

H. W. LIBBEY.

Shell.

No. 47,651.

Patented May 9, 1865.

Fig. 1.

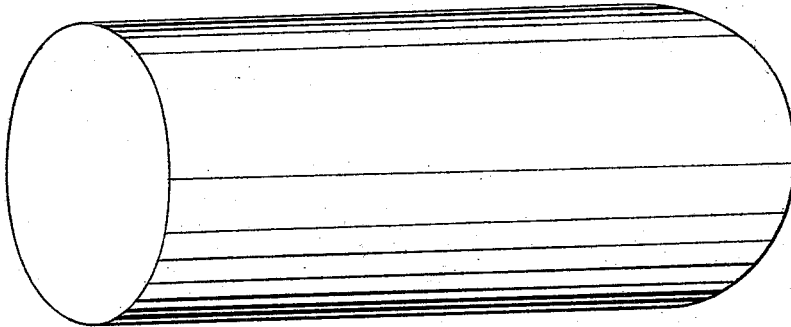


Fig. 2.

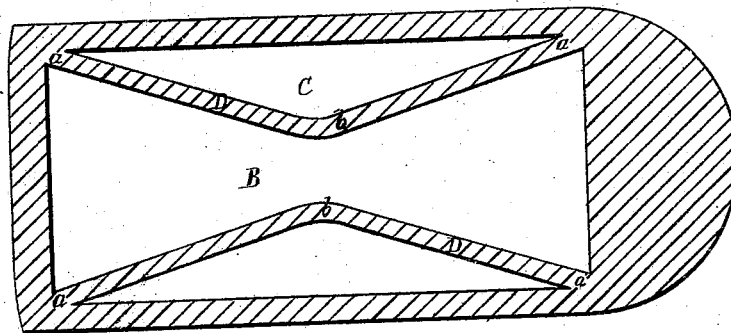
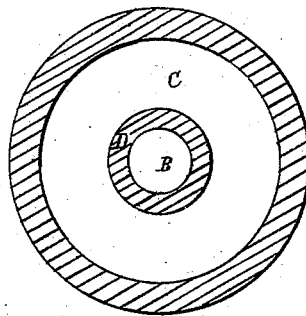


Fig. 3.



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IMPROVEMENT IN EXPLOSIVE SHELLS.

Specification forming part of Letters Patent No. 47,651, dated May 9, 1865.

To all whom it may concern:

Be it known that I, H. W. LIBBEY, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Projectiles; and I do hereby declare that the following is a full and complete description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of the projectile. Fig. 2 is a longitudinal section. Fig. 3 is a transverse section.

Like letters of reference indicate like parts in the views.

My improvement relates to the structure of a projectile by which greater destructive character is given to the shell as it explodes than in the ordinary way.

Fig. 1 represents the projectile or shell, the exterior of which may be of any of the usual forms. The internal structure is represented in Figs. 2 and 3, which consists of a chamber, B, in the center, contracted across the middle, and gradually expanded or widened toward the ends, as shown in Fig. 2, leaving a chamber, C, all around between the outside and the walls D of the inner chamber. The walls D spring from *a* to *b*, or from the corners of the chamber C, being of a form similar to an arc. The walls D may be curved or form an angle from the corners to the middle at *b*. There can be fuse-holes between the chambers B and C, so that one can be ignited from the other; or both may have fuse-holes communicating with the outside in the ordinary manner, and exploded separately. The chamber C can be filled with canister-shot, powder, &c., and the inside chamber, B, with an in-

incendiary compound; or the chamber B may be filled with powder only and the chamber C with incendiary compound, by which the powder and incendiary compound are separated by the walls D from each other, thus making an incendiary shell, and which will be exploded by the igniting of the powder in the chamber B. On account of the peculiar shape of the inner wall it will require greater force to explode it. Consequently the bursting of the shell will be more destructive, the fragments and contents of the shell impelled with greater force and power, and, also, when the chambers are thus filled, the projectile will have all the destructive character of a canister-shot, and at the same time the other chambers may contain all the elements of an incendiary compound; or both chambers may be filled and exploded as shells.

The compartments or chambers B and C may be subdivided and connected by fuse-holes, so that there will be successive explosions.

I am aware that shells have been made containing two or more chambers, for bursting and incendiary charges. These I do not broadly claim.

What I claim as new, and desire to secure by Letters Patent, is—

The shell A, having two chambers, B and C, when the side walls of the latter spring from the farther and outer extremities of the former, forming a double-cone-shaped chamber contracted at the center.

H. W. LIBBEY.

Witnesses:

W. H. BURRIDGE,
J. HOLMES.