

No. 636,485.

C. M. BROWN.
PROJECTILE.

Patented Nov. 7, 1899.

(Application filed Mar. 23, 1899.)

(No Model.)

Fig. 1.

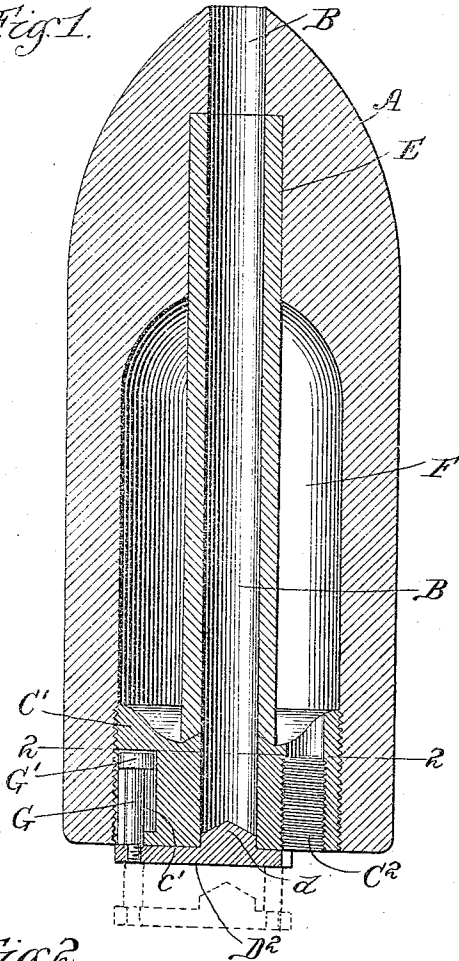


Fig. 2.

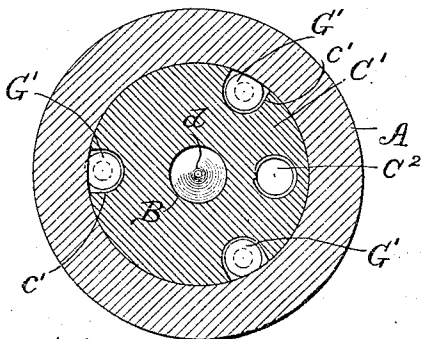
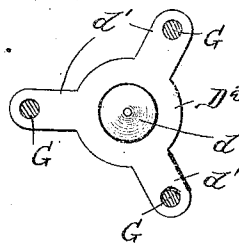


Fig. 3.



Witnesses.
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UNITED STATES PATENT OFFICE.

CHARLES M. BROWN, OF CHICAGO, ILLINOIS.

PROJECTILE.

SPECIFICATION forming part of Letters Patent No. 636,485, dated November 7, 1899.

Application filed March 23, 1899. Serial No. 710,253. (No model.)

To all whom it may concern:

Be it known that I, CHARLES M. BROWN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Projectiles, of which the following is a specification.

The present invention relates to that class of projectiles that are provided with means for directing their flight to the end that they shall maintain a true course and at any given instant throughout their flight occupy a position in line with or substantially parallel with the trajectory. Unless means be provided to prevent it when the projectile strikes it will occupy practically the same inclination as it had upon leaving the gun, and this is objectionable when the gun is fired at a considerable elevation, because the projectile will strike more or less sidewise. In order to prevent this, means have been provided for retarding the rear end of the projectile; and the object of the present invention is to provide improved means for this purpose.

To this end the invention consists in the features of novelty that are herein described.

In the accompanying drawings, which are made a part of this specification, Figure 1 is an axial section of a projectile embodying the invention in its preferred form. Fig. 2 is a transverse section thereof on the line 2 2, Fig. 1. Fig. 3 is a plan view of one of the parts thereof.

In all the figures, A represents the body of the projectile, and B a longitudinal air-passage formed therein, preferably directly in the center, so that in any cross-sectional plane of the projectile the weight is evenly distributed around the longitudinal center. This air-passage is at all times entirely open and unobstructed at its forward end. At the rear end means are provided for obstructing the passage as against the projecting pressure, while at the same time provision is made for allowing air to escape from the passage during the flight of the projectile, the escape of the air at the rear end of the passage being resisted to a greater or less extent, whereby the air is caused to exert a direct pressure upon the projectile at the rear end thereof.

Preferably the body of the projectile is

cored or counterbored to receive a tube E and to provide an annular chamber F for containing an explosive substance, the tube E being held in place by a screw-plug C', having through it a central opening registering with and of the same capacity as the bore of the tube E. This cap is also provided with a threaded opening C² for receiving the fuse.

D² is a device for the double purpose of completely obstructing the air-passage as against the projecting pressure and for partially obstructing the air-passage as against the escape of air from the rear end of the passage during the flight of the projectile. This device consists of a short plug d, adapted to enter the rear end of the air-passage, and a plate having equidistant arms d', that are adapted to be connected with the rear end of the projectile by means which will permit the obstructor D² to have a limited movement toward and from the rear end of the projectile. For thus connecting the obstructor to the projectile I prefer to use bolts G, which are screwed into threaded openings in the arms d' and which have heads G' occupying recesses c' in the sides of the plug C, the recesses being constructed at their rear ends so as to receive the shanks of the bolts and permit of their endwise movement and at the same time provide shoulders against which the edge of the bolts may come in contact for limiting the movement of the obstructor D² away from the rear end of the projectile. When the projectile is fired, the obstructor D² bears against the rear end of the projectile and the plug d occupies the air-passage, as shown by full lines in Fig. 1, so that the projecting pressure cannot enter the rear end of the air-passage. During its flight the air passing through the air-passage will exert a pressure upon the obstructor and move it away from the rear end of the projectile to the extent permitted by the bolts G, thus bringing it to the position indicated by dotted lines. While in this position it will to a greater or less extent resist the escape of air from the rear end of the air-passage, and thus, as in the other forms of the invention, the air is caused to exert upon the rear end of the projectile a pressure somewhat in excess of the pressure exerted upon the forward end.

What I claim as new is—

1. A projectile having a longitudinal passage open at its forward and rear ends to permit air to pass through it during the flight of the projectile, a displaceable device adapted to close the rear end of the passage as against the projecting pressure exerted upon the rear end of the projectile, and means for limiting the movement of said device away from the rear end of the projectile and holding it in a position opposite the rear end of the passage, whereby it resists the escape of air from the passage, substantially as set forth.
2. A projectile having a longitudinal passage open at its forward and rear ends to permit air to pass through it during the flight of the projectile, a displaceable device adapted to close the rear end of the passage as against the projecting pressure exerted upon the rear end of the projectile, headed bolts by which said device is carried, the projectile being provided with recesses in which the heads of the bolts fit, and shoulders for engaging the heads of the bolts for limiting the movement

of said device away from the projectile, substantially as set forth.

3. A projectile having a longitudinal passage open at its forward and rear ends to permit air to pass through it during the flight of the projectile, the body of the projectile being cored or counterbored to receive a tube forming a part of said passage and to provide around said tube an annular chamber, a tube fitting in the counterbore, a plug screwed into the rear end of the projectile and engaging the tube for holding it in place, said plug having an opening registering with the bore of the tube, and means for closing the rear end of the passage as against the projecting pressure exerted upon the rear end of the projectile and for resisting the escape of air from the rear end of the passage, substantially as set forth.

CHARLES M. BROWN.

Witnesses:

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BERTHA C. SIMS.