(No Model.)

E. A. MONFORT.

CARTRIDGE FOR ELECTRIC FIRE ARMS.

No. 317,409. Patented May 5, 1885.

Fig. 1.

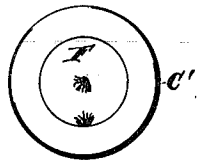


Fig. 2.

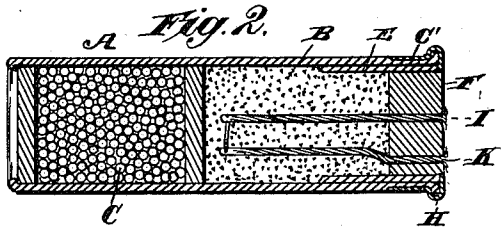


Fig. 6.

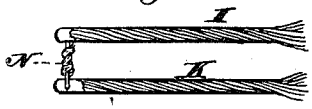


Fig. 3.

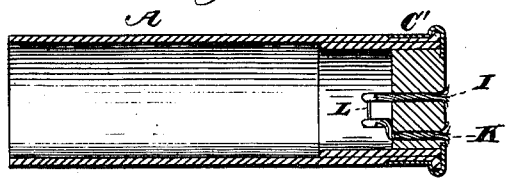


Fig. 4.

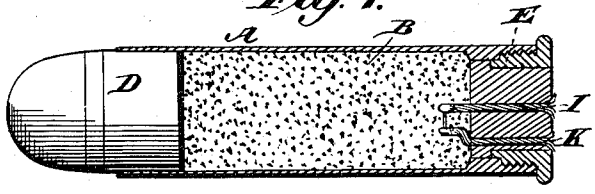
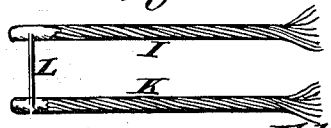


Fig. 5.



Witnesses.

Robert Everett.

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Inventor.

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By James L. Norris.

Atty.

UNITED STATES PATENT OFFICE.

EDGAR A. MONFORT, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE UNIVERSAL ELECTRIC ARMS AND AMMUNITION COMPANY, OF SAME PLACE.

CARTRIDGE FOR ELECTRIC FIRE-ARMS.

SPECIFICATION forming part of Letters Patent No. 317,409, dated May 5, 1885.

Application filed November 18, 1882. Renewed March 28, 1885. (No model.) Patented in England January 9, 1883, No. 125; in France July 9, 1883, No. 156,468, and in Belgium July 9, 1883, No. 161,968.

To all whom it may concern:

Be it known that I, EDGAR A. MONFORT, a citizen of the United States, residing at New York, in the county and State of New York, have invented new and useful Improvements in Cartridges for Breech-Loading Fire-Arms, of which the following is a specification.

This invention relates to an electric cartridge adapted for use in a breech-loading fire-arm, in which a current of electricity for firing the cartridge is derived from an accumulator, secondary battery, or any suitable electric generator located in the stock of the gun.

The fire-arm for which this cartridge is especially designed is shown and described in another application which I have made for Letters Patent of the United States, and hence does not require illustration in this application.

The object of my present improvement is to provide a cartridge in which the conducting-wires are so disposed that the charge of powder shall be ignited with certainty and all the powder burned, thus giving to the ball or charge of shot the full benefit of its expansive force; also to so dispose the conducting-wires that when the cartridge is placed in the gun their outer terminals shall always be in position for electrical connection with the contact of the breech-block; also to provide a cartridge which is adapted to be fired by an electric current, and which can be made in a cheap and simple manner. These objects I attain by means of the devices illustrated in the annexed drawings, in which—

Figure 1 is an end view of the cartridge, and shows the position of the outer terminals of its conductors. Fig. 2 is a longitudinal section taken centrally through the cartridge. Fig. 3 is a similar view of the cartridge-shell before it is loaded, the conductors in this instance being made somewhat shorter than in Fig. 2. Fig. 4 is a longitudinal section taken through a cartridge constructed in accordance with my invention and loaded with ball, the butt or head of the cartridge being somewhat modified in construction. Fig. 5 is an enlarged view of the conductors for the cartridge, with the platinum wire connecting their tips or inner ends. Fig. 6 shows the two conductors with gun-cotton wrapped around the platinum wire.

