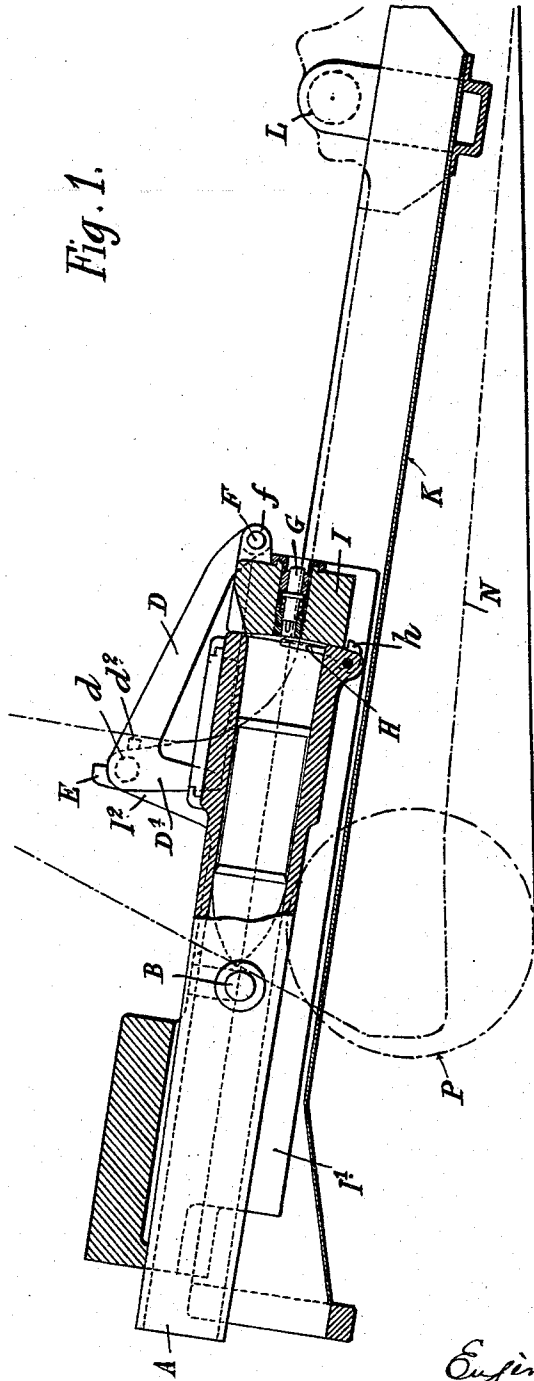


1,168,681.

E. SCHNEIDER.
ORDNANCE.
APPLICATION FILED APR. 13, 1915.

Patented Jan. 18, 1916.
3 SHEETS—SHEET 1.

Fig. 1.



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3 SHEETS—SHEET 2.

