No. 811,048. PATENTED JAN. 30, 1906.

A. H. FRIEDEL.

SHELL.

APPLICATION FILED NOV. 8, 1904.

Fig. 1.

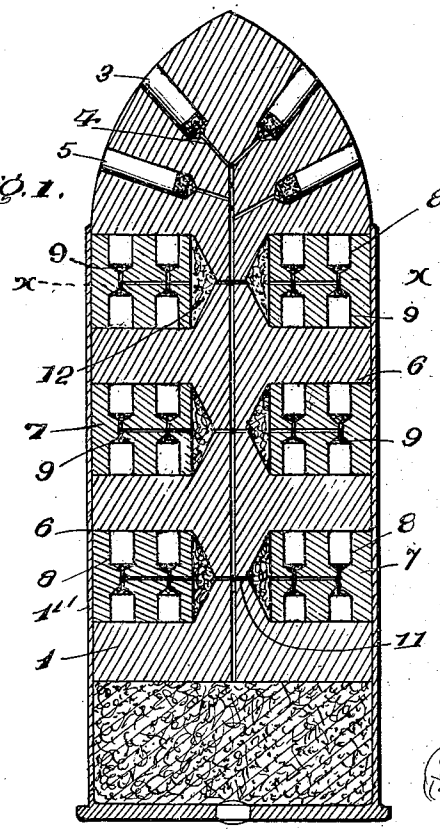


Fig. 2.

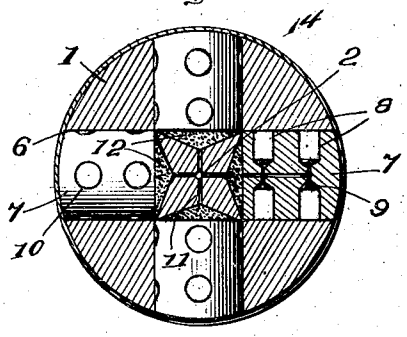


Fig. 3.

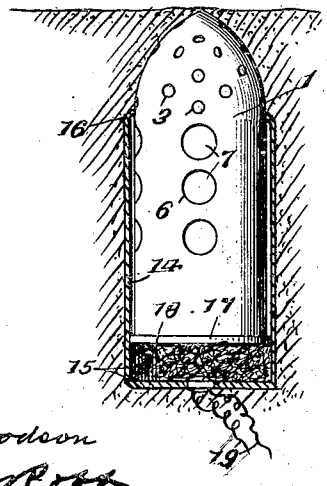
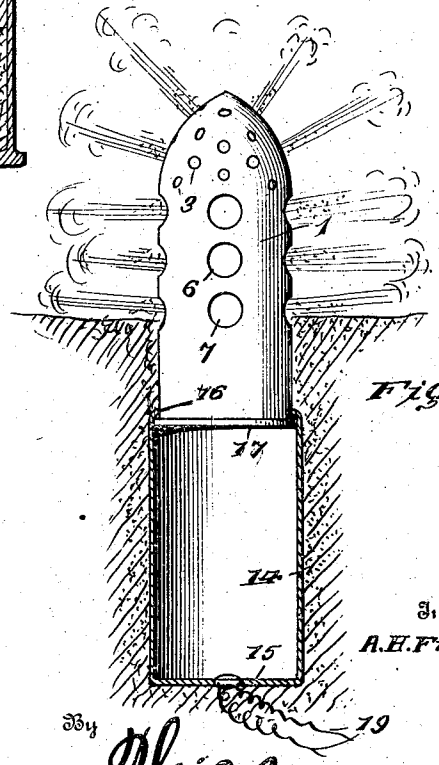


Fig. 4.



Witnesses

H. A. Woodson

J. M. Cox

Inventor

A. H. Friedel

By

Attorneys

UNITED STATES PATENT OFFICE.

ALBERT HUGO FRIEDEL, OF NEW YORK, N. Y.

SHELL.

No. 811,048. Specification of Letters Patent. Patented Jan. 30, 1906.

Application filed November 8, 1904. Serial No. 231,946.

To all whom it may concern:

Be it known that I, ALBERT HUGO FRIEDEL, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Shells, of which the following is a specification.

This invention provides a shell for use in warfare either to be projected from a cannon, mortar, or like heavy ordnance or to be placed in the field in ambush, fired by electricity.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and accompanying drawings.

