

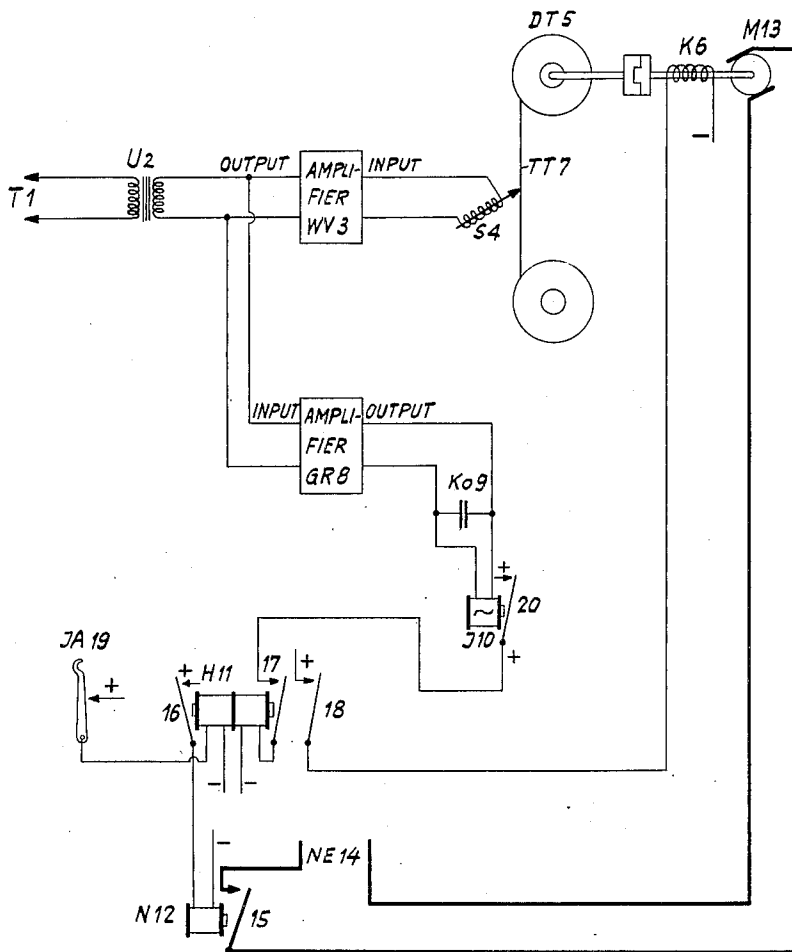
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DEVICE FOR AUTOMATIC SWITCHING OFF TELEPHONOGRAPHS

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DEVICE FOR AUTOMATICALLY SWITCHING
OFF A TELEPHONOGRAPHMax Handschin, Kusnacht, Switzerland, assignor
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The present invention relates to a device in a telephonograph for switching it off after reproduction has been performed, and to the method for operating the same.

Such devices have become known with sound recording instruments, particularly telephonographs, in which mechanical friction clutches and the like are provided. Although these mechanical components are being made with high accuracy, they have frequently given rise to disturbances. According to the invention this disadvantage is overcome thereby that the switching-off is effected exclusively by the electric means, for instance by a relay which remains energized only as long as the message is reproduced and becomes deenergized to switch off the telephonograph at the end of the reproduced message.

The switching-off can for example be effected in such a manner that at the amplifier output the recorded frequencies are checked by means of a delayed-action relay. Such a device is cheaper in manufacture than the known arrangement with friction clutch, and is operated moreover more reliably.

A preferred embodiment of a device according to the invention is schematically represented in the accompanying drawing.

It is to be understood in the following that the positive leads are connected with the positive and grounded terminal of a battery, while the negative leads are connected to the negative terminal of the battery.

It be assumed that the sound carrier TT7 and with it the wire drum DT5 has run in a known manner into the starting position, so that upon energizing the electric clutch winding K6, the subscriber T1 will be able to hear at once the recorded message.

In order to energize the clutch winding K6 the key JA19 is depressed for a short while so that, the relay H11 is energized from the following circuit:

(1) Earth, key JAk9, relay H11, battery. The relay H11, energizes on the one hand, the relay N12, which puts the motor M13 on the voltage of the mains NE14 through its contact 15. The relay N12 is energized by the circuit:

(2) Earth, contact 16, relay N12, battery. The motor is energized by the circuit:

(3) Mains NE14, contact 15, motor M13, mains NE14.

Moreover the electromagnetic clutch K6 is energized by the circuit:

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(4) Earth, contact 18, clutch winding K6, battery.

Now the wire drum DT5, and therewith the sound record TT7, are put into action in a known manner in the direction of the arrow. Now the subscriber T1 will hear the message recorded on the sound record TT7 by means of the pick-up S4, amplifier WV3 and coupling transformer U2. Parallel to the transformer U2 there may be for example arranged amplifier GR8 and at the output thereof a relay J10 which is now energized by the electric impulses or frequency signals which are discharged by the sound record.

