P. T. SNYDER.

CARTRIDGE PROJECTILE.

APPLICATION FILED AUG. 9, 1915.

1,191,357. Patented July 18, 1916.

Fig. 1.

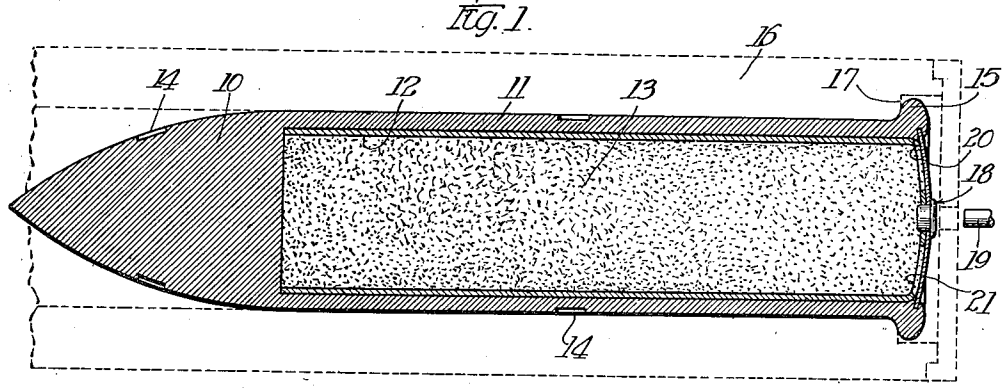


Fig. 2.

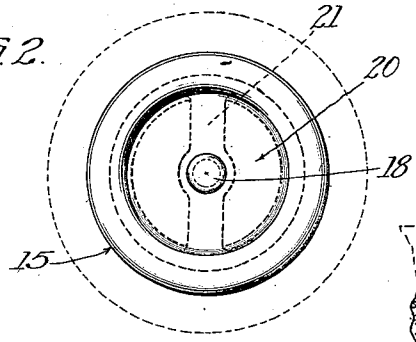


Fig. 6.



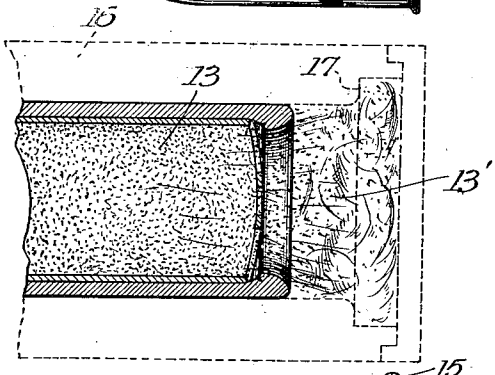


Fig. 3.

Fig. 4

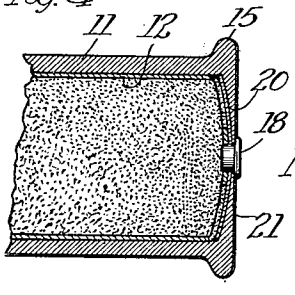
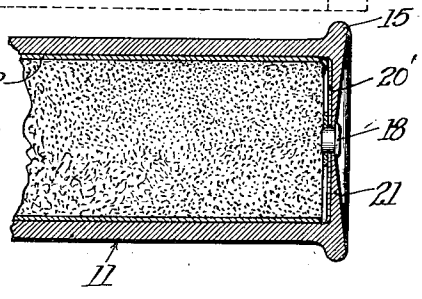


Fig. 5.



Witnesses:
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UNITED STATES PATENT OFFICE.

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CARTRIDGE-PROJECTILE.

1,191,357. Specification of Letters Patent. Patented July 18, 1916.

Application filed August 9, 1915. Serial No. 44,368.

To all whom it may concern:

Be it known that I, PARKE T. SNYDER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Cartridge-Projectiles, of which the following is a specification.

My invention relates to improvements in cartridges or projectiles.

One of the objects of my invention is to cheapen the construction and improve the efficiency of cartridge-projectiles.

Another object of my invention is to provide a cartridge and projectile in one integral structure, thereby doing away with the separable, copper, charge-holding shell.

Another object of my invention is to improve the body of the projectile to give it a rotary motion after it leaves the gun so that it may be shot from unrifled or smooth bore guns thereby cheapening the construction of the gun necessary for its proper and effective operation.

Other and further objects of my invention will become readily apparent, to persons skilled in the art, from a consideration of the following description when taken in conjunction with the drawings wherein:—

Figure 1 is a longitudinal section of a preferred form of my cartridge-projectile. Fig. 2 in an end view of same. Fig. 3 is a section of the rear end of the cartridge part showing the structure about to be fired from a gun and showing the gun in dotted lines. Fig. 4 is a similar view showing the structure before it is fired from a gun. Fig. 5 is a modification and Fig. 6 is a perspective view of the cartridge projectile.

