April 4, 1939. D. MASTINI 2,152,903

RADIO RECEIVER COMBINED WITH COIN COLLECTOR BOXES

Filed Jan. 24, 1935

Fig. 1

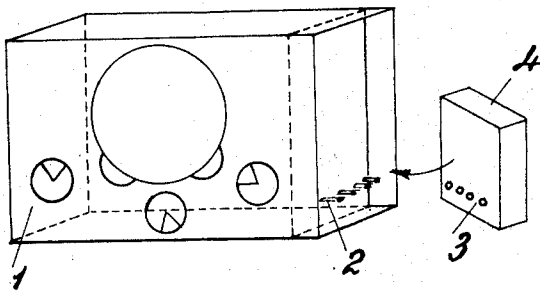



Fig. 2

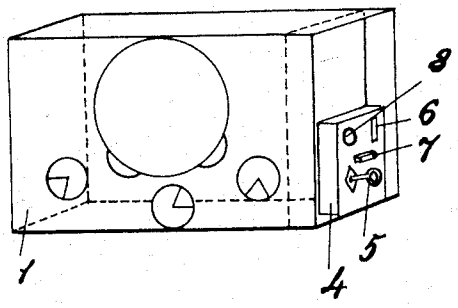



Fig. 5

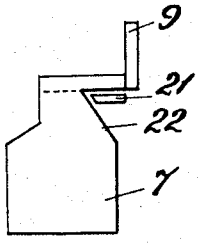



Fig. 3

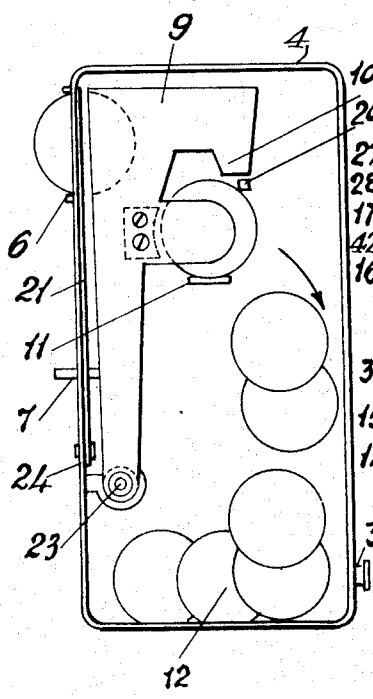
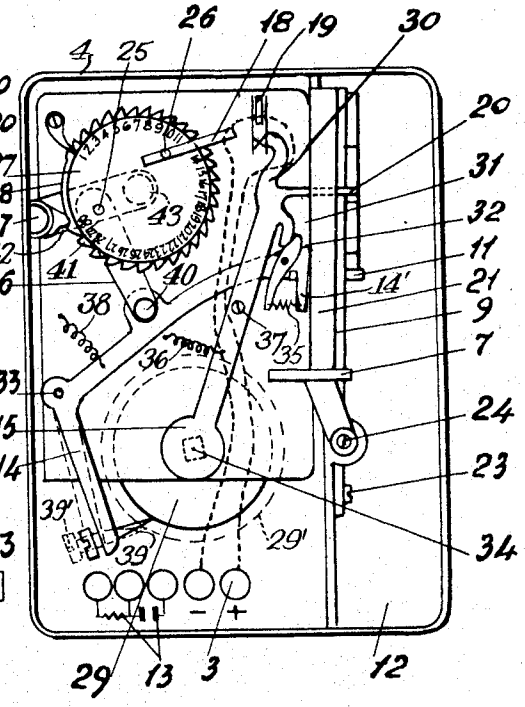



Fig. 4




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## RADIO RECEIVER COMBINED WITH COIN COLLECTOR BOXES

Domenico Mastini, Rome, Italy

Application January 24, 1935, Serial No. 3,257
In Italy January 26, 1934

5 Claims. (Cl. 194—73)

My invention relates to a combination of a radio receiver with an electromechanical device, in which the introduction of a counter or of a coin causes the closing of one or more circuits which are essential for the operation of the radio receiver.

A feature of the invention involves the inclusion of the mentioned electromechanical device in a detachable casing which may be termed a collector box adapted to receive the checks, counters or coins deposited in the apparatus, and also includes the feature of having certain of the essential parts of the radio indispensable to operation deliberately located within said detachable casing.

