Nov. 17, 1936. S. CHRISTIE 2,061,504

TIME CONTROLLED RADIO RECEIVER

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Fig. 1.

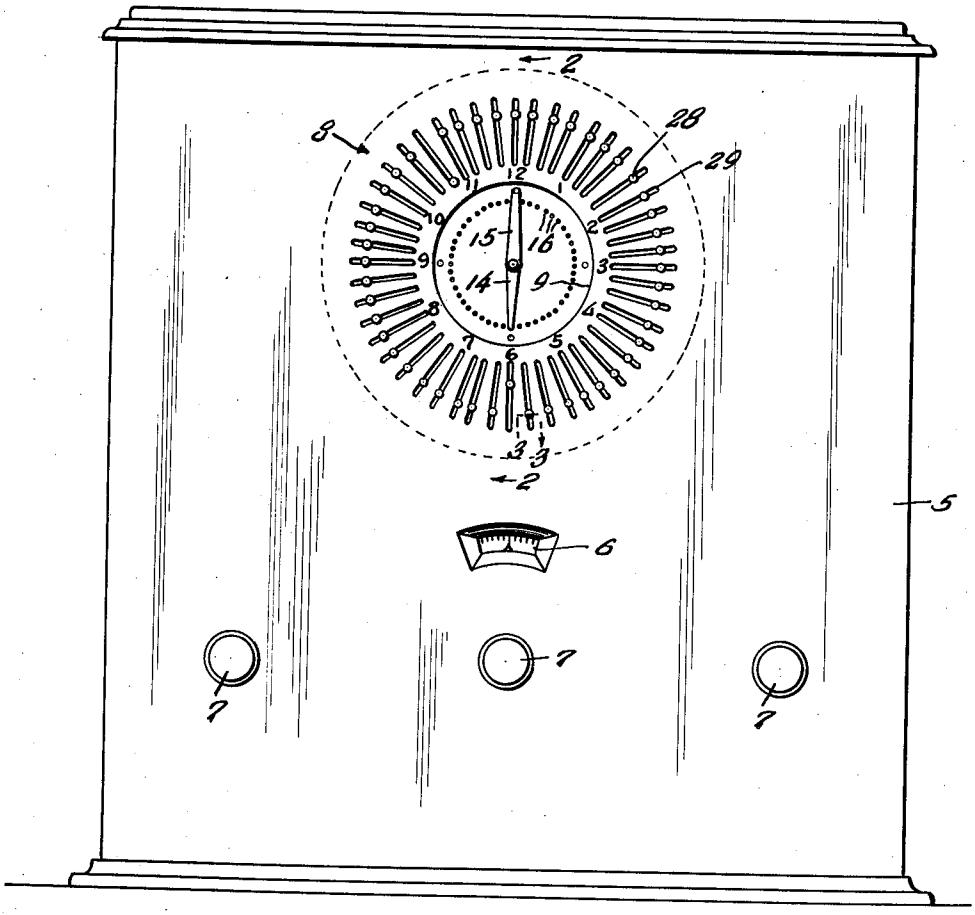
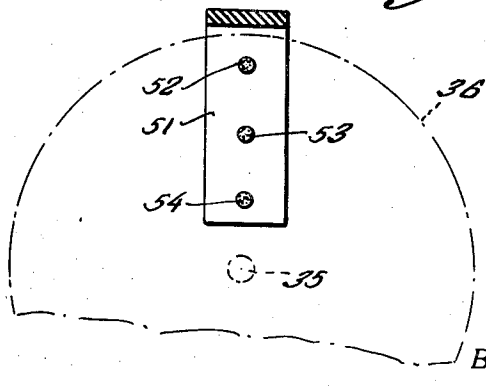


Fig. 8.



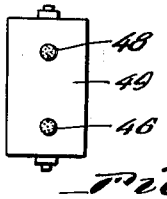


Fig. 9.

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Fig. 2.

