

H. F. SHARTZER.
ELECTRIC GUN.
APPLICATION FILED JUNE 13, 1917.

1,284,155.

Patented Nov. 5, 1918.

Fig. 1.

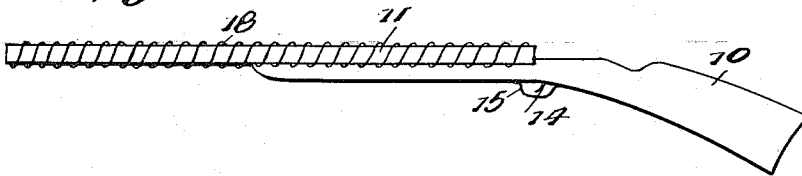
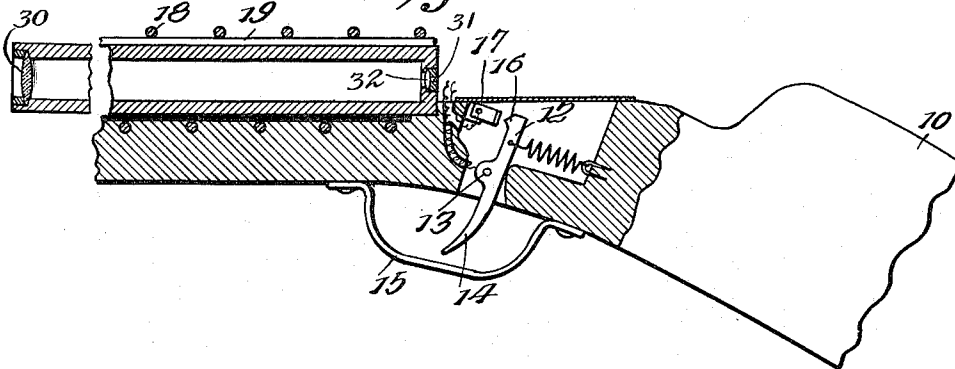
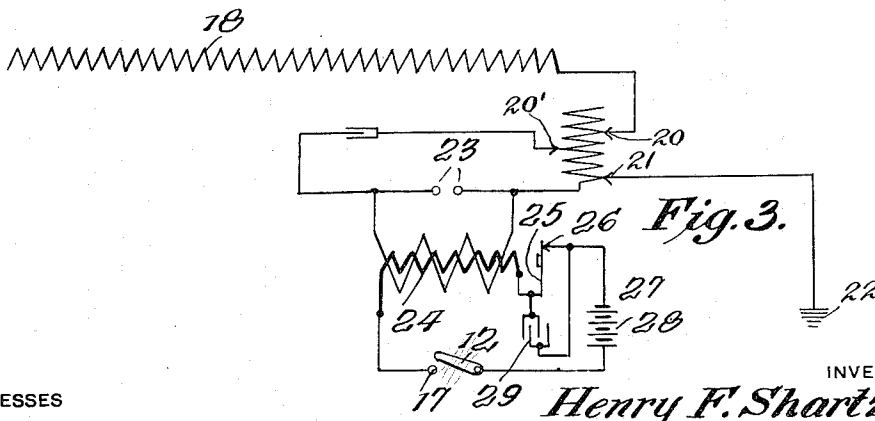


Fig. 2.



WITNESSES

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ELECTRIC GUN.

1,284,155.

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To all whom it may concern:

Be it known that I, HENRY F. SHARTZER, a citizen of the United States, residing at Leitchfield, in the county of Grayson and State of Kentucky, have invented certain new and useful Improvements in Electric Guns, of which the following is a specification.

This invention has relation to radio energy apparatus, with special reference to the embodiment therein of what might be termed an electric rifle, and has for an object to provide a device for directing Hertzian waves in any direction desired whereby to energize apparatus located at a distance and adapted to receive the waves to release explosives or the like for military purposes.

Another object of the invention is to provide apparatus for the purpose above set forth in the nature of and having the appearance of a rifle whereby the same may be aimed and Hertzian waves projected therefrom in the direction pointed out by the rifle for the purpose above set forth.

Another object of the invention is to provide an apparatus in the nature of a rifle including a barrel having a bore and embodying a magnifying lens mounted in the muzzle whereby to direct and concentrate a ray upon a distant point.

In addition to the foregoing my invention comprehends improvements in the details of construction and arrangement of the parts to be hereinafter more fully described and particularly set forth in the appended claims.

In the accompanying drawings in which similar and corresponding parts are designated by the same characters of reference throughout the several views in which they appear:

Figure 1, is a view in side elevation of an apparatus constructed in accordance with my invention.

Fig. 2, is a fragmentary view thereof in section, illustrating in detail the essential parts, and

Fig. 3, is a diagrammatic view illustrating auxiliary apparatus and the method of electrically connecting the same with my invention.

