

F. L. M. MASURY.
APPARATUS FOR EXPLODING MINES, BLASTING, &c.

APPLICATION FILED FEB. 3, 1904.

NO MODEL.

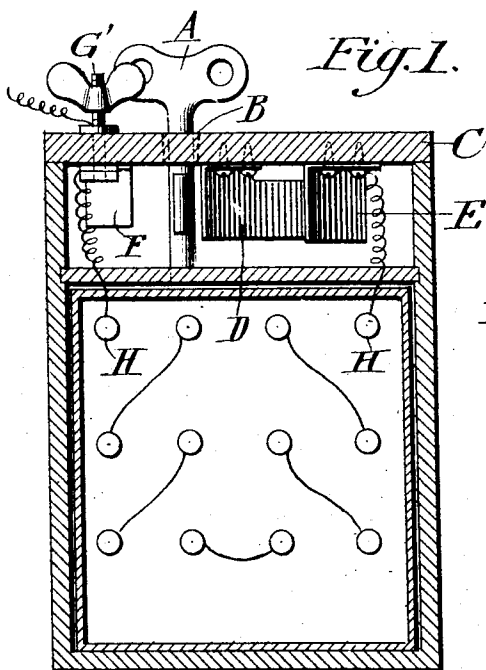


Fig. 2.

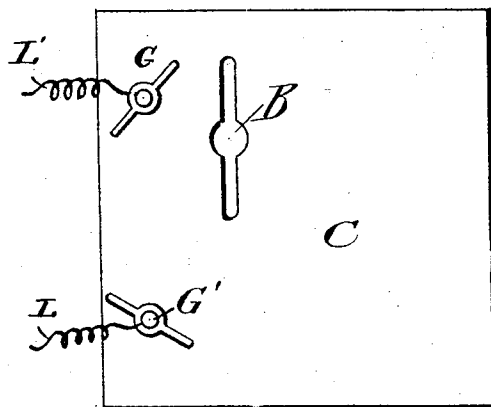


Fig. 3.

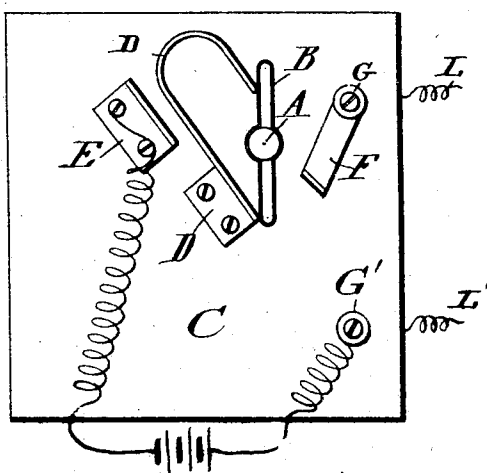
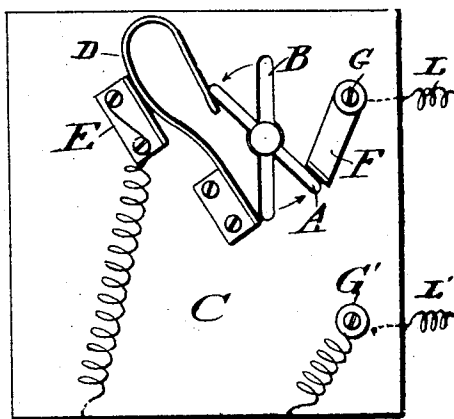


Fig. 4.



Witnesses:

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Inventor:

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UNITED STATES PATENT OFFICE.

FRED L. M. MASURY, OF BROOKFIELD TOWNSHIP, TRUMBULL COUNTY, OHIO.

APPARATUS FOR EXPLODING MINES, BLASTING, &c.

SPECIFICATION forming part of Letters Patent No. 766,454, dated August 2, 1904.

Application filed February 3, 1904. Serial No. 191,842. (No model.)

To all whom it may concern:

Be it known that I, FRED L. M. MASURY, a citizen of the United States, residing at Masury, Brookfield township, in the county of Trumbull and State of Ohio, have invented a new and Improved Apparatus for Exploding Mines, Blasting, &c., of which the following is a specification.

My invention relates to an improvement in devices employed for the purpose of exploding mines, blasting, firing ordnance, &c. The devices heretofore commonly employed for these purposes have usually employed an electric generator, including a revolving armature; but with the present invention I prefer to use "dry" batteries or accumulator-batteries for generating the electric current.