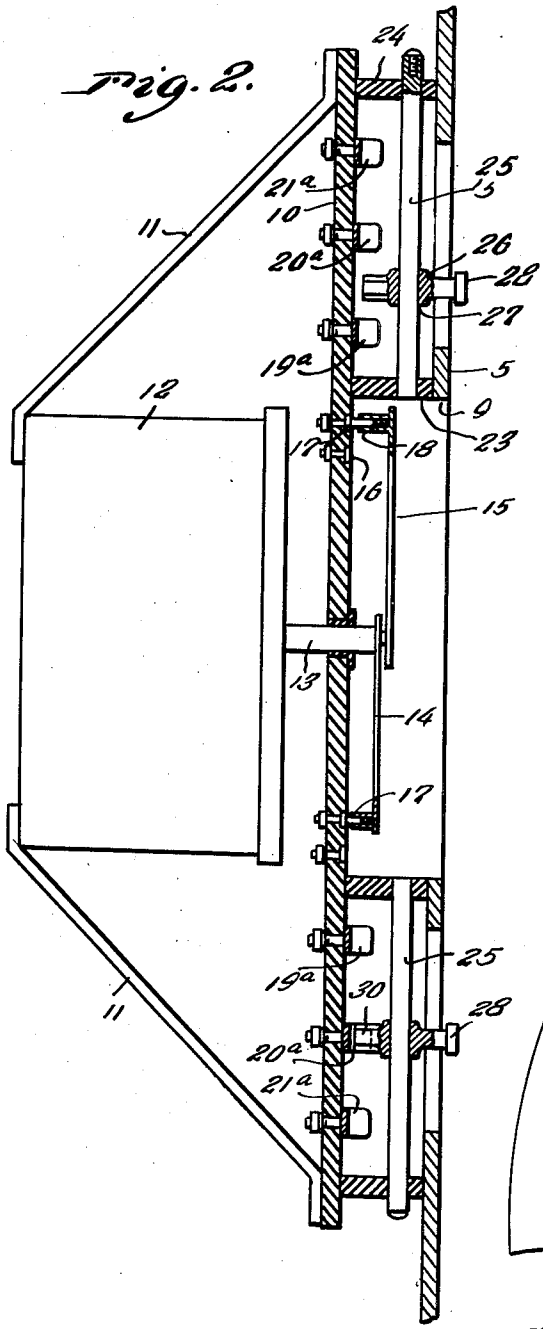


Fig. 3.

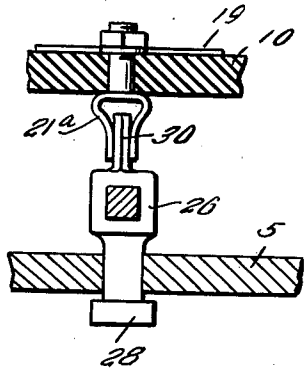
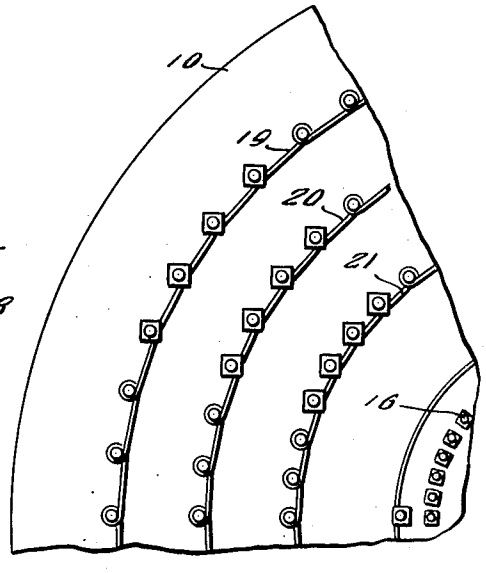


Fig. 4.



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Fig. 5.

