C. STOWELL.

BLASTING BY ELECTRICAL CURRENTS.

No. 36,824. Patented Oct. 28, 1862.

Fig: 3.

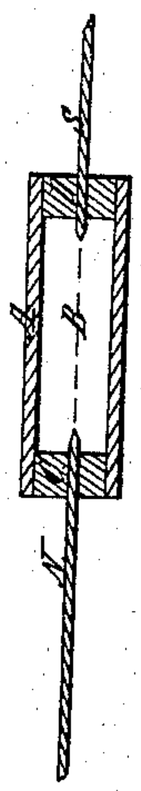

Fig: 4.

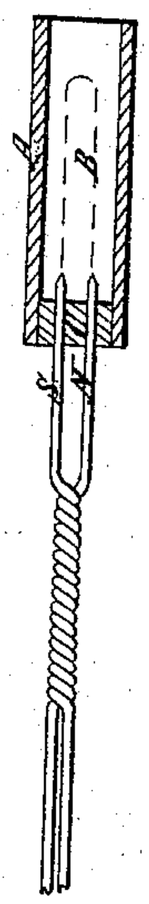

Fig: 1

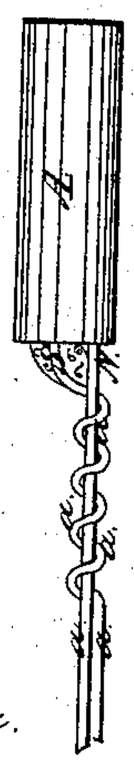

Fig: 2.

Witnesses.

Wm M. Gaylord.

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CHARLES STOWELL, OF CONCORD, ASSIGNOR TO SELF AND WILLIAM M. GAYLORD, OF NORTHAMPTON, MASSACHUSETTS.

IMPROVEMENT IN BLASTING BY ELECTRICAL CURRENTS.

Specification forming part of Letters Patent No. **36,824**, dated October 28, 1862.

To all whom it may concern:

Be it known that I, CHARLES STOWELL, a citizen of the United States of America, and a resident of Concord, in the county of Middlesex and State of Massachusetts, have invented an Improved Electrical Apparatus to be used in Discharging Cannon, Blasting Rocks, &c.; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 denotes a side view, and Fig. 2 a longitudinal section, of my invention. Figs. 3 and 4 illustrate certain well-known kinds of apparatus on which my invention is an improvement, they being referred to in order to particularly distinguish the principle of my said invention, or its difference with what may be considered old.

My invention has reference to the connection of two electric-circuit wires by a thin strip of platina in a manner to shield the platina from injury and enable the shield to receive a gunpowder or an explosive charge without any material disturbance of the platina.

In Fig. 3 the strip of platina is shown at B as stretched between and soldered to the two electric-circuit wires N S, and surrounded by a tubular shield, A, the wires passing respectively through insulating-plugs C D, inserted in the shield at its ends.

It will be very evident that the arrangement shown in Fig. 3 will not admit of the shield and its contents being easily or conveniently introduced in the drill-hole of a rock or into the bore of a gun by the muzzle thereof, and whether the apparatus be either in or out of a cartridge or charge.

In Fig. 4 the strip of platina is represented as bowed and affixed to the two wires N S inserted into one end of the shield, or into an insulating block or plug, C, placed therein. The difficulty with this latter arrangement is that the platina, being so very thin and delicate, is liable to be crushed or broken or bent down during the process of charging the tube A with an explosive charge.

In carrying out my improvement I make use of a metallic tubular shield or box, A, (see Figs. 1 and 2,) and solder one end of one of the electric-circuit wires N S to it. Both wires are to be introduced into one end of the shield, and they are to be insulated from one another by means of a covering, *a*, of cotton, linen, or silk thread wound around each. Where they enter the shield they may be plastered with shellac, as shown at C. For the sake of preventing the wire S from being drawn out of the shield such wire and the wire N may, after being provided with insulating-coverings *a a*, be twisted together a short distance from the shield, care being taken not to allow the metal of either wire to come in contact with that of the other.

The strip of platina B should have one of its ends soldered to the open end of the shield A, its other end being soldered to the inner extremity of the wire S. Under these circumstances the platina will be stretched in or about in a straight line between its two supports, and from its position in the shield will not be liable to displacement or injury during the process of placing a loading-charge of powder therein. When an electric current is caused to flow through the platina the latter will be heated to redness, and will thereby inflame the powder-charge surrounding it or within the shield.

I have sought to produce an apparatus which could be carried by artillery-troops and be made serviceable in firing guns which may have been plugged with shot or spiked by an enemy, as with my said apparatus a cartridge or load may be introduced into a cannon which may have a ball at the base of its bore, or which may have been spiked, and such cartridge or load may be fired by electrical agency, provided the party who may use my electrical apparatus be provided with a portable electrical battery, such as troops now have for telegraphic purposes. Thus an enemy's gun, after having been spiked, or having been disabled by a ball rammed or wedged down into its bore, may be fired by my invention, upon the retreating enemy. In this way pursuing troops may often employ to advantage captured guns which may have been spiked or had balls wedged into their bores.

I claim—

My improved arrangement or application of the shield, the circuit-wires, and the strip of platina, substantially as described.

CHARLES STOWELL.

Witnesses:

R. H. EDDY,

F. P. HALE, Jr.