While the invention may be adapted to different forms and conditions by changes in the structure and minor details without departing from the spirit or essential features thereof, still the preferred embodiment thereof is shown in the accompanying drawings, in which—

Figure 1 is a central longitudinal section of a shell embodying the invention. Fig. 2 is a cross-section thereof on the line x x of Fig. 1. Fig. 3 is a view showing the shell arranged to be fired by electricity. Fig. 4 is a view of the parts shown in Fig. 3, the shell being projected from the jacket or casing.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The shell 1 is of ordinary configuration, comprising a cylindrical body and a pointed end. A longitudinal opening 2 is formed centrally within the shell and is designed to receive either a slow-burning powder or a fuse by means of which the subsidiary charges are fired in successive order. The conoidal-shaped end of the shell has openings 3 formed therein to receive a charge 4 of powder and a projectile or bullet 5. The openings 3 are arranged at different relative angles to insure covering a wide range. Other openings 6 are formed along the sides of the shell and have a radial arrangement and are intended to receive smaller shells 7, each provided with a plurality of openings 8 to receive an explosive 9 and a missile or bullet 10, the openings 8 being in communication with a passage 11 central of the shell 7 and in communication at its inner end with the openings 6. An explosive 12 is supplied to each of the openings 6 in sufficient quantity to effect discharge of the shell 7. Each of the openings 6 is in communication with the opening 2, and the openings 3 are likewise in communication at their inner ends with said passage 2. The openings 8 in the shells 7 are in communication with the passage 11. The projectiles 5 and shells 7 are flush at their outer ends with the sides of the shell 1.

The shell may be of any size and contain any number of projectiles and smaller shells and is adapted to be shot from a cannon, mortar, battery, howitzer, or other heavy ordnance in the accustomed manner. When fired, the fuse or slow-burning powder contained in the passage 2 is ignited and sets off the charges in the openings 6, whereby the shells 7 are fired in rapid succession, said shells in turn discharging other bullets or projectiles 10, with the result that the field is searched and the object aimed at hit.

In the adaptation shown in Figs. 3 and 4 the shell 1 is arranged for use in the field and is intended to be buried in the ground, so as to be concealed, as shown most clearly in Fig. 3. A jacket or casing 14 is provided at its lower end with a base or supporting plate 15, and its upper end is inturned, as shown at 16, to engage with an outer rim 17 at the base of the shell 1 to limit its outward movement, as shown most clearly in Fig. 4. A small charge 18 of powder is placed within the jacket or casing 14, sufficient to project the shell, as indicated in Fig. 4, and ignite the fuse or slow-burning powder in the opening 2. The charge 18 is set off by means of a spark passed between the terminals of electric wires 19, which extend to a determinate point and are connected with an electric generator. When the charge 18 is fired, the shell 1 is projected beyond the surface of the ground, as indicated in Fig. 4, and discharges its projectiles 3 and shells 7 in every direction.

Having thus described the invention, what is claimed as new is—

1. A shell provided in its sides with a series of openings and having a passage in communication with each of said openings for setting off the charges therein, and a shell fitted in each of said openings and in turn provided in its sides with openings to receive an explosive and projectiles, substantially as set forth.

2. A main shell comprising a cylindrical

body having a conoidal-shaped end and having openings around the sides of the pointed end disposed at different relative angles and having radial openings in the sides of its body, an explosive and a projectile in each of the openings in the point, and a shell and explosive in each of the side openings, each of the shells being provided with a plurality of openings in each of which is placed an explosive and a projectile, the main shell having a passage in communication with all of the openings and having a slow-burning powder or fuse placed therein.

3. In combination, a casing adapted to receive an explosive, a shell within said casing and having openings in its sides to receive a plurality of projectiles, and means for limiting the movement of the shell with reference to the casing when the explosive is fired, substantially as set forth.

4. In combination, a casing having an extended base and adapted to receive an explosive, a shell arranged within the casing and provided in its sides with a plurality of openings to receive an explosive and projectiles, and means for limiting the movement of the shell within the casing when the explosive is set off.

5. In combination, a casing having a base at one end and an inner flange at the opposite end, an explosive supplied to the casing, and a shell having a series of openings in its side to receive an explosive and a projectile, said shell having an outer rim to engage with the inner rim of the casing and limit the outward movement of the shell, substantially as set forth.

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

ALBERT HUGO FRIEDEL. [L. S.]

Witnesses:
CHAS. HOYER,
HERMAN HOYER.