

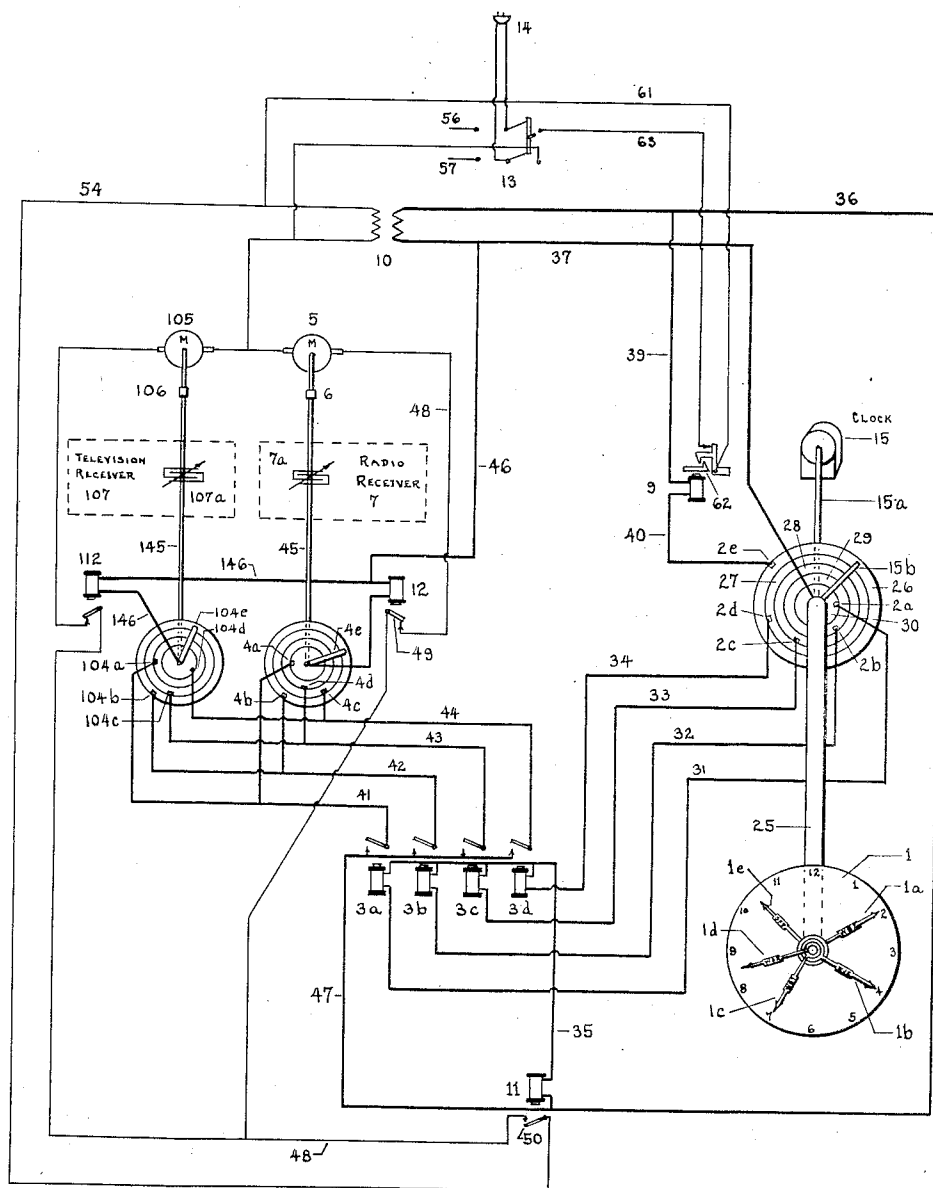
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AUTOMATIC OPERATION OF PLURALITY OF RADIO RECEIVERS

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AUTOMATIC OPERATION OF PLURALITY
OF RADIO RECEIVERS

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4 Claims. (Cl. 250—20)

This invention relates to radio broadcast receiving systems, more particularly to an arrangement whereby automatic operation thereof is obtained.

