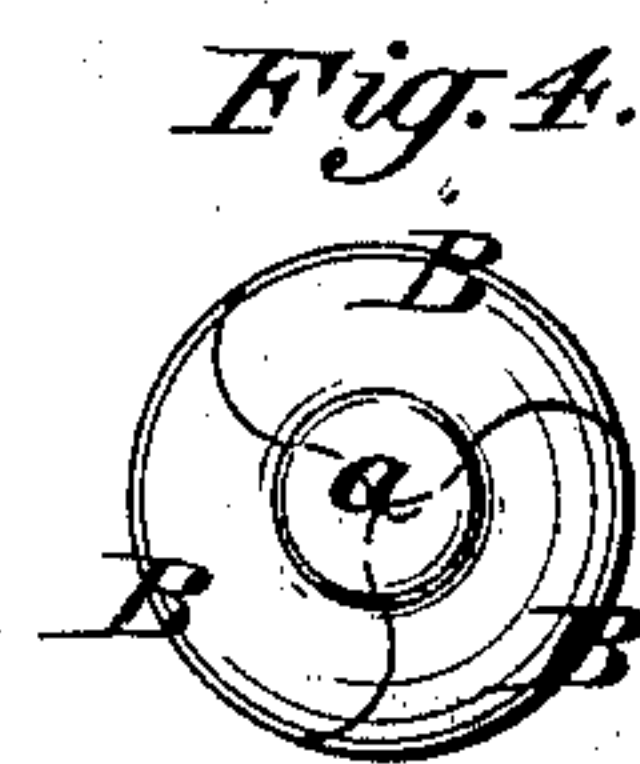
