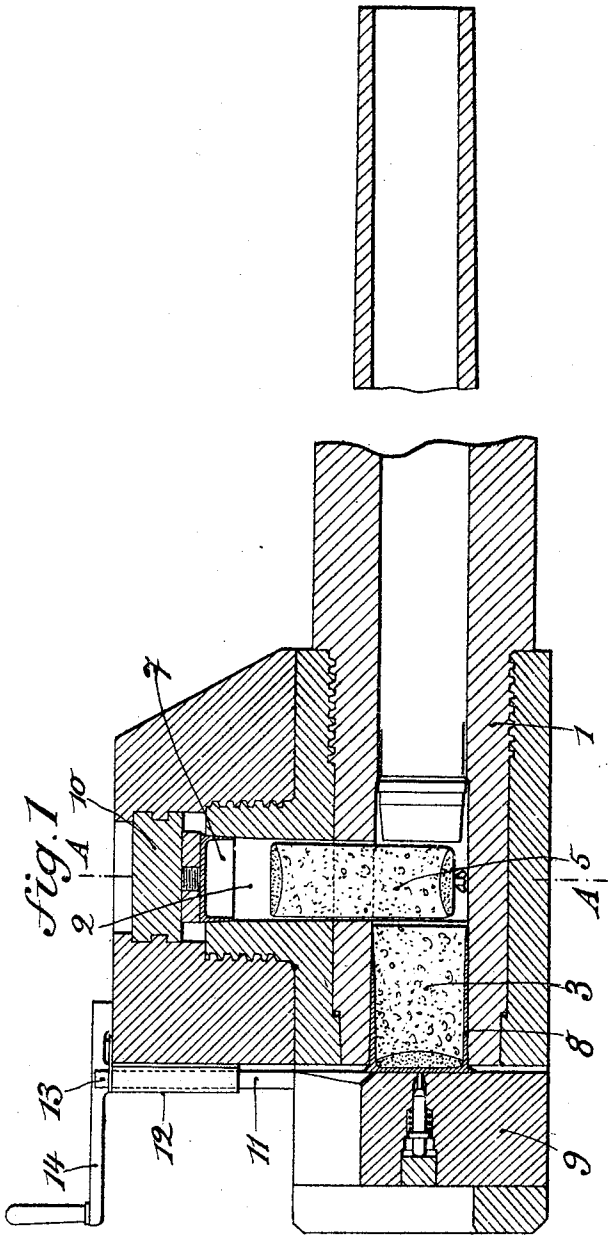
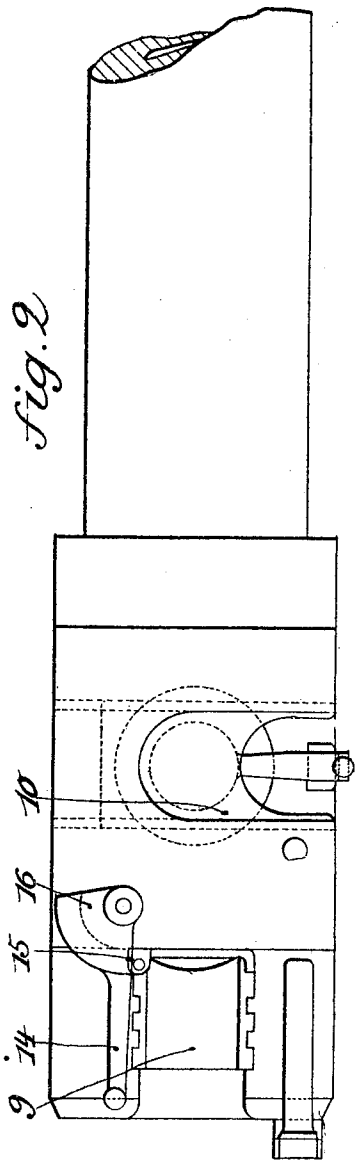
Dec. 11, 1923. 1,477,078

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CANNON WITH MULTIPLE POWDER CHAMBERS

