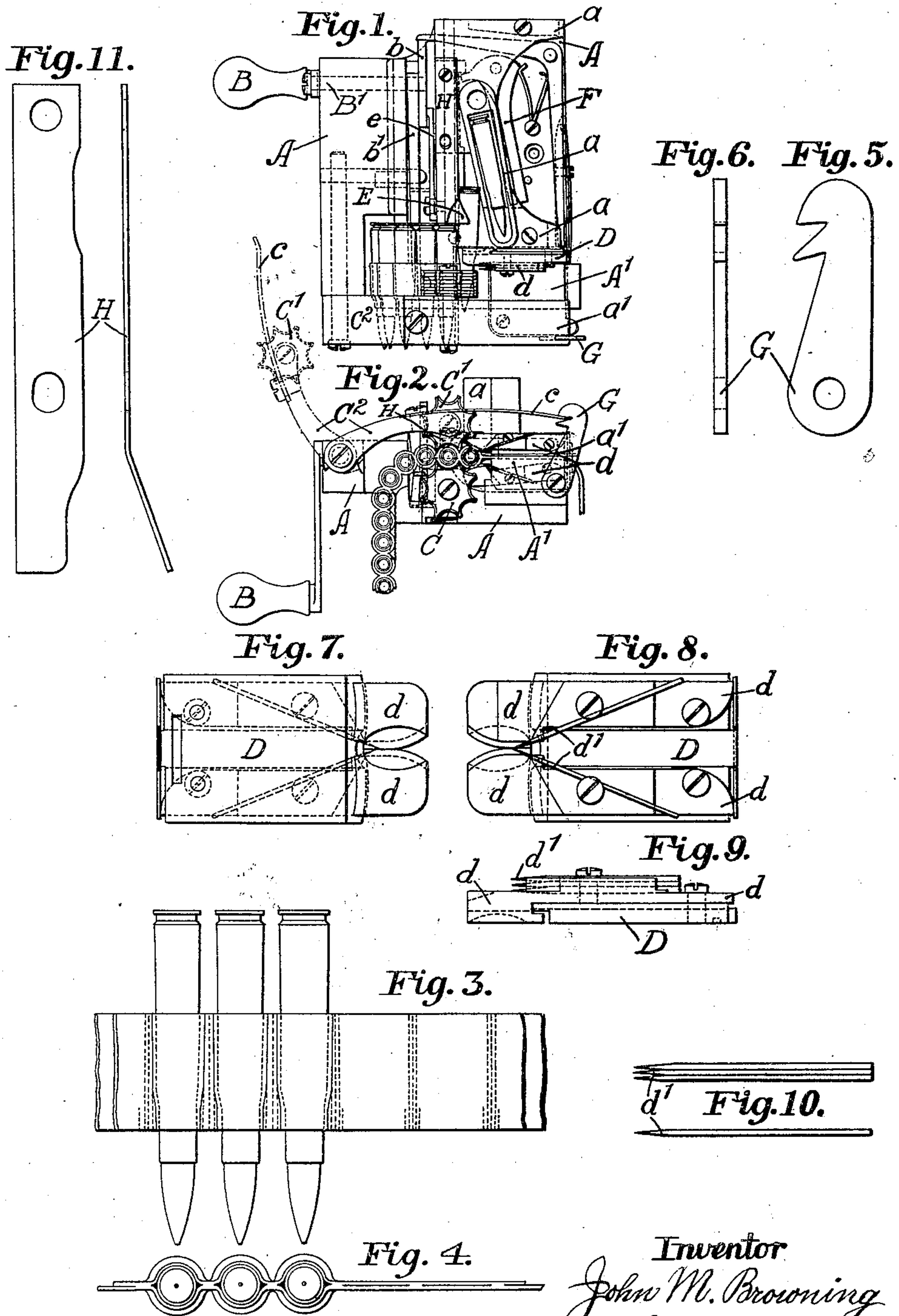


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MACHINE FOR FILLING FEED BELTS FOR MACHINE GUNS.
APPLICATION FILED SEPT. 9, 1919.

1,327,698.

Patented Jan. 13, 1920.



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UNITED STATES PATENT OFFICE.

JOHN M. BROWNING, OF OGDEN, UTAH.

