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(54) **BULLET OR PROJECTILE WITH SPIRAL GROOVES**

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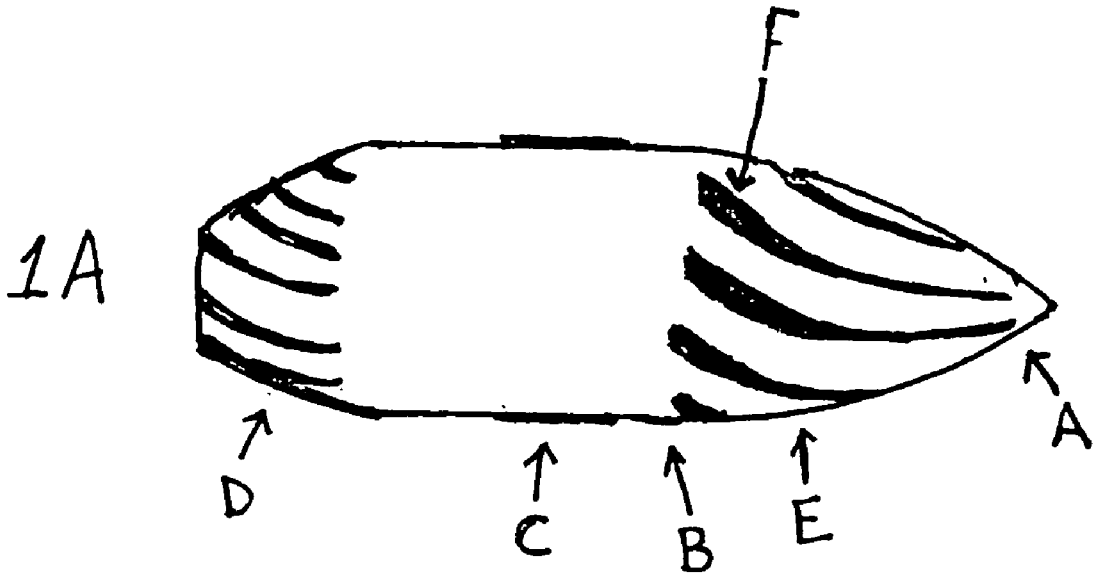
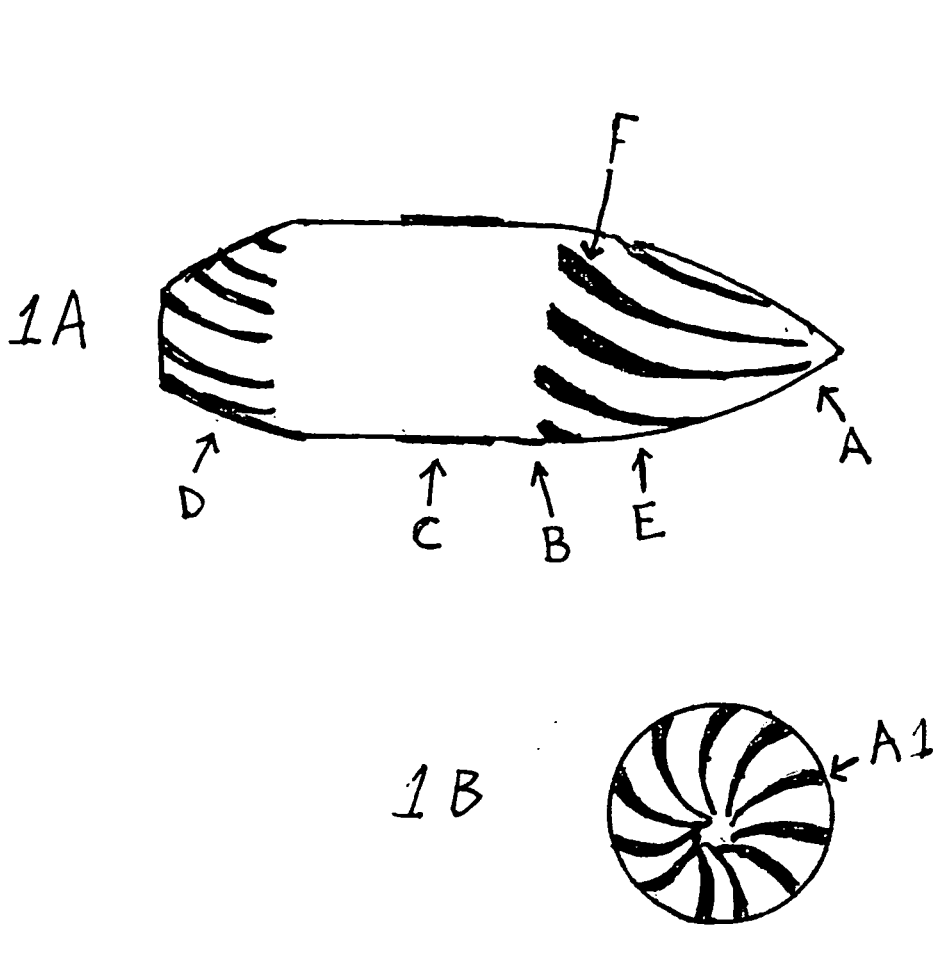
(57) **ABSTRACT**