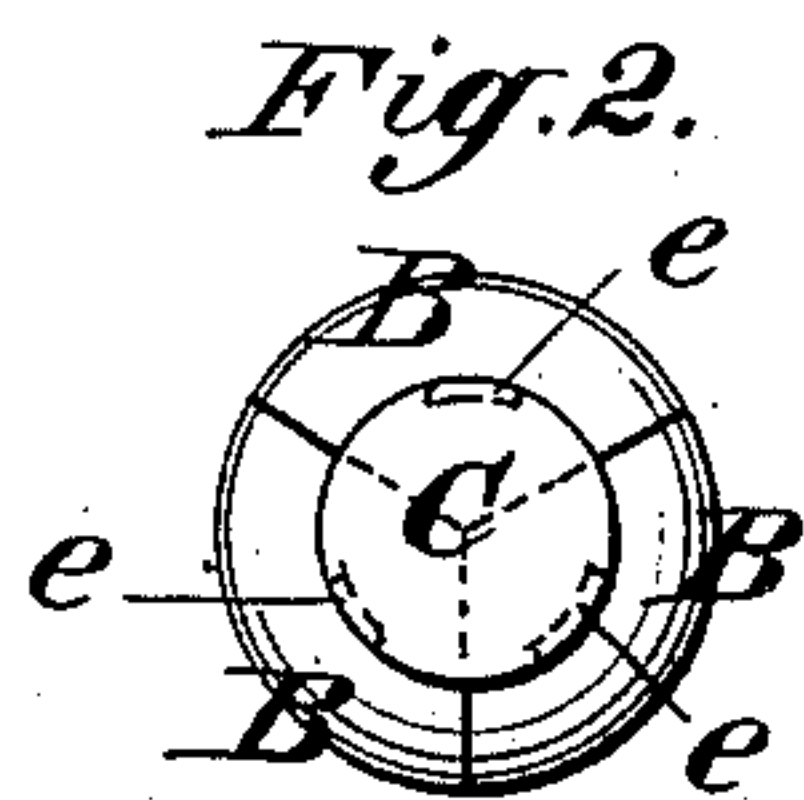
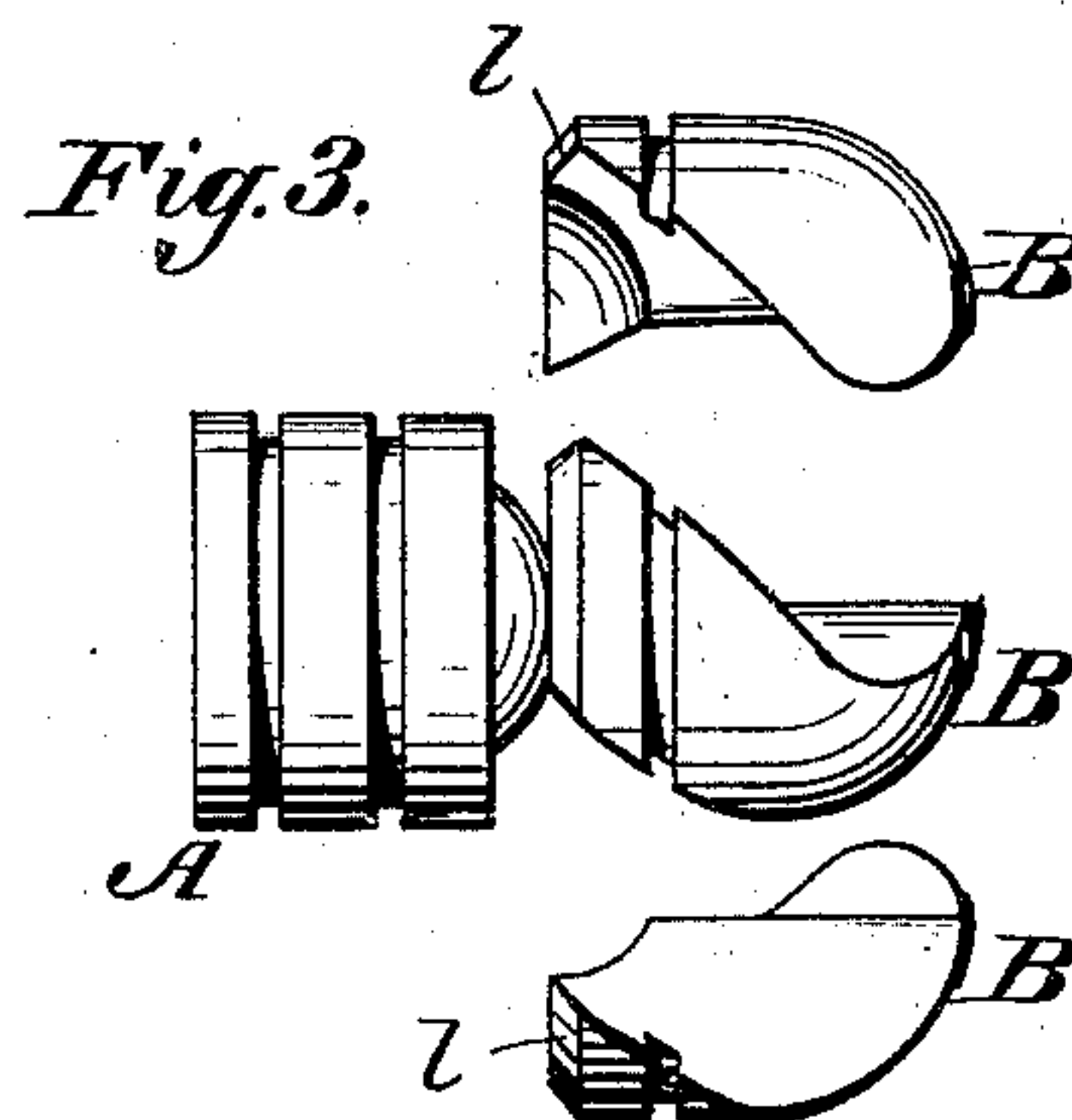