According to my invention, the electromechanical device contained in the collector box, aside from certain connecting members allowing the detaching of the whole box from the radio receiver, a comprises essentially a clock work and a system of levers operating two groups of spring contacts, connected in series, the one with the other. The said spring contacts have as their function to open and to close the aforesaid circuits which are essential for the operation of the radio receiver, as for example, the supply circuit. Each of the two groups of spring contacts is adapted to interrupt the circuit, and according to the invention the first interruption is caused to take place every day in order to induce the owner or tenant to introduce a new counter or coin into the box, where as the second interruption is caused to take place after a certain number of days, for example after 30 days, in order to induce the owner or tenant to detach the box, to pour out the coin contents, or to bring the box to the office where the payment is to be made and where the mechanism is set for a new period of operation.

The invention will now be described with reference to the annexed drawing showing by way of example a coin-operated radio receiver with collector box according to the principles of the invention.

Figure 1 is a perspective view of a radio receiver with the collector box detached and

Figure 2 is the same perspective view with the same collector box attached;

Figures 3 and 4 are an end view and a side view of the inner mechanism of the box, respectively, and

Figure 5 is a detail of the push button.

In Figures 1 and 2 of the drawing, a radio receiver 1 is shown, having on a side panel a plurality of connecting pins 2 adapted to be introduced into a corresponding number of sockets 3 of the detachable collector box 4, which has externally a key 5 or a similar winding device, a slot 6 for the introduction of a coin, a push button 7 for obtaining by the advancement of the coin the closing of a circuit and thereby the release of the clock work for 24 hours, and an observation hole 8 allowing the user to observe an interior dial-plate of a wheel 27, to be further explained.

As has already been stated, the inner mechanism of the box 4 comprises essential parts of the radio receiver circuit which is automatically interrupted at predeterminated intervals of time by means of a clock work and of two groups of spring contacts. The spring contacts 19 (Fig. 4) have the purpose of causing a daily interruption and the spring contacts 18 cause the interruption at longer intervals, for example of one or two months.

The operation of the spring contacts 19 is obtained as follows: when a coin has been introduced in the slot 6, this coin by effect of gravity will place itself between the small base 11 and the arm 20 of the lever 15. Pushing of the button 7 by the user will cause the lever 9 pivoted on the pivot 23 to push the coin, which, advancing on the base 11 will raise the arm 20 and turn the lever 15 counter-clockwise about its pivot 37.

The dog 31 on lever 15 will then engage the catch 32 so that the lever 15 is not allowed to return to inactive rest position. In this way the tappet 30 of the lever 15 closes an electric contact to be made between the spring contacts 19 and this contact is maintained until the lever 15 returns to its rest position. The spring 29 of the clock work is intended to be wound practically each time that a coin is inserted in order to cause actuation of the mechanism operated by the introduction of a coin, etc. During the time when member 30, which is moved by the introduced coin, is effective to close the contact between the group of contact springs 19, permitting the reception of a radio program, the disk like member 15 is intended to cover winding spindle 34 so as to obstruct access to the winding spindle, thus preventing winding of the clock spring. The operation of the lever 15 and the contact springs or spring contacts may only be had when the extension or expansion of the spring 29 of the clock work as indicated at 29' (or an eccentric turned by the mechanism itself) causes an angular displacement of the lever 14 pivoted at 33.

Due to the operation of the clock work the ap-

paratus is operated so that after the passing of a period of twenty-four hours said clock work causes lever 14 to swing downwardly and release dog 31 from the catch 32 so as to allow the lever 15 under the influence of a return spring 36 to swing away in a clockwise direction about its pivotal mounting from the obstructing position over winding spindle 34 and to simultaneously release the contact springs 19, thus allowing the latter to open and interrupt the circuit. Such interruption, of course, interrupts reception of any radio program on the receiver and is intended to induce the user of the apparatus to wind up the clock spring and also to introduce a coin in slot 6 in order to reestablish the circuit by means of the pressure effected by the coin on members 20, 30 and consequently by the latter on the contact springs 19.