A bullet or projectile having surface geometry in the form of a spiral or partial spiral groove. The spiral can be formed, cast or machined and very in depth, angle, and width. The spiral may go from the nose to the end of the bullet in one continual grove or the spiral may be focused on certain, areas of the bullet. The bullet may consist of any material capable of being formed, cast or machined and be of any caliber.

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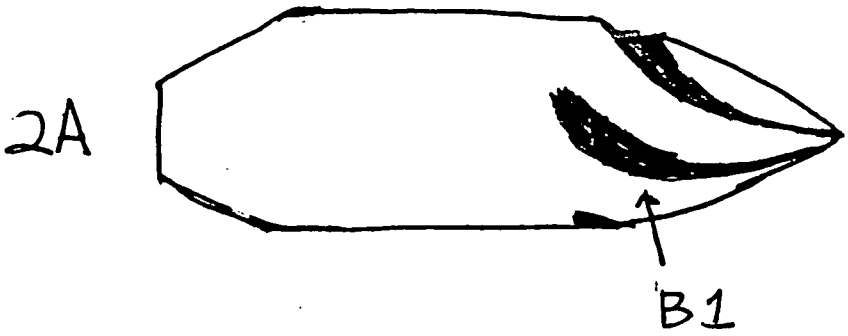

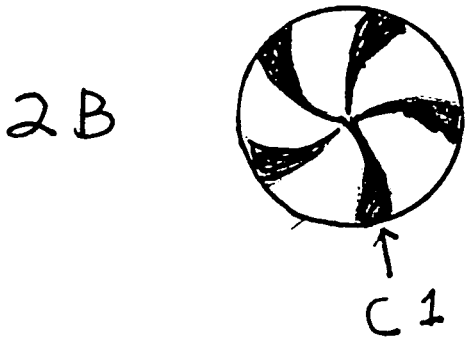

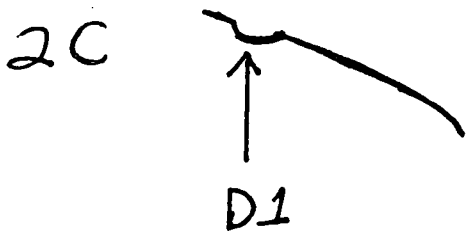

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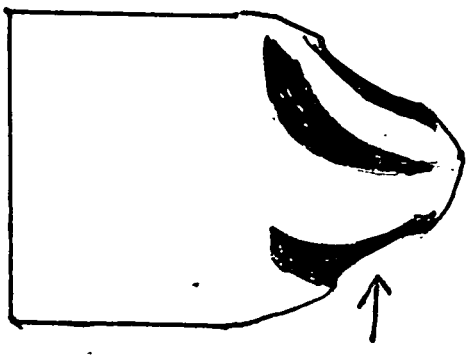

