

W. R. MOORE.
 PROJECTILE.
 APPLICATION FILED FEB. 15, 1917.

1,243,542.

Patented Oct. 16, 1917.

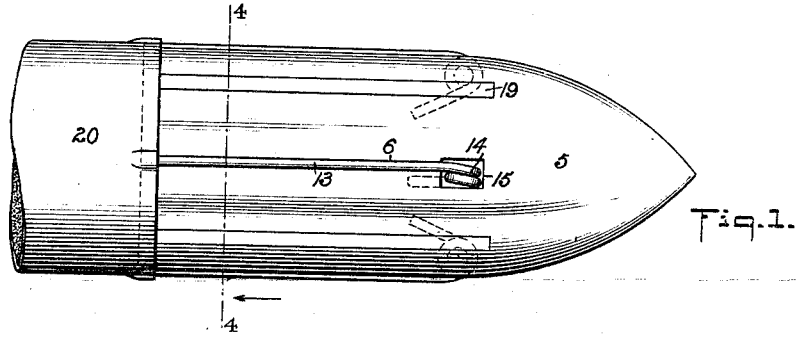


Fig. 1.

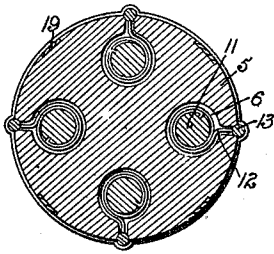


Fig. 4.

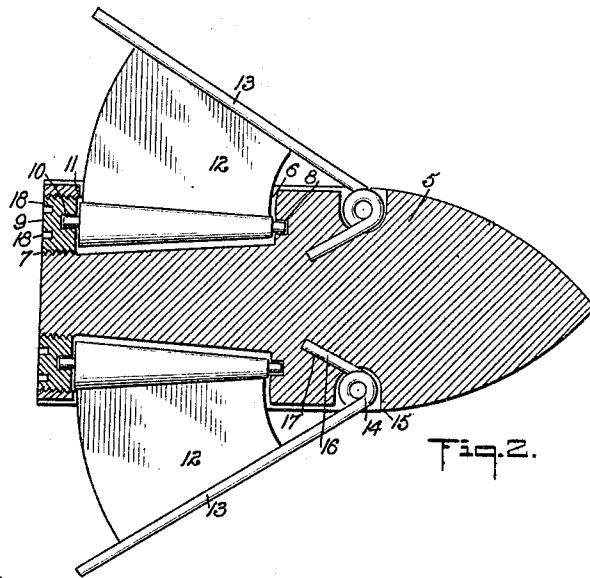


Fig. 2.

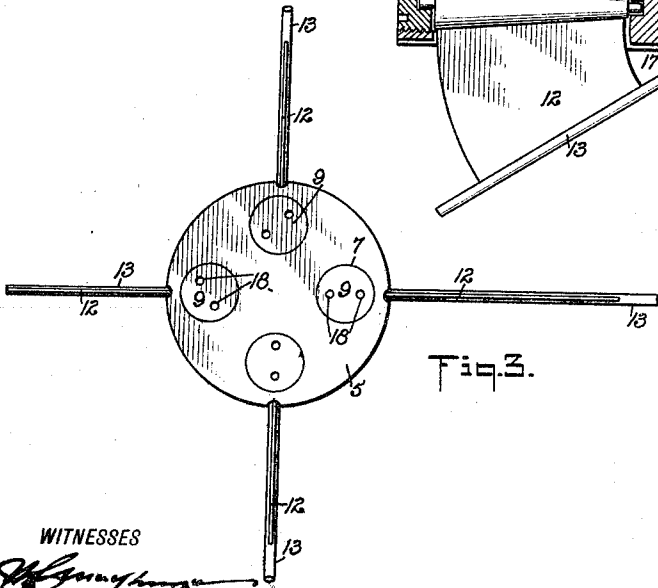


Fig. 3.

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PROJECTILE.

1,243,542.

Specification of Letters Patent.

Patented Oct. 18, 1917.

Application filed February 15, 1917. Serial No. 148,739.

To all whom it may concern:

Be it known that I, WILLIAM R. MOORE, a citizen of the United States, and a resident of Fayetteville, in the county of Washington and State of Arkansas, have invented a new and Improved Projectile, of which the following is a full, clear, and exact description.

My invention has for its object to provide a projectile for field, siege, coast and other guns, having wings which will open when the projectile leaves the gun to prevent tumbling, the wing arms to which the wings are secured being held close to the projectile by the powder shell when the projectile is introduced into the breech of the gun. The wing arms extend beyond the shell and they are disposed parallel with the axis of the gun when the gun is loaded with the projectile, so that the arms will pass in rifling channels in the gun which are disposed straight outwardly from the breech and parallel with the axis of the gun. When the shell is used, there is practically no friction against the rifling of the gun, and a longer range is obtained than is now possible with the spiral rifling in use.