The angular displacement of 14 in a clockwise direction lowers the catch 32, which is pivoted on lever 14 and urged in a counter-clockwise direction toward the main body of lever 15 by a tension spring 35 connected at one end to said lever 14 and at the other end to catch 32. In this construction, it is quite practical to have the catch 32 operate in practically the same plane as dog 31 so that the catch will positively be capable of being swung up into a position to engage against the dog. The lever 14 carries a stop 14' which limits counterclockwise rotation of the catch 32 through tension of spring 35, although it may be freely rotated a greater degree in clockwise direction in opposition to said spring. Hence, when lever 14 rises, due to winding up of spring 29 from unwound condition indicated at 29' and under the action of its tension spring 38, and a coin is then inserted so as to operate member 20 on disk lever 15 and swing the latter in counterclockwise direction about its pivot to close the winding aperture 34 and also close spring contacts 19, the upper end of catch 32 will make resilient wiping contact with dog 31. Thus, during the rise of the upper end of lever 14, said catch will exert increasing resilient pressure against dog 31 in counterclockwise direction so as to finally substantially lock lever 30 in operated position as shown in Fig. 4, until the spring 29 is again run down and causes clockwise rotation of lever 14 and consequent lowering and release of catch 32 from dog 31, which will allow spring 36 to return lever 15 to rest position in which the winding aperture 34 is again open and contact springs 19 also open. As the spring 29, when daily rewound from the expanded position, causes the displacement of the lever 14 every 24 hours, the lever 15 will also break the spring contact 19 every 24 hours.

As particularly indicated in Fig. 4, an adjustable projection 39 such as a screw, or the like is secured in the lower end of lever 14 and makes physical contact with the spring 29, but when the latter is expanded by unwinding as at 29', the lever and its projection are swung to the position indicated in broken lines at 39'. The lever tends to follow the size of spring 29 and part 39 is resiliently urged into contact therewith by a spring 38 connected to lever 14.

The same movement of lever 14, by means of the connecting rod 16 pivoted or articulated at 40 on lever 14, as well as the tappet 17 pivoted on lever 42 which is swingable about pivot 43 concentric with wheel 27, causes the rotation of the wheel 27 to occur by one tooth every day. This rotation will be possible only until the tappet 17 will encounter the toothless sector 25 of the toothed wheel or sprocket 27.

The electric contact of the other group or springs 18 is operated by the rotation of the toothed wheel 27. This wheel has on the flat portion of its surface a hole 25 which is brought tooth by tooth under an insulated pin 26 provided on the under spring contact of the group of spring contacts 18. This pin 26 enters in the hole thus breaking the contact between the spring contacts 18, whose closing is necessary for the operation of the radio receiver.

The automatic interruption of this operation is thus obtained at intervals of a number of days depending on the number of teeth upon the wheel 27.

To reestablish the contact between the group of spring contacts 18, a manual intervention is necessary after having detached and opened the box. The wheel 27 is then turned until the tappet 17 engages with the first tooth.

The lever 15 has in the wound position of the clock work spring 29 its lower end covering the spindle of the spring 29 which therefore can be rewound only in position of rest.

In Figure 3 the lever 9 operated by the push button 7 has an arm 10 which when the lever 9 is at rest, is disposed over the arm 20 of the lever 15 hindering this arm to be raised without pushing the lever 9 by means of the button 7.

But when the lever 9 is pushed by the button 7, the inclined surface 22 provided on the push button displaces sideways the lever 21 which rotates on the pivot 24 and closes the slot 6 for the coin introduction, for the purpose of preventing operation by other means instead of coins, for example by means of a knife or a hook, of the arm 20, to raise it so as to thus engage the levers 14 and 15 and close the contact between the spring contacts 19.

With the sockets 3 of the electric contact pins 2 are connected the aforesaid essential parts of the radio receiver, as for example resistances or condensers, schematically indicated by 13. The supply circuit may also be broken or closed by the said means 2 and 3, that is, by removing the casing or unit 4 as a whole with its contained parts.

It will be understood that the term radio receiver means equally a phonic receiver and a receiver of television images, etc. The purpose of the device is to stimulate the sense of economy, to propagate insurance enterprises, broadcasting and the like.