MACHINE FOR FILLING FEED-BELTS FOR MACHINE-GUNS.

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Specification of Letters Patent.

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Application filed September 9, 1919. Serial No. 322,686.

To all whom it may concern:

Be it known that I, JOHN M. BROWNING, a citizen of the United States, residing in Ogden, in the county of Weber and State of Utah, have invented certain new and useful Improvements in Machines for Filling Feed-Belts for Machine-Guns, of which the following is a specification, reference being had to the accompanying drawings, forming a part hereof.

The invention relates to machines for filling cartridge feed-belts, by means of which the cartridges are subsequently fed to machine-guns; and it particularly relates to novel improvements in feed-belt filling machines of the class for which a prior Patent, No. 660,244, was granted to me on October 23, 1900.

In the accompanying drawings, Figure 1 is a plan view of such a machine embodying my improvements, Fig. 2 is a front end elevation of the same; Fig. 3 represents, on an enlarged scale, a portion of a feed-belt with three cartridges inserted in adjoining pockets, Fig. 4 is a front end view of said belt and cartridges; Fig. 5 is a front view, on an enlarged scale, of my improved tension latch, detached, and Fig. 6 is a side view of same; Figs. 7, 8 and 9 are respectively a rear elevation, a front elevation and a bottom view of the pocket opener, detached, on an enlarged scale; Fig. 10 shows, on an enlarged scale, one of the multi-pointed needle-bars, detached, in a top view and in a front view; Fig. 11 represents the regulator-stop, on an enlarged scale, in a top view and in a side view.

In general construction and operation the machine represented in Figs. 1 and 2 consists of a bed plate A upon which is mounted a cartridge receiver α for receiving the cartridges so that the lowest cartridge will rest upon the bed plate below the base of said receiver.

A laterally vibrating lever F serves for moving the lowest cartridge toward the left side and for placing same in front of a longitudinally moving slide E, which, on being reciprocated by means of a crank B and crank shaft B^1 carrying a cam disk b with a crank pin thereon, and a connecting rod e , forces the cartridge forward so that the point of its bullet engages the beveled rear faces at the left ends of two vertically vibrating opener jaws d, d , which are pivotally mounted upon a laterally movable car-

rier D, each of the jaws being provided with an opening needle. In front of the carrier D a guide platform A^1 on the bed plate A is provided for receiving the empty cartridge belt, the general construction of which is plainly shown, on an enlarged scale, in Figs. 3 and 4, and a pivoted cover plate α^1 serves to hold the belt movably upon the guide platform.

At the front of the bed plate a fluted wheel C is mounted upon a longitudinal pivot to receive a stepwise rotary movement when the shaft B^1 is turned by means of an eccentric on said shaft and a lever b^1 ; a second fluted wheel C^1 is mounted to freely rotate upon a longitudinal pivot carried by a lever arm C^2 pivoted on a longitudinal pivot near the left end of the front face of the bed plate A.

As shown in dotted lines in Fig. 2, the lever arm C^2 may be turned upward so as to carry the upper wheel away from its place above the lower fluted wheel C; in this position a feed belt with a cartridge in one of its pockets may be laid upon the guide platform A^1 in such a manner that the cartridge and the pocket of the belt will fill the uppermost fluting of the wheel C; then the lever arm C^2 is returned to its lower position in which the lower fluting of the upper wheel will fit down upon the belt and cartridge, so that a step of rotation of the lower fluted wheel will be communicated to the upper wheel and serve to feed the belt and cartridge in the direction from the right side of the machine toward the left side.

At the forward movement of a cartridge actuated by the slide E, the bullet of said cartridge forces the opener jaws d, d , apart and the point of the needle secured to each of the said jaws serves to open the pocket of the feed belt, thereby insuring the insertion of the cartridge into the pocket of the belt by the slide E. Then the rotation of the two fluted wheels feeds the belt and the cartridges in the same toward the left side of the machine where belt and cartridges are guided downward from the machine.

From the top of the lever arm C^2 a flat spring c extends to the right side of the machine and a hooked tension latch G, pivoted at the front of the bed plate below the platform A^1 serves to hold down the free end of said spring by the tension of which the upper fluted wheel is pressed upon the belt and cartridge between the wheels.

