

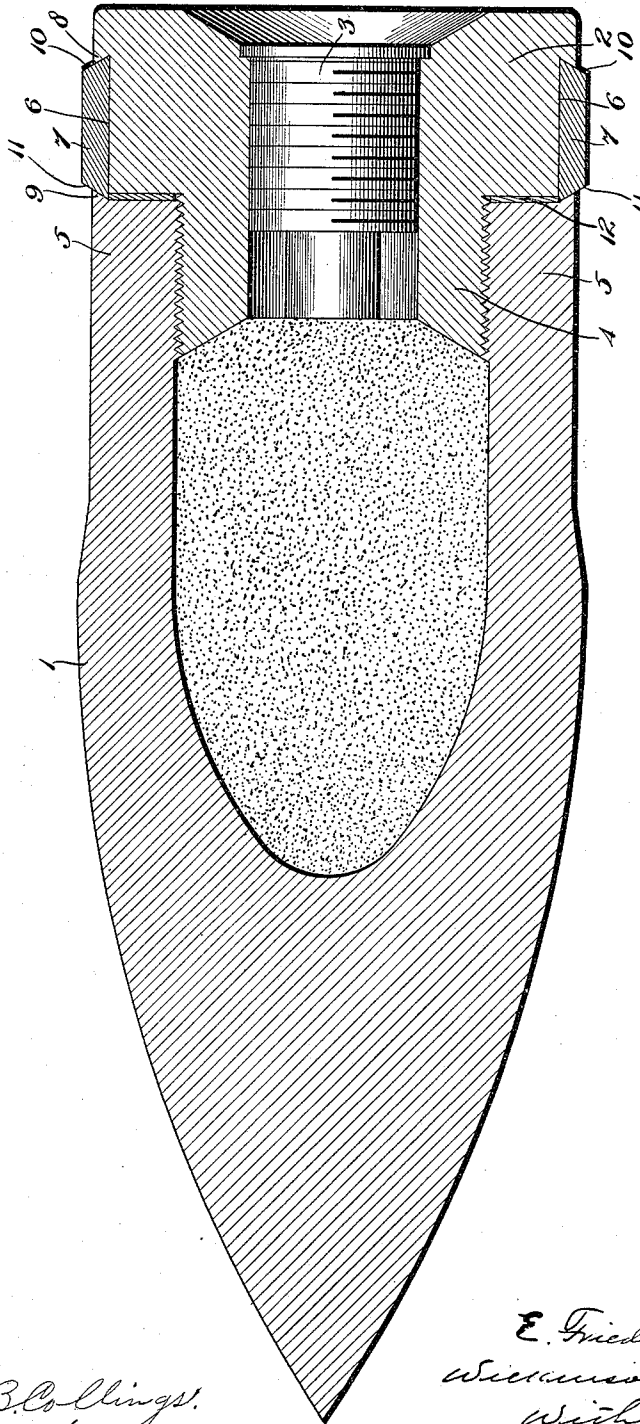
E. FRIEDRICK.

PROJECTILE.

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1,040,924.

Patented Oct. 8, 1912.



Witnesses
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UNITED STATES PATENT OFFICE.

ERNEST FRIEDRICK, OF THE UNITED STATES NAVY.

PROJECTILE.

1,040,924.

Specification of Letters Patent.

Patented Oct. 8, 1912.

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To all whom it may concern:

Be it known that I, ERNEST FRIEDRICK, lieutenant United States Navy, and a citizen of the United States, at present stationed at the works of E. W. Bliss Company, Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Projectiles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to projectiles, and has for its object to lessen the cost of the manufacture of standard projectiles, and at the same time to secure the rotating band more firmly in its seat, while preventing leakage of gases past the same.

To these ends, the invention consists in the novel details of construction and combinations of parts more fully hereinafter disclosed and particularly pointed out in the claims.

Referring to the accompanying drawings forming a part of this specification, in which the figure is a diagrammatic sectional view of a projectile made in accordance with my invention:—1 indicates the body of the projectile, which may be of any desired or approved contour, 2 the base thereof, and 3 any suitable fuse device secured in said base.