A indicates the cartridge-shell, which is shown in Figs. 2 and 4, loaded with a charge of powder, B, and in the former figure with a charge of shot, C, while in the latter a ball, D, is substituted for the shot. Where the shell is loaded with shot, the usual wads are required, but where a ball is employed such wads can be dispensed with.

In Figs. 1 and 2 a short tube, E, of paper or metal, is fitted in the rear or butt end of the shell, and a cylindrical wooden block, F, fitted in said short inner tube, so as to form the head of the cartridge.

In Fig. 1 the outer ends of the shell and its inclosed tube are covered by a metal band, C′, fitted upon the shell and against the ends of the shell and inner tube. This band is prevented from coming off by means of an annular rib, H, on the butt end of the shell, the band being compressed upon the shell so as to conform to said annular ribs.

In Fig. 3 a band, C′, is applied in like manner, with the exception that it laps over a portion of the outer face of the wooden block.

I and K are the two conductors, each of which is composed of a series of fine wires twisted together, with their outer ends terminating directly at the outer face of the cartridge-head. By so constructing the conductors their outer ends afford a more perfect and reliable contact for the movable breech-block described in my application, Serial No. 77,102, filed of even date herewith. Moreover, the said movable breech-block, when the gun is fired, and when moved into and out of position, tends to press the ends of the conductors flat against the cartridge-head. By making each conductor of several fine twisted wires their outer terminals can be conveniently spread out, by a pin or other implement, after the cartridge has been fired, thereby bringing such terminals into the best condition to form an extended and perfect contact with the breech-block, and permitting the same cartridge-shell to be used many times. This construction is therefore obviously of advantage over those conductors composed of a single wire. These conductors pass through the wooden block into the charge of powder, and

have their outer terminals on the outer face of the block. The conductor I passes through the center of the block, and also longitudinally through the center of the charge of powder, while the remaining conductor K passes through the block and charge in a line eccentric to the center of each. These two conductors have their inner ends or tips terminating near the base of the charge of shot, and have their said tips connected together by a platinum wire, L, whereby when an electric current passes through the said conductors and platinum wire the latter, owing to the resistance which it offers to the current, will become highly heated and incandescent, so as to ignite the charge. By locating the connected tips of these conductors near the base of the charge of shot the powder will all be burned, and hence the full benefit of its expansive force obtained.

In Fig. 4 a ball, M, is used in place of a charge of shot. In such instance the shell can be made of metal, if preferred, while in the cartridges charged with shot the shell will be preferably made of paper, although it can be composed of metal. The block F, inserted in this metal shell, is made of hard rubber, and the short tube E, interposed between the shell and the said block, is screw-threaded and screwed into the end of the shell, which is screw-threaded on its interior at the butt-end, so as to engage the short tube. The conductors in Fig. 4 extend to a point near the base of the ball, and in Fig. 3 the conductors are also made short, so that they will not extend far into the charge of powder. In some instances, to insure the ignition of the charge of powder, I provide the platinum wire with a wrapping, N, of gun-cotton, as shown in Fig. 6. This being more readily ignited than powder, will be ignited with certainty, and thereby ignite the powder.

The cartridge is designed to be placed in a breech-loading fire-arm having either a hinged barrel or a hinged or sliding breech-block, which latter will be provided with contacts adapted to electrically connect the terminals of the wires in the cartridge with the poles of a battery arranged in the gun, whereby, when the circuit is established, as described in my said application, the current will pass through the conductors and the platinum wire in the cartridge, so as to cause the platinum to become incandescent, and thereby ignite the charge.

It will be seen that by centrally locating one of the conductors in the cartridge it will, when the cartridge is placed in the gun, always be in position to connect with a contact centrally located in the breech-block, while by locating the remaining conductor of the cartridge eccentrically, as described, it will always be in position to connect with an annular contact, which can be located in the forward end of the breech-block around the central contact.

What I claim is—

1. The gun-cartridge herein described, having electrical conductors extended through the cartridge-head, each conductor consisting of a series of fine wires twisted together, with their outer ends terminating directly at the outer face of the cartridge-head and spread, the inner ends of the conductors being connected by a platinum or similar wire, substantially as described.

2. An electric cartridge provided with two conductors passing through a block at the butt-end of the cartridge, and connected at their tips within the charge of powder by a platinum wire, said platinum wire being provided with a wrapping of gun-cotton, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

EDGAR A. MONFORT.

Witnesses:
JAMES L. NORRIS,
J. A. RUTHERFORD.