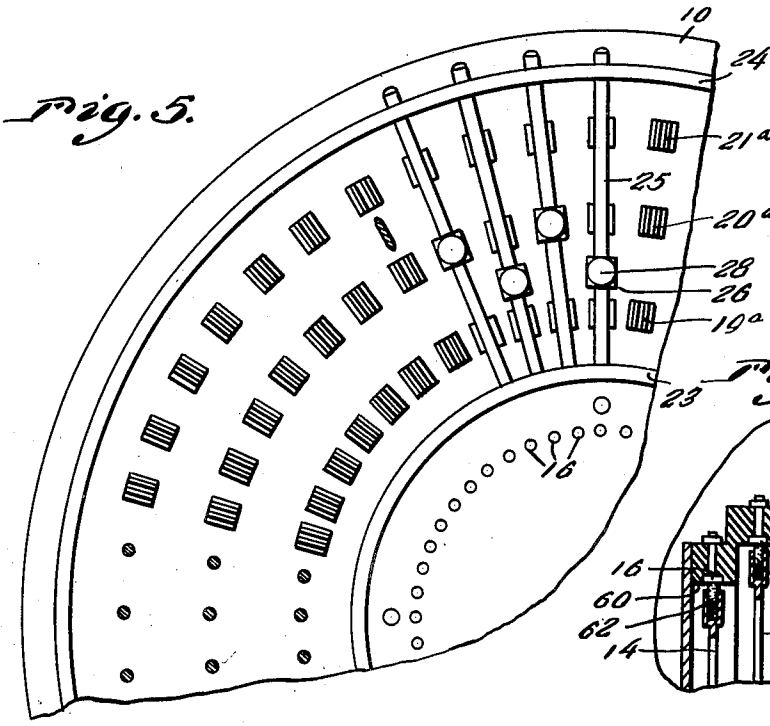


Fig. 11.

Fig. 6.

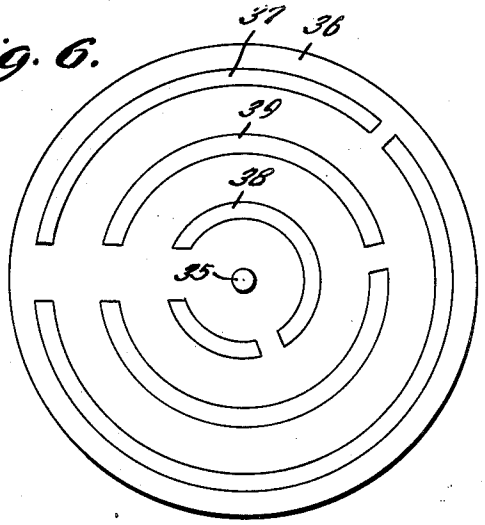
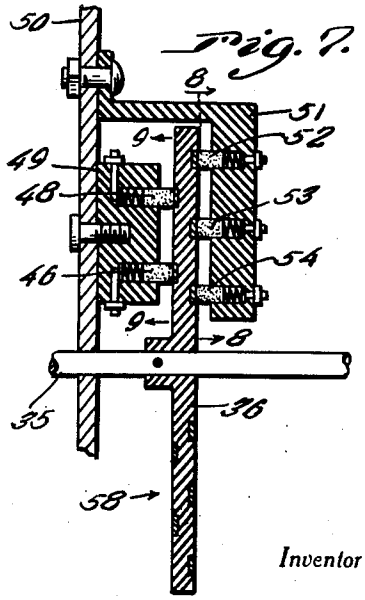


Fig. 7.



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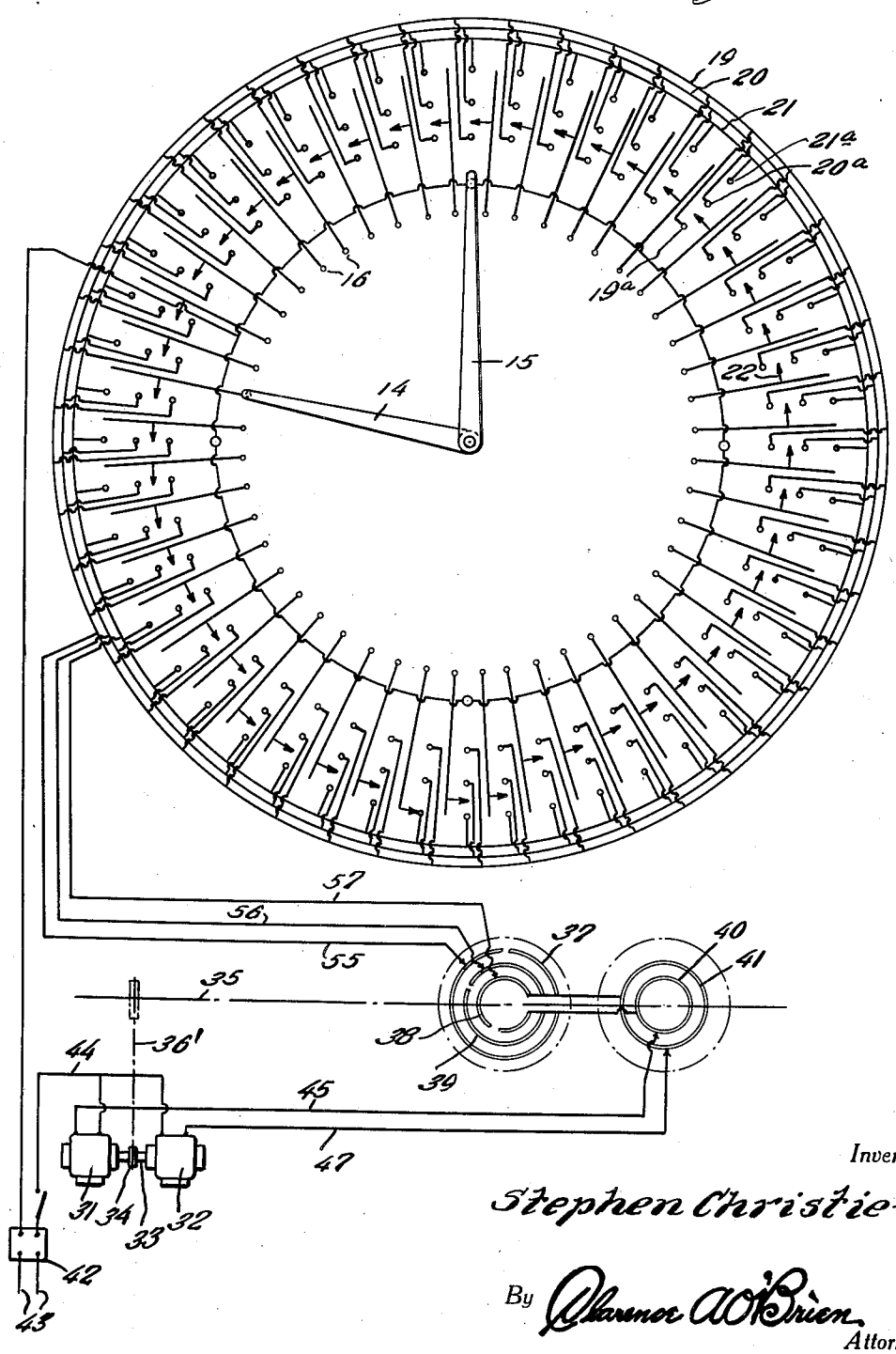
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Fig. 10.



