

Oct. 21, 1930.

J. R. McKELDIN ET AL

1,778,980

AUTOMATIC TELEPHONE RESPONSE DEVICE

Filed Aug. 26, 1929

2 Sheets-Sheet 1

Fig. 1.

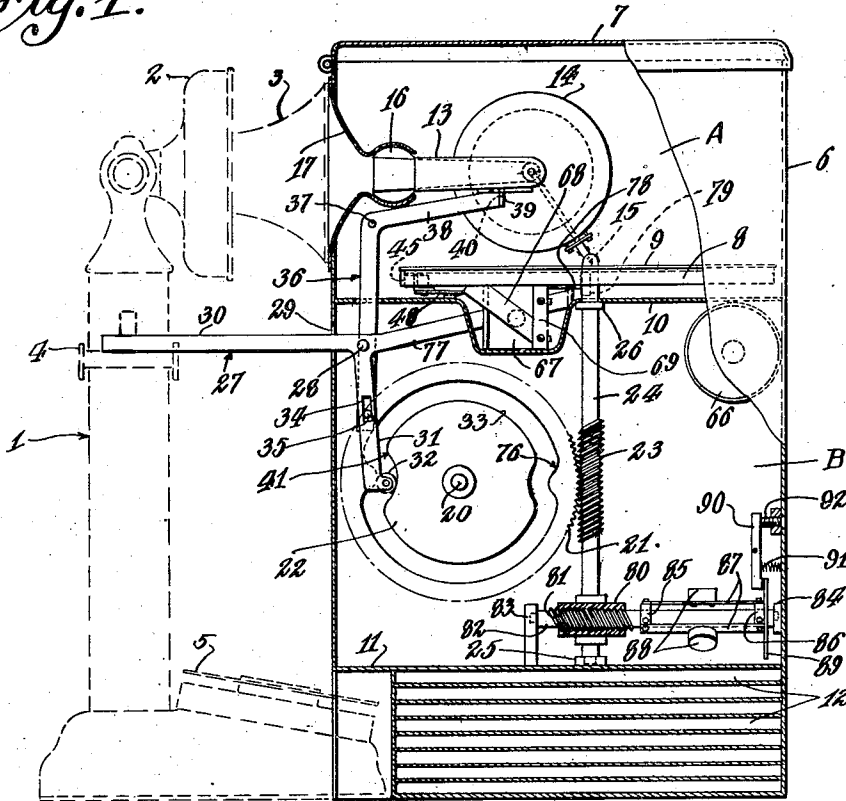


Fig. 4.

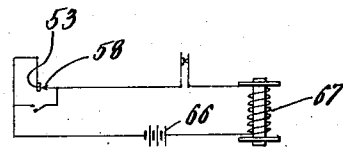
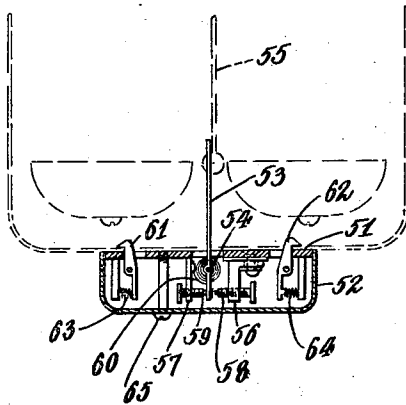


Fig. 5.

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2 Sheets-Sheet 2

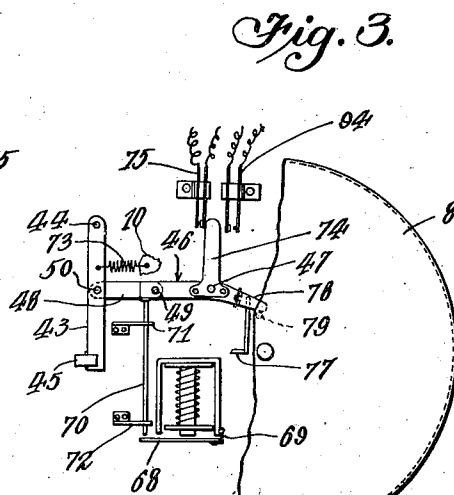
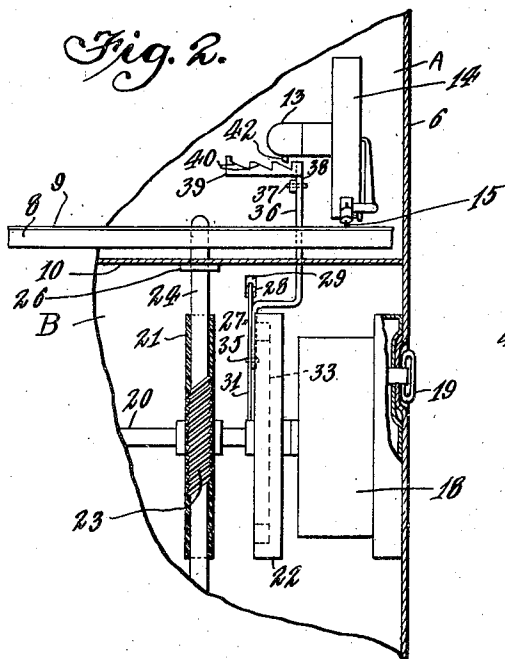


Fig. 6.