Filed Feb. 17, 1922 3 Sheets-Sheet 1





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Fig. 6

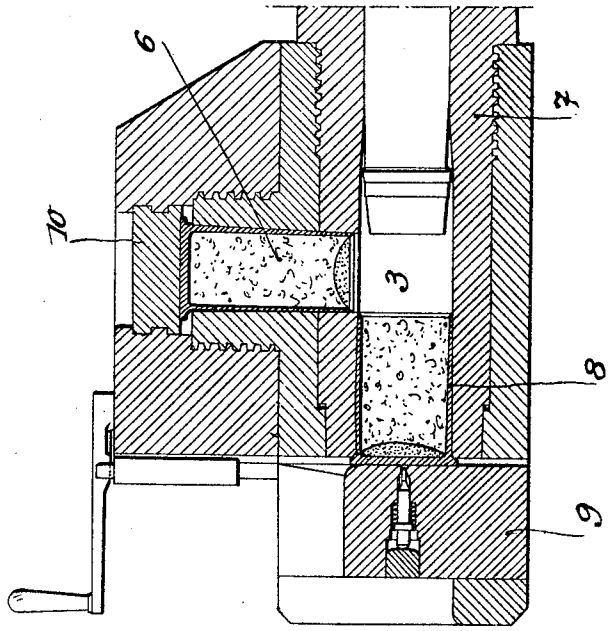
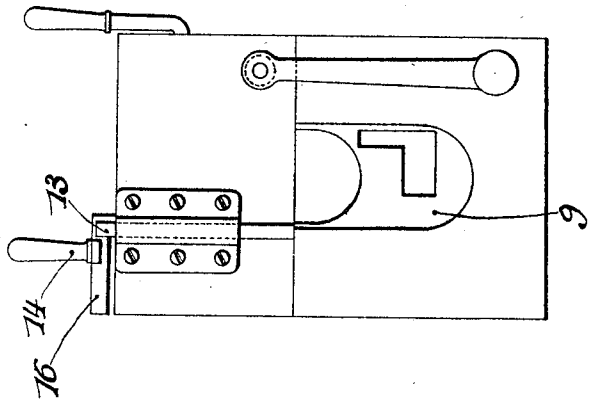


Fig. 3



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Fig. 5

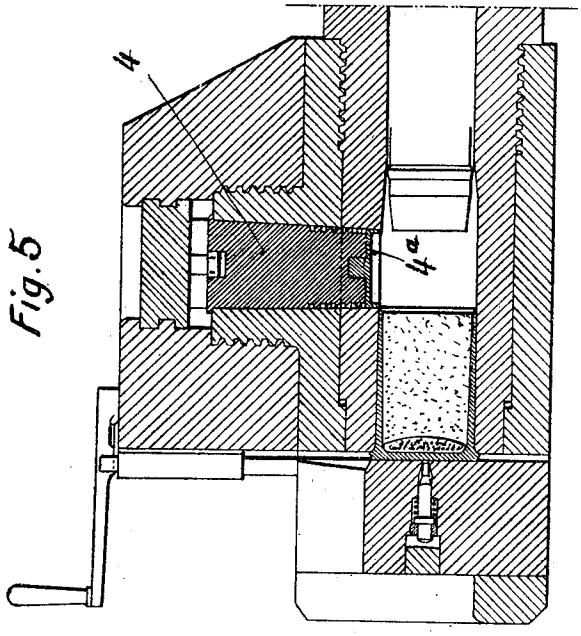
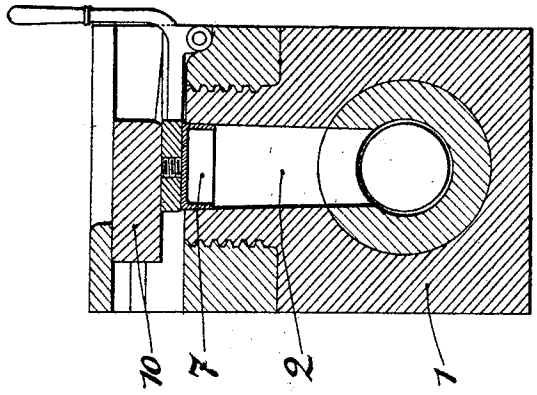


Fig. 4



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UNITED STATES PATENT OFFICE.

