E. A. DANA.

Sabot for Projectile.

No. 50,692. Patented Oct 31, 1865.

Fig. 3.

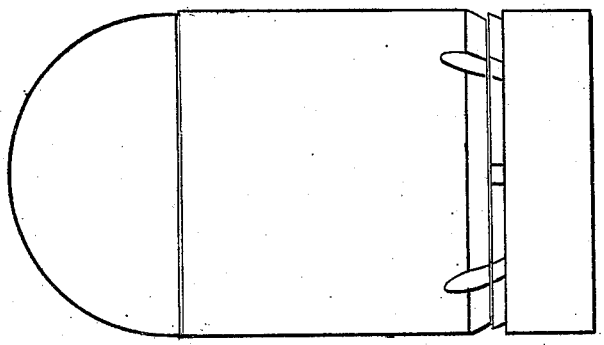


Fig 1

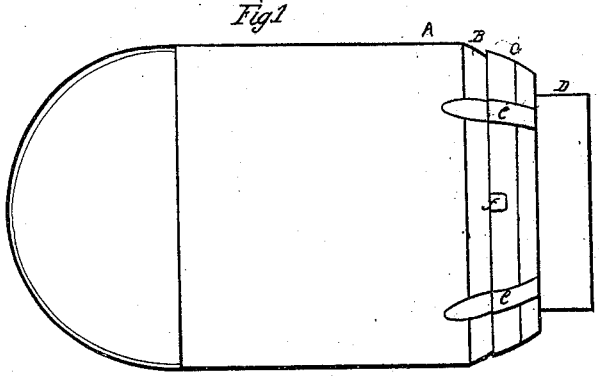
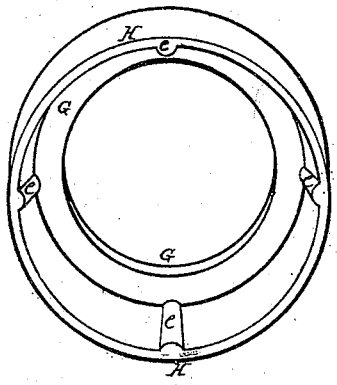


Fig. 2.



Witnesses:

Oliver Stevens

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UNITED STATES PATENT OFFICE.

EDWARD A. DANA, OF BROOKLINE, MASSACHUSETTS.

IMPROVEMENT IN SABOTS FOR PROJECTILES.

Specification forming part of Letters Patent No. **50,692**, dated October 21, 1865.

To all whom it may concern:

Be it known that I, EDWARD A. DANA, of Brookline, in the county of Norfolk and State of Massachusetts, have invented a new and useful form of Projectile for Rifled Cannon and other Rifled Fire-Arms; and I declare that the following is a full and exact description thereof, references being made to the drawings which accompany this specification.

My invention consists of a shot or shell of the form hereinafter described, and of a band or sabot of soft metal, which fits upon the rear of such shot or shell, and is by the explosion of the charge so wedged up upon it as to be forced into the grooves of the gun.

In the accompanying drawings, the projectile, with its sabot removed, is represented by Figure 1, in which A is the main body of the shot; B, a groove, which encircles the shot, and is in this case of a saw-tooth-like form, with its sloping face presenting backward; C, a conoidal portion in the rear of D, which slopes off backward, gradually at first and afterward more abruptly, until it terminates at a shoulder, behind which is the short cylindrical projection, D. Intersecting B and C are grooves *e e*, cast in the shot, which are intended to receive corresponding ribs on the sabot, hereinafter to be described. In the anterior edge of the conoidal portion C are pits or depressions *f*, also cast in the shot.

Fig. 2 represents the band or sabot, which may be made of brass, pewter, or other metal of sufficient softness and toughness. It is in shape a shallow cup, with a perforation in its bottom large enough to receive the cylindrical projection D on the rear of the shot, and may be described as consisting of two parts—viz., the perforated bottom piece or flat ring G and the hollow cylinder H, which corresponds to the sides of the cup. The part H is cylindrical on its outer and inner surfaces, with the exception of the anterior or upper portion of its inner surface, which is beveled with a slope corresponding to that of the part C of the shot. The rearward face of the ring G may either be flat or be grooved in such a way as to make a circular cup whose edges may be forced outward by the explosion of the charge.

Fig. 3 represents the projectile with the sabot attached. The forward or beveled edge of the sabot fits over the slope C, and the ring G is driven tightly over the cylinder D until D projects through the bottom of the sabot.

When the above-described projectile is fired the sabot is driven forward until arrested by the shoulder between C and D, and its sides are wedged outward by the conoidal portion C until they are forced into the grooves of the gun. At the same time the forward or thinner portion of H is forced into the groove B and into the pits or slots *f f*, so as to assist in holding the sabot firmly on the projectile.

A sabot of soft metal which has been driven over the wedge-shaped rear of a projectile has been found liable to become detached after leaving the gun, producing by so doing irregularities of flight. In the above-described projectile of my invention this liability is obviated by the action of the cylindrical part D, on which the ring G maintains a firm hold, and also by the contrivances of the groove or channel B and the pits *f f*, into which the metal of the sabot is forced by the inward pressure of the walls of the gun.

I am aware that projectiles have been made in which bands or sabots of soft metal or of other material are driven up by the force of the explosion of gunpowder on wedge-shaped or conoidal surfaces, and I do not claim the general use of such a contrivance; nor do I claim any projectile upon which a ring, disk, or cup of pewter, brass, or other soft metal is cast, making a part thereof, which may be expanded by the discharge of the gun; but

What I do claim, and desire to secure the exclusive use of by Letters Patent of the United States, is as follows:

1. The combination of a shot or shell the hinder part of which is shaped as above described—viz., with a sloping or wedge-shaped portion, C, and also with a straight or cylindrical portion, D, of less diameter than the body of the shot—with a rifling cup or packing of softer metal adapted thereto, but cast separately therefrom, which can be detached for the purposes of storage or transportation and placed on the projectile when wanted for use, the whole of which is driven forward on the shot when the gun is fired.

2. In combination with the above, the circular groove B on the rear part of the projectile, this groove being so placed that the metal of the rifling-cup may be driven into it by the discharge of the gun.

EDWARD A. DANA.

Witnesses:

OLIVER STEVENS,

GEO. Z. ADAMS.