V. POULSEN.

SIGNALING BY WIRELESS TELEGRAPHY.

APPLICATION FILED MAR. 8, 1907.

966,705. Patented Aug. 9, 1910.

Fig. 1.

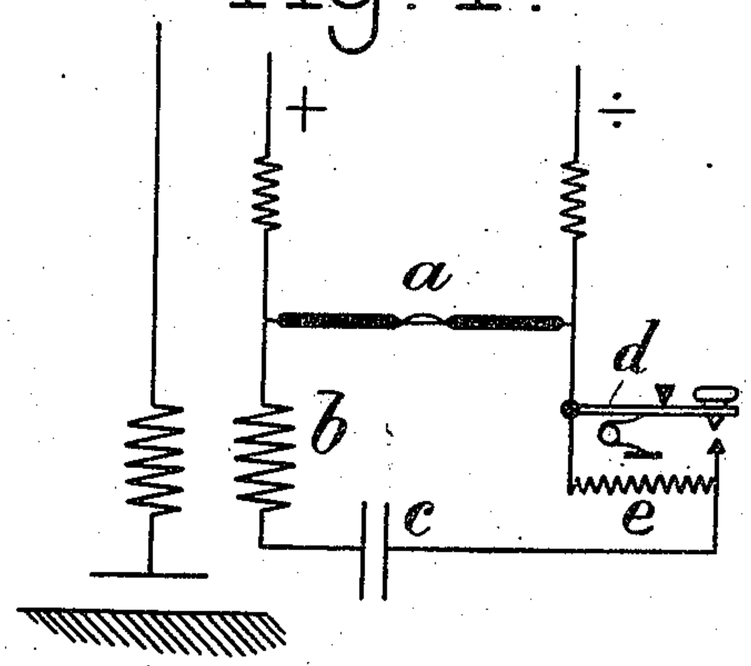


Fig. 2

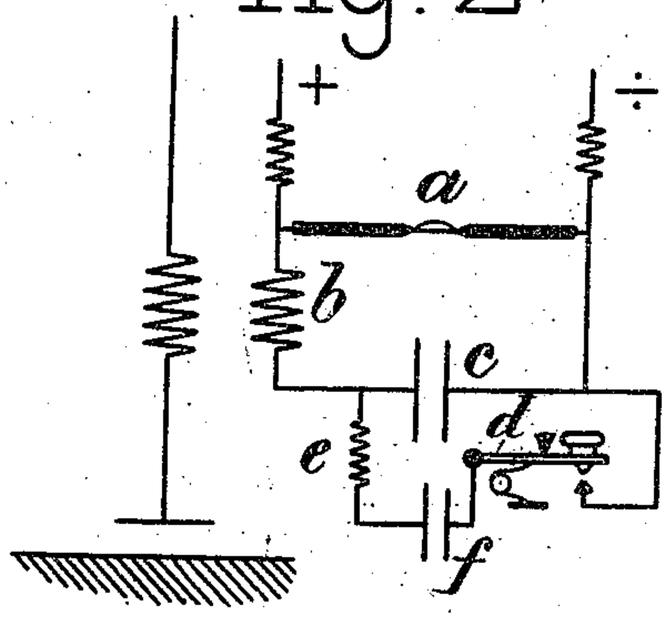
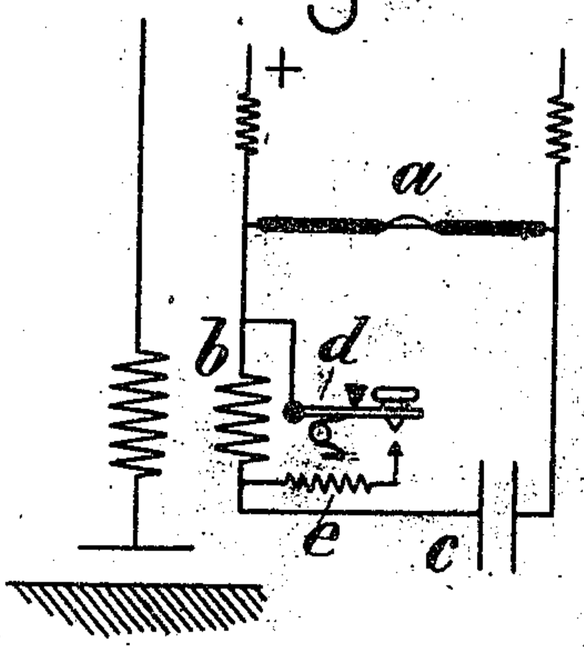


Fig. 3.