EMILE RIMAILHO, OF PARIS, FRANCE.

CANNON WITH MULTIPLE POWDER CHAMBERS.

Application filed February 17, 1922. Serial No. 537,285.

To all whom it may concern:

Be it known that I, EMILE RIMAILHO, a citizen of the Republic of France, and residing at Paris, Seine Department, No. 12 Rue de la Rochefoucauld, in the Republic of France, have invented certain new and useful Cannon with Multiple Powder Chambers, of which the following is a specification.

When it is desired to make use of a cannon of stated length which is provided with a powder chamber of determined volume, for firing with decreasing charges of powder, this decrease is limited by the fact that at a given ratio the volume of the chamber becomes too great to admit the combustion of the charge in an efficient and regular manner, as the charge is now too small with respect to this volume.

The present invention relates to a cannon whose barrel has the requisite length for long range firing, even though the so-called "normal" powder chamber which is situated rearwardly of the bore, has a small size such as is adapted for firing the same projectile with charges corresponding to what are used for shorter ranges in a howitzer or shell-gun of the same caliber.

If this small-sized chamber were used alone it is obvious that the available range would be less than with a larger chamber in which a greater charge can be used.

To obtain the long range, according to the present invention I provide in the breech of the cannon or reenforce, one or more additional powder chambers whose axis is in the perpendicular, oblique, or parallel position with respect to the axis of the normal chamber. The said chambers communicate with the normal chamber and are closed on the outer side by a plug, or by the breech-block with an obturation system of the known type.

The said additional chambers can be employed or not as may be desired, and to effect this they may contain a charge or may be filled up by a suitable inert plug.

A safety device is preferably used so as to prevent firing at the breech-block of the normal chamber as long as the breech-block of the additional chamber has not been closed, and to prevent opening one of the breech-blocks of the additional chambers when the breech-block of the normal chamber is closed and the firing can take place.

The said device comprises for example an arm controlled by the breech-block of the normal chamber which allows the additional breech-block to be opened only when the first-mentioned breech-block has been opened, and likewise a member controlled by the opening of the additionl breech-block, which serves to hold the said arm in the position for the opening of the normal breech-block as long as the additional breech-block is not entirely closed, so as to prevent the closing of the normal breech-block as long as the additional breech-block remains open.

The appended drawing shows by way of example the use of the device according to the invention with a cannon having a single additional chamber.

Fig. 1 is a lengthwise section on the axis of the cannon where two chambers are used, the additional chamber containing a cartridge.

Fig. 2 is a plan view of the reenforce.

Fig. 3 is a rear view of the same.

Fig. 4 is a cross-section on the line A—A of Fig. 1.

Fig. 5 is a section analogous to Fig. 1 where two chambers are in use, the additional chamber containing a filling plug.

Fig. 6 is a similar view with the additional chamber containing a cartridge case.

The cannon 1 comprises an additional chamber 2, which when the normal chamber 3 is alone employed is filled up by an inert plug 4 provided with a plastic or metallic obturator 4^a; in this manner the volume of the filled chamber is not added to the volume of the normal chamber 3, and the arrangement operates as if the said additional chamber were not used.

For long range firing, the plug 4 of the additional chamber is removed, and for each shot one places in this chamber the proper amount of powder 5, the normal chamber receiving a charge in the known manner. If the additional breech-block is provided with a plastic obturator, the charge may consist of a packet or bag of powder which is placed directly in the chamber; if the breech-block is of the wedge type, as shown, the additional charge is well inclosed in a metallic cartridge 6, Fig. 6, acting as an obturator and ejected in the known manner, or consists simply of a bag 5, the closing being obtained by an obturating bottom 7, Figs. 1 and 4.

