

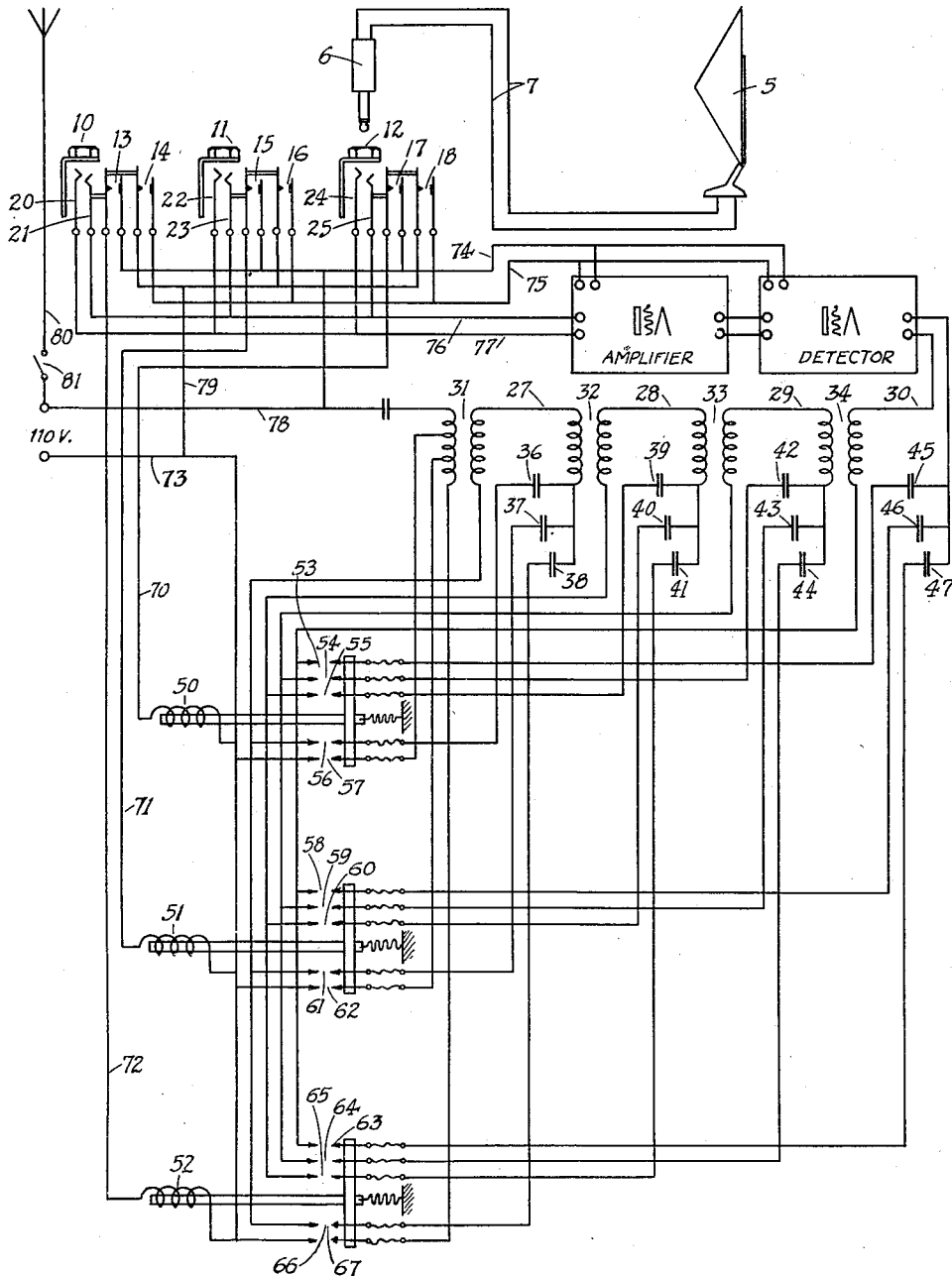
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REMOTE CONTROL OF RADIO OR WIRED RADIO RECEIVER

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REMOTE CONTROL OF RADIO OR WIRED
RADIO RECEIVER

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mesne assignments, to Federal Wired Radio,
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8 Claims. (Cl. 250—20)

This invention relates to space and wired radio receivers and particularly to means for controlling such receivers from remote points.

5 An object of this invention is to locate certain portions of broadcast receiver equipment according to its function.

Another object of the invention is to position a radio receiver at a distance from the point of reception and to control the receiver from that point.

10 A further object of the invention is to tune a radio receiver to one or more broadcast wave lengths and to make it operative and inoperative from the loud speaker location by the insertion of the speaker plug in predetermined tuned circuits.

15 A feature of the invention is that the detecting and amplifying portion of the receiver may be located in an inconspicuous or concealed position and the loud speaker located in another and appropriate position wherever the audition of the program is desired, the receiver being controlled from the latter point.