All these parts and their operation are fully described and shown in my prior Patent No. 660,244 referred to, and therefore do not require further description except in the relation to the improved novel devices.

In the practical use of these machines in the field during war time, a very great number of feed belts have to be filled in these machines, and among these belts, some of which may be entirely new while others may have been used many times, some variations of the belts in thickness, stiffness and width are unavoidable. For this reason, it is necessary that the tension latch G should be adjustable in order to hold the belt and cartridges in proper position, and for this purpose I have provided the improved tension latch G shown in Figs. 2, 5 and 6, which has two hooked-shaped projections on its left side for engaging the spring *c* and for at will increasing or decreasing the tension thereof according to the condition of the belt.

Another danger in the practical working of these machines is that the single opening needle carried by each of the opener jaws *d*, *d*, will not always be certain to take hold of the web of the belt if said belt happens to be a narrow one. By my improvement the opener jaws are each fitted with a wide needle bar having three separate and distinct points, see Figs. 7, 8 and 9, so that one or more of the three points will be sure to engage the rear edge of the feed belt and properly open the pockets in same. Such a multi-pointed needle bar is clearly shown in Fig. 10, detached.

The use of these machines in the field in war time has developed one further danger which consists in the fact that when a belt with its empty portion is properly laid on the guide platform *A*¹ and movably held there by the cover plate *a*¹ above it, the portion of the belt containing the single cartridge, which has been previously inserted in one of its pockets, may be placed correctly in the top fluting of the wheel C, but may be pushed too far rearward in the machine. A misplacement like this will cause the cartridges to be more or less far pushed into the pockets of the feed belt, so that the rear ends of the cartridges in the belt will not all lie in one transverse vertical plane. Such irregularity may prevent the filled belt from properly feeding into the machine gun, and thereby cause a stoppage or irregularity in the firing of the gun at a time when such occurrence might be fatal.

To overcome this difficulty I have devised the regulator-stop H which is fastened upon the upper surface of the base of the cartridge receiver *a*. Fig. 11 plainly shows the construction of this regulator-stop which consists of a flat spring the forward end of which is bent downward. As shown

in Fig. 1, the rear end of this regulator-stop H is firmly attached upon the base of the cartridge receiver *a* by a screw, while the forward portion is held in position by a dowel-pin fixed in the base and projecting upward through a slightly elongated hole in the regulator-stop, but allows its forward portion to yield upward under a lifting force applied to it.

The regulator-stop H being located above the slide E and parallel to same, its forward inclined end depends into the path of the slide, but when the slide E is moved forward it readily raises up the yielding end of the regulator-stop, which springs down again when the slide is withdrawn rearwardly.

When a cartridge is moved laterally from under the cartridge receiver *a* by the lever F, as hereinbefore described, the regulator-stop H does not oppose this lateral movement, but by yielding upward to the lifting force exerted by the cylindrical body of the cartridge allows the same to be placed in front of the slide E. However, if a cartridge in a pocket of the belt is with the belt pushed rearward while it rests in the upper fluting of the wheel C the depending front end of the regulator-stop H positively prevents the cartridge and belt from being pushed too far rearward and thereby insures the belt and cartridges therein to be placed in their proper relation, and the rear ends of all cartridges inserted into the pockets of the belt to lie in the same vertical plane.

What I claim as my invention is:

1. In a machine for filling the pockets of cartridge feed-belts, the combination of fluted belt holding and feeding wheels, means to rotate said wheels step by step, a reciprocating slide to insert the cartridges in the pockets, and a spring stop attached above said slide to yield upward out of the path of said slide, and to regulate the position of the belt and the cartridges therein between said fluted wheels.

2. In a machine for filling the pockets of feed-belts with cartridges, the combination of an opener provided with multi-pointed bars to engage and separate the pocket-walls, means to operate said opener, fluted belt holding and feeding wheels, means to stepwise rotate said wheels, a reciprocating slide to insert the cartridges in the pockets, and a spring stop attached above said slide to yield upward out of the path of said slide, and to regulate the position of the belt and the cartridges therein between said fluted wheels.

This specification signed and witnessed this 2nd day of Sept., A. D. 1919.

JOHN M. BROWNING.

In the presence of—

VAL A. BROWNING,
R. M. MARKLE.