J. F. CLEU.

Case Shot.

No. 45,474.

Patented Dec. 20, 1864.

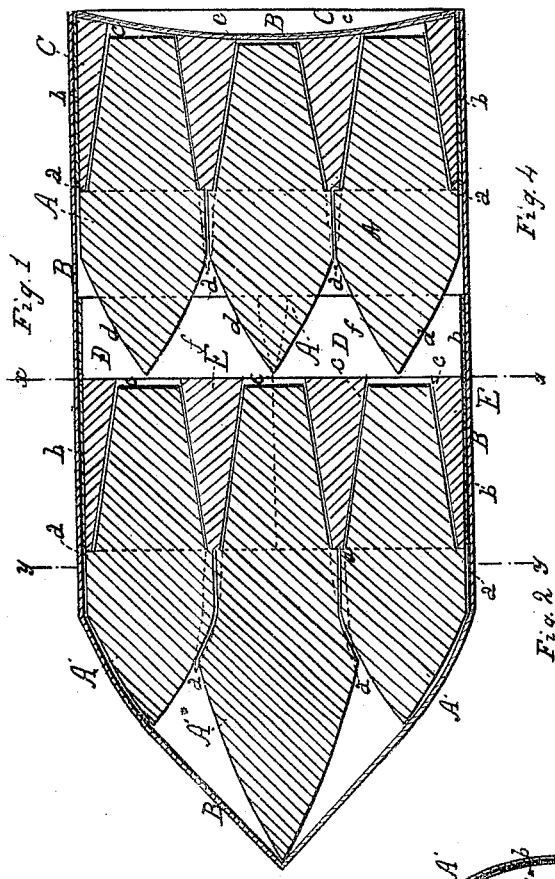

Fig. 1

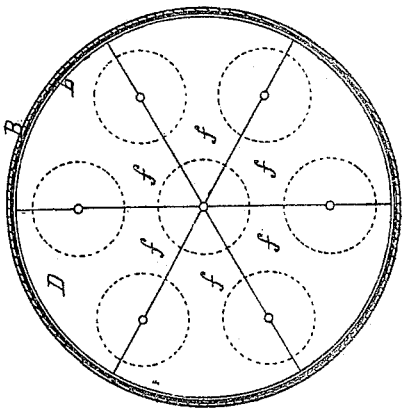

Fig. 4

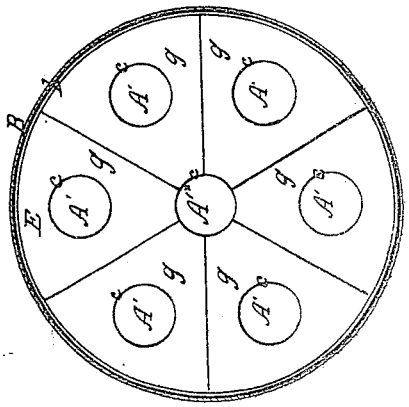

Fig. 2

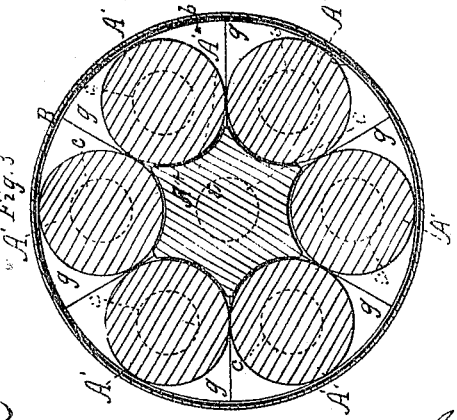

Fig. 3

Witnesses

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UNITED STATES PATENT OFFICE.

JOHN F. CLEU, OF NEW YORK, N. Y.

IMPROVEMENT IN CASE-SHOT.

Specification forming part of Letters Patent No. 45,474, dated December 20, 1864.

