May 8, 1934. J. DE WIT ET AL 1,957,632

RADIO TIME CONTROL

Filed Aug. 20, 1932

Fig. 1.

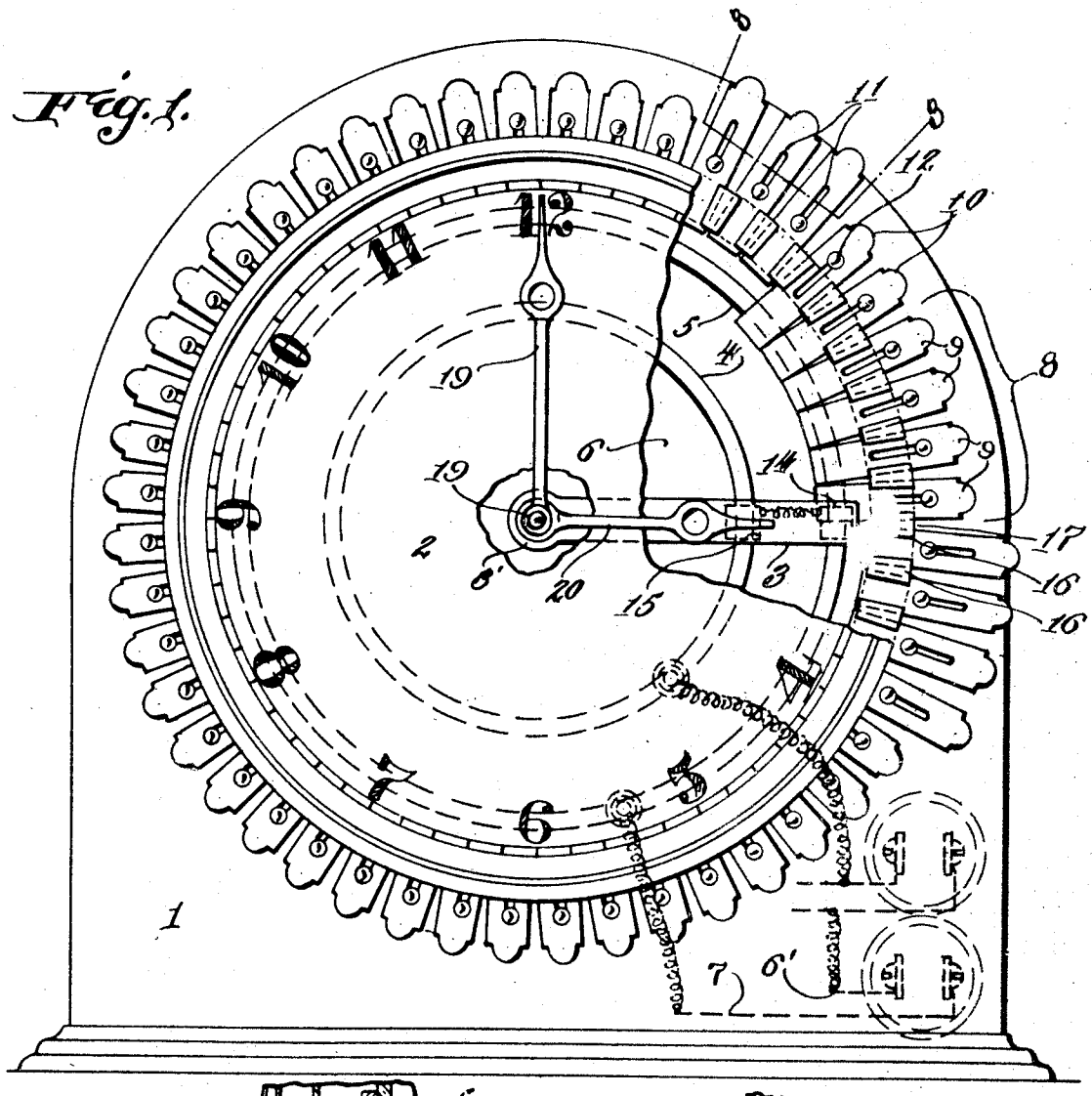
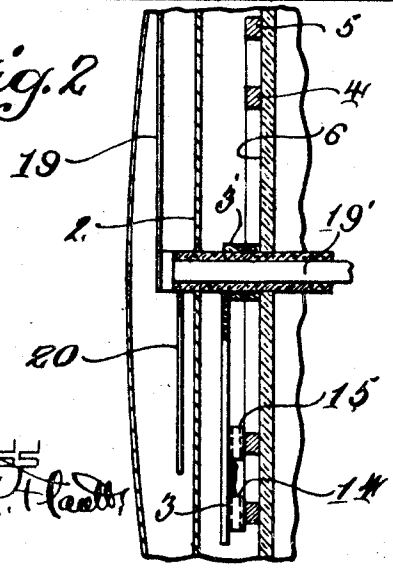