The base portion 2 is provided with a reduced screw-threaded forward portion 4, which is secured in the correspondingly screw-threaded rear portion 5 of the projectile, and said base portion is further scored out as at 6, to form a seat for the rotating band 7. The seat 6 is provided with the overhanging lip 8, and the rear portion 5 of the projectile is provided with the overhanging lip 9, while the band 7 is correspondingly beveled, as at 10 and 11, to fit under said lips when the parts are in their operative position. A gasket 12, shown in the drawings as greatly exaggerated, may be placed between the parts 1 and 2, in order to cause the band 7 to be more firmly gripped and to further prevent leakage of gases into the powder chamber.

As is well known, the forged steel projectiles manufactured at the present time have the rotating band 7 pressed into a groove in the projectile by hydraulic pressure, and the metal of the band is, therefore, usually in a

state of compression, or nearly so. By my invention, however, when the parts are set up firmly, the metal of the band is really in a state of tension, and it therefore grips the shell harder, and is less likely to fly off than are the bands now in use. A band fitted in accordance with my invention will further seal the bore of the gun more tightly during the firing, for they are capable of expanding to a greater degree than are the old bands, as will now appear.

In making my projectile, after the completion of the base portion 2, the copper band 7 is machined to a size slightly smaller than the diameter of its seat 6, when it is pressed home tight by any suitable means, and the band is then machined to the exact size, with an allowance of say .031 inches on the forward end, where it takes up against the projection 9 of the shell. This will cause a space 12 to be left, of say .031 inches, between the base 2 and the body 1 of the shell. The screw-threads are in such a direction that they will tend to tighten upon firing, and the inertia of the forward end of the projectile will cause the base 2 to screw up, thus forcing the rotating band radially outward into the rifling, and thereby reducing the leakage of gas past the shell.

Less leakage of gas will result in an increased velocity of the projectile, a perfectly functioning band prevents stripping, as is now experienced to some extent, and since the sections 1 and 2 of the shell may be tempered independently, a better fragmentation of the shell can be secured. In fact, a shell made in accordance with my invention is well adapted for use as shrapnel. Further, since the joint between the base and the forward portion of the shell is located forward of the band 7, there is no danger of the gases of explosion working their way to the interior of the shell, and thereupon causing a premature explosion.

It is obvious that those skilled in the art may vary the details of construction and the arrangement of parts without departing from the spirit of my invention, and therefore I do not wish to be limited to the above disclosure, except as may be required by the claims.

What I claim is:—

1. In a projectile the combination of a hollow screw-threaded forward portion provided with an undercut outer rim; a reduced

base portion screw threaded to fit said forward portion and provided with a larger portion having an undercut open seat for a band; and a band beveled at its rear edge
5 fitting said seat, extending a slight distance beyond the edge of said larger portion, and its forward edge adapted to fit said undercut rim, said band also adapted to be forced radially outward when the said forward and
10 base portions are forced together, substantially as described.

2. In a projectile, the combination of a hollow screw threaded forward portion having an under cut lip, and a straight shoulder
15 portion between said lip and screw threaded portion; a base portion screw threaded to fit said forward portion, having an open ended seat for a band, an under cut portion to receive said band, and a straight shoulder
20 portion between the open end of said seat and said screw threaded portion; and a band located in said seat fitting said undercut lips, and extending slightly beyond the
25 shoulder portion of said base in order that it may be forced radially outward upon forcing

the parts together, substantially as described.

3. In a projectile, the combination of a forward portion having a screw-threaded end; a base portion provided with an open
30 ended seat for a band, said base portion also provided with a reduced screw-threaded portion adapted to fit the screw-threaded end of said forward portion; a band fitting said
35 seat and projection slightly over the open end of the same to form a space between said forward and base portions when the latter
are united; and a gasket located in the space thus formed, whereby said band may be
40 forced radially outward when the parts are screwed home, while gases are prevented from leaking past said gasket, substantially as described.

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

ERNEST FRIEDRICK.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."