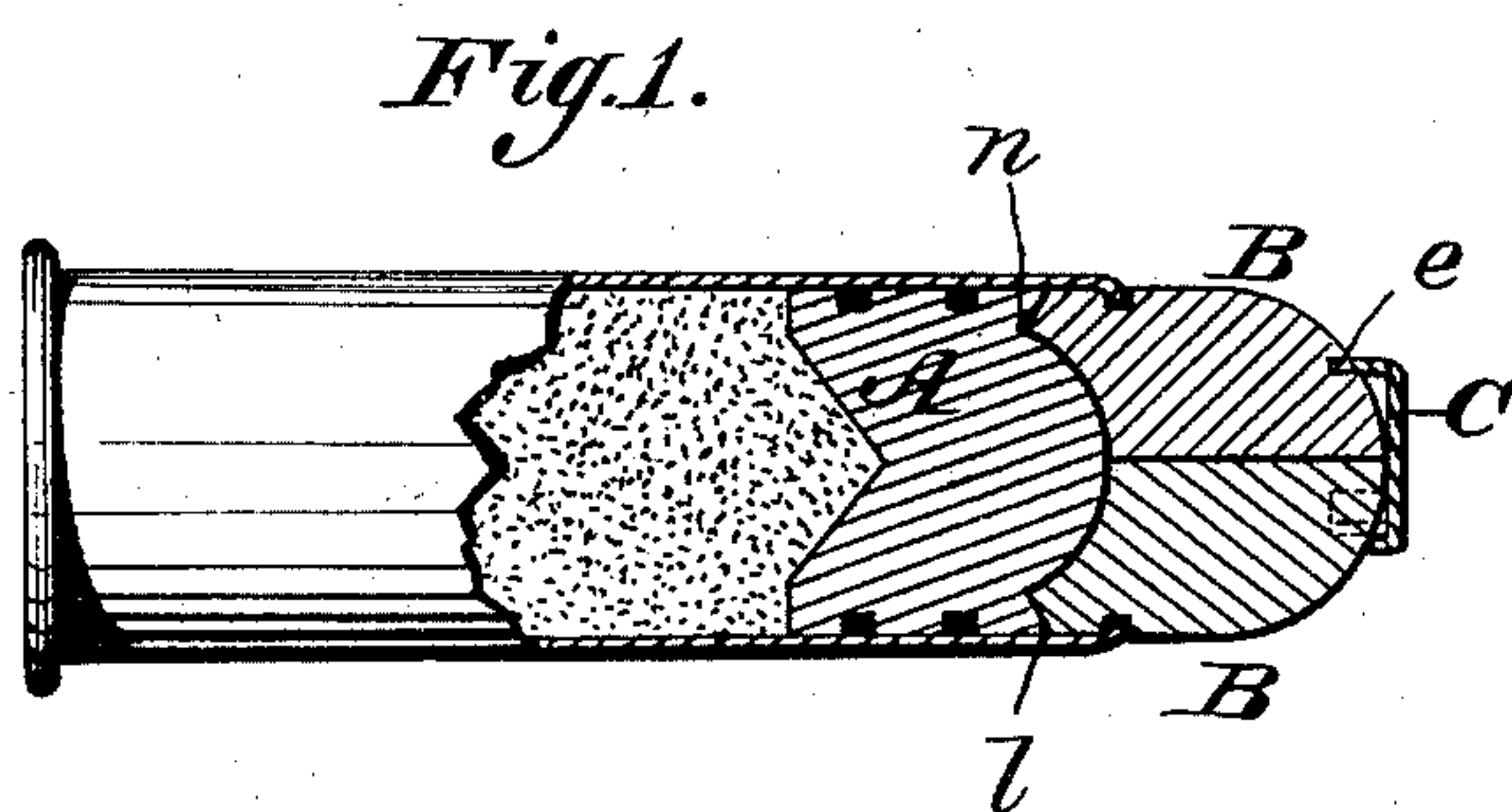