Fig. 2



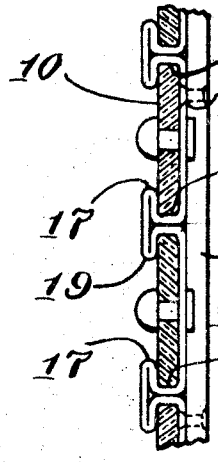


Fig. 3

Witnesses

Inventor
John de Wit
Emil R. Klinglaub

By Edwin Samuels
Attorney

Patented May 8, 1934 1,957,632

UNITED STATES PATENT OFFICE

1,957,632

RADIO TIME CONTROL

John de Wit and Emil R. Unglaub, Baltimore, Md.

Application August 20, 1932, Serial No. 629,580

3 Claims. (Cl. 200—37)

The invention relates to a time control or switch for use in connection with a radio receiving set. It often happens that after the user of a radio set has become informed as to the program of a particular station, he is desirious of listening to certain numbers which may be broadcast for a short period at a time when the user or operator of the set is so busily engaged or otherwise engrossed that he is entirely out of touch with the program and misses the number entirely, and for various other reasons it is found desirable to dispense with the manual operation of the on and off switch and to substitute an automatic time control.

While the prior existing patents contain various devices for this general purpose, they are so complicated and therefore so expensive and impractical and uncertain in their operation that they have not come into general use. The inventors in the present instance have produced a device for this purpose which is simple in design and cheap to construct, practical, definite and positive in its operation, so that the device may be regarded as filling a longfelt want in the nature of an automatic radio time control.

In the drawing:

Figure 1 is a plan view.

Figure 2 is a side elevation, certain parts being broken away, for convenience of illustration.

Figure 3 is a section on line 3, 3, Figure 1.

Referring to the drawing by numerals, each of which is used to indicate the same or similar parts in the different figures, the construction shown comprises a clock 1, which is preferably an electric clock or other type of clock which is essentially accurate, so that it can be kept without difficulty in agreement with the clocks at the various broadcasting stations. This clock is shown in Figure 1 with part of the dial removed. Underlying the dial 2 is a base plate 6, secured to the front of the casing. This may be of insulating material or the conducting parts may be insulated therefrom. A switch arm or moving contact member 3 is secured to the time shaft 3' which carries the hour hand 20. Minute hand 19 is mounted on an inner shaft 19'. Secured to the face of the clock we have shown an inner or continuous ring 4 and an outer intermittent contact ring 5 of conducting material suitably insulated and separated from each other in an electrical sense. The two rings 4 and 5 are concentric with the shaft 3'. Both rings are of contacting material and they are connected respectively to the two sides of the circuit indicated at 6' and 7, whereby the radio receiving set is energized. The dial is shown as divided into twelve main sections corresponding to the hours from 1 to 12 in accordance with the usual practice in the manufacture of clocks. The hour spaces indicated by reference character 8 are shown as divided each into four fifteen minute spaces indicated by reference character 9 though it will be understood that the dial may be otherwise divided or calibrated in any suitable manner. An important feature of the invention resides in the provision of a series of non-conducting shields 10. These in the preferred form of the invention shown are mounted for adjustment in a radial direction, being arranged about the circumference of the dial as shown.

In the form of the invention shown each of these shields is of a width in a circumferential direction corresponding to the fifteen minute spaces 9 on the dial and each shield is shown as slotted in a radial direction at 11, each slot being engaged by a pin 12 seated in the dial. This provides for the radial adjustment of each shield at the will of the operator. In what may be considered the normal position of the shields, they cover the outer contact ring 5 preventing contact therewith of the brush 14 which is mounted on the hand or arm 3 to wipe the ring 5 as the arm rotates, providing a suitable electrical contact therewith when the shields are withdrawn as hereinafter described. The hand or arm 3 is also provided with a brush 15 engaging the inner ring 4 making continuous electric contact therewith.

In order to place the radio set in operation during any selected period, the corresponding shields 10 are moved outward radially so that the pin 12 occupies the inner end of the slot 11, the slots being preferably of just sufficient length to provide for adjustment of the shields from their inner to their outer position and vice versa.

