Dec. 22, 1942. J. E. REED 2,306,140

PROJECTILE AND BULLET

Filed Sept. 27, 1940

Fig. 1.

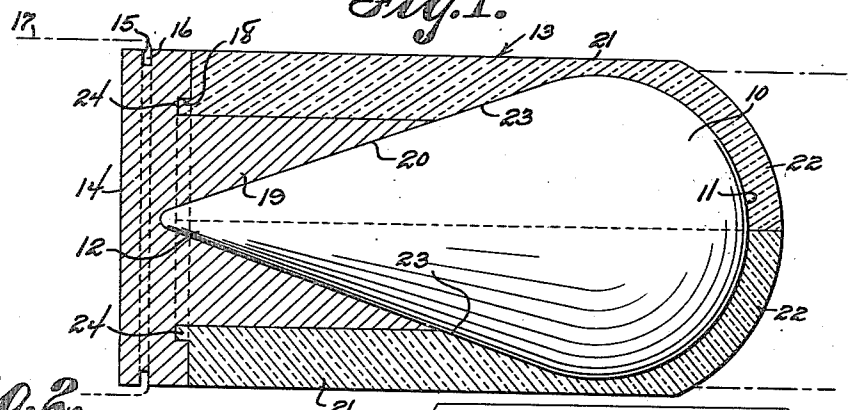


Fig. 2.

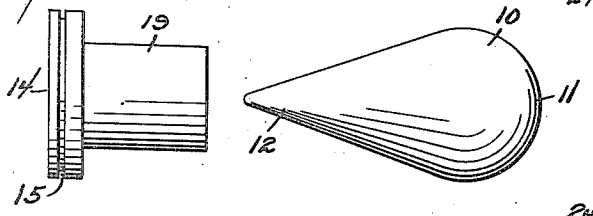


Fig. 3

Fig. 4.

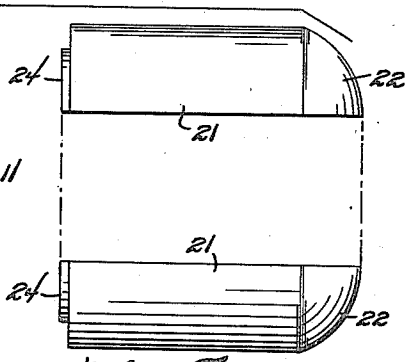


Fig. 8.

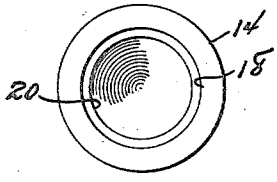


Fig. 5.

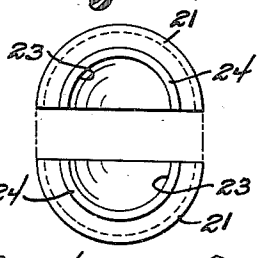


Fig. 6.

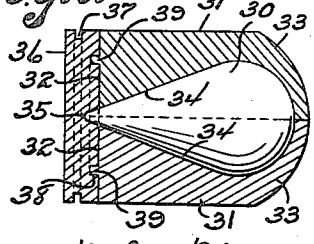
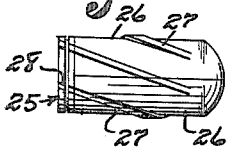
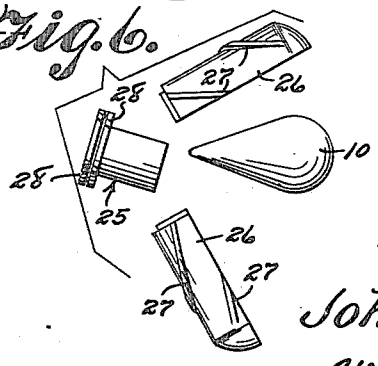
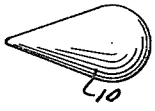


Fig. 7.







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WITNESS

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PROJECTILE AND BULLET

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Application September 27, 1940, Serial No. 358,715

4 Claims. (Cl. 102—40)

This invention relates to a projectile and bullet and has for an object to provide a streamlined projectile or bullet enclosed in a sectional casing of destructible material to fit in the bore of the cannon or small arm, the casing separating from the projectile or bullet at the mouth of the piece and releasing the bullet which due to its shape, preferably tear-shaped, promotes increased range and greater accuracy than conventional projectiles or bullets having pointed front ends and flat rear ends.

A further object is to provide apparatus of this character which will be formed of a few strong, simple and durable parts, which will be inexpensive to manufacture, and which will not easily get out of order.

With the above and other objects in view the invention consists of certain novel details of construction and combinations of parts hereinafter fully described and claimed, it being understood that various modifications may be restored to within the scope of the appended claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawing forming a part of this specification:

Figure 1 is a longitudinal sectional view of a projectile or bullet constructed in accordance with the invention.

Figure 2 is a side elevation of the projectile or bullet showing the sections of the sectional casing separated therefrom and from each other.

Figure 3 is a front elevation of the base section of the casing.