20 In the reception of broadcast programs the essentials are quality of reproduction, proper audible volume and the facility with which a particular program may be selected by the listener. This invention is adapted to produce these desirable results by permitting the loud speaker or speakers to be located in their optimum position with respect to acoustic considerations and the location of the receiving apparatus in a position to permit the construction of the best electrical circuits unlimited by cabinet design and appearance requirements.

25 The invention contemplates the provision of terminal outlets or jacks in the walls or baseboards of rooms in the same manner as electric house wiring outlets. Each jack represents a station and is connected to the common output conductors as well as to relays which connect in predetermined tuned circuits. The loud speaker wires terminate in a plug which is inserted in any one of the jacks. The insertion of this plug in any particular jack energizes the system and tunes in the station according to the jack selected. The jacks require small space, and may be placed in inconspicuous locations. Each room in which the listener desires to receive the stations may be provided with these jacks, the jacks being connected in multiple so the same station may be received in more than one room at a time. Indicators may be provided to show what station is being received at some other location, the indicators being lights in the

relay circuits and located near the respective jacks.

The invention will be more fully understood by reference to the accompanying schematic circuit drawing.

In the drawing, the detector and amplifier of the system are shown diagrammatically, and may consist of any well known type of radio receiving circuit or a circuit designed with particular emphasis on the quality and volume of the electrical transmission therethrough. The loud speaker is shown connected to a two-circuit plug by conductors 7. The loud speaker may be specially constructed from the standpoint of quality transformation of the electrical impulses into acoustic vibrations based on the particular acoustic properties of the room. For instance, the loud speaker may be built into the wall or ceiling of the room.

30 The system shown in the drawing is adapted to receive three broadcast wave lengths. Jacks 10, 11 and 12 are shown, into which plug 6 may be inserted to select the wave length desired according to the construction of the apparatus to be described hereinafter. The jack 10 has contacts 13 and 14; the jack 11 has contacts 15 and 16, and the jack 12 contacts 17 and 18. The jack 10 also has contact springs 20 and 21, the jack 11, contact springs 22 and 23 and the jack 12 contact springs 24 and 25. The selecting or tuning portion of the circuit comprises tuned circuits 27, 28, 29 and 30, which comprise coupling transformers 31, 32, 33 and 34, together with fixed condensers 36 to 47, inclusive. These tuned filter circuits may be any well known type but, preferably, of the type shown in U. S. patent applications to Louis Cohen, Serial Numbers 53,367 and 53,714, filed August 29, 1925 and August 31, 1925, respectively. These circuits are tuned by their associated elements in accordance with the energization of relays 50, 51 and 52. The condenser elements 36 to 47 are of various fixed values depending upon the wave length to be received and the constants of the transformers 31, 32, 33 and 34.

Relay 50 controls contacts 53 to 57, inclusive, relay 51 controls contacts 58 to 62, inclusive, and relay 52 controls contacts 63 to 67, inclusive. These relays are energized over circuits comprising individual conductors 70, 71 and 72, and a common conductor 73. The detector and amplifier are energized over conductors 74 and 75, while the output therefrom is supplied to the jacks in multiple over conductors 76 and 77.

This receiving system may receive its signaling

energy from an aerial 80 or over the house wiring system from a wired radio broadcast station. In the wired radio reception the signals will be supplied directly over conductors 73 and 78 from which the receiver is energized. The aerial may

5 be connected by a simple throwover switch 81. All the apparatus shown in the drawing, with exception of the loud speaker 5, plug 6 and their connecting wires, may be located in any part of a dwelling house or other building as for instance
10 in the cellar, attic or a closet. Wires leading therefrom will terminate at the jacks 10, 11 and 12 in the locality of the speaker.

The tuning in of a station by the insertion of
15 plug 6 in a particular jack will now be described. Assuming that plug 6 has been inserted in the jack 12, the following circuits are made with the subsequent operation of the various associated apparatus. A circuit is made from the house supply leads over conductor 79, contact 18, conductor
20 75 through the amplifier and detector in parallel, conductor 74 and back to the supply source over conductor 78. This circuit energizes the radio receiver. Another circuit is made through the closure of contact 17 over conductor 78, contact
25 17, conductor 70, winding of relay 50 and conductor 73. This circuit energizes the relay 50 and closes contacts 53 to 57, inclusive. Upon the closing of these contacts, the proper tuning elements are connected into the circuits 27, 28, 29
30 and 30 to tune them to the broadcast frequency previously determined. In the present system, contact 53 connects condenser 45 in circuit 30 with the secondary of transformer 34; the contact 54 tunes the circuit 29 by connecting the condenser 42 in circuit with the secondary of transformer 33 and primary of transformer 34; the
35 contact 55 connects condenser 39 into circuit 28 tuning that circuit to the frequency which is desired received; the contact 56 connects the condenser 36 in circuit 27 and contact 57 tunes the input circuit of the system to the desired wave length.