The latter arrangement is preferable inasmuch as the dimensions of the additional cartridge 7 may be such that there will be no confusion with the cartridge 8 of the normal chamber, Fig. 6.

To insure the safety of the elements in the arrangement shown in Figs. 1 and 2 in which both chambers are closed by breech-blocks of the wedge type 9 and 10, the breech-block 9 of the normal chamber has an extension 11 which is guided by a socket 12 and whereof the upper end 13 is capable of holding the lever 14 controlling the breech-block 10 in the extreme closing position by taking a position in front of a stop-piece 15 pertaining to a lever 14 adapted to actuate the breech-block 10, in such manner as to prevent any manipulation of this lever.

In these conditions, the breech-block 10 cannot be opened when the breech-block 9 is closed.

Inversely, when the breech-block 10 is opened, should it be desired to close the breech-block 9, the extension 11 will come into contact with a sector 16 secured to the lever 14 whereby the closing will be incomplete and it will be impossible to fire the cannon.

Obviously, as above stated, the disposition of the additional chamber in communication with the normal chamber may assume a variety of forms; for example the axis of the additional chamber may be situated in any desired plane, oblique or perpendicular to the cannon bore, or situated above, below or laterally with reference to the same.

Claims:

1. In a cannon adapted for firing with variable charges while maintaining a suitable relation between the weight of each charge and the volume of the chamber containing the same, the combination of a normal powder chamber corresponding to reduced charges, one or more additional chambers formed in the reenforce and communicating with the said normal chamber, apertures corresponding to the normal chamber and to the additional chambers, breech-blocks closing the said apertures, and inert plugs adapted to close up the said additional chambers when not in use.

2. In a cannon adapted for firing with variable charges while maintaining a suitable relation between the weight of each charge and the volume of the chamber containing the same, the combination of a normal powder chamber corresponding to reduced charges, one or more additional chambers formed in the reenforce and communicating with the said normal chamber, apertures corresponding to the normal chamber and to the additional chambers, breech-blocks closing the said apertures, inert plugs adapted to close up the said additional chambers when not in use, and a firing device for the normal charge.

3. In a cannon adapted for firing with variable charges, the combination of a normal powder chamber, one or more additional chambers communicating therewith, powder charges disposed in said chambers which may be replaced in the additional chambers by inert plugs, and a firing device for the normal charge whose ignition will likewise effect the ignition of the additional charges.

4. In a cannon adapted for firing with variable charges, the combination of a normal powder chamber corresponding to reduced charges, one or more additional chambers communicating therewith, breech-blocks serving to close each of the said chambers respectively, a firing device mounted in the breech-block of the normal chamber, means for preventing the said firing device from operating as long as any one of the breech-blocks of the additional chambers remains open, and inert plugs adapted to replace the charges in the said additional chambers.

5. In a cannon adapted for firing with variable charges, the combination of a normal powder chamber corresponding to reduced charges, one or more additional chambers communicating therewith, breech-blocks serving to close each of the said chambers respectively, a firing device mounted in the breech-block of the normal chamber, an arm disposed upon the breech-block of the normal chamber, elements controlled by the opening movement of the said breech-blocks of the additional chambers and coming into contact with the said arm as long as the said breech-blocks remain open, and inert plugs adapted to replace the charges in the said additional chambers.

6. In a cannon adapted for firing with variable charges, the combination of a normal powder chamber corresponding to reduced charges, one or more additional chambers communicating therewith, breech-blocks serving to close each of the said chambers respectively, a firing device mounted in the breech-block of the normal chamber, an arm disposed upon the breech-block of the normal chamber for preventing the opening of the breech-blocks of the additional chamber as long as the breech-block of the normal chamber remains open, elements controlled by the opening movement of the said breech-blocks of the additional chambers and coming into contact with the said arm as long as the said breech-blocks remain open, and inert plugs adapted to replace the charges in the said additional chambers.

In testimony that I claim the foregoing as my invention I have signed my name.

EMILE RIMAILHO.