Dec. 11, 1928. 1,694,726

G. W. WERNER

COIN CONTROL FOR AUTOMATIC SOUND REPRODUCERS

Filed Aug. 5, 1927

FIG. 1.

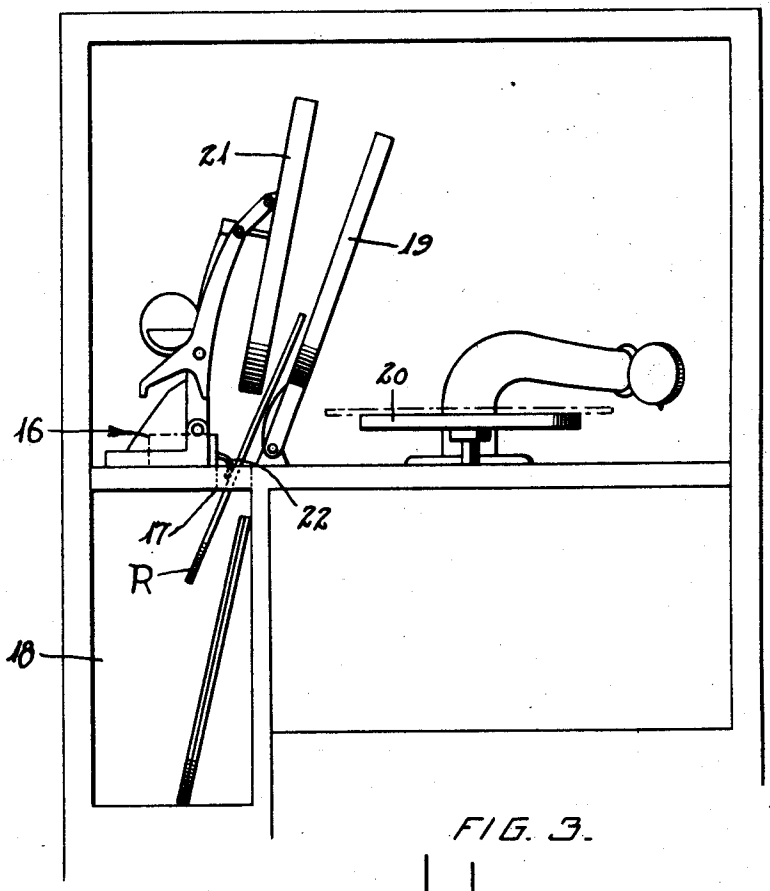


FIG. 2.

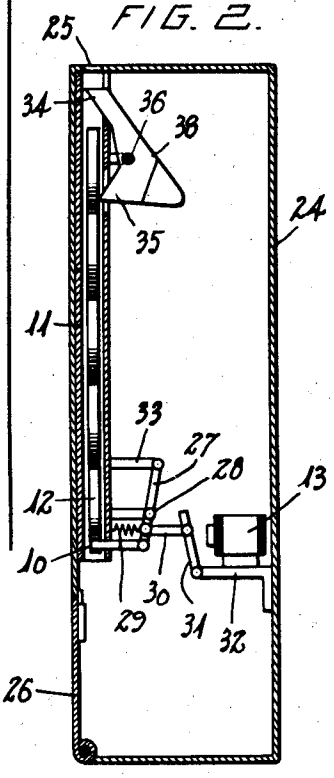
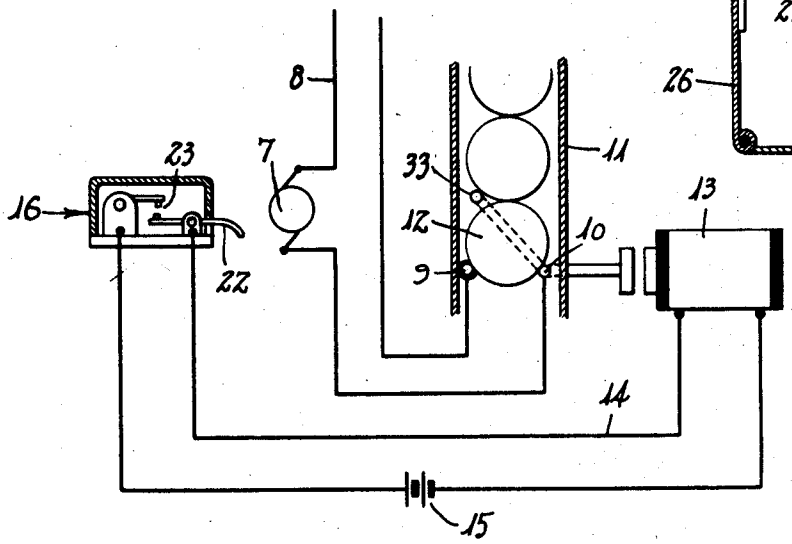