When the receiver is thus tuned by the making
45 of the contacts just described, a particular carrier wave received from either the antenna or house lighting wires will be detected and the audio frequency amplified and sent out over conductors 76 and 77, spring contacts 24 and 25, conductors 7
50 to the loud speaker 5, in which it will be reproduced into sound waves.

If the plug 6 is inserted in the jack 11, relay 51 and the receiver are energized through the closing of contacts 15 and 16, respectively. Relay 51
55 then closes its contacts 58 to 61, inclusive, which connect in condensers 46, 43, 40 and 37, respectively, while contact 62 tunes the input circuit to the desired frequency. The detected and amplified signals received on this wave length are then transmitted over spring contacts 22 and 23 in the
60 loud speaker 5.

When the plug 6 is inserted in the jack 10, contacts 13 and 14 are closed, energizing the relay 52 and the receiving apparatus, respectively.
65 The relay 52 in closing its contacts 63 to 67, inclusive connects condensers 47, 44, 41 and 38 in the circuits 30, 29, 28, and 27, respectively, while contact 57 tunes the input circuit of the system. The program on this wave length is then sent over the contacts 20 and 21 from the audio frequency amplifier to the speaker 5.
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It is obvious in the above case that the removal of the plug 6 from any one of the jacks de-energizes and detunes the system by breaking the energizing contacts of the jack. To transfer the
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reception from one station to another to which the system has been previously adjusted, the plug is removed from one jack and inserted in another jack. The system is thereby de-energized and
80 detuned and energized and tuned to the new wave length.

While the system disclosed is adapted to receive only three wave lengths, it is obvious that more broadcasting frequencies may be received
85 by adding additional jacks, relays and tuning elements in the same manner as those shown in the drawing. Furthermore by the multiple connection of the jacks, the same station may be received at several locations simultaneously.

The jacks may also, if desired, be located in
90 portable jack boxes which may be placed on the desk, chair arm or any convenient point with a cable leading therefrom to the tuning and amplifying system. In this manner it is exceptionally convenient to tune the receiver when located at a
95 remote point.

Although the invention has been described and embodied in a particular circuit, it is to be understood that it is capable of adaptation to equivalent systems and is not to be limited other than
100 by the scope of the appended claims.

I claim:

1. A carrier wave receiving system adapted to receive broadcast programs comprising apparatus receptive to wired radio or space radio frequencies,
105 means including a plurality of selectively actuated relays for effecting the tuning of said apparatus to a particular frequency, a loud speaker for changing the output of said apparatus into sound vibrations and a plurality of jacks with
110 associated contact springs, each jack having an individual connection with one of said relays, a connection with a source of energy and contact springs adapted by "plugging in" to connect said
115 loud speaker with said apparatus, whereby any one of said relays may be actuated in accordance with a desired frequency selection, said apparatus energized and said loud speaker connected and whereby said apparatus may be de-energized
120 by the mere manual operation of disconnecting said loud speaker from said jack.

2. A carrier wave receiving system adapted to receive wired and space radio broadcasts comprising a detector and amplifying system for said carrier waves, means for receiving either said
125 wired or space broadcasts, a plurality of sets of tuned circuits associated with said receiving system, a corresponding plurality of relays for connecting in a particular set of said tuned circuits, a corresponding plurality of jacks with associated
130 contact springs remotely located with respect to said receiving system for operating said relays, an acoustic device having conductors terminating in a plug, said plug being adapted to be inserted in any one of said jacks for operating a respective
135 relay and connecting in the respective set of tuned circuits into said receiving system.

3. The system in accordance with claim 2 in which any one of said sets of tuned circuits comprises an inductively coupled filter system.
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4. The system in accordance with claim 2 including common conductors for supplying energizing current to said relays and said receiving system, and for supplying wired radio carrier waves to said tuned circuits.
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5. The system in accordance with claim 2 including common conductors for supplying energizing current to said receiving system and to said relays and for supplying wired radio signalling energy, and in which any one set of said tuned
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circuits comprises an inductively coupled filter system responsive to said wired radio signalling energy transmitted over said common conductors.

ling energy for reception of said wired radio frequencies.

6. The system in accordance with claim 1 in which said receiving apparatus includes a plurality of sets of tuned circuits any of which comprises an inductively coupled filter system.

7. The system in accordance with claim 1 including common conductors for supplying energizing current to said relays and said receiving apparatus, and for supplying wired radio signal-

8. The system in accordance with claim 1 including common conductors for supplying energizing current to said receiving apparatus and to said relays and for supplying wired radio signalling energy, and including an inductively coupled filter system responsive to said wired radio signalling energy transmitted over said common conductors.

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CERTIFICATE OF CORRECTION.

Patent No. 1,972,471.

September 4, 1934.

CHANCE E. BOHNER.

It is hereby certified that the name of the assignee in the above numbered patent was erroneously described and specified as "Federal Wired Radio, Inc." whereas said name should have been described and specified as Wired Radio, Inc., as shown by the records of assignments in this office; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 9th day of October, A. D. 1934.

Leslie Frazer

(Seal)

Acting Commissioner of Patents.