In all the views the same reference characters are employed to indicate similar parts.

In making my cartridge the projectile part or bullet, 10, and the jacketing part 11 are made of a soft yielding material, such as lead. The rear portion 11 forms the cartridge portion of the projectile, of which the front end or projectile 10 is an integral part. A reinforcing tube, such as a steel tube 12, is placed within the part 11 to reinforce it and to enable the cartridge to withstand the pressure due to the explosion without undue expansion. A charge 13 is placed within the tube 12. The outside portions 10 and 11 are fluted, as at 14, to give the structure a rotary motion as it is projected from the gun by its contact with the air through which it passes. The rear end of the device is provided with a laterally extending, annular flange 15, of lead, or other similar material. This provides a packing, as required in a smooth bore gun, and prevents leak of gas through the flutes 14. The gun, shown in dotted lines, as at 16, is provided with an inner shoulder 17 against which the annular flange 15 rests when the projectile is within the gun. The flange 15 and the shoulder 17 prevent the projectile from falling from the gun and form a resistance against which to some extent to resist the charge and the effect of impact upon the igniting cap 18, when the firing point 19 strikes it with the object of firing the charge.

Fig. 3 shows a charge being fired and the projectile starting on its course through the gun. It will be observed that the annular flange 15 is turned inwardly by the stress against the shoulder 17 and forms a packing for the burning gases of the charge 13′.

The rear end of the projectile is closed with a combustible disk or closure 20, which may be made of celluloid, or like substance, adapted to be volatilized or otherwise consumed by the burning charge 13′ when the cartridge is fired. This closure 20, may be arched, as shown in Fig. 4, or may be a flat disk as shown at 20′ in Fig. 5. The disk 20 may be reinforced by a part 21 of the outside shell or covering 11.

When the projectile, as shown in Fig. 1, is fired, the entire device leaves the gun so that there is no copper shell or charge receptacle to be ejected from the gun after the firing of each shot.

The projectile-cartridge device carries its own charge and is urged forward by the rapid expansion of the charge while the device is within the barrel of the gun, but if the entire charge is not consumed, while in the gun, the projectile is given an additional impulse, after leaving the gun, by the effect of the burning charge upon the surrounding atmosphere, just as a sky rocket is projected by a burning charge, thus adding to the efficiency of the apparatus and receiving at all times the beneficial advantage of the entire charge contained within the cartridge.

The projectile will pass through the air like an arrow, the heavier or bullet portion 10 being always in front and held in true alinement with its course, by the relatively long light portion 11, thus preventing "tumbling" of the projectile, and causing it to

go true to the mark, the flutes preserving its rotary action through the air.

By shooting the entire device from the gun a material efficiency is effected, there being no parts or portions of material that are not at all times contributing to useful results and there being no portion to be ejected by the mechanism, as in automatically operating guns, shots can be fired in greater rapidity with less danger from derangement, due to the ejected shells. The weight of the cartridge is also reduced, thus imposing a lighter load upon the user of such devices and requiring less space in which to include a given number of cartridges of equal power and efficacy.

The cartridge may be made cheaper than those requiring expensive copper shells, the steel tube, in this case, being cheaper and protected against oxidation or disintegration by the lead covering 11 and having a greater resisting tenacity than does the copper shell and being a part of the flying projectile it contributes considerably to the efficiency in the construction and operation of the device.

While I have herein shown a single embodiment of my invention for the purpose of clear disclosure it is manifest that changes may be made in the general form and arrangement of the parts within the scope of the appended claims.

Having described my invention, what I claim is:

1. An article of manufacture, a projectile, comprising an integral, heavy, forward portion; a relatively light cylindrical charge-carrying portion, both portions being spirally fluted; a rear annular flange portion and a reinforcing open ended tube lining the charge carrying portion.

2. An article of manufacture, a projectile, comprising an integral, heavy, forward portion; a relatively light cylindrical charge-carrying portion, both portions being spirally fluted; a rear annular flange portion; a reinforcing, open-ended tube, lining the charge carrying portion, and a combustible closure for the latter portion and the tube.

3. As an article of manufacture, a projectile, comprising a heavy, forward portion; a relatively light cylindrical charge-carrying portion integral with said forward portion; a rear annular flange portion integral with the cylindrical portion; and a reinforcing open ended tube lining the charge carrying portion.

In testimony whereof I hereunto set my hand in the presence of two subscribing witnesses.

PARKE T. SNYDER.

In the presence of—
FORÉE BAIN,
MARY F. ALLEN.