

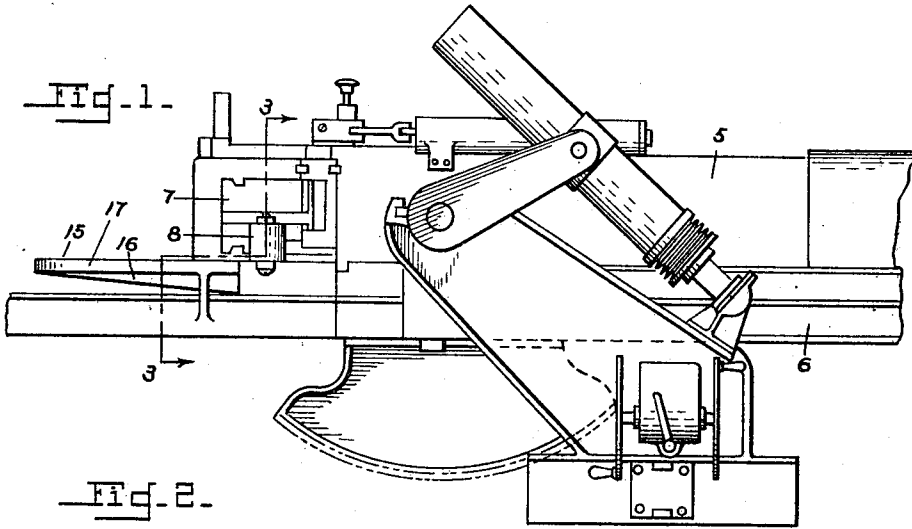
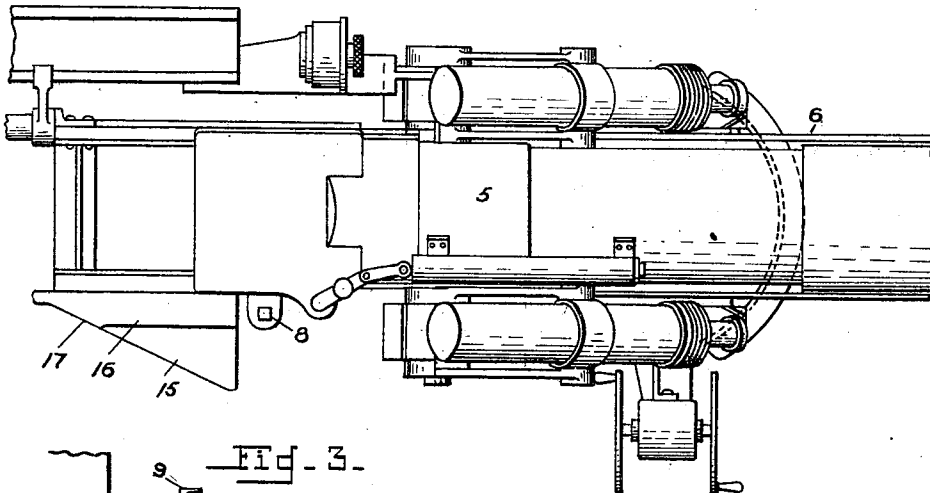
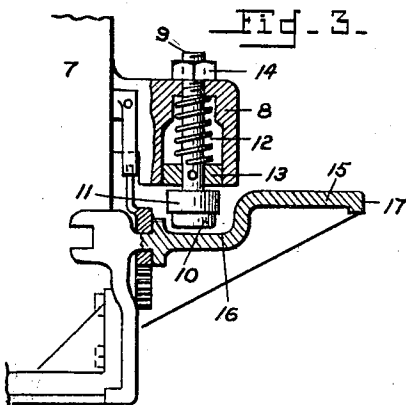
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BREECH OPENING MECHANISM

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BREECH-OPENING MECHANISM.

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(GRANTED UNDER THE PROVISIONS OF THE ACT OF MARCH 3, 1883, 22 STAT. L., 625.)

