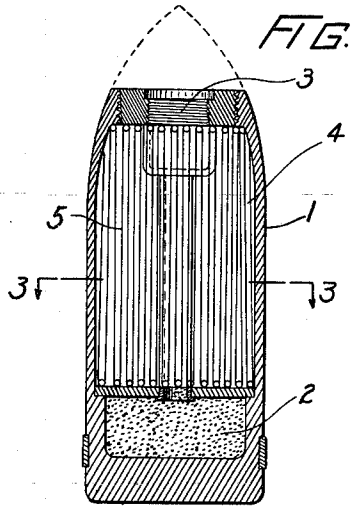
E. L. ROBINSON.

PROJECTILE.

APPLICATION FILED JULY 20, 1915.

1,247,331. Patented Nov. 20, 1917.

FIG. 1



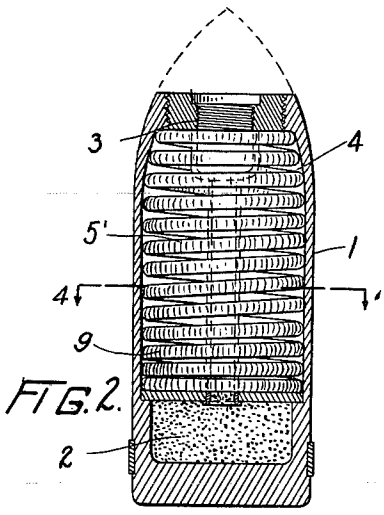


FIG. 2.

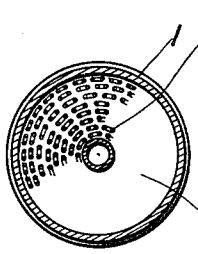


FIG. 3.

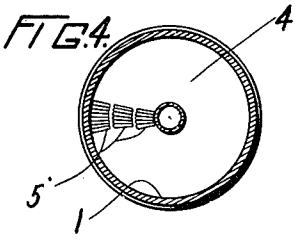


FIG. 4.

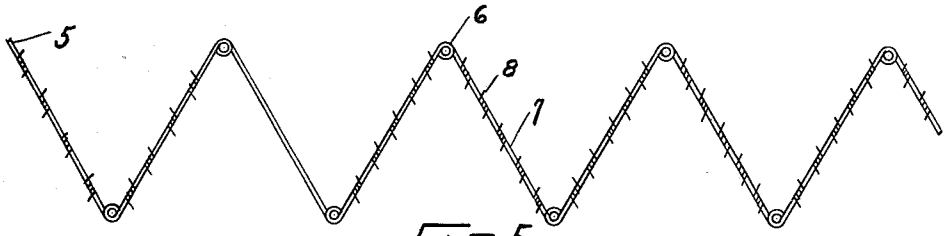


FIG. 5.

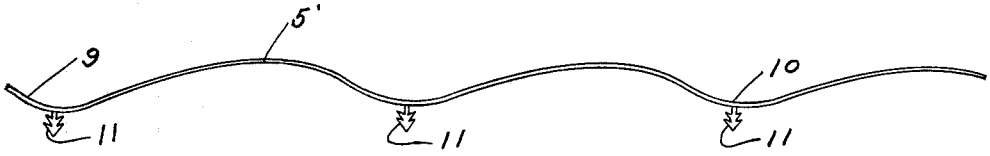


FIG. 6.

INVENTOR
EDWIN L. ROBINSON

BY ATTORNEY

UNITED STATES PATENT OFFICE.

EDWIN L. ROBINSON, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR OF ONE-HALF TO JOSEPH A. STEINMETZ, OF PHILADELPHIA, PENNSYLVANIA.

PROJECTILE.

1,247,331. Specification of Letters Patent. Patented Nov. 20, 1917.

Application filed July 20, 1915. Serial No. 40,991.

To all whom it may concern:

Be it known that I, EDWIN L. ROBINSON, a citizen of the United States, residing at Providence, county of Providence, State of Rhode Island, have invented certain new and useful Improvements in Projectiles, of which the following is a specification.

This invention relates to projectiles and the object of the invention is to produce a shell which will deliver upon bursting or otherwise discharging its contents, a length of barbed wire or the like for the purpose of stopping an advancing enemy or for preparing for defense a ground over which the enemy is about to advance.

The utilization of the barbed wire entanglement as an important feature in modern warfare has proven both its general effectiveness and also has developed specially a means of destruction through the cutting away by pioneers or through the previous destruction by gun fire. The advantage of being able to establish wire entanglement at distances and in zones covered by hostile gun fire preventing the operation of engineers or pioneers in the establishment of wire fences has made it extremely desirable to be able to produce wire entanglement by other than the usual means.

To this end I have devised my present invention, in which I propose to provide projectiles capable of distributing and extending barbed wire or like material by artillery fire.

Briefly my invention consists in providing shells with wire or like material so arranged that upon the bursting of the shell or the explosion of the material it will automatically spread itself so that not only will as much ground be covered as possible but that the wire so delivered will be entangled and enmeshed with whatever it comes in contact.