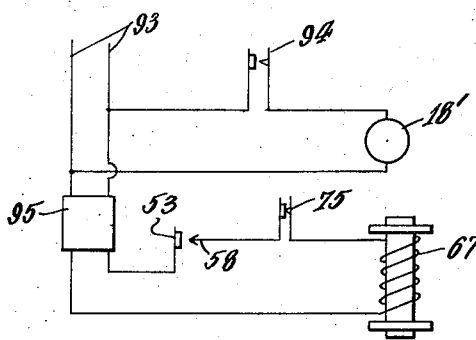
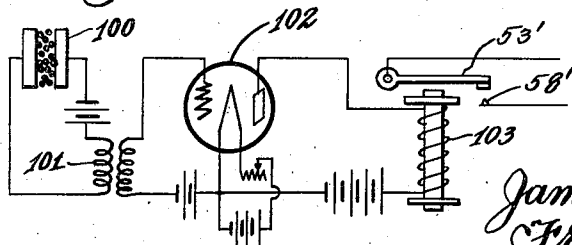


Fig. 7.



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AUTOMATIC TELEPHONE RESPONSE DEVICE

Application filed August 26, 1929. Serial No. 388,446.

This invention relates to an automatic device adapted to respond to incoming signals over the telephone, and is particularly directed to a device which does not in any way interfere with the normal operation of a telephone.

Attempts have been made heretofore to provide a mechanism capable of replying to telephone signals and imparting a message to the caller automatically. Such prior devices however, have been extremely complicated, expensive and objectionable, inasmuch as these devices have been activated by the signalling current in the telephone circuit. As a result, the installation of the device has been much more difficult and objectionable from the standpoint of the telephone companies who do not desire to have any appliances attached to or changes made in their circuits or devices.

Generally speaking, the apparatus embraced by this invention includes a reproducing mechanism carrying a plurality of messages or responses which may be selectively set and reproduced when a call comes in on the telephone. The device is preferably energized by the sound vibrations of the telephone call box or by the mechanical vibrations of the call box housing or of the bells of clappers therein. Provision has been made for automatically stopping the device at the expiration of a predetermined time, and for the resetting of the reproducing mechanism so that the same message is repeated when another call is made. Provision has also been made for regulating the speed of reproduction. The entire device is extremely simple and compact, not exceeding greatly the size of an ordinary telephone instrument.

An object of this invention is to disclose and provide an apparatus capable of automatically answering incoming calls and for transmitting a message to the caller.

Another object is to disclose and provide a device capable of responding to the vibrations set up during the ringing of a telephone.

Another object of this invention is to disclose and provide a device capable of transmitting a message to a caller and automatical-

ly terminating said transmission at the expiration of a predetermined time.

Another object is to disclose and provide a device capable of automatically responding to incoming telephone calls, transmitting a message to the caller, and automatically terminating said transmission and resetting the device for a subsequent call.

Another object of this invention is to disclose and provide a simple, compact and efficient telephone responding device.

Other objects, uses and advantages of this invention will become apparent from the following detailed description of one preferred form of a device embraced thereby.

In the following description, by the term "telephone instrument" reference will be had to one of the various usual forms of telephone receiver and transmitter, the drawings appended hereto showing a form of device adapted to be employed in connection with a vertical type of telephone instrument. By minor modifications the device may be adapted to be used with the so-called "French" type which is characterized by transmitter and receiver being mounted on a single handle.

By "incoming calls" reference is made to the effect produced upon a normal telephone instrument when a signalling current actuates a clapper so as to produce a signal adapted to cause the owner or possessor of the telephone instrument to have his attention drawn to the telephone and respond by closing the circuit and permitting the transmitter and receiver to be connected with the line.

By "record means" reference is to be made hereafter to any suitable engraved record on a disc or cylinder, said record bearing a message or messages adapted to be reproduced by the device.

In describing the preferred embodiment of the invention, reference will be made to the appended drawings, in which:

Fig. 1 is a side view of a general assembly, partly in section, showing the device in operative relation to a telephone instrument.

Fig. 2 is a front view of the device, partly in section.

