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PROJECTILE FOR USE AGAINST SUBMARINES AND SUBMERGED MINES.

APPLICATION FILED JULY 3, 1917.

1,303,738. Patented May 13, 1919.

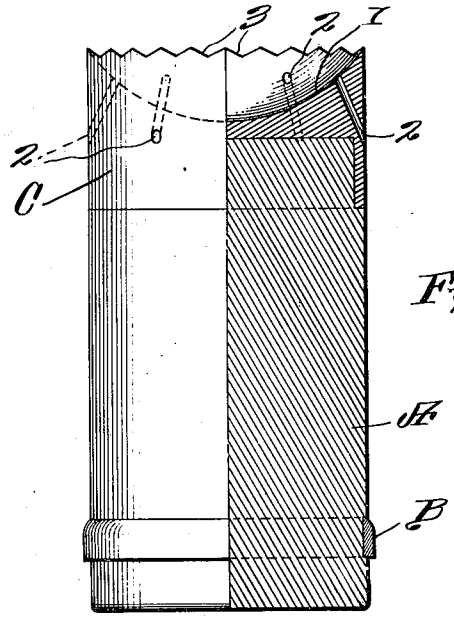


Fig. 1.

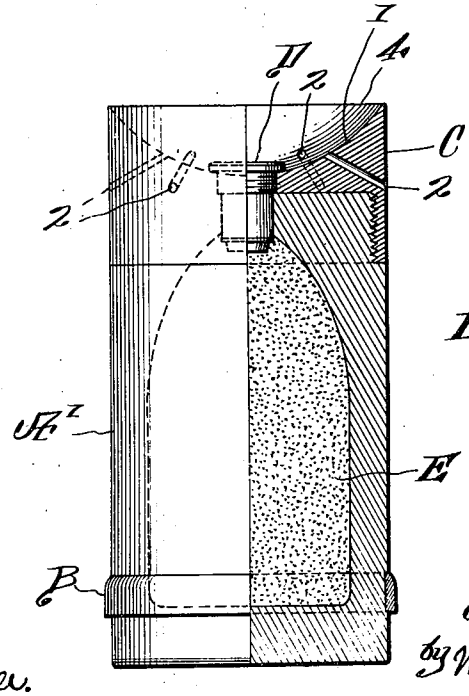


Fig. 2.

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UNITED STATES PATENT OFFICE.

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PROJECTILE FOR USE AGAINST SUBMARINES AND SUBMERGED MINES.

1,303,738. Specification of Letters Patent. Patented May 13, 1919.

Application filed July 3, 1917. Serial No. 178,378.

To all whom it may concern:

Be it known that I, ANDREW JACKSON STONE, a citizen of the United States, residing at New London, in the county of New London and State of Connecticut, have invented certain new and useful Improvements in Projectiles for Use Against Submarine and Submerged Mines; 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.

My invention relates to improvements in projectiles for use against submarines and submerged mines, and is intended more especially to provide a projectile which may be fired from overhead or at an angle from the vertical, and which will continue its travel through the water in substantially the direction of its flight through the air.

It is well known that when ogival or pointed projectiles are fired or dropped in the water from any height, that the path after reaching the water cannot be calculated with any great accuracy, as the projectile tends to diverge from its original path as soon as it strikes the water, and the direction of deflection is very uncertain and cannot be foreseen.

I have found, by using a projectile of substantially cylindrical form having a flat or preferably cup-shaped head, that if the projectile be dropped or fired in a vertical, or approximately vertical direction in the water, it will continue in substantially the same direction after striking the water as it had while in the air. Such projectiles are especially adapted to be fired from aeroplanes with guns of the non-recoil type, shown in the patents to Cleland Davis, Nos. 1,108,715 and 1,108,716, granted August 25, 1914, and entitled Apparatus for firing projectiles from aircraft.

My invention will be understood by reference to the accompanying drawings, in which:

Figure 1 shows a sectional elevation of a solid shot, constructed according to my invention; and

Fig. 2 shows a sectional elevation through an explosive shell, constructed in accordance with my invention.

Referring first to Fig. 1, A represents the body of the projectile, provided with the usual rifling band B; this body may be made of any suitable metal, such as cast iron or steel, and is provided with a cap C of hard steel, which is shrunk or screwed onto the body of the projectile, and is preferably cupped, as at 1.

This cap may be provided with a series of relief openings 2, so as to permit the passage of air or water therethrough, which will tend to relieve the head pressure on the projectile, and the same will also tend to assist in directing the projectile as it travels through the air or the water.

The outer edge of the cap may be dentated as at 3, so that when the projectile strikes the thin deck plating of the submarine its rotary motion will cause these teeth to saw a circular hole in the deck plating and to more readily cut through the same; but if sufficient velocity is imparted to the projectile these teeth may not be necessary.

In the form of device shown in Fig. 1, the cap is shrunk onto the body of the projectile, and in the form shown in Fig. 2, the cap is screwed onto the body of the projectile, and a suitable fuse D is provided to explode the bursting charge E contained in the shell body A'. In this form of the cap the teeth are shown as omitted from the cutting edge 4.

If desired, the cutting edge of the cap C may be especially hardened as by carburizing the same with acetylene gas, or in any other convenient way.

I do not mean to limit the invention to the particular form of cap; as the shape of the same may be changed in various ways without departing from the spirit of my invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent of the United States is:

A projectile of the character described, comprising a cylindrical body portion and a cylindrical cap of hard steel secured to the head thereof, the said cap being cupped and provided with a dentated cutting edge, and being also provided with passages opening rearward and outward from said cup-shaped portion, substantially as described.

In testimony whereof, I affix my signature.

ANDREW JACKSON STONE.