

(No Model.)

L. GEIGER.

PROJECTILE.

No. 343,269.

Patented June 8, 1886.

Fig. 2.



Fig. 1.



Fig. 3.

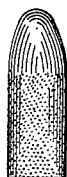
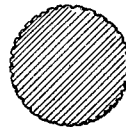


Fig. 4.



WITNESSES

Will. T. Robertson.
E. H. Bond.

INVENTOR

Leonard Geiger
By *T. J. W. Robertson*
Attorney

UNITED STATES PATENT OFFICE.

LEONARD GEIGER, OF HUDSON, NEW YORK.

PROJECTILE.

SPECIFICATION forming part of Letters Patent No. 343,269, dated June 8, 1886.

Application filed October 20, 1885. Serial No. 180,397. (No model.)

To all whom it may concern:

Be it known that I, LEONARD GEIGER, a citizen of the United States, residing at Hudson, in the county of Columbia and State of New York, have invented certain new and useful Improvements in Projectiles, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 represents a side elevation of a projectile constructed according to my improvement. Figs. 2 and 3 are similar views of modifications; and Fig. 4 a horizontal transverse section of the same enlarged.

This invention relates more particularly to that class of projectiles used in small-arms; and it consists in the peculiar construction of the same, as hereinafter more fully described and claimed.

Heretofore projectiles have been provided with grooves encircling the projectiles or arranged spirally upon the cylindrical body thereof. Such grooves, however, have always been made sufficiently deep to allow the passage of the gases of explosion, or have been made deep for other purposes. The consequence of such construction, however, is that the displaced metal not only materially reduces the weight of the projectile, but the abutting surfaces formed by the recesses are acted upon by the atmosphere to retard the projectile. These are serious defects. To overcome these difficulties and provide means for lubrication and for keeping the barrel clean, I propose to form in any convenient way, but preferably by "knurling," a series of shallow depressed lines, preferably in the form shown in Fig. 1—that is to say, with two series of such lines set slightly spiral and running in opposite directions. In lieu of this, a single series of independent lines may be used, as shown in Fig. 2, or a series of slight depressions, as shown in Fig. 3; but I prefer the form shown in Fig. 1. I also prefer that the outer surface of the projectile shall have a coating of copper, as shown in my Patent No. 306,739; but do not limit myself to coated projectiles. The coated projectiles, however, have the advantage that the edges of the lines have greater effect

in scraping the residuum out of the barrel, and thereby gives greater accuracy in shooting.

My invention comprises, essentially, a projectile which, while having a series of slight depressions or shallow depressed lines adapted to receive a lubricant and to keep the bore of the rifle clean, is without deep grooves designed and adapted to receive expansive gases while in the arm, and which will after leaving it present positive abutting projections against which the air will act, not only retarding the flight of the projectile, but also tending to change its direction.

In my projectile the surface of the body is scarified or roughened by shallow depressions or depressed lines easily distinguishable from the deep grooves which form ribs on the surface of the projectile which have the faults above mentioned.

My projectile has a plain cylindrical surface which, although comparatively smooth in general outline, has a roughened surface that serves to hold a lubricant and to present a cleaning-surface to the inner face of the barrel.

What I claim as new is—

1. A bullet having a cylindrical body provided with a scarified or rough surface formed over the same by numerous shallow depressions or depressed lines of insufficient depth to form abutting surfaces, as set forth.

2. A solid bullet having a cylindrical body with its surface roughened by two series of shallow and closely-adjacent depressed lines arranged in opposite spirals, and constructed to hold a lubricant without presenting air-abutting surfaces, as set forth.

3. A projectile having a lead body and a hard-metal coating extending from its point rearward, and provided with a series of shallow depressions or indentations of insufficient depth to form abutting surfaces, substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses, this 19th day of October, 1885:

LEONARD GEIGER.

Witnesses:

FRED. WATTLES,
CHAS. L. HAZLETON.