H. J. NOWLAN.
Projectile for Small-Arms.

No. 221,249.

Patented Nov. 4, 1879.



Witnesses:
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UNITED STATES PATENT OFFICE.

HENRY JAMES NOWLAN, OF UNITED STATES ARMY.

IMPROVEMENT IN PROJECTILES FOR SMALL-ARMS.

Specification forming part of Letters Patent No. **221,249**, dated November 4, 1879; application filed September 20, 1879.

To all whom it may concern:

Be it known that I, HENRY JAMES NOWLAN, now of the United States Army, and formerly a resident of New York, in the county of New York and State of New York, have invented certain Improvements in Compound Projectiles, of which the following is a specification.

My invention relates to compound projectiles or bullets for small-arms; and the invention consists in a novel construction of the parts, whereby they are held together when leaving the barrel of the arm, and allowed to separate after reaching a suitable distance, all as hereinafter more fully described.

Figure 1 is a longitudinal section of a projectile constructed on my plan with metallic shell attached, and Fig. 2 is a front-end view of the same. Fig. 3 represents a modified form of the improved projectile with the front parts separated to show the construction, and Fig. 4 is a front-end view of the same.

Various forms of compound bullets or projectiles for small-arms have been devised, but have generally been attended with a difficulty in controlling their flight, the sectional portions being apt to separate too soon, causing them to diverge and scatter too much, besides rendering their flight irregular and uncertain.

The object of my invention is to overcome these difficulties, and to produce a projectile that can be fired from an ordinary arm, and be so regulated in its flight as to cause the parts to separate and scatter or spread, as may be desired, in order to insure the greatest degree of efficiency.

In order to accomplish these results I construct my improved projectile as follows: The front portion, the exterior of which may be made in any form desired, I divide longitudinally into three equal parts, as represented in the drawings. These front sections, B, may be made with their adjoining faces or sides flat and straight, as indicated in Figs. 1 and 2, or they may be made curved or spiral, so as to interlock, as represented in Figs. 3 and 4, the first being the plan which I prefer, because, in practice, I find them to be more regular in their flight and easier to manufacture. In order to hold these sections together until the projectile has reached the proper distance in its flight, I fasten them together at their front

end either by means of a small metal cap or disk, C, Fig. 1, which has small spurs or points *e*, which, as shown, are turned backward and forced into the front end of the sections B, or by slightly soldering the sections together at their front end, as indicated at *a*, Fig. 4. At their rear end these sections B are so formed that when placed together there will be a central concavity surrounded by a beveled flange, *l*, as shown in Fig. 1.

The rear section, A, I make in a single solid piece, with an annular groove, *n*, on its front end, with its central portion convex, so as to fit accurately against the rear end of the front portion, as shown in Fig. 1. It will thus be seen that when the front and rear sections of the projectile are united, as represented in Fig. 1, the flange *l* of the front part will fit into the groove *n* on the front of the rear part, and that thus the rear end of the sections B will also be held together until the projectile has passed some distance (more or less) from the muzzle of the arm.

By varying the length of the points *e* and the distance that they enter the sections B, and also by making the groove *n* and the corresponding flange *l* more or less deep and more or less inclined, it is obvious that the sections B can be held united during a greater or less portion of their flight, and that thus a projectile can be produced which will cause the sections B to separate at any desired distance from the muzzle of the arm, and that thereby the space which will be covered by the sections in their flight may be varied and controlled, so as to have them spread more or less within the given distance.

The degree of firmness or strength with which the sections B are to be held together must, of course, be determined by experiment in the first instance, it being increased for long and decreased for short distances when it is desired to cover the same space for each distance. So, too, it is obvious that they may be made to scatter or spread more or less within the same distance by uniting them less or more securely.

It is obvious that the sections B may be held together sufficiently by fastening them at or near their front end only, and thus dispense with the groove and flange at their rear end,

especially if the adjoining or abutting ends of the parts A and B be made flat, or in such a form that the front end of part A will not tend to cause the sections B to separate.

It is also obvious that other means may be used for temporarily securing or holding the sections B together, and also that the number of both the front and rear parts may be varied at will, and therefore I do not wish to be understood as limiting myself in either of these particulars; but from the experiments which I have thus far made I prefer the construction shown in Figs. 1 and 2, not only as giving the best results, but also as being the simplest and cheapest to manufacture.

By means of this improvement I am enabled to produce a compound projectile that can be used in small-arms, and all the parts of which will be effective within the ordinary range for such arms, and which can be made to scatter more or less, as may be desired.

This projectile can be used in either muzzle-loading or breech-loading arms, as may be desired. When prepared for use in breech-loaders it will be set into a metallic cartridge-shell, as represented in Fig. 1.

Having thus described my invention, what I claim is—

1. A compound projectile for small-arms, consisting of a solid or undivided rear part, A, and a front part divided into longitudinal sections, said sections being temporarily fastened together, substantially as described.

2. The solid bullet A, provided on its front end with the recess *n*, in combination with the sections B, provided with the flange or rearward projections *l*, arranged to fit into the recess *n*, and having their front ends temporarily united by the cap C, or equivalent means, substantially as shown and described.

3. A compound projectile for small-arms, consisting of a rear solid portion, A, and a front portion divided longitudinally into sections slightly fastened together at their front ends, substantially as described.

HENRY JAMES NOWLAN.

Witnesses:

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