(No Model.)

R. H. ELLIOTT.

DEVICE FOR PLACING ELECTRIC BLASTING FUSES.

No. 556,882. Patented Mar. 24, 1896.

Fig. 1.

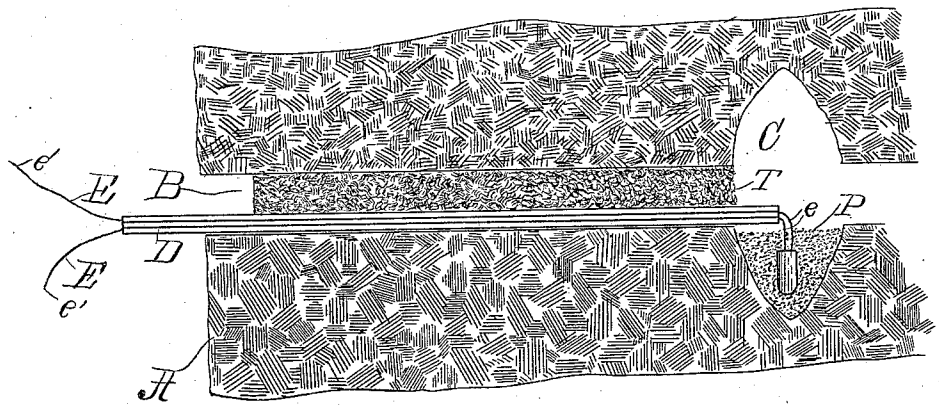


Fig. 2

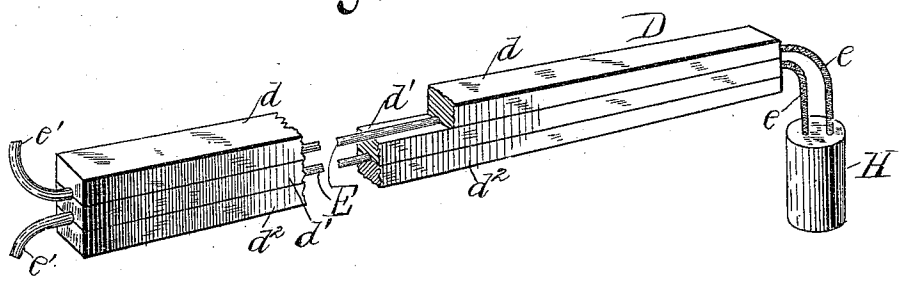
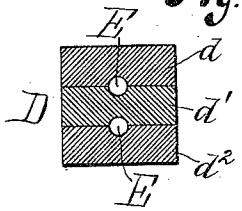


Fig. 3



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UNITED STATES PATENT OFFICE.

ROBERT H. ELLIOTT, OF BIRMINGHAM, ALABAMA, ASSIGNOR TO THE ALABAMA BLASTING AND MINING COMPANY, OF SAME PLACE.

DEVICE FOR PLACING ELECTRIC BLASTING-FUSES.

SPECIFICATION forming part of Letters Patent No. 556,882, dated March 24, 1896.

Application filed July 13, 1895. Serial No. 555,867. (No model.)

To all whom it may concern:

Be it known that I, ROBERT H. ELLIOTT, a citizen of the United States, residing at Birmingham, in the county of Jefferson and State of Alabama, have invented certain new and useful Improvements in Igniting Devices to be Used in Blasting; 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.

My invention relates to improvements in igniting devices to be used in exploding charges in mines for blasting purposes; and it consists of certain novel features hereinafter described and claimed.

Heretofore it has been generally the custom to use an electric fuse connected by insulated wires of sufficient length to reach through the bore-hole to the rear and pliable throughout their entire length. With this arrangement the insulating material commonly wrapped around the wires is expensive, and it is difficult to determine the exact position of the fuse in the bore-hole, owing to bends in the wires, and practically impossible to determine the position of the fuse as regards the explosive material in the reamed-out chambers.

In my invention the wires are only insulated by wound insulation for a short distance from the fuse, and are then held between superimposed slabs of wood, pasteboard, or other like material, which are glued or otherwise fastened together, and which serve not only to insulate the naked wire, but also as the guiding-rod and measuring-stick, by means of which the fuse may be conveniently and quickly pushed to the desired position in the bore-hole.

My invention will be more fully understood by reference to the accompanying drawings, wherein the same parts are indicated by the same letters throughout the several views.

Figure 1 represents a section through the bore-hole, showing the fuse in position. Fig. 2 represents a perspective view of the fuse and rod detached from the bore-hole and parts being broken away. Fig. 3 represents a transverse section through the insulating and guide rod.

A represents the seam of coal or other mineral to be blasted.

B represents the bore-hole, having the enlarged chamber C reamed out in the usual way.

D represents the insulating and guide rod, which consists of a plurality of strips b, b', and b^2, secured together in any convenient way, but preferably glued together, and holding between them in appropriate grooves the wires E, which are insulated at their inner ends e leading to the fuse H, and may or may not be insulated at their outer ends e', as desired.

P represents the powder or other explosive material, and T represents the tamping material.

In practice the rod D is pushed into the bore-hole until the fuse H hangs down in the powder-chamber, as shown in Fig. 1. Then the explosive material is put into place in the usual way, ordinarily burying the fuse therein. Then the tamping material T is rammed in and the apparatus is ready for the blast.

It will be seen that the rod D being stiff and lying straight along the bottom of the bore-hole will not interfere with the ready insertion of the blasting-charge nor with the placing of the tamping material, which may be conveniently rammed into place without disturbing the wires, whereas when the wires are simply insulated by the ordinary winding and are laid in the bottom of the bore-hole in the ordinary way the tools used in inserting the blasting-charge and the tamping material are very likely to catch in the wires, displacing the fuse and rendering it liable either to act poorly or to fail to act at all.

The pliable portion of the wires beyond the end of the rod D should be sufficient to allow the fuse to hang down to the proper position in the blasting-chamber, and this might be readily adjusted for different kinds of mining, dependent upon the size of the blasting-chamber and the charge of explosives to be used. While I have shown three of these insulating-strips forming the rod D, which is the simplest form of construction, the two wires might be placed in parallel grooves between a single pair of strips, or a plurality of strips may be placed between and on either

side of the wires. Moreover, the rod may be rounded or of any other convenient shape.

For use in damp mining the rod should be shellacked or varnished, so as to make the same approximately waterproof, or it might be oiled or wound with waterproof material, if desired.

It will be obvious that many modifications of the herein-described apparatus might be made which could be used without departing from the spirit of my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In an igniting device for use in blasting, the combination with an electric fuse, of flexible wires connected to said fuse, and covered with flexible insulating material for a short distance from said fuse, and a rod made of insulating material and inclosing the portion of said wires adapted to lie in the bore-hole and terminating a short distance from the fuse, substantially as described.

2. In an igniting device for use in blasting, the combination with an electric fuse, of flexible wires connected to said fuse, and covered with insulating material for a short distance from said fuse, and a rod made of a plurality of strips of insulating material inclosing the portion of said wires adapted to lie in the bore-hole, and terminating a short distance from the fuse, substantially as described.

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

ROBERT H. ELLIOTT.

Witnesses:
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