The construction and use of such projectiles will be more fully discussed in the specification which follows. In the drawings I have shown as an illustrative embodiment, two forms of projectiles which I believe to be well calculated for the purpose indicated and which illustrate the principle of my invention. Throughout specification and drawings, like reference numerals are applied to indicate corresponding parts.

In the drawings:

Figure 1 is a section through a shell in accordance with my invention.

Fig. 2 is a corresponding section through a modification in which wire is laid in coils.

Fig. 3 is a section on the line 3—3, Fig. 1.

Fig. 4 is a section on the line 4—4, Fig. 2.

Fig. 5 is an illustration of distended section of wire employed as shown in Fig. 1, and

Fig. 6 is a similar view of distended wire as employed in Fig. 2.

Referring to the form shown in Fig. 1 I provide a usual shell 1 which may be of any known type and has the susal bursting charge 2 at its base and the usual fuse 3 at its tip. Within the shell cavity 4, I introduce a wire element 5. The element as shown in Fig. 5 consists of a section of wire turned at regular intervals in loops 6 connected by substantially straight intervening loops 7 provided with any suitable barbing as indicated at 8. The wire being of a general resilient nature affords through the loops 6 a spring structure so that the wire tends to spread itself automatically as soon as released from the shell 1.

In the form shown in Fig. 2 I employ the same form of shell 1, with the bursting charge 2 and fuse 3, but in this case the shell is formed of conveniently coiled wire element 5^1 which is first formed with a small spiral winding 5^2 which is then laid in the shell in a continuous coil 9 as indicated in Figs. 2 and 3. As shown in Fig. 6 this wire will, upon release from the shell by the bursting of the charge or otherwise, distend itself to substantially a straight line with only slight turns as indicated at 10 where the bend of the wire remains.

With either form of these projectiles, the bursting charge or other means of expelling the contents of the shells, will deliver the wire in a form which will expand and spread so that as the shell bursts the wire is delivered against any desired object or upon the ground in such a manner that it will readily entangle with whatever it meets. In this manner, it is possible to cover a front

exposed to the enemies' attack by shell fire alone and to prepare it with wire entanglement without exposing troops to the enemies' fire. It is also believed that such entanglement may be formed about an enemies' position to prevent or hamper the movement from that position so that the fire may be concentrated upon them for the destruction of the troops or for compelling the surrender of the force.

In Fig. 6 I have further shown the turns 10 provided with depending barbs 11 which are adapted to engage the ground, or trees, fences, or other obstacles when the shell bursts and assist to anchor the entanglement. The barbs 11 may be secured to the loops 10 or to any other parts of the length 5^1 in any desired manner as by soldering or otherwise.

Various modifications may obviously be made in the form of the wire used and the manner in which it is packed within the shell. Also various forms and modifications may be used in the means for expelling the contents of the shell or for causing the bursting of the shell. The forms shown are merely illustrative of the principles of the invention, the essence of the invention being the provision of a projectile with an elongated, entangling or enmeshing medium such as barbed wire and the provision for the explosion of that medium at predetermined time in the flight of the projectile.

What I therefore claim and desire to secure by Letters Patent is:

1. In a projectile of the class described, a shell, a dischargeable content comprising a length of resilient barbed wire formed with spaced spring turns and folded upon said turns and disposed longitudinally within said shell for expulsion therefrom.

2. In a projectile, a casing, and a dischargeable content therein, consisting of a length of resilient barbed wire disposed as a coiled spring structure laid in said casing in resiliently expanding spaced parallel turns with spring bends between said turns, and adapted to assume zigzag formation upon expulsion.

3. A projectile charge consisting of a length of resilient barbed wire expansibly confined in compressed condition within the projectile, and laid in spaced substantially parallel turns therein, said charge automatically spreading in distended formation upon expulsion from said projectile.

4. A charge comprising an automatically expanding resilient bundle of confined turns of a barbed material.

5. A charge comprising a releasable bundle consisting of a length of resilient wire confined in parallel expansible turns and barbed at suitable intervals.

6. A charge comprising a releasable bundle consisting of a length of resilient wire confined in parallel expansible turns and barbed at said turns.

7. An ordnance charge comprising an automaticailly expanding resilient compacted bundle of sinuous barbed material.

8. An ordnance charge comprising a compacted bundle of an elastic, sinuous, barbed strand adapted to be discharged from a suitable arm, and automatically active when freed to extend and form a resilient, entangled barrier.

9. As a new article of ordnance, a dischargeable entanglement consisting of a resilient mass of barbed wire expansibly confined within the discharging apparatus in a condition adapting it to automatically distend upon expulsion.

10. A new article of ordnance consisting an entanglement of inherently resilient barbed wire expansibly confined in a condition adapting it to automatically distend over a relatively large area upon expulsion from a suitable projecting apparatus.

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

EDWIN L. ROBINSON.

Witnesses:

MAURICE ROBINSON,

MARY R. BOGAN.