It results the circuit:

(5) Subscriber T1, transformer U2, amplifier WV3 pick-up S4 and back to amplifier WV3, transformer U2, subscriber T1 and parallel to the transformer U2, amplifier GR8, relay J10 and back to the amplifier GR8 and transformer U2.

The relay J10 can be one which for example drops off with delayed action in order to bridge short interruptions in the reproduced message. For this purpose a condenser KO9 is provided. The contact 20 of the relay J10 will now take over the holding of relay H11. Circuit (1) becomes inoperative and it results circuit:

(6) Earth, contact 20, contact 17, holding coil of relay H11, battery.

The relay H11 and with it all talking circuits are now held so long until the relay J10 is de-energized i. e. only as long as recordings are on the sound record TT7 and no further impulses of speech flow over the pick-up S4.

When the message has been reproduced and there are no longer any recordings on the sound record TT7, the relay J10 becomes de-energized and therewith all other circuits too. The telephonographic apparatus is thereby switched off automatically.

What I claim as my invention and desire to secure by Letters Patent, is:

1. In a telephonograph, a sound record driven by an electric motor, an electric clutch drivingly connecting, when energized, said electric motor with said sound record, a subscriber telephone circuit, means connecting thereto a pick-up for reproducing the message recorded on said sound record, a relay provided with an operating coil and a holding coil, means including a manually operable switch in the circuit of said operating coil of said relay for controlling the operation of said electric motor to close the circuit of the latter when said switch is momentarily closed, said relay having contact means, closing at the same time the motor is energized, the circuit of

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said electric clutch to energize the latter, means including a second relay for closing, when energized, the circuit of said holding coil to maintain said electric motor and said electric clutch energized when said switch opens, said second relay being energized by the current impulses produced by the message reproduced by said sound record and fed into said subscriber's telephone circuit, said second relay being de-energized at the end of the reproduced message, owing to lack of current impulses, whereby the circuit of said holding coil is opened and as a result of which said electric motor and said electric clutch become de-energized.

2. In a telephonograph, a sound record driven by an electric motor, an electric clutch drivingly connecting, when energized, said electric motor with said sound record, a subscriber telephone circuit, means connecting thereto a pick-up for reproducing the message recorded on said sound record, a relay provided with an operating coil and a holding coil, means including a manually operable switch in the circuit of said operating coil of said relay for controlling the operation of said electric motor to close the circuit of the latter when said switch is momentarily closed, said relay having contact means closing, at the same time the motor is energized, the circuit of said electric clutch to energize the latter, means including a second relay for closing, when energized, the circuit of said holding coil to maintain said electric motor and said electric clutch energized when said switch opens, a coupling transformer having two coils, means connecting one of said coils to said subscriber telephone circuit and the other to the output of an amplifier, means connecting the input of said amplifier to said pick-up, a second amplifier, means connecting the input terminals of said second amplifier to the output terminals of the said first amplifier and means connecting the output of said second amplifier to said second relay, whereby said second relay is energized by amplified current impulses produced by said reproduced message at the output terminals of said first mentioned amplifier, said holding coil being deenergized at the end of the reproduced message when said second relay becomes deenergized as a result of lack of current impulses to be amplified, so that said electric motor and electric clutch will also become deenergized.

3. In a telephonograph, a sound record driven by an electric motor, an electric clutch drivingly connecting, when energized, said electric motor with said sound record, a subscriber telephone circuit, means connecting thereto a pick-up for

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reproducing the message recorded on said sound record, a relay provided with an operating coil and a holding coil, means including a manually operable switch in the circuit of said operating coil of said relay for controlling the operation of said electric motor to close the circuit of the latter when said switch is momentarily closed, said relay having contact means, closing at the same time the motor is energized, the circuit of said electric clutch to energize the latter, means including a second relay for closing, when energized, the circuit of said holding coil to maintain said electric motor and said electric clutch energized when said switch opens, a coupling transformer having two coils, means connecting one of said coils to said subscriber telephone circuit and the other to the output of an amplifier, means connecting the input of said amplifier to said pick-up, a second amplifier, means connecting the input terminals of said second amplifier to the output terminals of the said first amplifier, means connecting the output of said second amplifier to said second relay, means including a condenser shunted across said second relay to cause a delay in its action upon deenergization, said second relay being energized by amplified current impulses produced by said reproduced message at the output terminals of said first mentioned amplifier, and said holding coil being deenergized at the end of the reproduced message when said second relay becomes deenergized as a result of lack of current impulses to be amplified, so that said electric motor and electric clutch will also become deenergized.

4. In a telephonograph according to claim 1, including a third relay and means connecting it into a circuit with said first mentioned relay, whereby said third relay will be energized when the circuit of the operating coil of the first mentioned relay is closed, said third relay, when energized, closing the circuit of said electric motor and will become deenergized when the circuit of the holding coil of said second relay is opened.

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