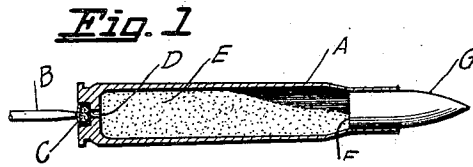
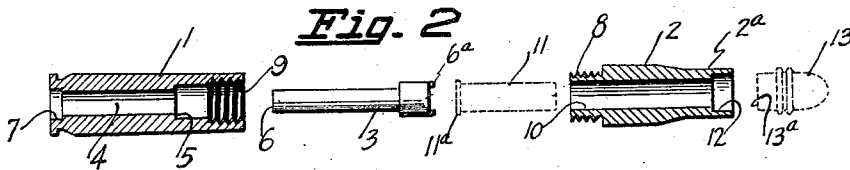
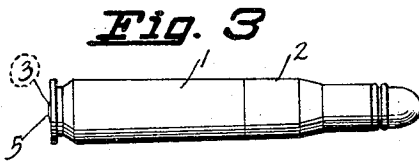
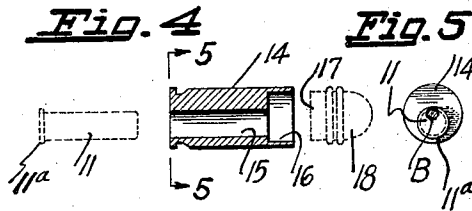
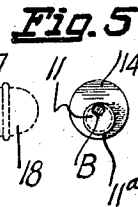
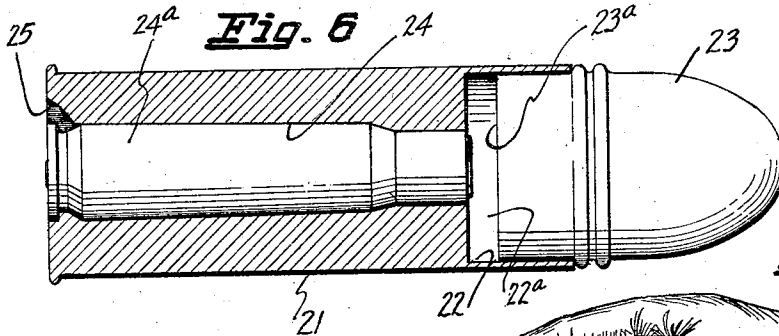
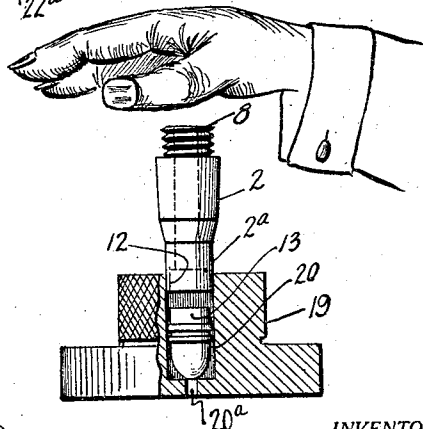
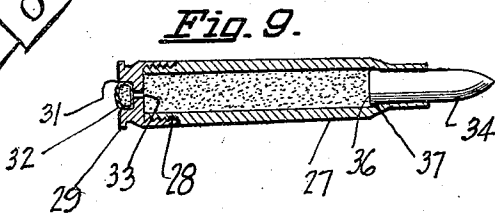


March 21, 1933.

A. F. GAIDOS
PRACTICE CARTRIDGE
Filed Dec. 22, 1930

1,902,771



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UNITED STATES PATENT OFFICE

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PRACTICE CARTRIDGE

Application filed December 22, 1930. Serial No. 503,957.

My invention refers to improvements in practice cartridges for use in firearms, preferably for use in short range target practice or small game hunting, and has for its primary object the provision of means for adapting the main charge of the standard commercial blank cartridge for use as the charge to propel the bullet through the bore of the firearm.

10 An object of my invention is to provide a means of varying at will, the range and velocity of the bullet fired from any firearm in which my practice cartridge is used.

Another object of my invention is to provide for the complete combustion of the gases evolved from the burning of the powder, thus the maximum pressures are obtained against the base of the bullet.

With the foregoing objects in view it will be noted that it is possible to adapt to my practice shell, factory loaded, commercial blank ammunition, preferably the inexpensive, rim fire type, the charge of which is used to propel the bullet through the bore of the firearm. For instance, I insert into my practice shell in the usual manner, a .30 caliber bullet behind which I insert a .22 caliber extra long blank cartridge, the charge in which, when exploded by the firing pin, propels the bullet through the .30 caliber barrel at sufficient force suitable for indoor target practice or for small game hunting. Likewise, I may use a standard .50 caliber blank cartridge in the same manner to propel a 37 millimeter caliber ball through the bore of small cannon, or in the case of practice firing with 75 millimeter caliber projectiles, a 37 millimeter blank cartridge may be used. This method will provide inexpensive target practice with the provision that the propelling charge can instantly be placed behind the projectile.