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Patented Nov. 17, 1936 2,061,504

UNITED STATES PATENT OFFICE

2,061,504

TIME CONTROLLED RADIO RECEIVER

Stephen Christie, Brooklyn, N. Y.

Application April 11, 1935, Serial No. 15,907

1 Claim. (Cl. 161—1)

This invention appertains to new and useful improvements in radio receivers and more particularly to a time controlled receiver.

The principal object of the present invention is to provide a control for radio receivers which can be set conveniently and which will operate automatically to cut on future programs.

Another important object of the invention is to provide a time controlled radio receiver control means wherein the construction is simple and far from being as complicated as the structures represented in prior patents.

These and various other important objects and advantages of the invention will become apparent to the reader of the following specification.

In the drawings:

Figure 1 represents a front elevational view of a receiver equipped with the novel control.

Figure 2 represents a fragmentary vertical sectional view taken substantially on line 2—2 of Figure 1.

Figure 3 represents a fragmentary detailed enlarged sectional view taken substantially on line 3—3 of Figure 1.

Figure 4 represents a fragmentary rear elevational view of the switch board shown in Figure 2.

Figure 5 represents a fragmentary front elevational view of the switch board.

Figure 6 represents an elevational view of the motor control switch disk.

Figure 7 represents a fragmentary sectional view through the motor control switch.

Figure 8 represents a sectional view taken substantially on line 8—8 of Figure 7.

Figure 9 represents an elevational view on line 9—9 of Figure 7.

Figure 10 represents a diagrammatic view disclosing the electrical connection between the electrical devices involved.

Figure 11 represents a modified form of hour and minute hand contacting structure.

Referring to the drawings wherein like numerals designate like parts, it can be seen that numeral 5 represents the cabinet construction including the front wall 5. This receiver may include the usual tuning dial 6 in the manual controls 7.

Numeral 8 generally refers to the automatic control. As is clearly shown in Figure 2, the front wall 5 of the cabinet is provided with an opening 9 therein and behind this wall 5 and extending behind this opening 9 is the switch board 10 having suitable brackets 11 on the back thereof for supporting the clock 12. From the clock 12 extends the tube 13 on which the hour hand 14 is located and through this tube 13 extends the shaft on which the minute hand 15 is secured.

On the switch board 10 and concentrically arranged with respect to the axis of the hand 14—15 is the row of contacts 16 against which the spring projected brush 17 on the hour hand wipes.

Numeral 17 represents an annular conductor ring with which the spring projected brush 18 on the minute hand 15 wipes.