The invention described herein may be used by the Government, or any of its officers or employees in prosecution of work for the Government, or by any other person in the United States, without payment to me of any royalty thereon, in accordance with the act of March 3, 1883.

The subject of this invention is a breech opening mechanism.

Guns employed against air craft are generally fired at high angles of elevation thereby reducing the clearance between the breech of the gun and the ground or gun platform. As the cartridge case which is to be ejected is of considerable length, it is desirable that ejection take place as the gun is returning to battery. Consequently, the breech block, should be opened during the counterrecoiling stroke.

The present invention contemplates a simple but positive semi-automatic breech opening mechanism wherein the opening operation is completed as the gun arrives in battery. This mechanism is positioned entirely on the exterior of the gun thereby rendering it capable of quick repair and ready attachment to guns now in use.

To these and other ends, the invention consists in the construction, arrangement, and combination of elements, described hereinafter and pointed out in the claims forming a part of this specification.

A practical embodiment of the invention is illustrated in the accompanying drawings, wherein:

Fig. 1 is a view in side elevation of the breech end of a gun equipped with my improved mechanism;

Fig. 2 is a plan view thereof; and

Fig. 3 is an enlarged sectional view on the line 3-3 of Fig. 1.

Referring to the drawings by numerals of reference:

I have shown a gun 5 slidable during recoil and counterrecoil on the cradle 6 and provided with a laterally sliding breech block 7. Attached to the outer side of the block is a casing 8 in which is mounted a plunger consisting of a bolt 9 having a rounded head 10 which supports a roller 11. A spring 12 embracing the bolt is confined

between a shoulder of the casing and a keyed guide collar 13 pinned on the bolt above the roller and serving to prevent rotation of the bolt. A nut 14 on the upper end of the bolt is engageable with the casing to limit the downward movement of the bolt under the influence of the spring.

Secured to the cradle 6 is a triangular plate 15 whose forward side is positioned immediately in rear of the casing 8 when the gun is in battery. The base portion of the triangular plate is formed with an inclined groove or ramp 16 in which the plunger 9 travels during initial recoil of the gun, being gradually elevated until clear of the plate whence it is depressed by its spring 12. During the final stage of counterrecoil the roller 11 which is in the normal or depressed position is constrained to ride along the outer side 17 of the plate thus forcing the breech block to the open position. When the block has been closed the plunger will again be positioned in the path of the ramp.

While in the foregoing there has been illustrated and described such combination and arrangement of elements as constitute the preferred embodiment of my invention, it is nevertheless desired to emphasize the fact that interpretation of the invention should only be conclusive when made in the light of the subjoined claims.

I claim:

1. A cradle, a gun mounted to reciprocate thereon, a sliding breech block for the gun, a casing attached to the outer side of the block, a bolt having a rounded head inserted in the casing, a guide collar fixed to the bolt and adapted to prevent rotation thereof, a spring embracing the bolt and confined between the collar and the casing, means for limiting movement of the bolt, a roller interposed between the collar and bolt head, a triangular plate secured to the cradle with its forward side position in rear of the bolt when the gun is in battery, and said plate formed with a ramp in its base portion.

2. A cradle, a gun mounted to reciprocate thereon, a breech block, a casing attached to the outer side of the block, a plunger in said casing, a roller on the plunger, a triangular plate secured to the cradle with its

forward side positioned in rear of the plunger when the gun is in battery, and said plate formed with a ramp in its base portion.

3. A cradle, a gun mounted to reciprocate thereon, a breech block, a plunger carried by the block, a roller on the plunger, a triangular plate secured to the cradle with its forward side positioned in rear of the plunger when the gun is in battery, and

said plate formed with a ramp in its base portion. 10

4. A cradle, a cam plate secured thereto, a gun mounted to reciprocate on the cradle, a laterally sliding breech block in the gun and a cam follower carried by the block and operable to open the block. 15

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