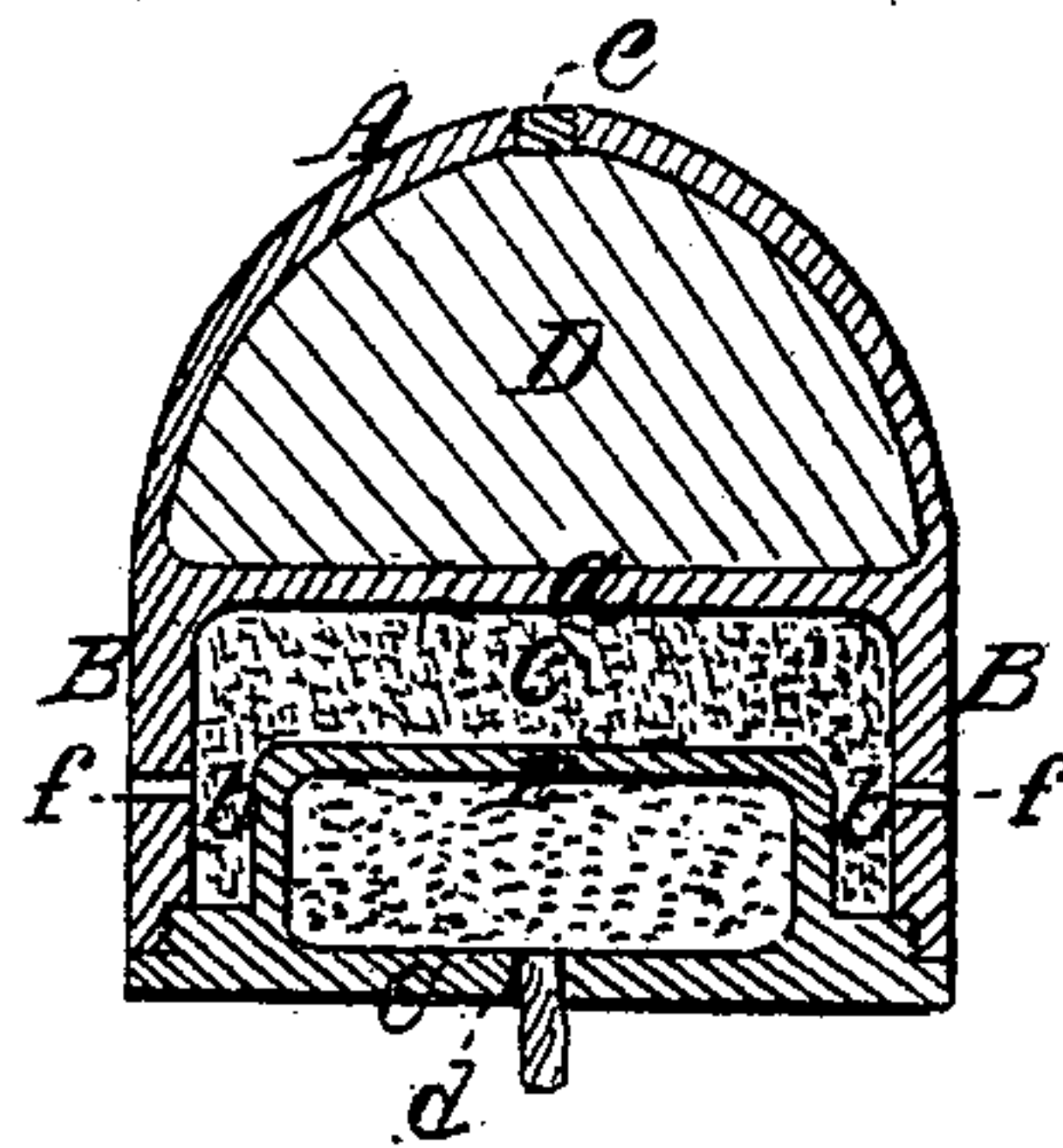


A. M. GEORGE.

Shell.

No. 15,760.

Patented Sept 23, 1856.



UNITED STATES PATENT OFFICE.

A. M. GEORGE, OF NASHUA, NEW HAMPSHIRE.

IMPROVED EXPLOSIVE SHELL.

Specification forming part of Letters Patent No. 15,760, dated September 23, 1856.

To all whom it may concern:

Be it known that I, A. M. GEORGE, of Nashua, in the county of Hillsborough and State of New Hampshire, have invented a certain new and Improved Explosive Shell for Ordnance; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification, which represents a central longitudinal section of the shell.

This invention consists in a certain arrangement and combination of chambers within a shell for the purpose of scattering melted metal or other incendiary substances by the explosion of the shell, and protecting the charge of powder or other explosive material within the shell from the heat of said metal or substance during the discharge of the shell from a piece of ordnance.

To enable others to make and use my invention, I will proceed to describe its construction and operation.

The shell represented is of cylindro-conoidal form, that being the form which I consider best adapted for the practical application of my invention, though other forms of shell might be used. The shell is constructed in two parts, of which one part forms the conoidal point A and cylindrical sides B B of the shell, with a partition, *a*, extending all across the interior at or nearly opposite the junction of the cylindrical and conoidal portions, the cavity D, within the conoidal point in front of the partition *a*, constituting the chamber for the melted metal. The other part constitutes the base or butt-end, C, of the shell, and contains the chamber E for the powder or explosive compound, which chamber may be of cylindrical or other form, but does not extend to the exterior of the base or butt-end, C, being small enough externally to leave a space, *b b*, between it and the sides of the shell, and is not of such depth as to reach the partition *a*. The base or butt C is secured to the cylindrical portion B B of the shell by screwing into it, or in any other equivalent way. The space *b b c*, between the powder-chamber E and the sides of the shell and the partition *a*, constitutes a chamber for the

reception of some substance which is a poor conductor of heat, or that contains much moisture that will be evaporated by an intense heat, and thus caused to carry off the heat. The substance with which I propose, generally, to fill this chamber is a compound of common salt and black-lead. The sides of the chamber *b b c* are provided with a number of small holes, *f f*, for the escape of steam or vapor that may be generated from the substance within it by heat, and the prevention of explosion of the said chamber by the pressure of such steam or vapor. The base or butt C is furnished with a fuse-hole, *d*, to allow of the introduction of a fuse to the powder-chamber. At the point of the shell there is a hole for the introduction of the melted metal to the chamber D, which hole is to be closed by the insertion of a screw-plug, *e*, after the chamber has been filled.

Previously to the filling of the shell the interior of the chamber D is coated with black-lead, to protect it from being melted by the melted iron with which it is charged. The shell may be kept with the chamber E, ready charged and chamber *b b c* ready filled, the chamber D of course remaining empty till just before the time for firing the shell, when it is filled by some suitable means and then closed by the insertion of the plug *e*, after which it must be inserted in the piece and fired as quickly as possible. The fuse is ignited in the same way as that of the common bomb-shell, and when the charge in the chamber E becomes ignited the said chamber and the whole of the shell explodes at once, and the melted metal is scattered about to the destruction of everything surrounding the spot where the explosion takes place.

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

The within-described arrangement and combination of the chambers D E and *b b c*, to constitute a new projectile for the scattering of melted metal or other incendiary substances.

A. M. GEORGE.

Witnesses:

Z. R. HINCKLEY,
S. AUGUSTUS SEARS.