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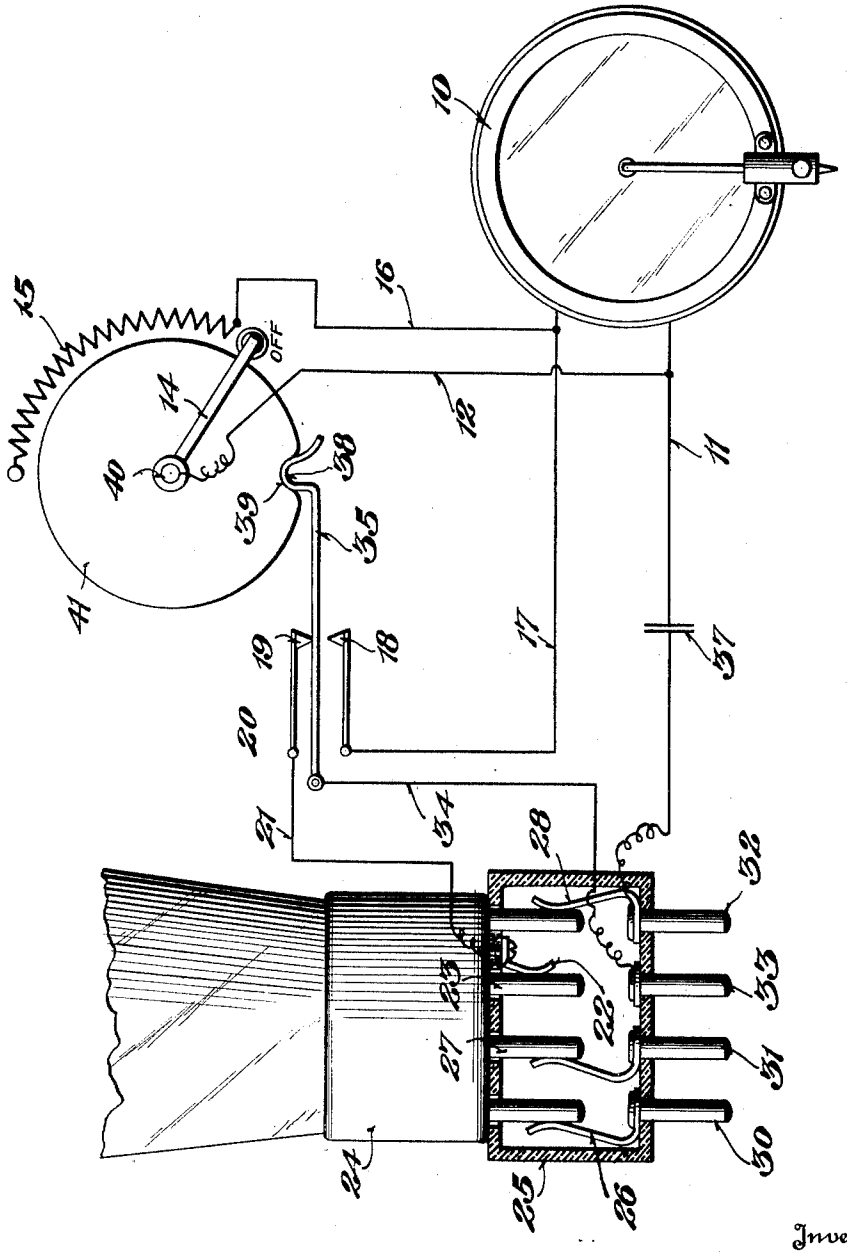
AUTOMATIC RADIO PHONOGRAPH SWITCH

Filed June 6, 1929



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AUTOMATIC RADIO-PHONOGRAPH SWITCH

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This invention relates to reproducing systems and has for its object the provision of a simple and efficient device which can be permanently installed in a radio set so as to connect the radio set to a phonograph providing automatic means for disconnecting the radio receiving tubes when the phonograph is operated and for automatically connecting the radio circuits when the phonograph is shut off.

In my Patent No. 1,645,491 I have shown a simple system which has been very successful. This system however has the disadvantage that to change from radio reproduction to phonograph reproduction one must lift out the detector tube and insert in the socket a special handle and naturally when changing back to the radio use the plug or handle must be taken out and the tube reinserted which takes some little time. I have also placed on the market a small disk which is inserted within the detector tube socket but while this is an improvement over the earlier system of removing the handle it still is necessary to detune the set to prevent radio music from coming thru and interfering with the phonographic reproduction and furthermore in changing back to radio reception it is necessary to remove a phone tip from its tip jack somewhere between the disk and the volume control of the phonograph accessory in order to prevent the resistance of this accessory and the pick-up from being shunted across the detector tube which would naturally have the effect of cutting down the volume given by the loud speaker.

The primary object of the invention is therefore to provide a device which may be permanently connected to the radio set and in the use of which it is not necessary to remove any tube or to break any connection in any part by any special act in changing either from radio to phonograph or from phonograph to radio. A further object of the invention lies in the provision of automatic means associated with the phonograph pick-up volume control for switching the connections from radio to phonograph and vice versa. This rotary resistance control in off position connects the plate prong of the detector tube to the corresponding contact of the socket but when the resistance is rotated the plate contact of the detector socket is connected to the pick-up so that the plate prong of the detector tube is disconnected.

In the drawing:—

The figure shows a simple embodiment of the invention.

