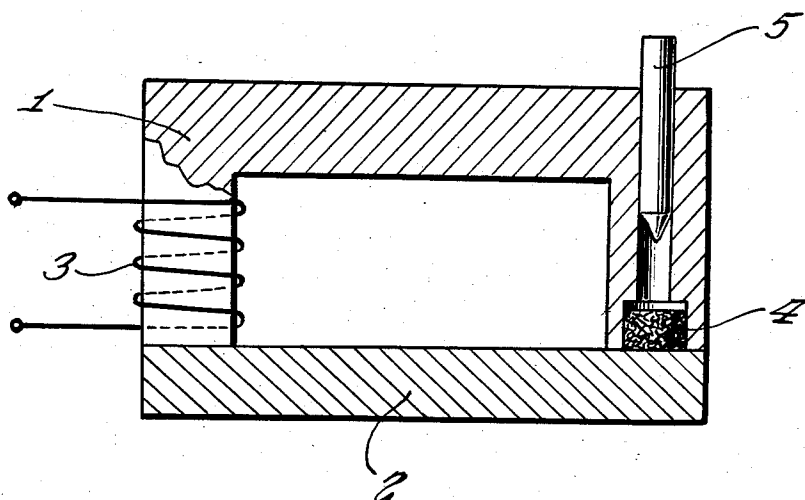


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METHOD AND DEVICE FOR THE GENERATION OF
IMPULSES IN ELECTRIC DETONATORS
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METHOD AND DEVICE FOR THE GENERATION OF IMPULSES IN ELECTRIC DETONATORS

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1 Claim. (Cl. 102—70.2)

It is known that by varying the rate of passage of magnetic flux in a coil there is produced an electric potential which may be employed to charge a condenser, as long as care is taken to again disconnect the condenser from the coil at the same time that the highest potential is reached. The extent of the potential generated in the coil for a given size of a magnet and spool is dependent only on the rate of change of the magnetic flux in the coil.

In the various applications of these systems, as for example in electrical detonators for ammunition shells, the energy made available is, in many instances, insufficient to achieve a sufficiently quick change of current flow. In consequence, the potential carried over to the condenser is smaller than that required for ignition.

It is an object of the present invention to provide a generator for the production of high induction potentials by interrupting a magnetic circuit. This object is effected by introducing a small quantity of explosive material into the magnetic circuit in such a manner that the explosive will interrupt the magnetic circuit at the time of ignition with very great speed, thus effecting a high potential in the induction coil.

To open the magnetic circuit, a simple mechanical means may be employed by forming a gap in the magnetic circuit; however, the magnetic circuit may also be opened by demolishing a part of the magnet by means of an explosive charge, whereby the magnetic flux may likewise be interrupted.

The apparatus according to the invention will now be more fully described with reference to the accompanying drawing, but it should be understood that this is given by way of illustration and not of limitation, and that many

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changes in the details can be made without departing from the spirit of the invention.

In the drawing, the figure of the drawing shows, by way of example, a current generator according to the invention.

There are indicated: the magnet 1, the magnet armature 2, the induction coil 3, a small explosive charge 4, which is disposed in an opening of one of the magnet legs and a striking pin 5.

The operation of the current generator according to the present invention is as follows:

Upon impact with a target the striking pin 5 strikes the primer charge 4, thereby exploding the latter. As a result of this explosion there follows an interruption in the magnetic flux which was built up by means of magnet 1 and armature 2, either because of the partial destruction of magnet 1, the armature 2, or the separation of armature 2 from the magnet. A surge of induction current results in coil 3 due to this interruption, which may serve to either ignite a primer or percussion cap directly through a filament, or which may be employed to charge a condenser.

What I claim is:

A generator for the production of high induction potential for the ignition of electrically ignitable fuses by the interruption of a magnetic circuit, comprising a U-shaped permanent magnet formed with a pair of spaced legs, an induction coil wound about one of said legs, a permanent magnet armature detachably connecting said legs, the other of said legs having a bore extending therethrough, an explosive charge in said bore adjacent said armature and a striking pin displaceably mounted in said bore, said striking pin being adapted, upon impact with a target, to strike and detonate said explosive charge, so that upon the detonation of said charge, said other leg of the magnet is destroyed and said armature separated from the magnet, thereby interrupting the magnetic circuit of said magnet and producing an instantaneous high induction potential in said induction coil.

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