Should I desire to reduce the muzzle velocity or the range of the bullet, it will only be necessary to substitute a shell container

of shorter length, or in the case of small cannon shells, a reduced blank load may be furnished.

My practice cartridge would be very desirable for use by recruit troops, as it would dispense with the gallery practice .22 caliber rifle with which they are given preliminary instruction on the rifle range. On account of the fact that the mechanism of the gallery practice rifle differs from that of the regular service rifle, preliminary target practice can be conveniently taught the recruit in the gallery range with the regular issued rifle using my practice cartridges. This will eliminate entirely the necessity of the recruit to receive instruction in the use of two distinct types of weapons. It is a well known fact that after one becomes accustomed to the sights, mechanism, trigger pull and weight of one rifle, it is quite difficult to immediately become accustomed to another type of rifle.

In the case of the sportsman hunting for deer or other large game, he may use the same rifle in hunting for rabbits, fowl, etc. It will only be necessary for him to equip himself with two kinds of cartridges, the regular high powered cartridge for use against large game and my practice cartridge for use against wild fowl, rabbits, or other small game.

Forms which my invention may assume are exemplified in the following description and illustrated in the accompanying drawing in which:—

Fig. 1 is a longitudinal sectional view of a complete round of military ammunition such as is used in small arms.

Fig. 2 is a longitudinal sectional view of the components of my practice cartridge.

Fig. 3 is a side view of my practice cartridge.

Fig. 4 is a longitudinal sectional view of a practice cartridge for use in side arms such as pistols, revolvers, etc.

Fig. 5 is a view of Fig. 4, taken on line 5-5.

Fig. 6 is a longitudinal sectional view of a practice cartridge for use in small cannon.

Fig. 7 is a view of the method of inserting or extracting the blank cartridge.

Fig. 8 is a view showing the method of placing the bullet into the practice shell.

Fig. 9 is a longitudinal sectional view of a reloadable practice shell.

In order to thoroughly understand the functioning of an ordinary cartridge, it will be necessary to refer to Fig. 1 of the accompanying sheet of drawing, in which A represents in general, an ordinary metal case such as is used to house the different components of a round of small arms ammunition. When firing pin B is struck by the firing mechanism it ignites fulminate in primer C, the flash from which enters aperture D, igniting the main or propelling charge E, the expansion of gases from which exerts a pressure on base F of bullet G, driving it through the bore of the barrel along its trajectory to a point of impact.

Referring again to the drawing in detail, particularly to Figs. 2 and 3, my practice cartridge is composed of mainly a base 1, a tip 2, and an auxiliary firing pin 3 which is inserted in a longitudinally bored hole 4, resting against shoulder 5 of base 1. To secure the firing pin 3 in the base 1, the pin 3 is loosely upset at 6 into the counterbore 7 of the base 1, after insertion.

The base 1 and the tip 2 are held together as an assembly by male thread 8 on tip 2, and female thread 9 in base 1. A hole 10 is bored through the tip 2 to frictionally engage a blank cartridge 11. The tip 2 is counterbored at 12 to frictionally engage bullet 13.

It will be noted that when the entire unit is assembled as in Fig. 3, it very much resembles a round of small arms ammunition such as is used in military firearms, and it will be apparent that when the unit is loaded with the blank cartridge 11 and the bullet 13, and placed in the chamber of the firearm, it will function similarly to a regular cartridge, as the firing mechanism of the arm will cause the firing pin 3 to strike the auxiliary firing pin 3 at the base 6. The tips 6^a of the firing pin 3 strike a rim type primer 11^a of the blank cartridge 11, thereby exploding the powder contents of the cartridge, the gases from which exert a pressure on the base 13^a of the bullet 13, driving it through the bore of the arm.

In a practice cartridge for use in revolvers or pistols, firing center fire ammunition, only a single unit section is required, for the fact that ammunition for this class of firearms is somewhat shorter in length, and for this reason I provide a shell case 14, as in Fig. 4, having a bored hole 15 to re-

ceive and frictionally engage the blank cartridge 11. It will be noted that said bored hole 15 is offset from the center of case 14, so as to bring the firing pin B, (Fig. 5) in a position to strike the rim type primer 11^a on the cartridge 11. A counterbore 16 (Fig. 4) is concentrically bored with a shell case 14 to receive and frictionally retain a bullet 18. It will be apparent that when the firing pin B of the firearms mechanism strikes the cartridge 11 at 11^a, exploding the charge therein, the gases expand in the counterbored section 16, building up a pressure against the base 17 of the bullet 18, driving it through the bore of the firearm.

