No. 622,773. Patented Apr. 11, 1899.

M. C. LISLE.

PROJECTILE.

(Application filed Sept. 8, 1896. Renewed June 24, 1898.)

(No Model.)

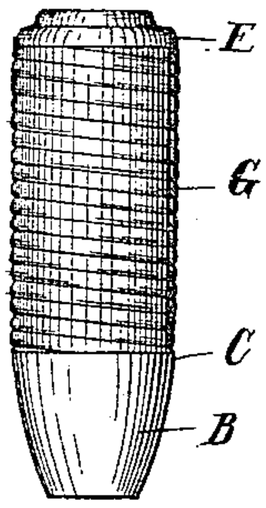

Fig. 1.

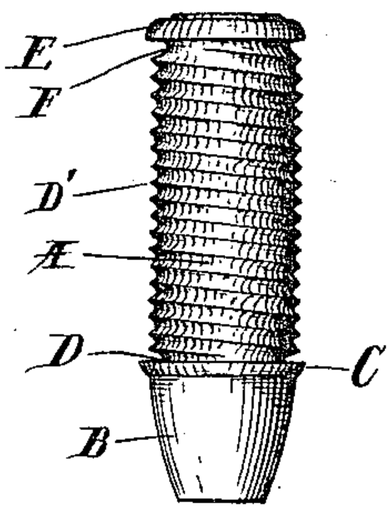

Fig. 2.

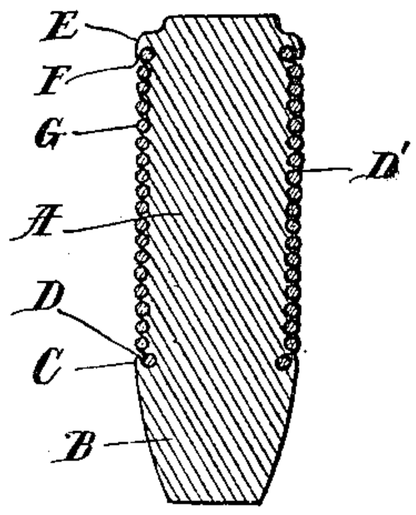

Fig. 3.

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MYRON C. LISLE, OF GRAND RAPIDS, MICHIGAN.

PROJECTILE.

SPECIFICATION forming part of Letters Patent No. 622,773, dated April 11, 1899.

Application filed September 8, 1896. Renewed June 24, 1898. Serial No. 684,423. (No model.)

To all whom it may concern:

Be it known that I, MYRON C. LISLE, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Projectiles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

It is well known that leaden or soft-metal bullets, while having certain advantages over those made of hard metal, have considerably less penetrative power than the latter, owing to the nature of the soft metal to spread or expand laterally and become distorted when it strikes a hard object. I have discovered that by winding a cord tightly and closely around the main body of a soft-metal projectile, so that it cannot become loosened during the process of attaching it or after it is secured, a jacket for the projectile will be formed which will not only prevent fouling of the gun and serve as a vehicle for a lubricant, but will also efficiently prevent lateral expansion of the projectile, thereby imparting to the soft-metal projectile an advantageous characteristic not heretofore possessed by it, making it the equal in respect to penetrative power of the projectile formed of hard metal and accomplishing a result heretofore deemed impossible of attainment by means of a cord jacket. In accordance with this discovery I have devised a most satisfactory means for attaching the ends of a cord wound spirally around a projectile by which the cord does not become loosened from the projectile while being applied or after it has been secured; but other means or modes of accomplishing the same result may be employed without departing from the spirit of the invention.

My invention consists in a soft-metal projectile having its main body tightly encircled by a cord wound spirally, closely, and inexpansibly around said main body and with its ends immovably secured thereto, so as to prevent both expansion of the soft-metal body and fouling of the gun, and also in the peculiar detail construction of the complete device, substantially as hereinafter described, and particularly pointed out in the subjoined claims.

In the accompanying drawings, Figure 1 is an elevation of my improved projectile complete; Fig. 2, the same before application of the jacket; Fig. 3, a longitudinal section through the axis of Fig. 1.

Like letters refer to like parts in all of the figures.

The body of the projectile is preferably made of lead or other soft metal and is first formed as in Fig. 2, having a cylindrical body A and conical end B. Deep grooves D and F are formed at the respective ends of the cylindrical body A, and flanges C and E are formed at opposite sides of and adjacent to said grooves. The body A is also provided with a shallower spiral groove D′, extending between the grooves D and F. Surrounding the cylindrical portion of the projectile is applied a jacket formed of a stout cord G, of linen, cotton, or other suitable material, the ends of which cord are placed in the respective grooves D and F and the intermediate portion thereof wound firmly around the body A in the groove D′. The ends of the jacket are firmly secured by swaging the flanges C E down upon the same, as shown in Figs. 1 and 3. It will be observed that the flanges are of such size that before they are swaged down upon the ends of the jacket their edges project to a plane beyond that of the body of the projectile. This permits the flanges to be swaged down properly to hold the jacket without disturbing the other metal of the projectile, and thereby without causing the jacket to slacken while being secured, whereby the latter may be wound and is held so tightly around the projectile as efficiently to prevent expansion thereof. Said cord may be waxed or greased to lubricate the gun, the lubricant being retained in the groove between the turns of the same. This jacket serves to prevent the lead from coming in contact with the gun and adhering to the same and also fits closely in the grooves of the barrel and at each discharge cleans the same and prevents fouling, so that a gun may be fired indefinitely without becoming fouled by lead or residue from the charges. The jacket is also retained by the projectile in its flight, and when it strikes the target the penetration is greatly enhanced, for the projectile does not materially change its shape and flatten out, the

jacket holding the cylindrical body of the projectile from expanding laterally. It thus follows and drives the conical point B to a much greater distance than if permitted to expand laterally.

Having thus fully described my invention, what I claim, and wish to secure by Letters Patent, is—

1. A projectile, consisting of a cylindrical body having annular grooves near its ends and radial flanges adjacent to said grooves, and a spirally-wound cord tightly embracing said body and preventing lateral expansion or distortion thereof, the ends of said cord being inserted in said grooves and held by the swaging of said flanges down upon the same, as specified.

2. The combination with a projectile having a soft-metal body, of a jacket therefor, consisting of a cord wound spirally closely and tightly about the main part of the projectile-body, so as to tightly embrace the whole of said main part and be inexpansible and immovable thereon, and having its ends securely attached to said body, substantially as described, whereby said jacket prevents lateral expansion or distortion of the soft-metal body, as specified.

3. A projectile, consisting of a cylindrical soft-metal body having deep annular grooves at its ends, flanges formed at opposite sides of and contiguous to said grooves and a shallower spiral groove extending between said deep grooves; and a continuous, lubricated projectile-distortion-preventing cord, wound tightly in said shallower groove and having its ends within the deeper grooves, said flanges being swaged down upon said ends of the cord, without disturbing any of the other metal of the projectile, whereby distortion of the projectile is prevented by said jacket, substantially as described and for the purposes specified.

In testimony whereof I affix my signature in presence of two witnesses.

MYRON C. LISLE.

Witnesses:
L. V. MOULTON,
F. W. TIDBALL.