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PULSE GENERATING ARRANGEMENT
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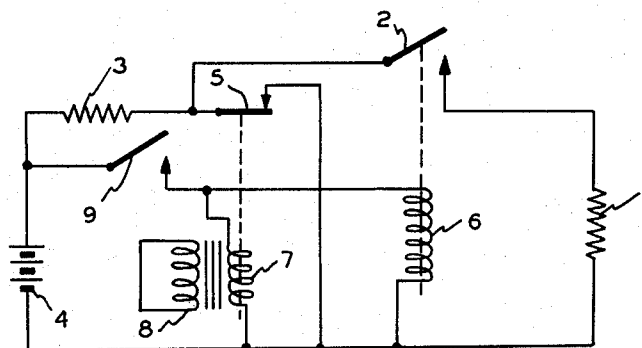


FIG. 1

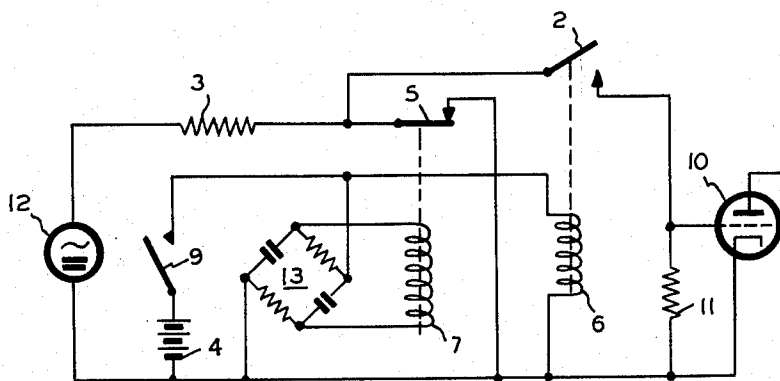


FIG. 2

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PULSE GENERATING ARRANGEMENT

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1 Claim. (Cl. 317-141)

In the transmission of pulses, such as in telegraphy, by means of arrangements in which the pulses are generated by the making and breaking of contacts, there often occurs an undesired modulation of the transmitted signal owing to rebound of the contact springs when contact is made. This undesired modulation has a relatively large band width and may disturb adjacent radio channels. It is therefore desirable that pulse transmitting arrangements are constructed in such a way that the transmitted signals are free from so called "key-clicks." It is particularly desirable that radio beacons for marine navigation transmit pure signals, since this type of "key-clicks" may disturb the receiving operation of direction finding equipment.

According to the present invention, this disadvantage is removed by means of an arrangement in which each pulse is adapted to be initiated by the breaking of a first contact means and to be terminated by the breaking of a second contact means. This effectively suppresses any modulation on account of contact rebound.

On the attached drawing, FIGS. 1 and 2 show two different embodiments of the invention.

In the FIG. 1 arrangement, 1 designates a load to which pulses are to be applied through a circuit comprising a contact means 2, a resistor 3 and a voltage source 4, which may consist of a battery. The portion of this circuit containing the load 1 and the contact means 2 is short-circuited by means of a contact means 5 when in its inoperative state. The contact means 2 is adapted to be controlled by the relay 6 of standard construction, whereas the contact means 5 is adapted to be controlled by a relay 7, which is provided with a delay arrangement. As an example of such a delay arrangement, there is shown in FIG. 1 a short-circuited winding 8. The relay coils 6 and 7 are connected in parallel and through a control member 9 to the voltage source 4. The control member 9 may comprise a telegraph key, a contactor of a control device or the like. As is apparent from the figure, the arrangement has the property that upon completing of the circuit to the relays 6 and 7 through the control member 9, the contact means 2 makes immediate contact, whereupon the contact means 5 breaks after a certain delay.

When the circuit is interrupted at the control member 9, the short-circuit connection is closed through the contact means 5, the current being then limited by the resistor

3. Upon closing of the control member 9, the relay 6 immediately closes the contact means 2. After a certain delay, which is determined by the short-circuited winding 8, the relay 7 actuates the contact means 5 so as to interrupt the short-circuit connection for the load 1 and current is thus applied to the load. The delay caused by the winding 8 is adjusted so as to let the contact means 2 carry no current when it is closed and during the short interval when a rebound effect at its contact springs may occur.

Upon the actuation of the control member 9, the current through the load 1 is immediately interrupted by the contact means 2 so as to terminate the pulse. Immediately after this, the relay 7 is deenergized, so that the contact means 5 recloses the short-circuit connection. Since the contact means 2 is already non-conductive, possible rebound effects at the contact springs on the contact means 5 cannot influence the load 1. The FIG. 2 embodiment of the invention is particularly suitable for radio transmitters. The pulses generated by the arrangement are in this case adapted to be applied to an electronic tube 10 having a grid leak 11. The arrangement may be such as to modulate either a D.C. or A.C. voltage with the generated pulse frequency, the voltage being applied from a voltage source 12 connected in series with the resistor 3. The relays 6 and 7 are energized as before from a voltage source 4 through a control member 9. In this embodiment of the invention the time delay of the relay 7 is caused by a condenser network 13.

What is claimed is:

A pulse generating apparatus connected between a current source and a load for applying electrical pulses to the load, comprising a relay having a relay coil; an electrical make contact actuated by said relay and forming a series connection with the load and the current source; a delayed action relay having a delaying actuatable relay coil; a brake contact actuated by said delayed action relay and connected in parallel with said series connection and said load; a control switch; a source of potential; the relay coils of each of said relays being effectively connected in parallel, the parallel connection of said relay coils being series connected with said control switch and said source of potential.

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