Fig. 3 is a plan view of the device, the case

and record table being partly broken away to illustrate the location and arrangement of the mechanism.

Fig. 4 is a vertical section through one form of initiating mechanism.

Fig. 5 is a diagrammatic illustration of an initiating circuit used in the device.

Fig. 6 is a form of circuit adapted to be employed when an electric motor is used in the device.

Fig. 7 is a diagrammatic representation of a circuit which may be employed when a vibration method of initiating the device is used.

The device shown in the appended drawings is adapted to be employed with a customary form of telephone instrument 1, provided with a transmitter 2 equipped with a mouth-piece 3. The receiver is normally suspended from an arm 4, the act of lifting the receiver from the arm 4 normally closing the circuit and placing the telephone instrument in condition for operation and use. The instrument shown includes a dialing device 5.

The apparatus for automatically responding to and answering incoming telephone calls preferably comprises an outer case 6 provided with a removable cover 7 adapted to permit access to the upper portion of the apparatus in which a rotatable table 8 is positioned. The table 8 is preferably adapted to receive sound records 9 in the form of discs. A partition 10 preferably divides and separates the upper chamber A from a lower chamber B in which most of the mechanism is enclosed.

A bottom chamber may be provided separated from the chamber B by means of a partition 11, said bottom chamber including a plurality of trays or pockets 12 adapted to receive and hold sound records such as the discs 9, thereby permitting a plurality of records bearing different messages thereon to be maintained within the case 6. Obviously, a suitable door may be provided so as to permit access to the records 12.

The reproducing mechanism may comprise a tone arm 13 and a diaphragm device 14 connected thereto, said diaphragm device 14 including customary means for receiving a needle 15 adapted to be actuated by the records made in the disc 9. The tone arm 13 is preferably connected by means of a ball joint 16 with an outwardly flaring member 17 leading to an aperture formed in the rear of the case 6, said aperture being in position to direct sound from the tone arm 13 into the transmitting mouth-piece 3 of the telephone instrument, when the case 6 is brought into operative position with respect to the instrument 1.

Means for driving the record disc 8 are preferably provided, and such means may comprise either a spring motor or an electric

motor. As shown in the drawings, the driving means may comprise a spring motor 18 positioned in the chamber B and provided with a suitable crank handle or key 19 by means of which the motor may be wound or placed in an operative condition. The driving shaft 20 of the motor 18 preferably carries a gear 21 and a cam 22. Gear 21 preferably meshes with a worm 23 mounted on or formed in a shaft 24 supported by means of a bearing 25 on the partition 11 and by means of a suitable bearing 26 in the upper partition 10. The shaft 24 is operably connected to the record table 8. Rotation of the gear 21 will, therefore, impart rotation to the shaft 24 and the table 8 on which the record 9 is carried.

Bell crank lever 27 pivotally connected to the body of the device as at 28 extends outwardly from the case 6 through an aperture 29, the arm 30 of said bell crank lever 27 being adapted to normally depress the arm 4 of the telephone instrument and thereby maintain the telephone circuit open as if said lever arm 4 were supporting the receiving member of a normal telephone.

The arm 31 of the bell crank lever 27 is preferably provided with a roller 32 pivotally connected thereto, said roller 32 being adapted to be slidably received in a cam groove 33 formed in the cam member 22. The arm 31 of the bell crank lever 27 is preferably provided with a slot 34 in which a pin 35 connected to the lower end of bell crank lever 36 is slidably received. The bell crank lever 36 is pivotally connected to the body portion of the device as at 37. The arm 38 of the bell crank lever 36 preferably terminates in an extension 39 having notches 40 therein, said notches being of such length and number as to correspond with the length and number of messages recorded upon the disc 9 positioned on the rotatable table 8. Means may be provided whereby the extension 39 having the notches 40 may be readily attached or detached from the arm 38 of bell crank lever 36.

It will be noted that when the shaft 20 is rotated by means of the spring motor 18, the cam member 22 will be rotated in a direction indicated by the arrow (Fig. 2) thereby causing the roller 32 slidably mounted in cam groove 33 to contact with the face 41 of the groove 33 and impel said roller 32 and the lower portion of the arm 31 outwardly. Such movement causes the bell crank lever 27 to pivot at 28 thereby raising arm 30 and closing the circuit by means of the upward movement of arm 4 of the telephone instrument. Such outward movement of arm 31 of the bell crank lever 27 imparts an outward movement to the bell crank lever 36 pivoted at 37, thereby lowering arm 38 of said lever. Lowering of the arm 38 of bell crank lever 36 causes the tone arm 13 resting on the member 39 to be

lowered into contact with the sound record 9 in position for reproduction.