FIG. 3.



Inventor:

George W. Werner

By Monroe E. Miller

Attorney

Patented Dec. 11, 1928. 1,694,726

UNITED STATES PATENT OFFICE.

GEORGE W. WERNER, OF EASTON, PENNSYLVANIA.

COIN CONTROL FOR AUTOMATIC SOUND REPRODUCERS.

Application filed August 5, 1927. Serial No. 210,916.

The present invention relates to coin or check controlled devices for electric motor operated machines, and aims to provide a novel and improved coin control for automatic sound reproducers which play a series of records in succession, this invention being an improvement over the coin control for electric motor operated machines disclosed in my application Serial No. 117,800, filed June 22, 1926.

There are automatic sound reproducers on the market which change records automatically, so that a series of records placed in a magazine will be played in succession. The present coin control is designed for use with such automatic sound reproducers, in order that when one or more coins or checks are inserted, the corresponding number of records will be played automatically.

Another object of the invention is the provision of a coin control operable to start the sound reproducer when a coin is inserted, and means being provided for stopping the sound reproducer when the record has been played and is removed from the turntable, thereby requiring another coin for the playing of the next record.

A further object is the provision of means whereby a number of coins may be inserted and a corresponding number of records played automatically in succession.

With the foregoing and other objects in view, which will be apparent as the description proceeds, the invention resides in the construction and arrangement of parts, as hereinafter described and claimed, it being understood that changes can be made within the scope of what is claimed, without departing from the spirit of the invention.

The invention is illustrated in the accompanying drawing, wherein—

Figure 1 is a front view, somewhat in diagram, of an automatic sound reproducer for playing a series of records in succession, showing the record operated circuit controller applied to the machine.

Fig. 2 is a vertical section of the coin box.

Fig. 3 is a diagrammatical view illustrating the electrical circuits.

Referring to Fig. 3, the numeral 7 designates the electric motor of the sound reproducer shown in Fig. 1, and the circuit 8 of the motor includes contacts 9 and 10 projecting within a coin chute 11. The contact 9 is fixed within the chute, while the contact 10 constitutes a slidable plunger which may be retracted from the chute to release the coin that bridges the contacts. The chute 11 may be of any suitable length to hold a desired number of coins 12, and the lowermost coin seating on the contacts 9 and 10 will close the circuit 8 to operate the motor 7. The contacts 9 and 10 are spaced apart to support the coin for which the device is intended, and to permit smaller coins to drop through or between the contacts. For example, if the device is intended for nickels, the contacts 9 and 10 will support a nickel, but will leave dimes and pennies drop through.

The movable contact 10 is retracted by an electromagnet 13 when same is energized, and the circuit 14 of said electromagnet includes a battery 15 or other source of low voltage current, and a circuit controller or switch 16. This circuit controller 16, preferably housed within a case, is secured on the sound reproducer, as seen in Fig. 1, adjacent to the played record slot 17 through which the played record R drops into a compartment or pocket 18. The sound reproducer includes an arm or member 19 which lifts, by an upward swinging movement, the record off the turntable 20, so that the played record drops through the slot 17 into the compartment 18, and the next record is transferred from the magazine 21 to the turntable 20 automatically. The circuit controller 16 has a trigger or finger 22 projecting into the path of the falling record, whereby to bring the contacts 23 together, for closing the circuit 14. The trigger or finger 22 is of flexible material so as not to injure the sound record, and said trigger or finger may also be bent downwardly. The circuit 14 is thus closed by the downward movement of the trigger or finger 22 when the record R drops through the slot 17, and said circuit is opened when the trigger 22 is released. Thus, the records being dropped in succession, when changing the records automatically, will control the circuit 14, although the controller 16 may be operated by the arm 19 or other part of the sound reproducer which is moved when changing records. However, it is convenient to use the circuit controller 16 with the flexible trigger or finger 22 to be operated by the dropped records.

