(No Model.)

E. S. FIELD.

PROJECTILE.

No. 594,199. Patented Nov. 23, 1897.

Fig. 1.

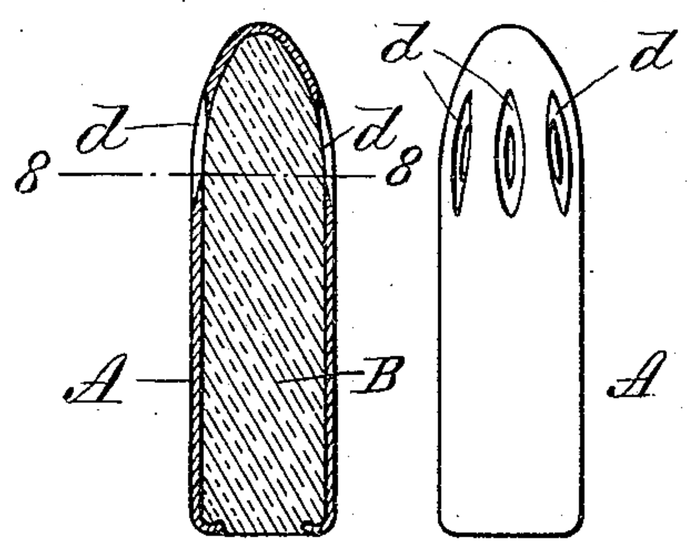


Fig. 2.

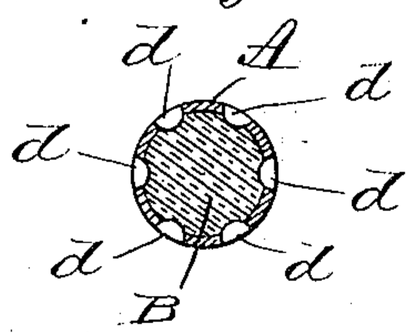
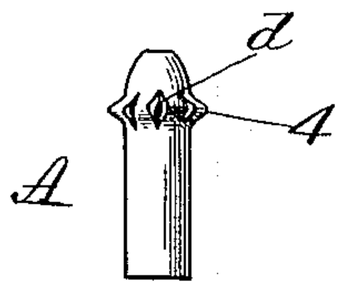


Fig. 3.



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UNITED STATES PATENT OFFICE.

EDWIN S. FIELD, OF SPRINGFIELD, MASSACHUSETTS.

PROJECTILE.

SPECIFICATION forming part of Letters Patent No. 594,199, dated November 23, 1897.

Application filed July 9, 1897. Serial No. 643,938. (No model.)

To all whom it may concern:

Be it known that I, EDWIN S. FIELD, a citizen of the United States of America, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Projectiles, of which the following is a specification.

This invention relates to bullets or projectiles for firearms, and particularly for arms for military and hunting purposes, the object being to produce an improved projectile which comprises a tubular metallic shell and softer metal filling, the effect of which upon an object struck by it is more destructive than are those heretofore used; and the invention consists in the peculiar construction of the parts of the bullet and their relative arrangement, all as hereinafter fully set forth, and more particularly referred to in the claims.

In the drawings Figure 1 illustrates in side elevation and in vertical section a projectile (somewhat enlarged) embodying my improvements. Fig. 2 is a sectional view on line 8 8, Fig. 1. Fig. 3 illustrates the condition of said projectile after having been fired against an object.

Referring to the drawings, A indicates the tubular metallic shell of the bullet, and B the softer metal body or filling thereof.

Bullets of the class herein described and shown, as heretofore made, have comprised said soft-metal filling or body, somewhat harder than pure lead, and said shell A of malleable metal and generally enveloping, unbroken, the entire filling B, excepting at the butt of the bullet, as shown. Such a bullet as this last-described one when fired against or into an object, owing to its caliber and pointed form or outline, generally passes quite through the object or becomes embedded therein, according to the resistance offered by said object; but in either case the bullet preserves its original form or shape and oftentimes leaves little trace of its pathway through or into such hit object, and hence the destructive purpose sought for by such firing is not attained.

It will be observed, by referring to Figs. 1 and 2, that the openings *d* through the shell A, just below the apex thereof, are surrounded by an elongated indentation which is concave in cross-section, said opening being formed through the shell at the base of said indentation by grinding or milling through the shell with a suitably-formed cutter, whereby said opening is formed, as aforesaid, having thin and sharp knife-like borders. Said manner of forming said last-named openings results in the production of said thin sharp borders around said openings, which offer less resistance to the escape of the soft-metal filling of the projectile when the latter strikes a hard object than do the surrounding thicker portions of the shell, and consequently said sharp borders are first turned outward and act to cut the object struck as well as to otherwise injure it, as below described.

The effect of the sudden, complete, or partial arrestation of the flight of a bullet of the class herein described, when made of metal which allows of it, is an upsetting one; but bullets comprising said shell A, whose surface is intact and containing the filling or core B, are not easily upset, as aforesaid, unless the displacement of a portion of said filling or core be provided for. Therefore to provide for advantageously employing a bullet comprising said shell and filling or core and to couple with it the further advantage as to destructiveness, due to an abnormal enlargement thereof, caused by upsetting the same, as described, the said thin-edged openings through the bullet casing or shell are made.

In firing the within-described improved shell it is, as aforesaid, found that portions of said soft-metal core are driven outward through the said openings in the shell A, and that consequently the interior of the forward end of the shell is relieved of a sufficient portion of said core to allow it to be upset and driven rearwardly by said impact, thus contributing to the formation of the outfolding portions 4 of the shell, as shown in Fig. 3.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A projectile for firearms comprising a metallic shell having one or more openings through its side, each surrounded by an elongated indentation, concave in cross-section, below the apex thereof, thereby forming knife-

like borders around the said openings, and a body of soft metal inclosed by said shell, substantially as described.

2. A projectile for firearms comprising a malleable metal shell having several elongated openings therethrough, which openings have oppositely-arranged knife-like borders, and a body of soft metal inclosed in said shell, substantially as set forth.

3. A projectile for firearms comprising a body of soft metal, and a shell of malleable metal inclosing said body, said shell having several openings through its sides below the apex thereof, knife-like borders around the same forming several weakened shell portions for outwardly abnormal distention, whereby said borders are turned outwardly and portions of said body are forced through said openings, as a result of the impact of the projectile, when fired, substantially as described.

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