The pick-up 10 is of any desired commercial type made substantially identical with the pick-up shown in my patent heretofore mentioned. This pick-up is connected by the wires 11 and 12 with the movable arm 14 of the phonograph volume control which is merely a resistance. The resistance wire 15 is connected by the wire 16 to the other binding post of the pick-up and is also connected thru the wire 17 to the lower contact 18 of a single pole double throw switch indicated as a whole by the numeral 20 and of which the other fixed contact is 19 and is connected by the wire 21 to a spring contact 22 which engages the plate prong 23 of the radio tube 24. Each of the other prongs of the radio tube engage spring contacts of the adaptor 25 such as 26, 27 and 28 on alined sockets 30, 31 and 32 of the adaptor which fits into the radio set in the same manner as the detector tube would if the adaptor were absent. The prong 33 however which fits into the plate socket of the set is connected by the wire 34 with the movable blade 35 of the switch 20, this blade engaging the contact 19 to connect the plate prong of the tube direct to the plate socket of the radio set or to engage the contact 18 which will disconnect the plate prong of the tube and will connect the adaptor plate prong 33 with the wire 17 leading to the pick-up. A by-pass condenser 37 is placed between the filament

prong 32 and the pick-up in the same manner as in my patent.

The operation is as follows:—The adaptor 25 is inserted into the detector socket and when so positioned the detector tube is then inserted into the adaptor this connection being relatively permanent. In the ordinary use of the radio the volume control 14 of the phonograph device is in the position illustrated in the figure at which time the cammed end 38 of the spring blade 35 of the switch 20 is received within the recess 39 of the volume control shaft or preferably a collar on such shaft and the spring blade 35 is therefore in engagement with the contact 19 directly connecting the plate prong 23 of the tube with the plate prong 33 of the adaptor and consequently engaged with the set in a normal way. In turning the volume control 14 to operative position to use the phonograph the spring blade 35 of the switch 20 is cammed downwardly as shown in the figure, in automatically disconnecting the plate prong 23 of the tube and connecting the adaptor prong 33 with the pick-up so that the circuit is then exactly the same as illustrated in my patent.

What I claim is:

1. In combination, a pick-up, means for electrically connecting the pick-up to a circuit of a radio set, a volume control connected to the terminals of the pick-up, and means governed by the position of the control for connecting and disconnecting the pick-up and said circuit.

2. In a telegraphophone system, a pick-up, means for connecting the pick-up with a circuit of a radio set, a double throw switch adapted in one position to connect the prong of a radio tube of the set with its socket, and adapted in the other position to connect said socket with said pickup, a variable control for the pick-up, and means operated by said control for throwing the switch so as to disconnect the tube from the set and to substitute therefor said pick-up.

3. In combination, an adaptor having a split connection for one of the prongs of a radio tube and direct connections for each of the other prongs, a single pole double throw switch connecting the two split connections, a pick-up connected to one of the direct connected prongs and to the free contact of said switch, a volume control connected to said pickup, a handle for varying the control, means connecting said handle and said switch whereby the latter is operated at one position of said control.

4. In a telegraphophone reproducer system, a rotary member for controlling said system, a double throw switch, means governed by said rotary member for throwing the blade of said switch, and means connecting said switch to the telegraphophone reproducer system and to a radio set whereby upon movement of said rotary control the telegraphophone is connected into the set.

5. In combination, a pick-up, a volume control therefor, means for connecting the pick-up to a radio set and means operated by the volume control for electrically connecting and disconnecting the pick-up to the plate circuit of the set.

6. In a device of the character described, an adaptor having a plurality of prongs corresponding in number to the prongs of a radio tube, means for electrically connecting a filament prong of the tube with the filament prong of the adaptor, a single pole double throw switch, means for connecting the plate prong of the adaptor with the blade of the switch and connecting the plate prong of the tube with one contact of said switch, a pick-up connected to the other contact of said switch, means for connecting said pick-up with the filament prongs of the adaptor and tube, a variable resistance shunted across the pick-up, and means governed by the position of the variable resistance for operating the switch.

7. In combination, a pick-up, a volume control therefor, means for connecting the pick-up to a radio set, and means operated by the volume control for electrically connecting and disconnecting the pick-up to the set.

8. In a device of the character described, an adaptor having a plurality of prongs corresponding in number to the prongs of a radio tube, means for electrically connecting a filament prong of the tube with the filament prong of the adaptor, a single pole double throw switch, means for connecting the plate prong of the adaptor with the blade of the switch and connecting the plate prong of the tube with one contact of said switch, a pick-up connected to the other contact of said switch, means for connecting said pick-up with the filament prongs of the adaptor and tube, a variable resistance, and means governed by the position of the variable resistance for operating the switch.

9. An accessory for connecting a reproducer to a radio set comprising in combination, transmitter terminals, an adapter having prongs arranged to fit in the sockets provided for a certain tube in the set, sockets in said adaptor corresponding to the prongs of said tube, contacts on some of said adaptor prongs positioned in the adaptor sockets to engage the corresponding prongs of the tube when inserted in said sockets, one of said contact-carrying prongs being connected to one of said transmitter terminals, a single pole double throw switch, a non-contact-carrying adaptor prong connected thru one side of said switch to its corresponding adaptor socket terminal, the other side of said switch being connected to a second transmitter terminal, a variable impedance connected to said transmitter terminals, means for varying the im-

pedance, said means being connected to the switch whereby when the transmitter terminals are connected to the set by the switch the non-contact-carrying prong is disconnected from its corresponding adaptor socket terminal.

10. In combination, connector terminals, means for electrically connecting the connector terminals to a circuit of a radio set, a variable resistance connected to said terminals and means for varying said resistance, and a means governed by the position of said resistance varying means for connecting and disconnecting the terminals and the set.

In testimony whereof I affix my signature.

LE ROY J. LEISHMAN.