With reference to the drawings, 10 indicates the stock of a rifle of conventional configuration and 11 the barrel which may be of steel and formed with a bore which may be

continued from end to end or may be closed at the rear end as illustrated in Fig. 2.

A recess is formed in the stock adjacent the rear end of the barrel to receive a switch mechanism, which comprises a lever 12 fulcrumed as at 13 within the recess provided with a trigger portion 14 which extends without the recess and beneath the rifle within a trigger guard 15. The other portion of the lever extending within the recess and in a direction opposite the direction of extension of the trigger portion is formed with a sharpened terminal 16 adapted to engage a spring contact finger 17 mounted upon one of the inner walls of the recess.

A coil of bare copper or aluminum wire 18 is wound around the barrel of the device from one end to the other, being held in spaced relation from the barrel, however, by means of strips of insulating material 19. The rear terminal of the coil 18 is connected to one sliding contact 20 of a transformer while the other sliding contact 21 is grounded as at 22. The terminal of the transformer is then connected to one of the spherical members 23 which are disposed in close relation to permit a spark to jump therebetween while the other spherical member is connected to a sliding contact 20' of the transformer by means of a conductor having a low capacity condenser interposed therein. The primary coil 24 is connected at one terminal to the contact finger 17 of the trip mechanism located within the rifle, while the other terminal of the primary is connected to a vibrating contact 25. Said contact is adapted for intermittent engagement with a stationary contact 26 placed in communication by means of a conductor 27 with the lever 12 of the aforesaid switch mechanism. A source of current 28 is also interposed in said conductor 27. To increase the efficiency of operation of the induction coil a condenser 29 may be connected across the vibrating contact 25 and stationary contact 26 as indicated in Fig. 3.

In operation the rifle is directed toward the object intended to be affected by the Hertzian waves, and at the proper moment the trigger 14 is drawn so as to complete the circuit through the primary of the induction coil whereby a high tension current is induced in the secondary with the result that Hertzian waves emanate from the coil 18. It has been my experience that with a coil

surrounding the metallic barrel such as I have herein disclosed, the waves will be directed in a particular abundance along a line coincident with the axis of the said coil

18. While waves will of course be radiated in a direction at right angles to the axis of the coils, and from every convolution thereof, the waves will be emanated more abundantly in an axial direction relatively to the coil. The object of my invention is therefore, to provide a device whereby the waves may be directed in particular toward some apparatus located at a distance and designed especially to be affected and energized by Hertzian waves. To this end the apparatus, for military purposes may be in the nature of a mine or other container of high explosives, having associated therewith a receiving apparatus for Hertzian waves, which may include a sensitive projector, grounded so as to complete the circuit through the ground 22; a sensitive relay actuatable by current passing through the projector, and an electric fuse in a circuit which may be energized by operation of the relay, together with any other apparatus that may be necessary to effect the object desired. Since receiving apparatus, of the nature above stated are well known in the art, it is not thought necessary to describe any particular type of apparatus in detail.

A magnifying lens 30 of the best quality obtainable is fitted in the muzzle of the barrel. It has been my experience that with this arrangement a ray generated by the high tension current will be concentrated at a distant point or at the focal distance of the lens, and that intense heat will be generated at the said focal point of concentration. The end of the barrel opposite that end provided with the lens 30 may be formed with a reduced aperture 31 and a concave lens fitted in said opening of a focal distance adapted, in conjunction with the focal strength of the lens 30 to form a telescope whereby the object at which the rifle is pointed may be enlarged and rendered more distinct thereby facilitating the use of the instrument, without affecting the capacity of the lens 30 to concentrate the wireless waves. It is to be

noted that inasmuch as the lens 30 is rather small in diameter in order that it may be fitted in the end of an ordinary size gun barrel or of a barrel slightly larger, it will be necessary to generate wireless waves of relatively short lengths in order that a beam of rays of sufficient concentration may be refracted, and directed in the manner desired. To this end a transformer and low capacity condenser are used, although it will be understood that any form of wireless wave generating apparatus capable of producing a short wave length will be amply sufficient and operable for the purposes of my invention.

While I have illustrated and described my invention with some degree of particularity, I realize that in practice various alterations thereover may be made, and I therefore desire to reserve the right and privilege of changing the form of the details of construction or otherwise altering the arrangement of the correlative parts without departing from the spirit of the invention, or the scope of the appended claims.

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

1. An apparatus for directing wireless waves including a rifle stock, a steel tubular barrel mounted thereon, a coil of wire wrapped spirally around the barrel with the convolutions spaced therefrom, a switch mechanism mounted on the stock, and means for generating high-frequency oscillatory currents of short wave lengths for transmission through the coil.

2. An apparatus for directing and transmitting rays of energy including a hollow steel core, a magnifying lens fitted into one end of the core, a coil of wire wrapped spirally around the core, and means for generating wireless waves of short lengths for transmission through the coil.

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

HENRY F. SHARTZER.

Witnesses:

E. T. SHREWSBURY,
J. MORGAN BERRY.