What I claim is:

1. The combination, with a radio receiver having exterior contacts connected to the interior circuits thereof, of a detachable coin collector box adapted to engage with said exterior contacts and containing two distinct means for periodically breaking the radio circuit of said radio receiver, means for again reestablishing said circuit and causing the receiver to resume operation, the one breaking means automatically operating at short intervals of time and the other at relatively longer intervals of time, coin operated means operatively associated with said first circuit breaking means and causing the same to close the circuits of said receiver so as to allow said receiver to operate, and means associated with the second circuit breaking means which operates at longer time intervals, locking the same against resetting from the exterior of said detachable box and necessitating removal of the same in order to obtain access thereto for the

purpose of resetting said second means in operative position.

2. In a radio receiver provided with exterior contacts connected to the interior circuits thereof, and a detachable coin collector box adapted to engage with said exterior contacts, the combination of coin operated mechanism exclusively contained within and associated with said collector box and comprising interior circuit making and breaking means connecting in said box with said contacts, and a clockwork periodically operating to open said circuit making and breaking means so as to interrupt operation of the receiver, said circuit making and breaking means being again closed by an introduced coin, and including a plurality of contacts and a system of spring actuated levers operated by the clockwork at the expiration of a predetermined period of time to open said contacts, the clockwork being manually wound and having a winding shaft, pivoted shiftable means for obstructing access to said winding shaft displaced by said levers when operated by said clockwork at said predetermined period to allow access to said winding shaft and means operable upon the introduction of a coin for manually resetting said levers and causing said shiftable means to shift about its pivotal mounting into obstructing position with respect to the winding shaft.

3. In a radio receiver, the combination, with interior circuits in said receiver and exterior contacts connected to said interior circuits and comprising contact pins, of a detachable coin collector box comprising a control means for the receiver which, upon removal, renders said receiver inoperative, there being sockets upon said collector box adapted to engage upon said contact pins, and coin operated mechanism exclusively contained within and associated with said collector box and comprising interior circuit making and breaking means connecting in said box with said contacts, and a clockwork periodically operating to open said circuit making and breaking means so as to interrupt operation of the receiver, said circuit making and breaking means being again closed by an introduced coin, and including a plurality of contacts and a system of spring actuated levers operated by the clockwork at the expiration of a predetermined period of time to open said contacts, the clockwork being manually wound and having a winding shaft, pivoted shiftable means for obstructing access to said winding shaft displaced by said levers when operated by said clockwork at said predetermined period to allow access to said winding shaft and means operable upon the introduction of a coin for manually resetting said levers and causing said shiftable means to shift about its pivotal mounting into obstructing position with respect to the winding shaft.

4. In a radio receiver provided with exterior contacts connected to the interior circuits thereof, and a detachable coin collector box adapted to engage with said exterior contacts, the combination of coin operated mechanism exclusively contained within and associated with said collector box and comprising interior circuit making and breaking means connecting in said box with said contacts, a clockwork periodically operating to open said circuit making and breaking means so as to interrupt operation of the receiver, said circuit making and breaking means being again closed by an introduced coin, and a manually operated push button upon said coin collector box for releasing an introduced coin, the circuit making and breaking means include a plurality of contacts and spring actuated levers, the clockwork being manually wound and having a winding shaft, a pivoted shiftable means for obstructing said winding shaft operable by said levers to obstruct said shaft and also to shift about its pivotal mounting and allow access thereto and means setting said levers in initially operative position upon depression of said button and release of said coin, the clockwork causing said levers to become released at the expiration of a predetermined period and open said contacts so as to interrupt operation of the radio receiver.

5. In a radio receiver having a detachable coin collecting box containing at least an essential link in the radio circuit of said radio receiver, the combination of a clockwork within said collecting box for interrupting said radio circuit at the expiration of a predetermined time period, coin operated means disposed within said box for reestablishing said circuit, a system of spring actuated levers, contacts forming portions of the essential link in the radio circuit and when closed serving to establish said circuit upon setting of said levers, the removal of said collecting box removing said link in the radio circuit so as to render said radio receiver inoperative, and the clockwork having a driving spring and winding means for manually winding up the same and upon running down after a predetermined period of time, said spring expanding and operating said lever system and causing the same to open said contacts and break said radio circuit, and a pivoted swingable obstructing means operated by said lever system to obstruct said winding means when the latter is set into operative position and the radio circuit is closed.

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