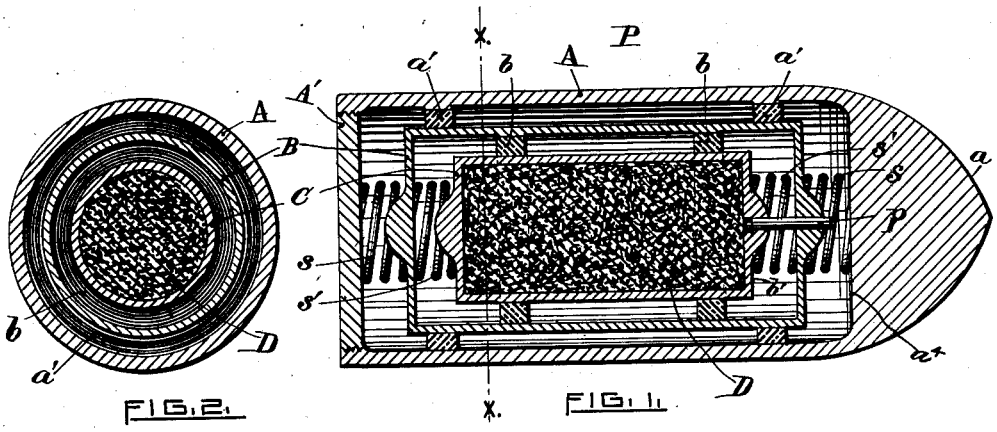
(No Model.)

H. P. GRISWOLD.

DYNAMITE SHELL.

No. 302,562. Patented July 29, 1884.



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UNITED STATES PATENT OFFICE.

HORACE P. GRISWOLD, OF PROVIDENCE, RHODE ISLAND.

DYNAMITE-SHELL.

SPECIFICATION forming part of Letters Patent No. 302,562, dated July 29, 1884.

Application filed May 17, 1884. (No model.)

To all whom it may concern:

Be it known that I, HORACE P. GRISWOLD, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Dynamite-Projectiles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to projectiles adapted to be charged with dynamite or other analogous explosives; and it consists, essentially, of a shell having a conical or other well-known exterior form adapted to be inserted within the bore of a gun of ordinary construction, in combination with one or more interior cylinders or chambers and suitable springs and packings, the central chamber being the holder for the explosive material, all combined and arranged within said outer shell and adapted to be fired from a gun charged with powder, as common.

The object of the invention is to so arrange the dynamite charge within the projectile, whereby in the ordinary course of handling the danger heretofore incident thereto is practically overcome, yet, at the same time, when fired from a gun the projectile, in striking the target, is made to automatically explode its charge of dynamite with the destructive result which usually accompanies such agent, all as will be more fully hereinafter set forth in this specification.

In the annexed sheet of drawings, Figure 1 represents a longitudinal central section through the projectile, showing the several parts in their normal position; and Fig. 2 is a transverse section through the same on line *x x*.

The following is a detailed description of the invention, including the manner of its operation.

P in the drawings represents the projectile complete, consisting of the outer shell, A, which may be of any desired form, or even spherical. Said shell is provided with a removable end or cap, A′.

B represents a hollow cylinder inserted within the shell A and retained in position laterally by means of rubber or other equivalent annular spring packing-rings, *a′ a′*. Springs *s* serve to retain said cylinder longitudinally. Within the cylinder B (an end thereof being removable for the purpose) is placed the chambered central cylinder, C, the latter being filled with dynamite D, or other explosives, this cylinder also being retained laterally by means of annular packings *b b*, while springs or buffers *s′ s′* at each end thereof serve to retain it longitudinally.

p is the exploding or firing pin of the projectile, adapted to extend through the front heads of both cylinders B C, as fully shown.

The operation of loading is as follows: The powder-cartridge is first placed within the bore of the gun and rammed home, after which the projectile J, containing the charge of dynamite, is inserted and pressed against the cartridge. The gun can now be ranged and fired as usual.

My projectile is adapted to be used in either heavy or light ordinance guns as well as in muzzle and breech loaders. At the instant of firing, the shell A (impelled by the expanding gases of the powder) moves forward against the resistance of the air, &c., while the dynamite-cylinder C within said shell tends to move longitudinally in the opposite direction, and cushions against the rear springs or buffers, *s s′*, thereby increasing the space between the inner end, *a′*, of the shell A and the front end of the pin *p*. The recoil of the springs within the chambers soon produces an equilibrium of the said cylinder C, so that when the end *a* of the projectile strikes the target the momentum of the cylinder C, together with the recoil of the outer shell, forces the surface *a′* thereof and the forward end of the pin together, the shock therefrom causing the fulminate at the rear of said pin to explode, which in turn produces the explosion of the dynamite D. The rings or bands *a′ b* serve to prevent an explosion, which might otherwise occur from a lateral shock or blow upon the shell A.

I contemplate, in certain cases, to dispense with the cylinder or shell B, in which case the said rings *a* would necessarily be made thicker laterally.

The outer shell, A, of this projectile can be adapted for use in either rifled or smooth-bore guns, substantially the same as the common powder-filled fuse-shells now so generally used.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an explosive projectile having an outer shell and means for obtaining access to its chamber, the combination therewith of a central chamber or shell charged with dynamite or other explosive material, springs or buffers for retaining said central chamber in position, and means for exploding the dynamite, all substantially as shown and set forth.

2. The projectile P, herein described, consisting of the outer shell, A, intermediate shell, B, and central shell, C, filled with dynamite or other explosive material, said internal shells being retained in position by means of springs or buffers *s s'* and annular packing *a' b*, the whole combined, arranged, and provided with means for exploding the center shell, all substantially as shown, and for the purpose set forth.

In testimony whereof I have affixed my signature in presence of two witnesses.

HORACE P. GRISWOLD.

Witnesses:
GEO. H. REMINGTON,
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