To guide the shields we have provided in addition to the pin and slot arrangement described suitable guides 16 which may project over the edges of the shields in any suitable manner. These are best illustrated in Figure 3 which is a sectional view, the guides being in accordance with the illustration formed for the entire construction of a single strip of thin sheet metal which is bent up at intervals to form T's of double thickness as shown at 17. The bases of these T's at 23 are secured to the plate 6. The non-conducting shields or slides 10 are mounted between the shanks 18 of each two adjacent T's, the cross arms of the T's at the top at 19 taking over the top edges of the shields, permitting them

to slide radially in the direction of their length to the limits provided by the pin and slot engagement.

In the preferred form of the invention the contact arm 3 and the rings 4 and 5 are covered by a clock dial 2 and the shaft 3' which carries the contact arm 3, also carries the hour hand 20, the minute hand 19 being carried by an inner shaft 21 concentric with the shaft 6. Under these circumstances, the arm 3 preferably underlies the hour hand 20 and the calibration or hour numbers appear on the dial only.

In the operation of the device the set is first tuned to receive from a certain predetermined station the program which it is desired to reproduce for a definite period, it being assumed that the rings 4 and 5 are placed in circuit with the receiving set in series with the on and off switch. The clock being in operation either actuated electrically or by means of a spring, the slides 10 corresponding to the period when it is desired to have the set in operation, are drawn outwards radially as shown in Figure 1 exposing a corresponding segment of the outer conducting ring 5. As the arm 3 with its brush 14 crosses this segment, the circuit which is normally broken by means of the shields 10, which prevent contact of the brush 14 with the rings 5 so that the circuit is normally open between the rings 3 and 4, is closed during the period in which the brush 14 is in contact with the ring 5 which in the form of the invention shown comprises fifteen minutes for each shield withdrawn. In the illustration, Figure 1, the shields 10 corresponding to the period from half past nine to ten, are withdrawn so that the set will be in operation during that period.

An important advantage of the improved construction lies in the fact that it can be produced at a lower cost than any apparatus for this purpose hitherto devised or offered for sale. It is also of importance that in adjusting the apparatus for playing at different periods there is no disturbance of the connections other than the removal of the noncontacting shield which permits the brush carried by the moving contact arm to enter into electrical contact with the ring for the extent of the segment thus uncovered. The changes of circuit necessary to the prior art devices not only add to the expense of the apparatus in order to make these contacts satisfactory, but have increased the uncertainty of its operation on account of the tendency to defective contacts.

We have thus described specifically and in detail an automatic time control for a radio receiving set embodying the features of our invention in the preferred form, in order that the manner of constructing, operating, applying and using the invention may be clearly understood, however, the specific terms herein are used descriptively rather than in a limiting sense, the scope of the invention being defined in the claims.

What we claim as new and desire to secure by Letters Patent is:

1. An automatic time control for a radio comprising a clock, a moving contact arm operated by the clock and insulated therefrom, inner and outer contact rings connected to the radio circuit, the circuit being normally open between the rings, the moving arm having means thereon for closing contact between the rings, a series of movable shields corresponding to definite periods of time, said shields normally overlying one of said rings, holding the contact normally open between said rings, said shields being mounted to move and being movable at the will of the operator to expose predetermined segments of said contact ring to contact with the moving arm, providing for the operation of the radio receiving set during a corresponding period of time.

2. An automatic time control for electrical apparatus comprising a clock, a moving contact arm operated by the clock and insulated therefrom, a contact ring connected to the circuit and means connecting the contact arm to the circuit which is normally open between the arm and the ring, a series of radially extending independently movable shields corresponding to definite periods of time, said shields normally overlying the ring serving to hold the contact normally open between the ring and the arm, said shields being mounted to move and being movable at the will of the operator radially outwardly to expose predetermined segments of said contact ring to contact with the moving arm providing for the operation of said apparatus during a corresponding period of time.

3. An automatic time control for electrical apparatus comprising a clock, a moving control arm operated by the clock and insulated therefrom, a contact ring connected to the circuit and means connecting the contact arm to the circuit, which is normally open between the arm and the ring, means of shielding said ring in segments corresponding to definite periods of time, said shielding means normally serving to hold the contact normally open between the ring and the arm, said means being movable at the will of the operator to expose the said segments of the contact ring.

JOHN DE WIT.
EMIL R. UNGLAUB.