The coin chute 11 is disposed within a coin box 24 which has a coin slot 25 at the upper end of the chute for the introduction of the coins, the slot 25 being of a size to prevent oversize coins or slugs from being inserted.

The box 24 also has a lower door 26, with a lock therefor, to permit the coins to be removed.

A detent 33 is slidable in the chute 11 to be projected into the chute below the second coin, for supporting such coin and any other coins above it, when the lowermost or first coin is released. The detent 33 and contact or plunger 10 are projected into the chute alternately. Thus, said contact 10 and detent 33 are pivotally connected with the short and long arms, respectively, of a lever 27 pivoted, as at 28, and a spring 29 normally swings said lever to project the contact 10 into the case and retract the detent 33. A link 30 connects the short arm of the lever 27 with an armature 31 pivoted on a bracket 32 which supports the electromagnet 13, whereby the electromagnet being energized and attracting the armature 31 will swing the lever 27 to retract the contact 10 from and project the detent 33 into the chute 11.

In order to prevent an excessive number of coins being inserted, and to avoid the possible grounding of the electric circuit 8 through a person inserting a coin in the box 24, a guard 38 of fibre or other insulating material is pivoted, as at 36, adjacent to the upper end of the chute 11 below the slot 25, and has a finger 34 capable of projecting into the chute 11 immediately below the slot 25. The guard 38 has a cam 35 with which the coins contact, and the guard 38 is weighted or spring influenced so as to swing to a position to project the cam 35 into the chute and retract the finger 34. A coin passing the cam 35 will swing the guard 38 to the position shown in Fig. 2, to move the finger 35 into the chute, and when the full number of coins are inserted, for which the chute 11 is intended, the uppermost coin is disposed opposite to the cam 35, thereby holding the guard 38 in the position shown, so that the finger 34 will prevent another coin from being inserted. This will prevent a coin held in the fingers from contacting with the last coin in the chute and completing an electrical circuit to ground from either of the contacts 9 and 10, and the chute and other parts may otherwise be suitably insulated. The guard 38 will therefore prevent the coins from establishing an electrical connection from either contact 9 or 10 with the person depositing a coin in the slot, and if the chute is still filled with coins up to the intended capacity, another coin cannot be inserted to contact with the last coin in the chute. However, as soon as the lowermost coin is released and the coins drop down in the chute, another coin may be inserted, the guard 38 having been released. Therefore, if the chute is not filled up with coins to the intended capacity, additional coins may be inserted.

In operation, with the magazine 21 filled with records, a coin 12 inserted in the chute 11 will bridge the contacts 9 and 10, thereby closing the circuit 8 of the motor 7 and operating the sound reproducer to play the record which is placed on the turntable 20. The sound reproducer operates automatically, after the record has been played, to raise the arm 19 and lift the played record off the turntable, and the played record drops down through the slot 17 into the compartment 18. Said record dropping down will move the trigger or finger 22, so as to close the circuit 14, and the electromagnet 13 being energized will retract the contact 10, thereby permitting the coin to drop down. This will open the circuit 8 and stop the sound reproducer until another coin is inserted.

If a number of coins have been inserted in the chute 11, a corresponding number of records will be played automatically in succession. Thus, when one record has been played and the contact 10 is retracted, the detent 33 is projected into the chute to support the next coin and others above it, the detent moving into the chute before the contact 10 is completely retracted. Then, when the record has dropped into the compartment 18, the finger or trigger 22 being released will open the circuit 14, and the spring 29 will retract the detent 33 and project the contact 10, so that the coin supported by the detent drops on the contacts 9 and 10, thereby again closing the circuit 8 of the motor 7 and operating the sound reproducer, the operation being repeated substantially as above described. This operation will be repeated for each coin in the chute. If the records in the magazine 21 are exhausted with one or more coins remaining in the chute 11, said coins will remain in the chute until the magazine 21 is again filled with records, after which the sound reproducer will be operated.

