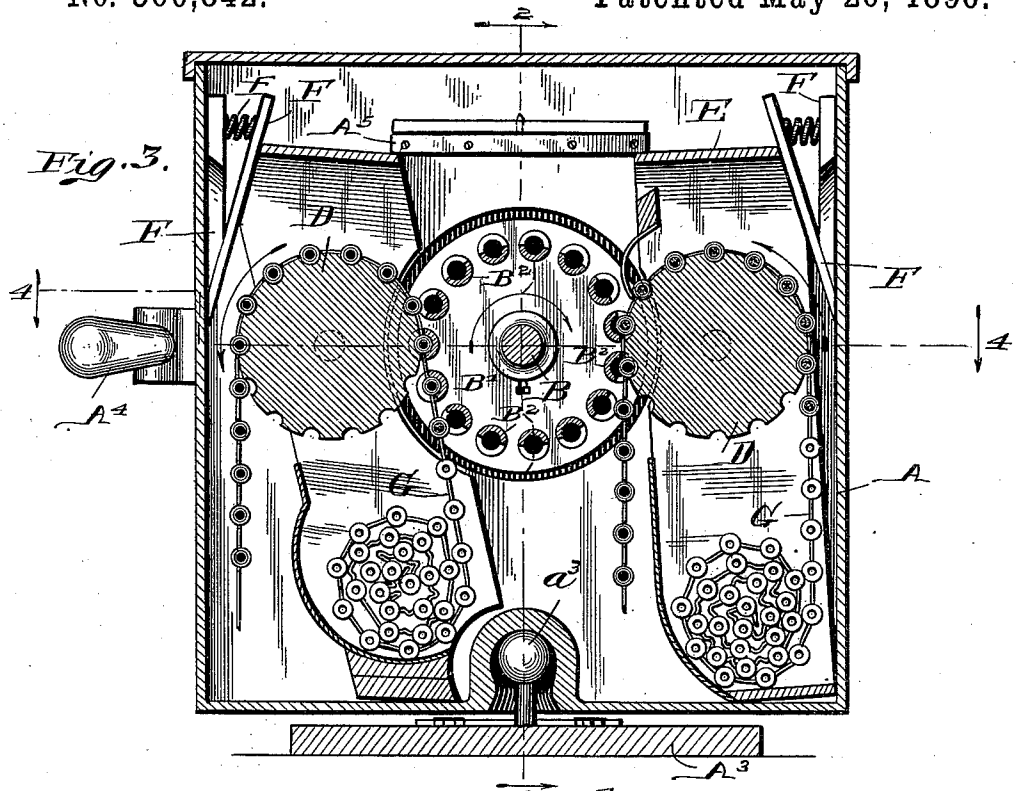
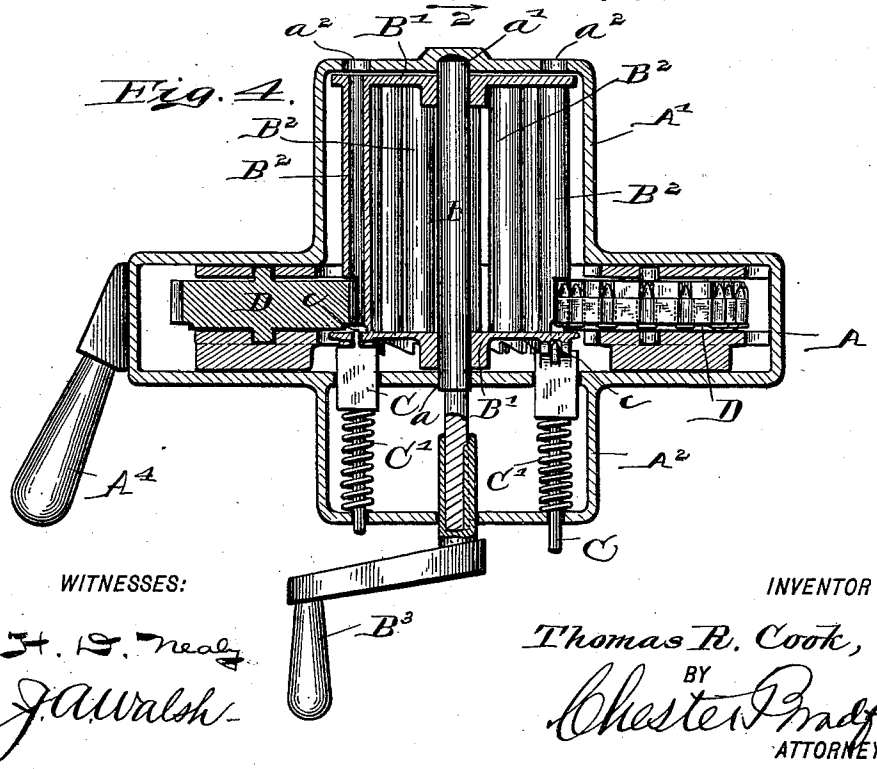


Fig. 4.