Additional objects of the invention will appear in the following specification, in which the preferred form of the invention is disclosed.

In the drawings similar reference characters denote similar parts in all the views, in which—

Figure 1 is a side elevation of the projectile and a portion of the powder casing;

Fig. 2 is a longitudinal sectional view of the projectile;

Fig. 3 is a rear-view of Fig. 2; and

Fig. 4 is a sectional view on the line 4—4 of Fig. 1.

By referring to the drawings, it will be seen that the projectile 5 has a plurality of longitudinally extending openings 6 spaced apart in its sides, there being also rear openings 7 in the projectile 5, one of these rear openings 7 being connected with each of the longitudinally extending openings 6. At the forward end of each of the longitudinally extending openings 6 there is a bearing 8 in the projectile, and in the forward portion of each of plugs 9, which are used to close the opening 7, there is a similar bearing 10, the bearings 10 being in alignment with the bearings 8, spools 11 being journaled in these bearings 8 and 10. The

diameter of each of the spools 11 tapers forwardly as illustrated, and on these spools there are wound steel sheet wings 12, the outer ends of these wings 12 being secured to arms 13 which have their forward ends coiled to form springs 14 which are disposed in openings 15 in the sides of the projectile, terminals 16, extending from the springs 14, being disposed in recesses 17, by which means the springs 14 are held in place. The arms 13 move forwardly when they are freed, and for this reason the spools 11 are tapered as has been stated, since the forward ends of the wings 12 will expose less surface than their rear ends when they are spread.

As will be seen by referring to Fig. 1 of the drawings, the arms 13 will be disposed close to the sides of the projectile 5 when the arms are in closed position, but nevertheless the arms 13 which are disposed parallel with each other and with the axis of the projectile, will be disposed slightly beyond the sides of the projectile, so that when the projectile is disposed in a gun the arms 13 will be disposed in rifling grooves which are parallel with each other and with the axis of the gun. With this construction there is practically no friction against the rifling grooves of the gun when the projectile is fired, and this naturally increases the range of fire. The wings 12 serve to prevent the projectile from tumbling.

I prefer to provide the projectile 5 with four arms 13, each having a wing 12 secured thereto, and to space these arms and wings apart around the projectile, with two laterally extending wings and arms of greater length than the upwardly and downwardly extending wings and arms.

The plugs 9 are preferably screwed in threads in the openings 7, there being recesses 18 in the plugs 9.

The rear ends of the arms 13 are held in position by the powder casing 20 when the projectile is introduced into the gun and until it is fired.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A projectile having an opening in its side, a spool journaled in bearings in the opening, a wing wound on the spool, an arm to which the wing is secured, and means to move the arm outwardly to spread the wing.
2. A projectile having openings spaced

apart around its sides, spools one journaled in each of the openings, wings wound one on each of the spools, arms to which the wings are secured, means to move the arms outwardly to spread the wings, the arms when in closed position being disposed at the outer side of the projectile and parallel with the axis of the projectile.

3. A projectile having an opening in its side, there being an opening in the rear of the projectile extending to the first opening, a bearing at the front of the first opening, a plug for closing the second opening and having a bearing in alinement with the first bearing, a spool journaled in the bearings, a wing wound on the spool, and means for spreading the wing.

4. A projectile having a plurality of openings in its side and a plurality of openings in its rear one of which extends to each of the first openings, bearings one at the front of each of the first mentioned openings, plugs for closing the second mentioned openings and each having a bearing in alinement with one of the first mentioned bearings, spools journaled in the bearings, wings wound one on each of the spools, and resiliently held arms to which the wings are secured.

5. A projectile having an opening in its side, an arm pivoted at its forward end to the forward end of the projectile, a wing disposed in the opening in the projectile and secured to the arm to be moved outwardly thereby, and means connected with the projectile in the breech of a gun which serves to

hold the rear of the arm close to the projectile, the arm being freed to move outwardly when the projectile is fired, thereby severing the connection between the means and the arm.

6. A projectile having an opening in its side, there being an opening in the rear of the projectile extending to the first opening, a bearing at the front of the first opening, a plug for closing the second mentioned opening and having a bearing in alinement with the first bearing, a spool journaled in the bearings, a wing wound on the spool, an arm pivoted at its forward end to the projectile, and means connected with the projectile in the breech of a gun which serves to hold the arm close to the projectile, the arm being freed to move outwardly when the projectile is fired, thereby severing the connection between the means and the arm.

7. A projectile having an opening in its side, an arm pivoted to the projectile in front of the opening and having means for moving it outwardly, the arm when the projectile is in a gun being disposed parallel with the axis of the projectile at the outer side thereof for fitting the rifling, a curtain in the opening and secured to the arm, and means which may be disposed with the projectile in a gun and which serves to hold the arm close to the projectile, the arm being freed to move outwardly when the projectile is fired, thereby severing the connection between the means and the arm.

WILLIAM ROBERT MOORE.