Figure 4 is a rear elevation of the body sections of the casing separated from each other.

Figure 5 is a side elevation of the projectile or bullet at the moment of leaving the gun muzzle.

Figure 6 is a side elevation of the projectile or bullet showing the parts separated a moment after leaving the gun muzzle.

Figure 7 is a side elevation showing the projectile or bullet freed from its sectional casing, in flight.

Figure 8 is a longitudinal sectional view with parts in elevation of a modified form of the invention and showing the body sections and base section of different construction than shown in Figure 1.

Referring now to the drawing in which like characters of reference designate similar parts in the various views, 10 designates a projectile or bullet of tear-shaped contour having a rounded front end 11 and a conical rear end 12 to reduce skin friction and eliminate vacuum drag back of the projectile or bullet.

The projectile or bullet is housed in a destructible casing 13 formed of a plurality of sections which may be adhesively or otherwise secured together to fly apart in the air in front of the muzzle of the piece of armament and release the bullet or projectile after receiving impetus from the fired charge of explosive.

The casing comprises a rear section 14 in the form of a flat disk having a circumferential groove 15 to receive the crimp 16 of a case 17 containing the powder charge, not shown. The front face of the disk is provided with an annular groove 18 concentric with the axis of the disk and inside of the groove is provided with a forwardly extending cylindrical socket 19 having a conical bore 20, the large end of which is at the front end of the socket member and the apex of which is located at the center of the disk rearwardly of the groove 18.

The casing also includes a pair of cylindrical body sections 21 which are provided with rounded front walls 22, the inner faces of which contact with the rounded front end 11 of the projectile or bullet. The inner faces of the body sections are tapered symmetrically in rear of the rounded front end walls as shown at 23 to co-act with the conical bore 20 of the rear section 14 in conforming to the conical portion of the projectile or bullet. The body sections are provided with respective semi-circular flanges 24 which are received in the groove 18 on the front face of the rear section 14.

In Figure 5 it will be observed that the rear section 25 and the body section 26 have received respective lands 27 and 28 formed by the rifling of the barrel. However, the barrel may be smooth bore and the sectional casing may be smooth within the scope of the invention.

A modified form of the invention is shown in Figure 8 to receive a tear-shaped bullet 30 shown in Figure 7. In this modified form of the invention the body sections 31 are substantially cylindrical and have rear end faces 32 in a common plane at a right angle to the axis of the bullet or projectile. The body sections terminate in rounded front end walls 33 which conform to the rounded front end of the projectile or bullet, but in this form of the invention the inner walls 34 of the body sections are frustum-shaped in contour and register with a substantially conical socket member 35 formed in the front face of the rear end section 36 which, as previously described, is a disk having a circumferential groove

37 to receive the crimp of the powder case and having a groove 38 on the front face to receive semi-circular flanges 39 formed on the rear end faces of the body sections.

In all forms of the invention it will be noted that the protective casing for the bullet or projectile is shaped internally to conform snugly to the stream-lined shape of the bullet or projectile and is formed of detachably connected sections adapted to fit in the barrel from which the projectile or bullet is to be fired, these sections being adapted to fly off from the projectile or bullet at the gun muzzle and free the projectile or bullet.

It will also be pointed out that the sectional casing may be formed of a destructible material such as paper, wood pulp, fabric, hardened plastic, or any material which will not cause wear on the bore of the gun barrel and to further promote this end the material may be lubricated externally or have a lubricant incorporated therein.

From the above description it is thought that the construction and operation of the invention will be fully understood without further explanation.

What is claimed is:

1. The combination of a tear shape projectile or bullet having a rounded front end and a conical rear end, a cylindrical casing housing the projectile formed of body sections surrounding the projectile or bullet and rounded at the front end, a rear disk section, there being an annular groove in the front face of the disk section concentric with the axis of the disk section, a cylindrical socket member integral with the disk section extending forwardly from the front face of the disk section inside of said annular groove, said socket member having a conical bore the large end of which is at the front end of the socket member and the apex of which is disposed at the center of the disk section and extends rearwardly of the front face of the disk section, said bore snugly receiving the conical rear end of the projectile from near the median plane of the projectile to the apex of the conical rear portion of the projectile, the inner faces of the body sections being tapered symmetrically in rear of the rounded front end of the projectile to coact with the conical bore of the socket member in conforming to the conical portion of the bullet or projectile throughout its area, said body sections being provided with respective arcuate flanges on the rear ends received in said annular groove in the front face of the disk section.

2. The structure as of claim 1 and in which the cylindrical body sections are provided with spiral lands on the exterior surface, and said disk section is provided with spiral lands forming continuations of the lands of the body sections.

3. The structure as of claim 1 and in which said body sections are formed of relatively soft destructible material which will not cause wear on the bore of a gun barrel.

4. The structure as of claim 1 and in which said body sections are formed of relatively soft destructible material which will not cause wear on the bore of a gun barrel, said destructible body sections having a lubricant associated therewith.

JOHN E. REED.