

O. A. YINGLING.
PROJECTILE.
APPLICATION FILED AUG. 9, 1911.

1,027,964.

Patented May 28, 1912.

Fig. I.

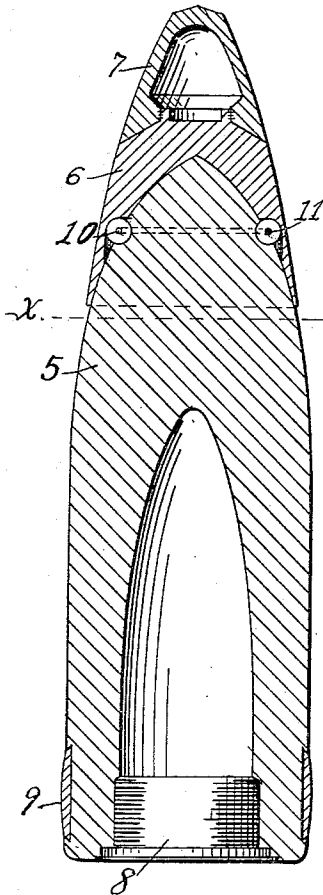


Fig. II.

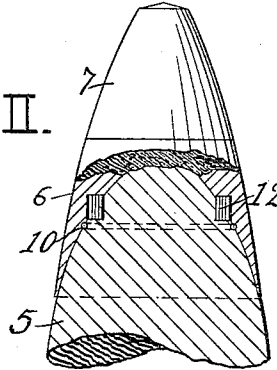


Fig. III.

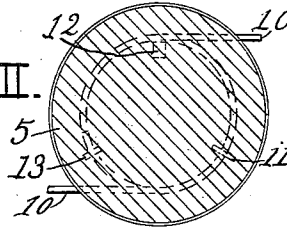
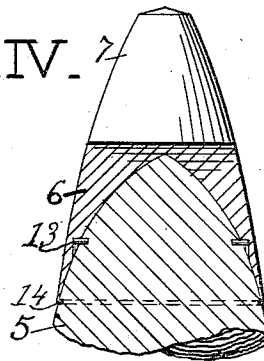


Fig. IV.



Witnesses
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PROJECTILE.

1,027,964.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, OTTO A. YINGLING, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Projectiles, of which the following is a specification.

This invention relates to projectiles of the class known as "armor-piercing shot and shell" which are provided with a cap of relatively soft material secured over the point of the projectile. In order that a heavy projectile may be fired with accuracy it is necessary that the center of gravity of its rotation shall coincide with its longitudinal axis. But the sudden starting of the body to revolve when fired, as well as the resistance of the air in flight has a tendency to strain the cap from its normally concentric position on the body, thus causing eccentricity of weight, and deviation from the true trajectory. It is common to swell the cap by heating it and then let it shrink upon the body in cooling, to hold it fast, but the results by this process are varying and uncertain.

The object of this invention is to secure the cap against rotation upon the body of the projectile without the aid of heat and without defacing the exterior of the cap.

To this end, my invention consists in the construction and combination of parts forming a projectile, hereinafter more fully described, and particularly stated in the claim, reference being had to the accompanying drawing, in which—

Figure I, shows in central longitudinal section, an ordnance shell with one form of my invention located as in service. Figs. II, and IV, show the forward ends of similar projectiles, partly in longitudinal section and partly broken away, with different modifications of the same invention. Fig. III, represents a transverse section at line *x* of Fig. I, showing in dotted lines each of these three modifications radially located.

Numeral 5 represents the body of the projectile, 6 the cap, 7 the tip, 8 the base plug, 9 the rifling ring and 10 a common wire locking ring. This ring is usually inserted as a straight pin, tangentially, as shown in Fig. III, and forced to bend into the circular groove formed partly in the cap and

partly in the body. This prevents the cap being worked forward off the body, but to prevent the cap rotating around the body, I insert one or more keys radially into the body and cap. These keys may be common circular washers through which the pin 10, passes, as shown at 11, or they may be parallelogram-shaped as at 12, or be mere pins or screws as shown at 13; but in every case either the projectile body or the shell is slotted longitudinally to the key seat so that the cap may be pushed down upon the body and receive the keys in their respective seats; or be drawn forward off the body and keys.

Modifications 11 and 13 show the cap slotted to permit the keys to pass out, and modification 12 shows both body and cap slotted so the key might pass longitudinally out of either, yet in every modification of my invention the key seat is made into the inner surface of the cap and it does not disfigure or mutilate the outer contour or surface of the cap. Another common mode of securing the cap longitudinally upon the body is to circumferentially groove the body and then press the edge of the cap into the groove as shown at 14 Fig. IV, but while my invention may be used with this style of lock, it relates wholly to preventing the cap from rotating around the body. Whether the key seats be slotted, drilled, or otherwise made they are termed in the claim, recesses. They do not require the cap to be heated to fasten it on the body, and they may be easily and inexpensively applied to almost any style of capped projectile.

I claim,

In a projectile, two members consisting of a body and a cap; the cap having interior recesses and the body having recesses in its exterior face to register therewith, and keys to fit the walls of the said recesses, the recesses in one of the members being slotted longitudinally to admit the keys longitudinally to their seats.

In testimony whereof I affix my signature in presence of two witnesses.

OTTO A. YINGLING.

Witnesses:

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