BULLET OR PROJECTILE WITH SPIRAL GROOVES

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] Not Applicable

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[0002] Not Applicable

REFERENCE TO SEQUENCE LISTING, A TABLE OR A COMPUTER PROGRAM LISTING COMPACT DISC APPENDIX

[0003] Not Applicable

BACKGROUND OF THE INVENTION

[0004] The present invention relates to bullets or projectiles, more specifically bullets with spiral or partial spiral grooves on the surface of the bullet. Conventional bullet designs consist of a basically smooth surface. The smooth surface relies on the rifling in the firearm barrel to impart spin on the bullet to obtain its gyroscopic stability. The conventional bullet design with a smooth surface also has limited ballistics based on current smooth surface with no spiral grooves on the surface of the bullet other than what is imparted from the rifling in the barrel.

BRIEF SUMMARY OF THE INVENTION

[0005] The present invention is a unique bullet or projectile design in which the spiral grooves on the bullet can help increase bullet stability and velocity. This is important due to the ability of a equal amount of gunpowder to provide a bullet of the same weight to have a higher velocity over a greater distance or allow less gunpowder to obtain the same bullet velocity. This could produce cost savings to the manufacturer and greater performance to the customer.

[0006] The grooves will also assist in the stability of the bullet do to the increased gyroscopic effects. This could allow less barrel twist to be used while maintaining the appropriate twist rate to achieve the appropriate stability. Less barrel twist could result in less friction which would assist bullet muzzle velocity.

[0007] The spiral grooves on the bullet also help reduce drag. This will result in a bullet velocity that is maintained at a greater rate than a traditional style bullet. A benefit of this is a straighter bullet trajectory where less drop is realized for a given distance. The result of which is greater energy delivered at impact.

[0008] The spiral grooves can start at the nose and continue to the end of the bullet or projectile, but most likely will not continue through the full length of the bullet without an interruption. The interruption in grooves will most likely occur in the driving band to allow a better seal when the bullet is fired.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING

[0009] FIG. **1**A shows a side view of a bullet with spiral grooves. Detail: A. Nose of bullet. Detail: B. Bore Rider of bullet. Detail: C. Driving Band of bullet. Detail: D. Boat Tail of bullet. Detail: E. Ogive of bullet. Detail: F. Spiral Groove of bullet.

[0010] FIG. **1**B shows a front view of a bullet with spiral grooves. Detail: A**1**. Spiral Groove.

[0011] FIG. **2**A shows a side view of a bullet with spiral grooves. Detail: B**1**. Spiral Groove.

[0012] FIG. **2**B shows a front view of a bullet with spiral grooves. Detail: C**1**. Spiral Groove front view.

[0013] FIG. **2**C shows detail of a spiral groove. Detail: D**1**. Section view of spiral groove.

[0014] FIG. **3**A. shows a side view of a bullet with spiral grooves.

DETAILED DESCRIPTION OF THE INVENTION

[0015] A bullet is generally designed with a nose A, ogive E, bore rider B, driving band C and boat tail D, but some designs may not include all of the features or may include additional features. The groove depth, width, and angle can vary depending on the bullet caliber, load, and desired performance. The groove depth and width may also very along the surface of the bullet. For example, the start of the ogive at the nose may have a very minimal groove depth, but as the spiral groove moves along the ogive the groove could get deeper, wider and the angle of the groove could change.

[0016] The grooves could be machined efficiently in an existing bullet with a CNC milling machine or a CNC lathe while utilizing the appropriate tooling to cut the groove. The bullets could also be cast in a mold which contains the grooves, so upon ejection from the mold the bullet is a finished product. The grooves could also be imparted during the forming process of a FMJ bullet or in a injection molding process.

1. A bullet or projectile comprising of spiral or partial spiral grooves on the surface of the bullet.

2. The grooves can vary in length, width and depth depending on the desired ballistic characteristics.

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