B. L. BLAIR.

PROJECTILE ROTATOR.

APPLICATION FILED APR. 13, 1917.

1,266,764. Patented May 21, 1918.

Fig. 1.

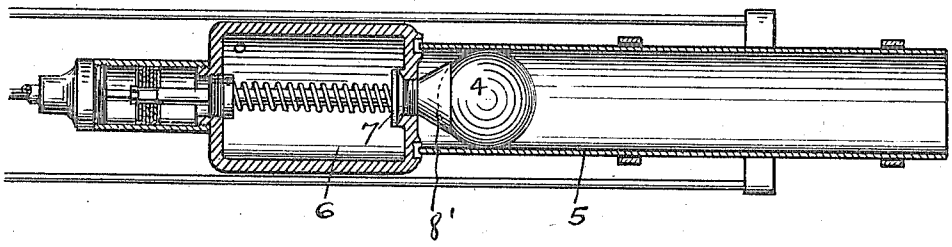


Fig. 2.

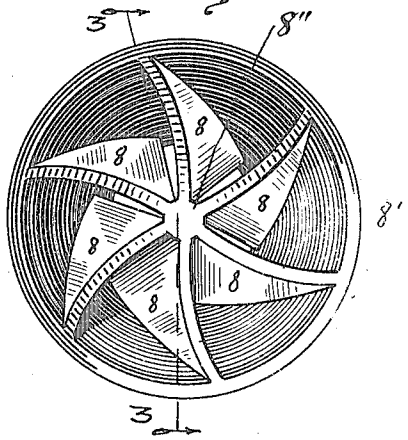
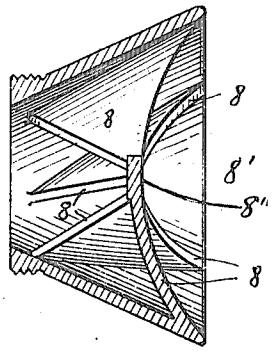


Fig. 3.



Inventor,

Benjamin L. Blair,

By Minturn & Worner

Attorneys.

UNITED STATES PATENT OFFICE.

BENJAMIN L. BLAIR, OF INDIANAPOLIS, INDIANA.

PROJECTILE-ROTATOR.

1,266,764. Specification of Letters Patent. Patented May 21, 1918.

Application filed April 13, 1917. Serial No. 161,792.

To all whom it may concern:

Be it known that I, BENJAMIN L. BLAIR, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Projectile-Rotators, of which the following is a specification.

The object of this invention is to rapidly rotate an air-gun projectile about an axis in the direction of its travel, by the action of the expanding air which expels the projectile from the gun, through a barrel with a smooth bore, to make the gun shoot more accurately.

I accomplish the above objects by the means illustrated in the accompanying drawing, in which—

Figure 1 is a longitudinal section of the air chamber and projectile barrel of an air gun provided with my projectile rotator. Fig. 2 is an end view of the rotator looking at the end next to the projectile, and Fig. 3 is a section on the line 3—3 of Fig. 2.

Referring to Fig. 1, the projectile 4 is discharged through the barrel 5, preferably having a smooth bore, by the expansion of compressed air admitted to a chamber 6, having a port discharging the air under pressure into the breech of the barrel and closed, except at the instant of discharge, by a valve 7. The valve is withdrawn from the port by any usual and suitable means. My present invention is entirely embraced in a nozzle 8′, which is screwed into the projectile-barrel end of the port leading from the chamber 6. It comprises a diverging hollow truncated conical shell, having a center plate 8″ which is supported from the shell by a series of partitions 8, integral with both plate and shell. The edges of the partitions toward the chamber 6 are obliquely formed from the plate to the shell, and their opposite edges, toward the projectile, are curved to conform to the latter, as shown in Fig. 3, so the compressed air will be more confined in its action on the projectile.

The partitions 8 as thus defined are spirally curved as shown in the drawing, to impart a rotary twist to the air passing between them, and this twist I have found by experience is transmitted in a marked degree by the air to the projectile, spinning the latter about the axis of its travel through the barrel of the gun and throughout its trajectory.

I do not desire to limit my invention to the number of partitions shown, nor to their shape or outline, or in any other respect than is expressed in the claims, and having herein fully described my invention what I claim as new and wish to secure by Letters Patent, is—

1. A nozzle for air guns having a plurality of partitions curved to impart a rotary travel to the air while ejecting the projectile.

2. A nozzle for air guns having a diverging shell and a plurality of partitions which extend from the shell and meet at the axis of the shell, said partitions being curved to twist the air currents passing between them to the projectile.

3. A nozzle for air guns having a diverging shell, a plate at its middle near its outer end, and a plurality of screw shaped partitions from the shell to the plate.

4. A nozzle for air guns having a diverging shell and a plurality of partitions which extend from the shell and meet at the middle of the shell, said partitions being removed in part to form a hollow inner conical portion of the shell.

5. A nozzle for air guns having a plurality of partitions curved to impart a rotary travel to the air passing between them to the projectile, and said partitions being shaped at their edges next to the projectile to conform to the shape of the latter.

In witness whereof I have hereunto set my hand and seal at Indianapolis, Indiana, this 22nd day of March, A. D. one thousand nine hundred and seventeen.

BENJAMIN L. BLAIR. [L. S.]

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