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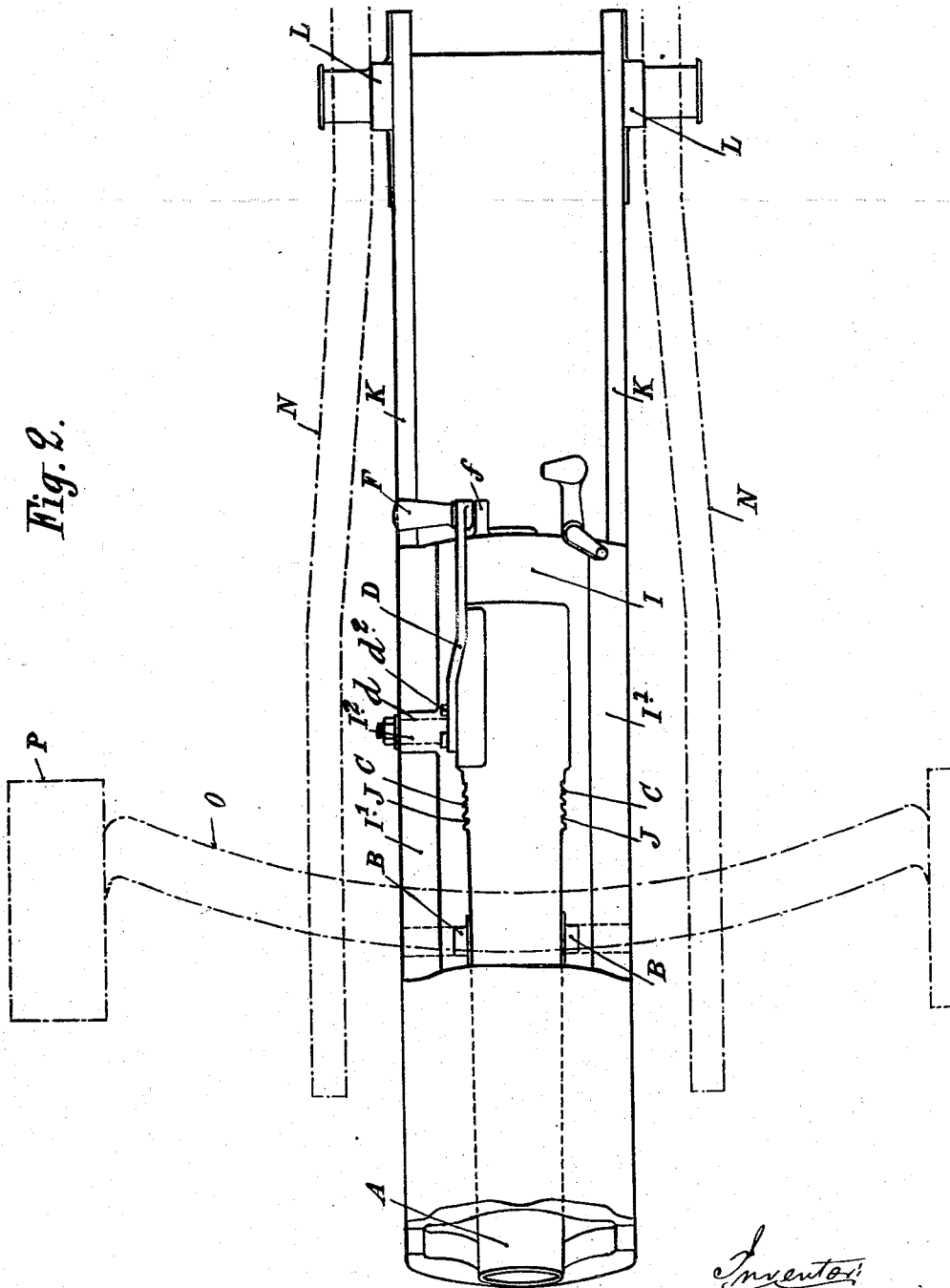


Fig. 2.

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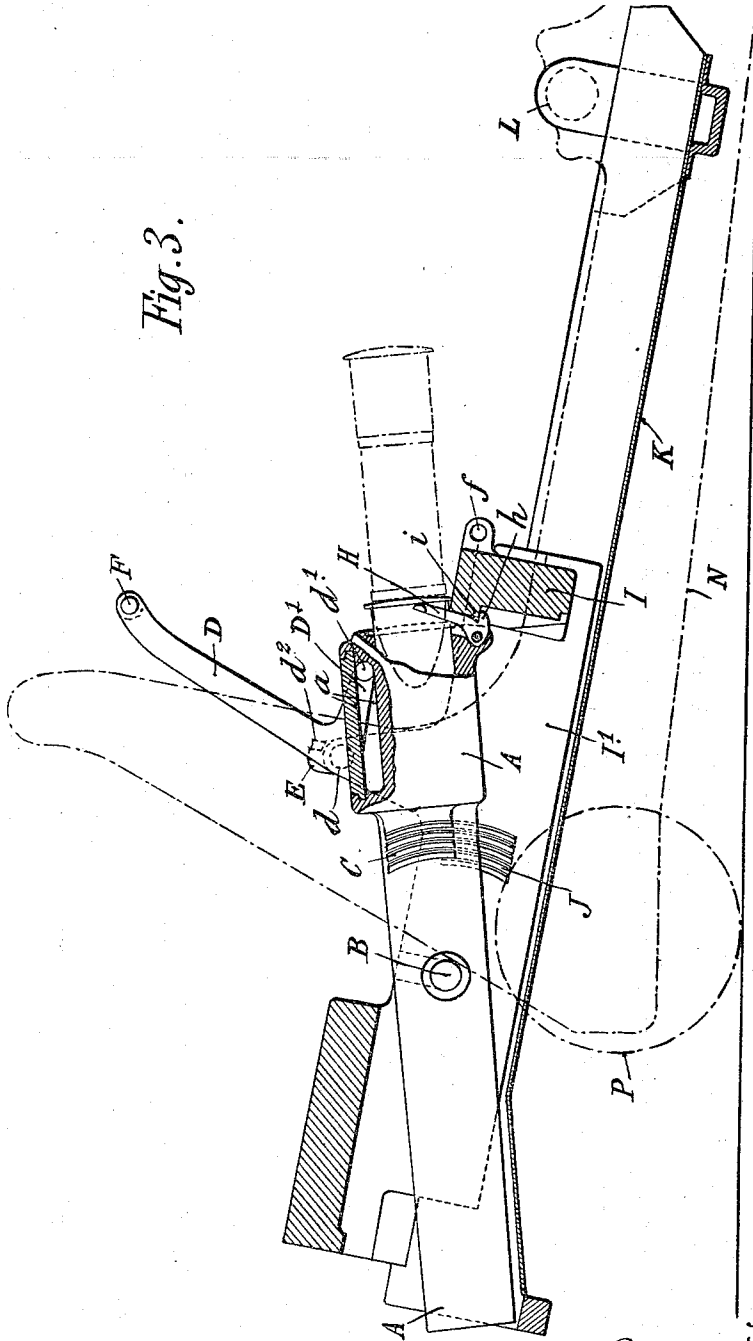
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3 SHEETS—SHEET 3.

