A. M. SAWYER.
Canister Shot.

No. 202,055. Patented April 2, 1878.

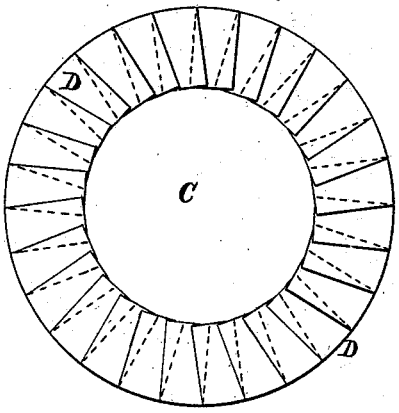

FIG. 2.

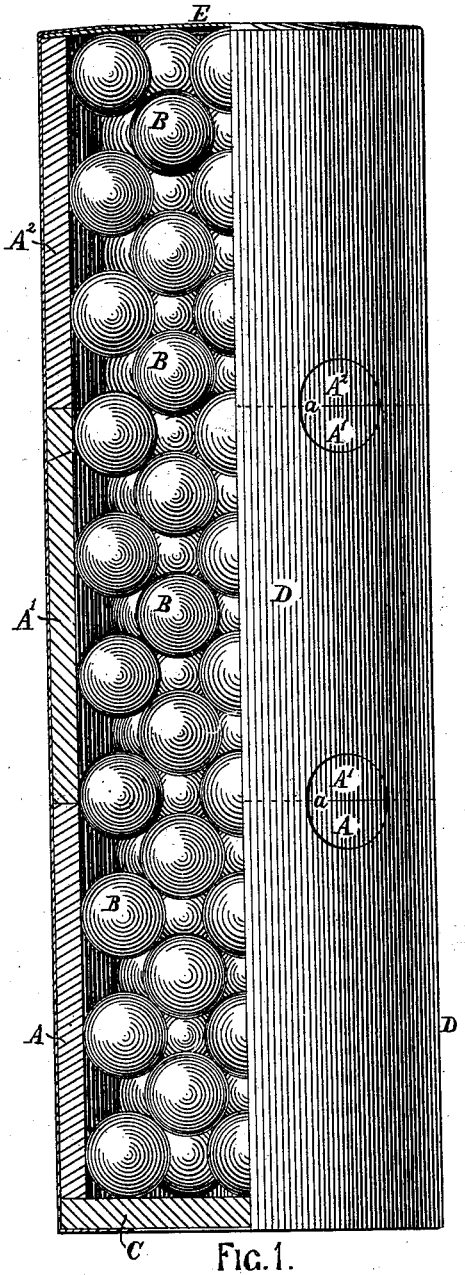

FIG. 1.

WITNESSES.
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ADDISON M. SAWYER, OF ATHOL, MASSACHUSETTS.

IMPROVEMENT IN CANISTER-SHOT.

Specification forming part of Letters Patent No. **202,055**, dated April 2, 1878; application filed February 9, 1878.

To all whom it may concern:

Be it known that I, ADDISON M. SAWYER, of Athol, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Canister-Shot, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to the construction of canister-shot for ordnance; and it consists in the use, in combination with a number of small balls packed in a compact mass to form the center of a canister-shot, of a casing, to contain said small balls, of sufficient strength and stiffness to resist the impact of the small balls contained therein and the force of the charge of powder in the gun, which tend to force the casing against the bore and into the rifled grooves of the gun, said casing being divided transversely into two or more sections or short tubes, held together by a thin sheet-metal envelope, or sheet-metal bands extending from end to end of said casing and turned down over its end, said bands or envelope being of sufficient strength to hold the several sections of the casing together till placed in the gun, but too weak to resist the force of the explosion of the charge of powder which expels the shot from the gun, so that when the shot leaves the gun said casing is divided into two or more parts, each of which serves as an independent shot, while the small balls contained in each section of the shell are prevented from "flying wild" as soon as they leave the gun, as is apt to be the case when the inclosing-shell is only a thin sheet-metal envelope, or the inner shell is divided longitudinally into several pieces, the strong cylindrical casing of which each section of the inner casing of my improved canister-shot is composed tending to retain the small balls longer after leaving the gun, and thus causing them to be carried to a greater distance than would be the case were the inner casing dispensed with, as in the ordinary regulation canister, or divided longitudinally into several staves, as in the Letters Patent No. 34,058, granted to B. B. Hotchkiss, January 7, 1862.

A careful consideration of the subject of centrifugal force will make it obvious to any one that a mass of small balls placed in a weak envelope, so constructed as to be forced laterally into the grooves of a rifled gun by the explosion of the charge of powder which expels the canister from the gun, in such a manner that the canister-shot shall be made to rotate about its axis as it leaves the gun, will, owing to said rotary motion, have a tendency to fly off at a tangent to the circle of revolution, and thus prevent the small balls reaching the target. Hence the comparative inefficiency of canister-shot, as heretofore constructed, when discharged from rifled cannon.

To obviate these objections, and render the canister-shot equally effective whether discharged from a rifled or smooth-bore gun, and to greatly increase its effectiveness over the canister-shot heretofore in use, is the object of this present, as also of an earlier, application of mine, of which the subject-matter of this application originally formed a part.

Figure 1 of the drawings is a sectional elevation of my improved canister-shot, and Fig. 2 is an end view of the same.

A A^1 A^2 are three short tubes of malleable or wrought iron, placed end to end to make up the desired length of the canister, said tubes being made of sufficient strength and stiffness to resist the impact of the small balls B placed therein, or any tendency to force the said tubes outward against the bore of the gun or into the rifled grooves of the gun. C is a thick metal head, forming the rear end of the shot, which may be a plain disk, as shown, or it may form an integral part of the rear section A of the casing, as illustrated in a former application for a patent for canister-shot, filed by me on the 11th day of January, A. D. 1878.

D is an envelope or tube, of tin or other thin sheet metal, made somewhat longer than the aggregate length of the canister-casing which it incloses, the two ends of said envelope being slit and turned down onto the disk or head C, and the thin sheet-metal cover E placed upon the forward end of the shot to retain the balls B, as clearly shown in the drawings.

The tin envelope may have openings *a* cut in it, and said openings may be made of any desired length or width, according to the strength that it is desired to give to said envelope.

By adopting this construction a very cheap and effective canister-shot is obtained.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A canister-shot provided with a casing

of malleable or wrought iron, or other hard metal, of such strength and stiffness that it will not be forced outward against the bore or into the grooves of the gun, divided transversely into two or more sections, held together by an exterior tie or ties of sheet metal, of sufficient strength to hold the sections in place till placed in the gun, but too weak to resist the explosion of the charge of powder which discharges the shot from the gun, substantially as and for the purposes described.

2. The combination, in a canister-shot, of two or more tubes, of malleable iron or other hard metal, of such strength and stiffness that they will not be forced outward against the bore or into the grooves of the gun, placed end to end, a thick metal head at one end, a light metal cap at its other end, a mass of small balls filling the chamber so formed, and a thin sheet-metal envelope or tube surrounding said hard-metal tube, substantially as and for the purposes described.

Executed at Boston, Massachusetts, this 6th day of February, A. D. 1878.

ADDISON M. SAWYER.

Witnesses:

N. C. LOMBARD,

E. A. HEMMENWAY.