

A. G. SINCLAIR.
Projectiles for Rifled Ordnance.

No. 149,800.

Fig. 1.

Patented April 14, 1874.

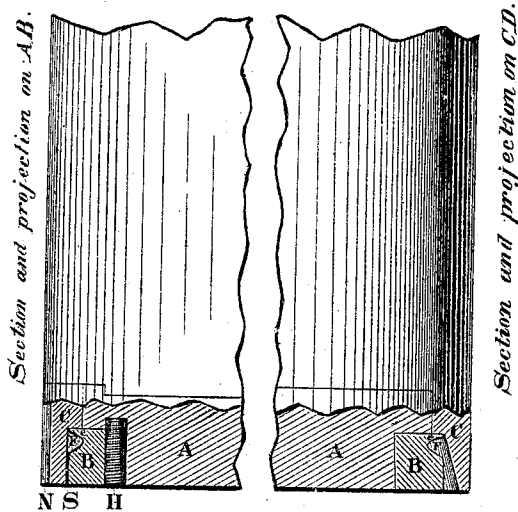


Fig. 2.

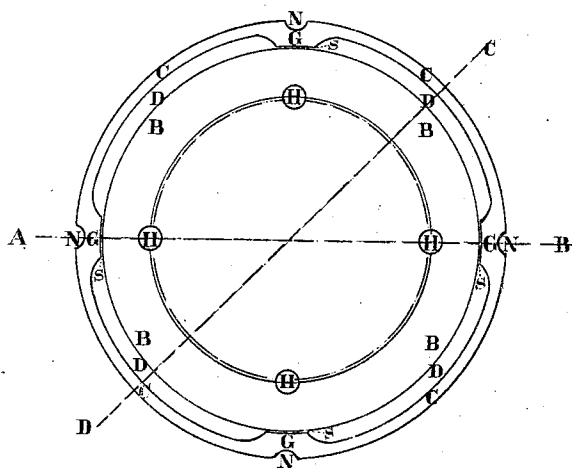
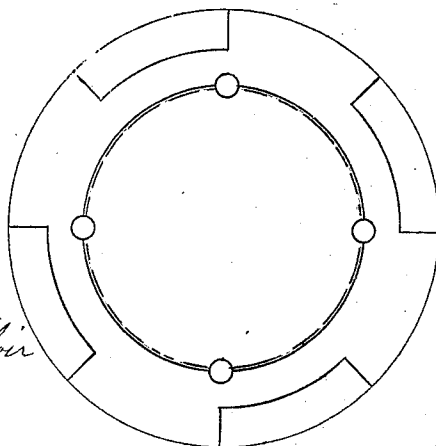


Fig. 3.



Inventor.

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Witnesses.

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ALLEN G. SINCLAIR, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN PROJECTILES FOR RIFLED ORDNANCE.

Specification forming part of Letters Patent No. **149,800**, dated April 14, 1874; application filed March 16, 1874.

To all whom it may concern:

Be it known that I, ALLEN G. SINCLAIR, of the city of Brooklyn, in the county of Kings, in the State of New York, have invented an Improved Projectile for Rifled Ordnance, of which the following is a specification:

My invention relates to an improved mode of forming and attaching the circular band or ring containing the gas-aperture for lateral expansion into the grooves of the cannon in consequence of the action of the powder; also, to an improved mode of forming the gas-aperture for expansion, so as, while preserving the full strength of the expanding portion of the circular band, to admit of a free escape of gas, and thus prevent high and injurious strains upon the walls of the gun, which are well known to arise in the use of expanding projectiles using a continuous circular slit or gas-aperture for filling the grooves. Hitherto permanently-attached circular expanding bands have been made of single pieces cast onto the projectile, or attached to it by means of keys or screws, or have been screwed onto the iron or steel body, and have been so applied as to be costly in manufacture, deficient in strength, in mode of securing, and in simplicity of construction or manufacture; also, in this class of projectiles, as heretofore made, no provision exists for a gas-escape to relieve abnormal pressure developed in guns with their use, and causing the guns to rupture or injuriously straining them, which defects, and the others above mentioned, it is the design of my invention to remove.

In the drawing, Figure 1, A represents a longitudinal section of a part of the body of the projectile; C, a section of the annular or continuous ring applied to the base of the projectile; B, a cross-section of a wrought-iron band, intended to keep the ring C in place, and is secured to the body of the projectile by being shrunk on, the body being tapered, as shown in the drawing, to receive it. The wrought-iron band has a recess, F, and a corresponding lip, E, which acts to prevent the gas from penetrating between it and the continuous band or ring shown in section at C. Fig. 2, A shows the base of the projectile. H H H

H represent metal screws to afford additional security to the wrought-iron band B B B B. C C C C show the outer lip of the expanding ring, and D D D D are the openings between the annular expanding ring and its fastening wrought-iron band B B B B, and into which openings the powder-gases are injected and cause the expansion into the grooves of the soft-metal expanding base. G G G G are projecting lugs from the outer lip of the expanding circular ring, separated by a fine cut, S S S S, from the corresponding part of the inner walls of the gas-apertures. These lugs form a base, so as to admit the application of the grooves N N N N to the continuous annular ring for the escape of the gas around the projectile, and without too much weakening of the lips of the ring in the act of expansion, which would be the case if gas-escape grooves, of a size to be practically beneficial, were applied without these lugs, or their equivalent.

It is evident that as many lugs as may be required can be placed at different points in the gas-aperture slit.

It is evident that if the outer or expanding lip were uniformly thickened to afford space for the gas-escape grooves it could not perform in a practical manner its function of expansion to take the grooves, on account of its great thickness.

It is evident that these lugs can be applied whether the annular band applied to the base of the projectile is either made of one or two pieces.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The circular or annular band C, in combination with the metal band B, applied to the base of a projectile, substantially as specified.

2. The inwardly-projecting lugs G G G G, cast with or otherwise attached to the expanding lips C C C C, substantially as and for the purpose specified.

ALLEN G. SINCLAIR.

Witnesses:

BURR FROST,

JOHN H. ROWLAND.