1,168,681.

Fig. 3.



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UNITED STATES PATENT OFFICE.

EUGÈNE SCHNEIDER, OF PARIS, FRANCE.

ORDNANCE.

1,168,681.

Specification of Letters Patent.

Patented Jan. 18, 1916.

Application filed April 13, 1915. Serial No. 21,162.

To all whom it may concern:

Be it known that I, EUGÈNE SCHNEIDER, a citizen of the Republic of France, residing at Paris, France, have invented certain new and useful Improvements in or Relating to Ordnance, of which the following is a specification.

This invention relates to ordnance and is particularly applicable to ordnance adapted to fire at great angles of elevation. When the gun is placed at a high angle, it is necessary to bring it into an approximately horizontal position for loading. In order that this operation may be effected, it has already been proposed to cause the gun to pivot alone relatively to the sliding cradle in order to bring the gun into a convenient loading position and then proceed to the usual operation of opening the breech followed by the introduction of the projectile into the gun and the closing of the breech.

The chief object of the present invention is to simplify the bringing of the gun to and from its loading position and to generally simplify the movements and to diminish the mass to be displaced.

According to this invention the gun and the sliding cradle are constructed in such a manner that the latter carries or is made rigid (and preferably integrally) with the breech block in which the firing mechanism is housed and which, in the firing position, closes the barrel which is displaceable angularly relatively to the sliding cradle and to this fixed breech. The mass to be maneuvered in order to bring the gun to the loading position and to return it to the firing position, is thus diminished by the entire weight of the breech, while by the movements of the barrel relatively to the cradle the opening of the breech with the ejection of the empty cartridge case and the closing of the breech are produced.

In order that the said invention may be clearly understood and readily carried into effect, one embodiment thereof (selected merely for purposes of illustration) will now be described more fully with reference to the accompanying drawings, in which:—

Figure 1 is a longitudinal sectional ele-

vation showing the gun in the firing position. Fig. 2 is a corresponding plan. Fig. 3 is a longitudinal sectional elevation showing the gun brought into the position for extracting the empty cartridge case and loading with a fresh cartridge.

The gun proper or the barrel is mounted on a suitable support which, so far as certain features of my invention are concerned, can be of any usual or preferred construction. Preferably, however, I provide a support in the form of a cradle which is adapted to slide longitudinally of the main gun frame or carriage.

The sliding cradle I' and the gun are represented as mounted in a slideway K of appropriate construction and displaceable by means of trunnions L in a carriage N which may be carried on an axle O and wheels P.

The cradle I', in which the brake and recuperator cylinders may be formed in the usual manner, in accordance with the present invention is preferably given the form of a yoke piece or a U-shaped frame, whose base or rear portion I constitutes the breech block of the gun provided with its firing mechanism G. The gun is completed by the gun barrel proper A which is displaceable angularly relatively to the cradle I' and its breech block I, being pivotally mounted. For this purpose the barrel A carries two trunnions B housed in corresponding recesses in the cradle; it also carries on each side projections or ribs C in the form of arcs of circles concentric with the trunnions B and engaging corresponding projections or ribs J (Fig. 3) formed on the inner faces of the longitudinal sides of the cradle. This arrangement insures the connection of the barrel A with the breech block and relieves the trunnions B of strain during firing.

The projections C and J are remote from and independent of the breech-block, thus relieving the breech-block from any unnecessary stresses such as would result were the projections to be located on the breech-block itself. With this construction not only are the trunnions relieved from stress, but the breech-block is also relieved from

any stress incident to the reaction exerted on the barrel during firing.