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UNITED STATES PATENT OFFICE.

THOMAS R. COOK, OF MARION, INDIANA, ASSIGNOR OF ONE-HALF TO EWALD OVER, OF INDIANAPOLIS, INDIANA.

MACHINE-GUN.

SPECIFICATION forming part of Letters Patent No. 560,842, dated May 26, 1896.

Application filed October 7, 1895. Serial No. 564,893. (No model.)

To all whom it may concern:

Be it known that I, THOMAS R. COOK, a citizen of the United States, residing at Marion, in the county of Grant and State of Indiana, have invented certain new and useful Improvements in Machine-Guns, of which the following is a specification.

The object of my said invention is to produce a simple and inexpensive but effective machine firearm adapted especially for use at short range.

Said invention consists in various improvements in the construction and arrangements of parts, as will be hereinafter more particularly described and claimed.

Referring to the accompanying drawings, which are made a part hereof and on which similar letters of reference indicate similar parts, Figure 1 is a perspective view of a firearm embodying my said invention; Fig. 2, a central longitudinal vertical sectional view of the same as seen when looking in the direction indicated by the arrows on the dotted lines 2 2 in Fig. 3; Fig. 3, a view as seen from the dotted line 3 3 in Fig. 2; Fig. 4, a horizontal sectional view looking downwardly from the dotted line 4 4 in Fig. 3, and Fig. 5 a detail fragmentary view illustrating one of the firing-pins more plainly.

In said drawings the portions marked A represent the casing or framework of my improved firearm; B, the cylinder-shaft; C, the firing-pins; D, drums by which the cartridge-belts are fed forward and which serve also as one side of the cartridge-chambers; E, frames or casings which contain said drums; F, spring wedges operating on said frames, and G the cartridge-belts.

The framework or casing A is of a suitable form to contain the mechanism of my device, being preferably substantially square at the point where the greater portion of said mechanism is positioned, and having a forwardly-projecting cylindrical portion A′ to contain the barrel-cylinder, and a rearwardly-extending but smaller portion A^2 to contain the firing-pins. It is mounted on a preferably ball-headed pivot a^3, extending up from a base A^3, and also has upon one side a handle A^4, by which the user may move and hold it to the desired position.

The shaft B carries the heads B′ of the barrel-cylinder, and is itself mounted in bearings *a* and *a*′, provided therefor in the body-plate A and extension A′ of the casing. The cylinder-heads B′ are firmly secured thereon and revolve therewith. The barrels B^2 are fixedly mounted in the cylinder-heads B′ and serve the usual purpose of barrels to a firearm. At the rear end one-half of each barrel is cut away for a distance substantially the length of a cartridge, and also substantially equal to the thickness of the drums D. These barrels at this point are thus semicircular and form one half of the cartridge-chamber, the drums D forming the other half, as will be presently explained. In operation this cylinder is revolved by means of the crank B^3 on the shaft B, and the result is a rapid and continuous firing until the cartridges at the time in the belts are exhausted. The extreme rear end of the barrel-cylinder, which is in form a flange on the rear cylinder-head B′, is serrated or formed into a series of inclined teeth *b*′, which engage with and operate the firing-pin, said teeth being equal in number to the number of barrels in the cylinder. Said head B′ is also provided with an equal number of openings through which the contact-points *c* of firing-pins pass to the head of the cartridge.

The firing-pins C are mounted in bearings in the framework, as shown, in which bearings they are adapted to reciprocate. They are urged forward toward the barrels B^2 by means of the springs C′, which surround their stems, as shown most plainly in Fig. 4. The forward ends of these firing-pins are inclined for the greater portion of their inner ends, where they come in contact with the teeth *b*′ on the end of the firing-cylinder; but they are provided centrally with the contact-points *c*, which are adapted to pass through the openings therefor in the head B′, and to strike and explode the cartridges as they are urged forward, when the pins as a whole escape from the teeth on the barrel-cylinder. Said teeth are divided, as shown, to permit them to pass these points without coming in contact therewith. The inclines thus engage on both sides of the operative points of the firing-pin, precluding any sidewise strain.