The particular object of the invention is to provide a very compact and readily-portable device which can be safely handled and in which any danger of accidental closing of the electric circuit is avoided.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a vertical sectional view through an apparatus constructed in accordance with the present invention. Fig. 2 is a plan view of the same, the key-like circuit-closer being removed. Fig. 3 is a view of the inside of the top of the case, showing the parts in the position represented in Fig. 1, in which the electric circuit is broken. Fig. 4 is a view similar to Fig. 3, showing the circuit-closer in operative position.

Referring to the drawings, in the several figures of which like reference-letters designate corresponding parts, it will be seen that the apparatus is inclosed within a suitable case having a slot B formed in its top C. The interior of the case is divided into two compartments within the lower one of which may be arranged an electric battery containing any suitable number of cells connected in series, the terminals of which series are designated by reference character H in Fig. 1. To the under side of the top piece C of the case on opposite sides of the slot B therein are secured two contacts E F, preferably made in the form shown in the drawings. The contact E is

electrically connected with one of the terminals of the battery, and the contact F is connected by means of a binding-post G with a suitable line-wire L. A second line-wire L' is connected by means of a binding-post G' with a wire leading from the other terminal of the battery. The electric circuit, including said line-wires, battery, and contacts E F, is completed by means of a circuit-closer adapted to be inserted through the slot B and provided on opposite sides with lateral wings or blades of conducting material, one of which will, as the key-like device A is turned about its axis, bear against the contact F, while the other forces a yielding spring-arm D laterally against the contact E. The arm D not only acts to complete the circuit when the parts are turned into the position shown in Fig. 4, but normally holds the circuit-closer in the position shown in Figs. 1 and 3—that is, with its lateral wings or blades in alinement with the slot B and away from the contact F.

It will be seen that by turning the circuit-closing device A the operator will first move the spring D and force it against the contact E, and as such rotation of the device A is continued its conducting-section will come against the contact F and complete the circuit. As soon as the key is released the spring D will restore it to the position indicated in Figs. 1 and 3 and the circuit will be broken.

It is obvious that the circuit can only be completed or the battery "discharged" by means of the device specially provided therefor and only when that is turned in the manner described. Therefore there is no likelihood of the circuit being accidentally completed.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. In an apparatus for the purpose described, the combination of a suitable casing, an electric circuit including two contacts carried by said casing, a circuit-closer adapted to be rotated to bear against one of said contacts, and a spring-arm arranged to normally hold said circuit-closer in inoperative position and to be forced against the other of said contacts as the circuit-closer is rotated prior to the latter

reaching the contact against which it is adapted to bear.

2. In an apparatus for the purpose described, the combination of a suitable casing, an electric circuit including two contacts carried by said casing, a rotatable circuit-closer adapted to be turned to bear against one of said contacts, and means for normally holding said circuit-closer away from said contact and adapted to electrically connect the other contact with said circuit-closer as the latter is rotated toward operative position.

3. In an apparatus for the purpose described, the combination of a suitable casing having a slot B in one wall thereof, an electric circuit including two contacts arranged within the casing on opposite sides of the said slot, a spring-arm of conducting material arranged within the casing between the slot therein and one of said contacts, and a key-like circuit-closer adapted to be inserted in the casing through said slot and, when rotated, to first force said spring-arm against the adjacent contact and thereafter to itself bear against the other contact.

4. A circuit-closing device comprising, in combination, a pair of fixed terminals, a spring-arm adjacent to one terminal and normally separated therefrom, and a circuit-closing key having two blades, one of the blades being adapted and arranged to press the spring-arm into contact with one terminal and

the other blade to contact with the other terminal, whereby the circuit is closed through the key device and the spring-arm.

5. A circuit-closing device comprising, in combination, two fixed terminals, a circuit-closing key having opposite blades, and a spring-arm arranged between one of said blades and one of the terminals, said spring-arm being normally separated from its adjacent terminal and being adapted to hold the circuit-closing device normally away from the other terminal, for the purpose set forth.

6. A circuit-closing device comprising a casing having an elongated key-slot therein, terminals within the casing, on opposite sides of said slot, a key having two opposite blades adapted to be inserted through and turned in said slot, and a spring arranged between the slot and one of the terminals and normally preventing the key from closing the circuit, said key when turned being adapted to contact with one of said terminals and to force the spring-arm into contact with the other terminal and thereby close the circuit.

In testimony whereof I have placed my name to this specification, in the presence of two subscribing witnesses, this 1st day of February, 1904.

FRED L. M. MASURY.

Witnesses:

H. H. CARLETON,
H. D. BAKER.