The rear face of the barrel A and the supporting surface upon the breech block I are spherically curved, the center of curvature being located at the point of intersection of the axis of the barrel and the axis of the trunnions B. The extractor H movable in a guide in the block I is pivoted to the barrel A and is provided with a finger *h* (Fig. 3) which causes it to rock when, during the raising of the breech end of the gun, the said finger encounters the stop *i* of the breech block.

The rocking movements of the gun can be obtained by means of the mechanism represented in the drawing, comprising a shaft *d* parallel with the trunnions B and mounted in a bearing I² formed on one of the branches of the sliding carriage I'. This shaft carries a two-armed bell lever D D'. The arm D carries an operating handle F having a projection for engaging with a staple *f* carried by the block I, and the arm D' carries a finger or pin *d'* displaceable in a slideway or groove *a* formed in the barrel A. When the lever is in the position shown in Fig. 1, the arm D' is perpendicular to the groove *a*, and thus serves to lock the barrel against accidental movement by any force applied externally to the lever. However, by moving the lever by means of the arm D, the barrel can be swung upward to the position shown in Fig. 3. The handle F being slidable through the aperture in the end of the lever arm D, can be engaged with the staple *f* to lock the lever against movement when it is in position to lock the barrel against movement. The bearing I² carries a stop E which serves as an abutment for a boss *d*² on the arm D of the lever when the barrel A has reached the loading position.

It will be observed that the projections C and J are so constructed that they do not themselves limit the swinging movement of the barrel, such movement being possible in either direction indefinitely so far as these projections are concerned. The barrel movement is controlled and limited entirely by the bell-crank and by the pin *d'*.

It should be noted that as the trunnions B are arranged in proximity to the middle of the barrel, the rocking movements of the gun in the cradle are effected with the minimum effort.

What I claim and desire to secure by Letters Patent of the United States is:—

1. The combination of a support, a breech-block mounted on the support, a barrel normally registering at its rear with the breech-block, and two oppositely disposed horizontal trunnions on the barrel engaging the support, the said support and barrel being provided with two oppositely disposed sets of interengaging curved projections concen-

tric with the trunnions and remote from and independent of the breech-block for relieving the trunnions and the breech-block from stress resulting from reaction on the barrel during firing.

2. The combination with the gun carriage, of a cradle slidable longitudinally along the carriage, a breech-block mounted on the cradle, a barrel normally registering at its rear with the breech-block, and two oppositely disposed horizontal trunnions on the barrel engaging the support, the said support and barrel being provided with two oppositely disposed sets of interengaging curved projections concentric with the trunnions and remote from and independent of the breech-block for relieving the trunnions and the breech-block from stress resulting from reaction on the barrel during firing.

3. The combination of a support, a breech-block mounted on the support, a barrel normally registering at its rear with the breech-block, two oppositely disposed horizontal trunnions on the barrel engaging the support, a manually operable mechanism connected with the support and the barrel to move the barrel on its trunnions and to lock it in firing position, and two oppositely disposed sets of interengaging curved projections formed respectively on the support and the barrel and concentric with the trunnions and remote from and independent of the breech-block for the relieving of the trunnions and the breech-block from the stress of firing, the said projections permitting free movement of the barrel indefinitely in either direction, the extent of movement being entirely determined by the said manually operable mechanism.

4. The combination of a support, a breech block rigidly mounted on the support, a barrel pivotally mounted on the support and normally registering at its rear with the breech block, the barrel being formed with a longitudinal groove, a bell-lever horizontally pivoted to the support and having one arm manually operable, a pin on the other arm of the lever slidable in the groove, the lever serving when the first said arm is manually moved to move the barrel on its pivot and serving when the first said arm is perpendicular to the groove to lock the barrel against accidental movement by forces applied externally to the lever, and means carried by the breech block and movable into engagement with the lever to lock it in position with the barrel registering with the breech block.

5. The combination of a support, a breech block rigidly mounted on the support, a barrel pivotally mounted on the support and normally registering at its rear with the breech block, the barrel being formed with a longitudinal groove, a bell-lever horizontally pivoted to the support and having one

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arm manually operable, and a pin on the
other arm of the lever slidable in the groove,
the lever serving when the first said arm is
manually moved to move the barrel on its
5 pivot and serving when the first said arm is
perpendicular to the groove to lock the bar-
rel against accidental movement by forces
applied externally to the lever, and a stop

for engaging the lever to limit the move-
ment of the barrel to loading position.

In testimony whereof I have affixed my
signature in presence of two witnesses.

EUGÈNE SCHNEIDER.

Witnesses:

DEW. C. POOLE, Jr.,

B. O. TURLINGER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."