To all whom it may concern:

Be it known that I, JOHN F. CLEU, in the city, county, and State of New York, have invented a new and useful Improvement in Grape and Case Shot; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable any person skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a central longitudinal section of a case-shot constructed according to my invention. Fig. 2 is a transverse section of the same in the plane indicated by the line *x x*, Fig. 1. Fig. 3 is a transverse section of the same in the plane indicated by the line *y y* in Fig. 1. Fig. 4 is a transverse section in the same plane as Fig. 2, but showing the opposite side of the plane of section.

Similar letters of reference indicate like parts.

This invention relates to the use of elongated projectiles in a grape or case shot; and it consists in a novel arrangement of and mode of holding in place such projectiles within a case or without one, whereby they are caused to be projected with their points forward and to strike point on.

A A′ A′* are the elongated projectiles arranged in tiers within the case B of tin-plate or other sheet metal. There may be one or more of these tiers, according to the relative sizes of the case and of the contained projectile; but there are two in the example represented. Those in each tier are arranged as close together as practicable. The projectiles are so formed and have their weight so distributed, as described in another application of mine for Letters Patent, marked D, that in their flight their axes will be tangential to the trajectory, and they are made with shoulders *a a* all around.

C, D, and E are cast-iron packing-disks for filling up the interstices between and around the projectiles. These disks are of such circumference externally that when thin india-rubber, *b b*, are applied around them they will fit the cylindrical interior of the case B. The rear disk, C, is of one piece, and has provided in it a number of conical holes, *c c*, of a size to receive the conical rear portions of the rear tier of projectiles, A, the shoulders *a* of which abut against the front face of the said disks, and the rear ends of which do not quite reach the rear face of the disk. This face is slightly concave. The disk D in front of the said projectiles has provided in its rear face a number of holes, *d*, corresponding in form and position with the points of the projectiles A, the said holes extending only just or not quite through the front of the said disk, and the said disk is cut or otherwise divided diametrically into section-shaped sections *f f*, as shown in Fig. 4, being arranged so that each projectile comes half into one and half into another section. The front disk, E, which receives the rear portions of the front tier of projectiles, A′, is substantially like C, except that it is divided diametrically into sections *g g*, as shown in Figs. 2 and 3, and its rear face is made flat to abut against the flat front face of D. The central projectile, A′*, of the front tier is made longer than the others, A′, of the same tier in order that its point may fit to the front end of the case B, which is made of conoidal form and conforms to the sides of the projectiles A′, as shown in Fig. 1. The sides of this projectile A′* are hollowed out in front of the disk E, as shown in Fig. 3, to fit the contiguous sides of the projectiles A′, and its head is made somewhat larger than that of A′. By these means the center of gravity of this projectile is brought so far forward as to insure its remaining tangential to the trajectory during its flight and and striking point on.

In putting the projectiles and disks into the case, the bands *b* serve to hold the several portions of the divided disks together until they arrive in their places in the case. In the discharge of the case-shot from a piece of ordnance, the projectile force evolved by the explosion of the charge of the gun acts against the disk C, and is thereby transmitted to the shoulders *a a* of the projectiles A in the rear tier. These projectiles transmit the force to the disk D, and this to the disk E, which transmits it to the shoulders of the projectiles A′ A′*. The several parts with their containing-case leave the gun together, and the case bursting is thrown off. The several pieces of the divided disks D and E are then separated from the projectiles by the greater resistance, owing to their form, they meet with from the atmosphere and are scattered, and the disk C

is separated in like manner. The elongated projectiles A A′ A′* are caused to diverge slightly from each other in their flight by the resistance of the atmosphere acting between their heads when they are first liberated from the case, but otherwise their flight will be as though fired singly from a gun of corresponding caliber.

The number of projectiles in a tier may be greater or less, according to their size, and they may be arranged one in the center, and two or more surrounding circular series. They may be either solid shot or explosive shells, the explosion being effected by percussion or friction. When no case is used the several tiers of projectiles are inserted separately into the gun.

I claim as my invention, and desire to secure by Letters Patent—

The arrangement of elongated projectiles in a grape or case shot in one or more series with surrounding and interposed disks, substantially as herein specified.

JOHN F. CLEU.

Witnesses:
J. P. HALL,
GEO. W. REED.