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UNITED STATES PATENT OFFICE.

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SIGNALING BY WIRELESS TELEGRAPHY.

966,705. Specification of Letters Patent. **Patented Aug. 9, 1910.**

Application filed March 8, 1907. Serial No. 361,280.

To all whom it may concern:

Be it known that I, VALDEMAR POULSEN, a subject of the King of Denmark, residing at Copenhagen, Denmark, have invented certain new and useful Improvements in Signaling by Wireless Telegraphy, of which the following is a full, clear, and exact description.

This invention relates to a method and apparatus for wireless signaling by means of continuous electric oscillations produced by means of a generator having an electric arc or the like connected with self induction and capacity. Arrangements for this purpose have been hitherto proposed by me and described, for example, in Patent No. 793,608, dated June 27, 1905, and in which the arc is maintained in an atmosphere of hydrogen or a gas containing hydrogen.

The object of the present invention is to signal in such a manner that the oscillations in the transmitting circuit may, through the use of a key, be periodically caused to cease. I accomplish this result by inserting in the oscillation circuit, or in parallel with a portion of the same, a means for damping the oscillations, so that the oscillations in the aerial are brought to rest either partially or completely.

In the drawings I have illustrated embodiments of my invention for accomplishing the above purposes, in which the damping means is inserted in the oscillation circuit of the generator.

In the drawings, Figure 1 is a diagram illustrating a wireless transmitting apparatus embodying the principles of my invention. Fig. 2 shows a slightly modified form of the same. Fig. 3 illustrates a still further slightly modified arrangement.

As a damping means, a non-inductive ohmic resistance may, for example, be used.

a indicates the arc which, combined with an inductance *b* and a condenser *c*, forms the oscillation circuit directly or inductively connected with the aerial.

In Fig. 1 the oscillation circuit may be closed directly by means of a transmitting key *d*, so that the ohmic resistance *e* is short circuited. If the oscillation circuit is opened by means of said key *d*, the oscillations will be absorbed by the ohmic resistance *e* and the system will cease to transmit waves.

With the form of the invention shown in Fig. 2 the same effect is obtained by placing an ohmic resistance *e* in parallel with a condenser *c*. The condenser *f* prevents the current which supplies or maintains the arc from passing through the resistance *e*.

In the form of the invention shown in Fig. 3 the resistance *e* can, by means of an operating key *d*, be placed in parallel with the inductance *b* which also has the effect of causing the oscillations to cease. The damping of the oscillations by the forms of the invention shown in Figs. 2 and 3 is due to the fact that, with an oscillation circuit having capacity or inductance, if such capacity or inductance is shunted by a suitable ohmic resistance, it is found by experience that the oscillations are caused to cease.

It is to be noted that, in the arrangement of Figs. 2 and 3, the signaling or transmission of oscillations takes place on the back stroke of the key *d*, instead of the down or circuit-completing stroke, as in Fig. 1.

What I claim is:

1. A wireless signaling apparatus including an electric arc, a circuit from said electric arc including inductance and capacity, an oscillation damping device, and means for putting such damping device into and out of the circuit to absorb the energy thereof in the form of heat.

2. A wireless signaling apparatus including an electric arc, an oscillation circuit bridged across said arc, and means for connecting and disconnecting an ohmic resistance with said circuit to absorb the energy thereof in the form of heat and prevent the transmission of oscillations therefrom.

In witness whereof, I subscribe my signature, in the presence of two witnesses.

VALDEMAR POULSEN.

Witnesses:
PEDER OLUF PEDERSEN,
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