

Projectile Rotating Band

The invention pertains to a projectile rotating band which is housed inside a circumferential recess on the projectile casing.

The purpose of these rotating bands is to guide the projectile inside the barrel when it is discharged and cause it to rotate (spin) around the longitudinal axis. Rotating bands of this type, which are generally made of metallic materials, are known, for example, from *DE-OS 37 36 167* or *DE-OS 35 08 053*. Rotating bands of this type have the disadvantage that they can cause a significant erosion of the bore. This premature erosion of the bore may be prevented if a suitable synthetic material is selected for the rotating bands, however, the manufacture, assembly and installation of rotating bands of this type is relatively complicated and expensive. From *DE-OS 35 25 854*, a similar rotating band is known, which is formed of two half-rings that can be securely fastened to each other with a snap-on lock. However, this rotating band is not firmly attached to the projectile casing but merely placed over the same in a manner which allows it to slide through, with the result that the projectile only receives a residual twist when it is discharged.

This Sheet Has Been Replaced



It is the object of the invention to present a rotating band of the above type which is devoid of the above-mentioned drawbacks.

This object is accomplished with the invention presented in Claim 1. In the presented design, the rotating band is firmly connected, through openings in the projectile casing, to a sealing section at the rear of the projectile inside the projectile casing. The rotating band is formed together with the sealing section in a single step of the manufacturing process by injecting a synthetic material into the projectile casing through its open back.

The rotating band according to the invention presents the advantages that the rotating band is manufactured in a simple process and firmly and securely attached to the projectile casing, resulting in only minimal manufacturing costs.

The invention is described in detail below, based on an exemplary embodiment, with reference to the accompanying drawing in which:

Fig. 1 is a longitudinal section through a portion of the projectile,

Fig. 2 is a longitudinal section of the projectile casing presented in Fig. 1, and

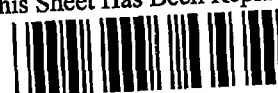


Fig. 3 is an enlarged sectional view taken at the line III-III in Fig. 2, through a portion of the projectile casing.

In Fig. 1 through 3, the reference number 1 denotes a jacket, formed by a projectile casing 2 and a nose 3 which is firmly connected to the projectile casing. The nose 3, which is preferably made of a high-temperature, fiber reinforced, thermoplastic synthetic material, is sprayed onto the projectile casing 2 in a first step of the manufacturing process in a manner so that the nose 3 is anchored in grooves 4 on the inner wall of the projectile casing 2. The nose 3 has a centering 6, not shown in detail on the drawing, inside which a core 5 of the projectile is guided and held in place. The core 5 of the projectile is inserted, in a second step of the manufacturing process, through the open back of the projectile casing 2 into the centering 6 of the nose 3. The reference number 7 denotes a rotating band embedded in a circumferential recess 8 of the projectile casing 2. The rotating band 7 is firmly connected, through openings 9 inside the projectile casing 2, to a sealing section 10 at the rear of the projectile inside the projectile casing 2. The openings 9 may consist, for example, of six borings arranged radially in the area of the circumferential recess 8 and offset by an angle of 60°. However, a different number of openings or different shapes are also possible.



In a third step of the manufacturing process, the rotating band 7 and the sealing section 10 are formed simultaneously by injecting, through the open back of the projectile casing 2, the same synthetic material used to manufacture the nose 3. In the process, the injected material exits through the openings 9 in the projectile casing 2, into the circumferential recess 8 and the circumferential grooves 11 and 12 inside the projectile casing 2. The injected material furthermore encompasses the portion of the projectile core 5 which protrudes from the centering 6, thus firmly anchoring the projectile core 5 inside the projectile. The circumferential recess 8 has teeth 13 which interlock with the rotating band 7, thus enhancing the spin of the projectile.





I claim:

1. A projectile rotating band (7) which is located inside a circumferential recess (8) of a projectile casing (2), characterized in that

the rotating band (7) is firmly connected, through openings (9) in the projectile casing (2), to a sealing section (10) at the rear of the projectile inside the projectile casing (2), and that the rotating band (7) is formed together with the sealing section (10) in the course of a single manufacturing step by injecting a synthetic material into the projectile casing (2) through its open back.

2. A rotating band according to Claim 1, characterized in that

the openings (9) are borings arranged radially in the area of the circumferential recess.

3. A rotating band according to Claim 1, characterized in that

there are six openings (9) which are offset by an angle of 60°.

4. A rotating band according to Claim 1, characterized in that

the circumferential recess (8) has teeth (13) which interlock with the rotating band (7).





5. A rotating band according to Claim 1, characterized
in that

the rotating band (7) is manufactured of a high-
temperature, fiber reinforced thermoplastic synthetic
material.