The drums D contain a number of semicircular depressions in their peripheries, cor-

responding in size to the interior surfaces of the half-cylinders formed at the rear ends of the barrels, where they are cut away, so that when a drum is brought to that position where one of its depressions registers exactly with the corresponding half of a barrel they together form a cartridge-chamber, as shown at the left hand of the barrel-cylinder in Fig. 3. It will be observed that at the right hand neither of the barrels are exactly in the position to explode the cartridge; this arrangement being for the purpose of securing an alternative rather than a simultaneous explosion of cartridges, which, it will be observed, is a considerable advantage, as the shock of the firing operation is thereby better distributed. The drums are mounted to revolve freely in bearings in the frame or casings E provided therefor. Said frames or casings E are detachably positioned with the main frame A, resting on the floor or lower portion thereof and extending up alongside the firing-cylinder. When in position for operation, as shown most plainly in Fig. 3, their inner upper corners engage with a catch-bar A^5, secured to the inner surface of the adjacent portion of the frame A. By this means, as will be readily understood, said frames are prevented from raising from their proper position. Said drums are held firmly but somewhat yieldingly into the proper relation with the firing-cylinder by means of the spring-wedges F, which consist, as shown in Fig. 3, of two pieces arranged in wedge-like relation and having a spring *f* between them. These spring-wedges are shoved down into position by hand tightly enough to accomplish the purpose, which is to hold the parts strongly and closely together, but not so strongly as to occasion undue friction.

The cartridge-belt G is in itself merely a belt with open-ended pockets at regular intervals to receive the cartridges. Such belts are placed in position, substantially as shown in Fig. 3, so that the ends pass between the drums D and the open-sided parts of the barrels in the firing-cylinder, and thus the cartridges are brought successively into position in the cartridge-chambers formed by the semi-cylindrical cavities, consisting of one-half the barrel and the depressions in the peripheries of the drums.

In operation the user grasps the handle A^4 and swings the structure to the desired inclination vertically and laterally. He then turns the firing-cylinder by means of the crank B^3, when the cartridges are exploded by means of the firing-pins, as described, and the bullets are discharged through the perforations a^2 in the front end of the casing part A'. The great value of my invention lies in its adaptability to rapid firing at short range, and it is especially adapted to the use of express-messengers on railway-trains. This firearm may be positioned in one corner of the car—for instance, on its base A^3, which in turn is secured fixedly upon any support desired. If the train should be attacked by robbers, the messenger can retire behind this gun, and immediately the door or side of the car is burst in can discharge such a volley as to preclude the possibility of any assaulter escaping, and this, too, without himself being disclosed to attack before having accomplished his purpose. The advantages of such a machine as this over an ordinary revolver under such conditions is great and obvious.

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

1. The combination, in a machine-gun, of the revolving barrel-cylinder, drum-cases placed alongside thereof, drums in said drum-cases, and spring-wedges whereby said drum-cases and drums are held toward and into engagement with the barrel-cylinder, substantially as set forth.

2. The combination, in a machine-gun, of the frame, the stop A^5, and the cartridge-carrying drums D mounted in cases E, said cases being adapted to engage with and be held in position by said stop A^5, substantially as shown and described.

3. The combination, in a machine-gun, of the barrels carried by a front and rear disk, said barrels being cut away for a portion of their circumference immediately in front of the rear disk, thereby forming semicylinders, and revolving drums positioned alongside said barrels and formed with semicylindrical depressions in their peripheries which when brought into registry with said cut-away portions of said barrels form cartridge-chambers, substantially as shown and described.

4. The combination, in a machine-gun, of the framework, a revolving cylinder therein containing the gun-barrels, loose frames positioned alongside said cylinder and carrying drums, cartridge-belts carrying cartridges at regular intervals adapted to be fed in between said drums and the rear open-sided ends of said gun-barrels, spring firing-pins located behind said gun-barrels and provided with inclined faces on their ends and with firing-points, said cylinder being also provided with inclined faces whereby said firing-pins are operated as the cylinder is revolved, substantially as shown and described.

In witness whereof I have hereunto set my hand and seal, at Marion, Indiana, this 20th day of September, A. D. 1895.

THOMAS R. COOK. [L. S.]

Witnesses:
FRANK C. PALMER,
DAVID W. TAYLOR.