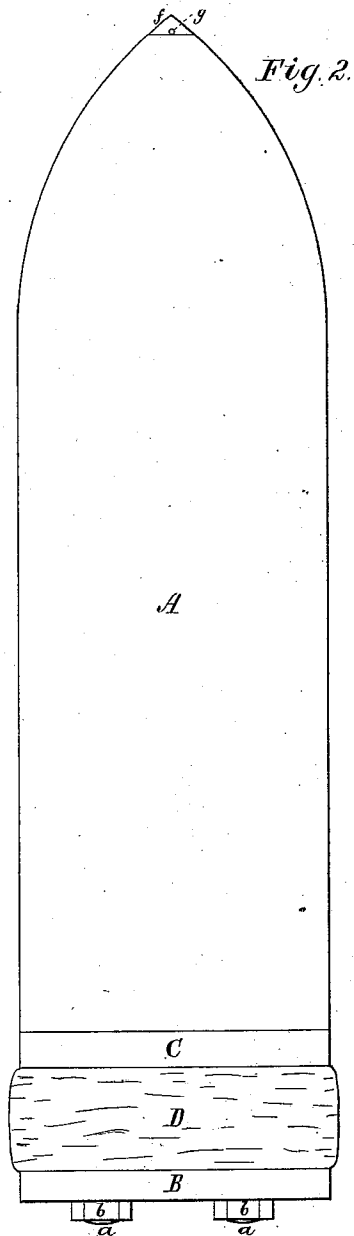
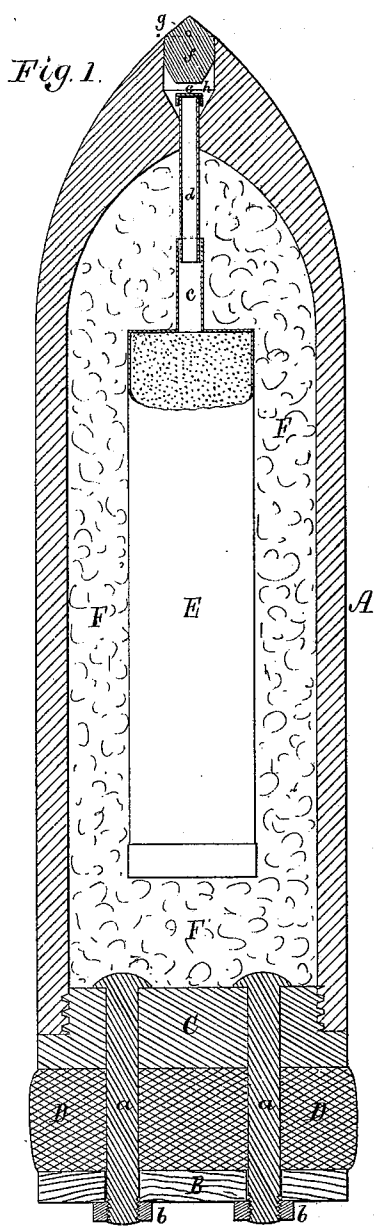


(No Model.)

B. B. HILL.  
-SHELL.

No. 316,970.

Patented May 5, 1885.



Witnesses:  
*S. N. Piper*  
*Ernest D. Pratt.*

Inventor.  
*Barton B. Hill.*  
by *R. H. Sedy* atty

# UNITED STATES PATENT OFFICE.

BARTON BERKLEY HILL, OF LOWELL, MASSACHUSETTS.

## SHELL.

SPECIFICATION forming part of Letters Patent No. 316,970, dated May 5, 1885.

Application filed December 12, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, BARTON BERKLEY HILL, of Lowell, in the county of Middlesex, of the Commonwealth of Massachusetts, have  
5 invented a new and useful Improvement in Explosive Projectiles; and I do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

10 Figure 1 is a longitudinal section, and Fig. 2 a side view, of a shell provided with my invention, the nature of which is defined in the claims hereinafter presented.

The object of my invention is to enable dynamite or other explosive material of like  
15 character to be used in a projectile to be discharged from a gun or cannon.

In the drawings, A denotes the body of a shell pointed at its front end, and having at  
20 its rear a sabot, B, between which and the screw-cap C of the body is a cushion, D, of felt or other proper elastic or yielding material, the said sabot and cushion being held to the screw-cap by screw-bolts *a*, and nuts *b* arranged with them, as represented. The two  
25 screw-bolts prevent the sabot and cushion from revolving independently of the shell-body. When the explosion of the gun or cannon powder-load takes place, the sabot will be driven  
30 toward the shell-body, and in consequence thereof the cushion will be compressed horizontally and be extended radially, so as to be forced firmly against the bore of the gun or into the riflings thereof, if the bore of the piece  
35 may be rifled.

Within the body of the shell, and concentric therewith, is a dynamite cartridge, E, which is surrounded on all sides and at its rear and front ends by a cushion or stuffing, F, of cotton or other proper elastic or yielding substance, to insulate the cartridge from the body  
40 of the shell in a manner to prevent explosion of the cartridge, either by accidental falling of the shell or while the shell is being discharged from a gun, by the explosion of the powder charge of such gun.

From the cartridge at its front end a tube,

*c*, projects, and receives another tube, *d*, fixed in the body of the shell, and extending from a chamber, *h*, in such body at its front end. On  
50 the outer end of the tube *d* is a percussion-cap, *e*, and there is in the mouth of the chamber *h* a plug, *f*, that projects beyond the body and is held in the chamber by a pin, *g*, that goes through the plug and rests against the  
55 end of the shell.

On the shell being in flight and striking point foremost against an object, the plug will be driven backward into the chamber and against the percussion-cap, which by the im-  
60 pact of the plug will be exploded, and fire from it will be driven into the cartridge to explode it.

It is essential to have the tube *c* empty, and to slide either on or within the fixed tube *d*,  
65 in order that the cartridge may move endwise more or less in its surrounding cushion or elastic insulator.

I claim—

1. The combination of the shell-body provided with the chamber in its front end, the  
70 plug arranged therein, and the primer-tube extending from such chamber into the charge-chamber of the body, with the cartridge provided at its front end with a tube to enter or  
75 slide on the primer-tube, and surrounded by a cushion or yielding stuffing, all being substantially as set forth.

2. The explosive projectile or shell-body provided at its rear end with the sabot or cushion, as described, and at its front end with a  
80 chamber, a firing-plug, and a priming-tube, as explained, in combination with a cartridge arranged within the said body, and provided not only with a tube to enter and slide on the  
85 priming-tube, but with a cushion or yielding stuffing extending around and in front and in rear of it, the said cartridge, all being substantially as represented.

BARTON BERKLEY HILL.

Witnesses:

R. H. EDDY,  
ERNEST B. PRATT.