5 The present invention is a modification of that described in my co-pending application Serial No. 546,050, filed June 22, 1931, entitled "Automatic operation of radio receivers". Said application is directed to means whereby a listener may in
10 advance select desired programs on a number of stations, set the apparatus, and thereafter the predetermined programs will be tuned in automatically at the proper time. This is capable of operation where only one receiving set was to be
15 tuned.

In many cases it becomes highly desirable to tune in two or even more receiving sets as, for instance, a radio receiver and a television receiver, operating on different wave lengths, but
20 broadcasting a single program making it necessary to tune the same in simultaneously.

The present invention is intended to provide a system in which two or more receivers of any kind, either radio or television, or both radio and
25 television, may be tuned in simultaneously to predetermined wave lengths at predetermined times.

In the accompanying drawing constituting a part hereof and in which like reference characters indicate like parts, the single figure is a diagrammatic view of my system as applied to an apparatus comprising a radio receiver and a television receiver.

I provide a program selector panel or dial
35 having numerals thereon designating the ordinary divisions of time, and mount thereon one or more pointers 1a, 1b, 1c and 1d, each designating a predetermined broadcasting station. Pointer 1e designates the "off" position of the apparatus. Each pointer is mounted on a shaft, said shafts being hollow and concentric as shown generally
40 at 25. Each pointer and its rigidly attached shaft is operatively connected thereby to a corresponding disc 26, 27, 28, 29, and 30, respectively, each disc carrying a station contact member 2a, 2b, 2c, 2d and "off" contact member 2e, respectively, rigidly secured thereto. By the manual operation of the pointers 1a, etc., to a designated
45 time the contact members 2a, etc., are moved into positions to make contact at such times.

The clock 15 is preferably electrically operated and has a shaft 15a, so connected to the clock mechanism as to make one revolution in twelve
55 hours, there being secured to said shaft a contact

arm 15b, which as it rotates makes contact with members 2a, etc.

Contact members 2a, 2b, 2c, and 2d are connected by wires 31, 32, 33, and 34, respectively, to relays 3a, 3b, 3c, and 3d, respectively, said relays having a common terminal lead 35, which is connected to relay 11, the other terminal 36 thereof being connected to the secondary of the main current transformer 10. Lead 37 of the transformer makes contact with arm 15b.

Lead 39 from the transformer 10 completes a circuit through relay 9, lead 40, "off" contact member 2e and arm 15b, as will be later described. The armatures of relays 3a, 3b, 3c, and 3d are connected by leads 41, 42, 43 and 44, respectively, to movable discs carrying corresponding contact members 4a, 4b, 4c, and 4d, respectively. In the center of the disc is a contact arm 4e connected by shaft 45 to condensers 7a of the radio broadcast receiver 7. Motor 5 is secured to shaft 45 through friction clutch 6 and serves to rotate contact arm 4e from which lead 46 connects through relay 12 into lead 37 of the secondary of transformer 10. The free ends of the armatures of relays, 3a, 3b, 3c, and 3d are adapted to contact with a common terminal lead 47 which connects to lead 36.

One terminal of motor 5 is connected to one lead of the current supply, the other terminal being connected by lead 48 to armature 49 of relay 12, through armature 50 of relay 11, and is connected by lead 54 to the other side of the current supply.

A similar motor 105 is secured to shaft 145 through friction clutch 106 and rotates contact arm 104e from which lead 146 connects through relay 12 into lead 46. Shaft 145 is connected to condensers 107a of television receiver 107. Moveable discs have contact members 104a, 104b, 104c, and 104d connected to leads 41, 42, 43, and 44 respectively.

A plug 14 is adapted to be inserted into the ordinary alternating current house circuit, and is connected to the center of a double pole double throw switch 13. The contacts on the left side thereof are directly connected to the receiver 7 by leads 56 and 57 for ordinary manual operation of the radio receiver. When the switch is thrown to the contacts on the right automatic operation in accordance with the present invention takes place. The main line primary circuit is connected by lead 61 to armature 62 of relay 9.