It will be observed in Figure 10, that numerals 19, 20, and 21 represent the station line and of course there can be as many more of these station lines as desired. Obviously, if the station lines 19, 20, and 21 are increased, the number of contacts 19*a*, 20*a*, and 21*a* must be proportionately increased. For each quarter hour duration of the program there is a switch which if the apparatus is only constructed for reception of three stations, naturally employs the three contacts 19*a*, 20*a*, and 21*a* along with the contactor 22. Two annular partitions, one inner and one outer denoted by numerals 23—24 respectively are provided between the cabinet front 5 and the switch board 10 and are provided with openings through which the guide rods 25 extend, along which the contactors 26 are located. One contactor 26 for each group of safety contacts 19*a*, 20*a*, and 21*a* and more if desired.

The contactor 26 consists of a collar 27 slidable on the rods 25 and provided with a knob 28 which extends through a corresponding slot 29 in the front wall 5 of the cabinet. The slots 29 are radially disposed with respect to the opening 9. The contacts 19*a*, 20*a*, and 21*a* are of the spring clip type, while on the collar 26 is the knife blade 30 for engagement with the clip like contact. Obviously whichever station is desired is determined by moving the blade 30 to engage its contact, whether it be 19*a*, 20*a* or 21*a*.

For actuating the tuning shaft or tuning dial of a radio receiver (not shown) a pair of motors 31—32 are employed and provided with a common shaft 33 on which is located a pulley 34 (or a sprocket wheel if desired) which drives the shaft 35 through the medium of a belt 36' (or sprocket chain if desired). On this shaft 35 is the dielectric disk 36 which on one side is provided with the outside annular conductor strip 37 having a break therein, the inside conductor strip 38 having a break therein and the intermediate contact strip 39 having a break therein, these breaks being located at offset positions with respect to each other as defined in Figure 6.

On the other side of the disk 36 are the annular unbroken conductor rings 40—41.

Numeral 42 represents a step-down transformer in the power line 43, one side of the secondary of which is connected by the conductor 44 to one side of each of the motors 31—32. The other side of one of the motors is connected by the conductor 45 to the ring 40 by means of a spring projected contact brush 46, while the remaining side of the motor is connected by the conductor 47 to the outside conductor ring 41 by means of a spring projected from the brush 48. The brushes 46, 48 are stationarily mounted on an annular dielectric strip 49 secured to a stationary wall 50 through which the shaft 35 extends. A dielectric bracket 51 supports the three spring projected brushes 52, 53, and 54 which are respectively connected by conductors 55, 56, and 57 to the station lines 19, 20 and 21 respectively.

Thus it can be seen when the clock hand reaches the closed switch set for a given program, one of the motors 31—32 will be energized through the medium of the switch generally referred to by numeral 58 in Figure 7 to the end that the circuit will be maintained open for a period of fifteen minutes at the end of which the motor will be shut off unless the adjacent switch of the control shown in Figure 1 is set to work in continuation of the program.

Figure 11 shows a slightly modified form of contacts for the hour and minute hand. In the opening 9 of the cabinet front an annulus 59 of dielectric material is provided with the stepped shoulders 60—61. On the shoulder 61 is located the annular conductor strip 17a for the spring projected brush 18a of the minute hand while on the shoulder 60 is the annular arrangement of contacts 16 with which the spring projected brush 62 of the hour hand 14 is engageable.

While the foregoing specification sets forth the invention in specific terms, it is to be understood that numerous changes in the shape, size, materials may be resorted to without departing from the spirit or scope of the invention as claimed hereinafter.

Having described the invention, what I claim as new is:

In a time controlled receiver, a cabinet structure including a clock mechanism having an hour and a minute hand, a collector ring for one of the hands, a plurality of contacts annularly arranged for the other hand, said collector ring and contacts being mounted on the face of the clock against which the hands wipe, said cabinet having a front wall provided with an opening therein, said clock face being located inside of the cabinet and forming a backing for the opening, said face extending on its periphery beyond the limits of said opening, and in spaced relation to the back of the front wall, the front of the cabinet being provided with a plurality of slots radiating from the said opening therein, a conductor rod mounted in the cabinet between the outer portion of the clock face and the rear part of the front wall and adjacent each of the slots, a slider on each of the rods provided with a handle protruding through the corresponding slot, the outer portion of the clock face being provided with a plurality of annular rows of time contacts arranged concentrically thereon, and blades on the slider for engagement selectively with the said last mentioned contacts.

STEPHEN CHRISTIE.