In larger ammunition such as small cannon or the like, a high powered blank cartridge is adapted to the practice shell as in Fig. 6. A practice shell is provided for the 37 millimeter caliber cannon in which the shell 21 is counterbored at 22, to receive and frictionally engage projectile 23. The counterbored chamber 22 has still another function to perform, as it will be noted that a space 22^a exists between the base 23^a and the end of the blank cartridge 24^a. This space is provided to furnish additional oxygen to the powder to facilitate more rapid combustion of the powder gases. The shell is bored out at 24, to frictionally engage a .50 caliber machine gun blank cartridge 24^a. To conveniently extract the cartridge 24^a, recessed notch 25 is provided in the base of the shell 21, as access for screw driver or blade. It will be apparent that when the entire unit is loaded and inserted in the breech of the cannon, the firing pin of the cannon mechanism will explode the primer and the main charge in the .50 caliber blank cartridge, and the pressure of the gases will be exerted against the base of 23^a of the projectile 23, driving it through the bore of the cannon.

For the purpose of conveniently loading the bullet 13 in the tip 2, I provide a fixture 19, (Fig. 8) in which is bored vertically, a hole 20 to receive the bullet 13 in inverted position. The neck 2^a of the tip 2 is inserted in the bored hole 20 of the fixture 19 and tapped with the hand at the threaded end section 8, forcing the bullet 13 into the counterbored end section 12 of the tip 2. The hole 20^a is provided for a knockout pin for tight fitting bullets.

While certain features of my invention are more or less specifically illustrated, I wish it to be understood that various changes as to form and proportion may be resorted to within the scope of the appended claims. I similarly wish it to be understood that the materials and the finish of the several parts employed may be such as the experience and the judgment of the manufacturer may dictate or the various uses demand. I also wish it to be understood that the practice

cartridge may be made in all standard calibers as well as calibers of future firearms.

The reloadable ammunition component container shown in Fig. 9, includes a shell 5 27, which has a male thread 28 on its rear end upon which latter is threadedly secured a primer housing 29. The primer housing 29 is preferably of the center fire type and it has a central recess 31 to receive a primer 10 32 therein. In the bottom of the recess 31 is formed a flame aperture 33 in the usual manner.

It is to be noted that there is no machine or die required to reload this shell, because 15 the bullet 34 can be readily inserted through the rear end of the shell 27, after the housing 29 is removed. The bullet 34 is provided with a flared base 36 which abuts against the inner shoulders 37 at the reduced end of the shell 27. After the bullet 34 is 20 thus inserted in place, a desired amount of explosive powder is poured or placed into the shell 27, to act as a propelling charge. Then the housing 29 is threaded in place and 25 the cartridge with all its components is ready to be placed in a high pressure firearm. It is obvious therefore, that in this manner low pressure, reloadable practice shells, can be conveniently fired from the 30 usual high pressure fire arm. It is also to be noted that it is not necessary to reduce or change the caliber of the fire arm.

Having thus described this invention, what I claim and desire to secure by Letters 35 Patent is:

1. In combination, a shell fitting into a high pressure firearm, longitudinal tubular shell sections forming said shell, means to detachably secure said sections to each other 40 in end to end relation, the section at the discharge end of the shell having a recess in its free end, and having an elongated passage of smaller diameter than the diameter of said recess extending from the recess to the other end of said section, a projectile in 45 said recess, a blank cartridge in the passage being shorter than the said passage, the secured end of the other section being adapted to engage and back up the rim of the cartridge, and an auxiliary firing pin in the sec- 50 ond section, an end of said pin being adapted to be acted upon by center fire action, a firing mechanism and rim firing elements on the other end of the pin to act on the rim of the cartridge, when the firing pin 55 is acted upon by the firing mechanism of the firearm.

2. A reloadable practice shell comprising two longitudinal shell sections demountably 60 secured to each other, an end of one section having a recess in its free end to receive a projectile therein, and having a passage from said recess to the other end of said section to contain a cartridge behind the pro- 65 jectile, the passage being of smaller diame-

ter than the projectile, the firing end of the section being recessed and apertured, an auxiliary firing pin in said second section in operative position relative to the usual firing mechanism of a firearm, and a rim firing 70 element on the end of said pin adjacent the rim of the cartridge.

In testimony whereof, I have hereunto set my hand at San Francisco, California, this 12th day of December, 1930.

ALONZO F. GAIDOS. 75

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