The operation of the embodiment shown is as follows:

Assuming that pointers 1a, 1b, 1c, and 1d desig- 55

5 nate stations WBZ, WJZ, WGY and WOR, respectively, the corresponding discs carrying contact members 4a, 4b, 4c, and 4d, respectively, and 104a, 104b, 104c, and 104d, respectively, are set to the proper wave lengths for the receivers 7 and 107 and are fixed in position. They need not be moved unless it is desired to substitute other stations therefor. If it is desired to listen to and see the programs of WBZ at 2 P. M., 10 WJZ at 4 P. M., WGY at 7 P. M., WOR at 8:30 P. M., and the instrument is to be turned off at 10:30 P. M., the pointers 1a, 1b, 1c, 1d and 1e are set as shown on dial 1.

15 All of the relay armatures are in the positions shown and switch 13 is thrown to the right. The clock 15 causes arm 15b to rotate until it touches station contact member 2a, at 2 P. M., closing a circuit through relays 3a and 11. Relay 3a pulls down its armature. Relay 11 pulls up 20 armature 50 completing the circuit of motors 5 and 105, starting them and causing arms 4e and 104e and condensers 7a and 107a to rotate until arm 4e makes contact with member 4a energizing relay 12 and armature 49, arm 104e 25 makes contact with member 104a energizing relay 112 and its armature, at which moment the receiver has been tuned to the wavelengths of station WBZ. This breaks the circuit to motors 5 and 105 and stops them. As soon as arm 15b 30 has passed contact member 2a, relays 3a, 11, 12 and 112 are deenergized and the armatures of relays 3a, 11 and 12 return to the positions shown.

35 In order to more clearly illustrate the operations of the apparatus, some of the parts, such as the suppressor device of my copending application which shuts off the sets while the motors are running, has not been shown or described herein. The system of the present invention is 40 adapted to operate not only in the combination shown but also in other systems for automatic tuning. Although specifically applied to a combined radio and television receiver, it is capable of operation in other combinations, such as of 45 two television receivers for the production of stereoscopic images, or of two radio receivers for the study of sound effects, or of two condensers or sets of condensers in a single receiver, and in many other combinations for various purposes.

The exact apparatus herein disclosed is not absolutely essential and equivalent elements may be substituted for those specifically set forth. These and other changes may be made in my invention within the spirit thereof, the scope of my invention being defined by the claims appended hereto.

What I claim is:

1. In radio reception apparatus, a clock, a movable contact control member operated by said clock, a radio receiver, a television receiver, a motor for tuning in said radio receiver, a motor for tuning in said television receiver, a relay in a circuit of which said member is a part for simultaneously energizing both motors, and a relay adapted to be energized when its motor has tuned in its receiver for de-energizing said motor. 15

2. In radio reception apparatus, a clock, a movable contact control member operated by said clock, a radio receiver, a television receiver, a motor for tuning in said radio receiver, a motor for tuning in said television receiver, a relay in a circuit of which said member is a part for simultaneously energizing both motors, and a relay for each of said motors adapted to be energized when its motor has tuned in its receiver for deenergizing said motor. 25

3. In radio reception apparatus, a clock, a movable contact control member operated by said clock, a radio receiver, a television receiver, a motor for tuning in said radio receiver, a motor for tuning in said television receiver, a relay in a circuit of which said member is a part for simultaneously energizing both motors, and a relay for each of said motors adapted to be energized when its motor has tuned in its receiver for deenergizing said motor, said latter relays being energized through an additional common relay. 35

4. In radio reception apparatus, a clock, a movable contact control member operated by said clock, a radio receiver, a television receiver, a motor for tuning in said radio receiver, a motor for tuning in said television receiver, operating mechanism in a circuit of which said member is a part for simultaneously energizing both motors, and an operating mechanism adapted to be energized when its motor has tuned in its receiver for deenergizing said motor. 45

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