The sound box 24 may be located adjacent to or remote from the sound reproducer, and in addition to the provision of the sound box 24, it is only necessary to secure the circuit controller 16 in the sound reproducer and to make the proper electrical connections, as shown in Fig. 3.

Having thus described the invention, what is claimed as new is:—

1. The combination with an automatic record changing sound reproducer, of coin controlled means for operating said sound reproducer, and record-operated means operable by the change of records by said sound reproducer and controlling said means to stop said sound reproducer.

2. The combination with an automatic record changing sound reproducer including an electric motor, of coin controlled means for closing the circuit of said motor, and record-operated means operable by the change of records by said sound reproducer and controlling said means to open said circuit.

3. The combination with an automatic record changing sound reproducer, of coin controlled means for operating said sound reproducer in the presence of a coin, and record-operated means operable by the change of records by said sound reproducer and controlling said means to release said coin and stop the sound reproducer.

4. The combination with an automatic record changing sound reproducer including an electric motor, of coin controlled means for closing the circuit of said motor in the presence of a coin, and record-operated means operable by the change of records by said sound reproducer and controlling said means to release said coin and stop the sound reproducer.

5. The combination with an automatic record changing sound reproducer including an electric motor, of coin controlled means for closing the circuit of said motor including contacts to be bridged by a coin, and record-operated means operable by the change of records by said sound reproducer and controlling said means to release said coin from said contacts.

6. The combination with an automatic record changing sound reproducer including a turntable and means for raising a record from the turntable and dropping the record, of coin controlled means for operating said sound reproducer, and means operable by a dropped record and controlling said coin controlled means to stop the sound reproducer.

7. The combination with an automatic record changing sound reproducer including a turntable and means for raising a record off said turntable and dropping the record, of coin controlled means for operating said sound reproducer, and means including a flexible trigger in the path of a dropped record to be operated by said record and controlling said coin controlled means for stopping the sound producer.

8. The combination with an automatic record changing sound reproducer including an electric motor, a turntable and means for raising a record off said turntable and dropping the record, of coin controlled means for closing the circuit of said motor, and electrical means controlling said coin controlled means and including a circuit controller arranged to be operated by a dropped record to effect the opening of said circuit.

9. The combination with an automatic record changing sound reproducer, of a coin chute for holding a number of coins, means controlled by a coin in the chute for operating said sound reproducer, and record-operated means operable by the change of records by said sound reproducer and controlling said means to release said coin and, after the played record is removed, restoring the first-named means for control by the next coin.

10. The combination with an automatic record changing sound reproducer, of a chute for holding a number of coins, means controlled by the presence of a coin in the chute for operating said sound reproducer, and record-operated means controlled by the change of records by said sound reproducer and controlling said firstnamed means to release said coin and hold the next coin in the magazine until the played record is disposed of.

11. The combination with an automatic record changing sound reproducer including an electric motor, a turntable and means for raising a record off said turntable and dropping the record, of a chute for holding a series of coins, contact means in said chute to be bridged by a coin and connected in circuit with said motor, a detent for holding the next coin in the chute, said contact means being operable to release the coin therefrom, and electrical means for controlling said contact means and detent and including a circuit controller arranged to be operated by a dropped record to release the coin from the contact means when a record is being dropped and to support the next coin until the record has been dropped.

12. The combination with an automatic record changing sound reproducer, of a coin chute for holding a number of coins, means controlled by the lowermost coin in the chute for operating said sound reproducer, and record-operated means responding to the change of records by said sound reproducer and controlling said means to release said lowermost coin.

13. The combination with an automatic record changing sound reproducer, of coin controlled means for operating said sound reproducer, and means controlling the first-named means to stop said sound reproducer and including a flexible trigger to contact with a record while being changed to operate the secondnamed means.

14. The combination with an automatic record changing sound reproducer including an electric motor, a turntable and means for raising a record off said turntable and dropping the record, of coin controlled means for closing the circuit of said motor, and electrical means controlling said coin controlled means and including a record controller having a flexible trigger to contact with a record dropped by the firstnamed means to effect the opening of the firstnamed circuit.

In testimony whereof I hereunto affix my signature.

GEORGE W. WERNER.