A small member 42 is preferably carried by the tone arm 13, said member 42 being adapted to be received in the notches 40 cut in the member 39. As shown in Fig. 2, the tone arm 13 has been lowered so that the needle 15 contacts with the record 9.

Rotation of the table 8 is normally restrained by means of a brake arm 43 pivoted to the body portion or preferably to the upper partition 10 as at 44. The brake arm 43 is preferably provided with a pad 45 carried thereby, said pad being made of any suitable composition or material.

The pad 45 preferably contacts with the inner surface of the downwardly turned flange at or near the edge of the rotatable table 8. Lever arm 46 pivotally connected at 47 to the partition 10 or to the fixed portion of the device is connected by means of a toggle arm 48 to the brake arm 43 at pivoted connections 49 and 50, respectively. When the toggle arm 48 is in line with that portion of the lever 46 to which it is pivotally connected, as at 49, then the brake arm 43 is in such position that the pad 45 carried thereby is in contact with the table 8 and prevents rotation thereof.

The mechanism for initiating the operation of the automatic telephone responding device is preferably unconnected with the signaling circuit of the telephone instrument, but instead comprises means actuated by the vibration of the bell box or clapper. As shown in Fig. 4 the initiating mechanism preferably comprises a base plate 51 having a cover 52 removably attached thereto. Pivotally mounted on suitable supports attached to the base plate 51 is an arm 53 pivoted as at 54, said arm 53 extending outwardly through an aperture in the base 51. Said arm 53 may be of any desired configuration, that is, it may be flat or it may be in the form of a thin rod having an extension bent at right angles therefrom, said extension being adapted to contact with the clapper rod 55.

Terminal poles 56 and 57 provided with adjustable contact points 58 and 59, respectively, are preferably provided within the case 52, said contact point 58 and terminal pole 56 being electrically connected by means of suitable flexible wires with the main automatic telephone responding device. A hair spring 60 is preferably mounted on the pivot arm 54 of the arm 53, said hair spring being adapted to maintain the shorter portion of the arm 53 in contact with one of said terminal poles, or contact points such as for example the contact point 59. It is to be understood that the arm 53 extends into the bell box of a telephone installation through one of the many apertures in such bell box.

The case 52 containing the initiating mechanism may be attached to the bell box in any

suitable manner. For illustrative purposes I have provided pivoted latches 61 and 62 extending through apertures in the base plate 51, and yieldingly urged into position by means of compression springs 63 and 64. The latches 61 and 62 may be provided with tapering heads so that they may be inserted into apertures in the bell box and engage with the inner surfaces of the bell box near such apertures, thereby maintaining the initiating mechanism in position thereon. If it is desired to remove the device, the threaded screw 65 connecting the case 52 with the base 51 may be removed, thereby permitting access to the initiating mechanism so that the latches 61 and 62 may be manually operated to release their hold on the bell box and the device removed.

When the clapper rod 55 is actuated by the signalling current, it actuates the arm 53 thereby causing the arm 53 to contact with the contact point 58 which closes an initiating circuit of the character shown in Fig. 5 for example. It is to be understood that arm 53 is electrically connected with said initiating circuit. As shown in Fig. 5, when contact is closed between element 53 and contact point 58, current from a battery 66 will flow through a coil 67 of an electro-magnet. The electro-magnet 67 is shown in Fig. 3 as being positioned beneath the rotating table 8, suitable flexible connections being made between said electro-magnetic coil and the initiating mechanism shown in Fig. 4.

As shown with greater particularity in Fig. 1, the mechanism beneath the rotating table 8 (Fig. 3) is preferably positioned in a depression formed in the upper partition 10. The electro-magnet 67 includes an armature 68 flexibly connected as at 69 with the case of the electro-magnet 67. The end of the armature 68 is adapted to come into abutting relation with a pusher rod 70 slidably and guidingly retained in guides 71 and 72 attached to the partition 10. The push rod 70 is adapted to contact with the toggle arm 48. If, therefore, the initiating mechanism is operated by the clapper rod 55, the arm 53 contacts with contact point 58 thereby closing the initiating circuit which, energized by the battery 66 (preferably contained in the case 6 as shown in Fig. 1), energizes the coil 67.

The armature 68 is thus drawn up sharply by the attraction of the electro-magnetic coil and pushes the rod 70 against the toggle arm 48; this causes the bell crank lever 46 to pivot upon the point 47, and this movement causes the brake arm 43 to move in the direction of the arrow (Fig. 3), this movement being assisted by the tension spring 73 attached to the brake arm 43 and to the partition 10. When the brake arm 43 releases its hold upon the inner flange on rotating table 8, then the motor 18 is released, thereby caus-

ing the rotation of the gear 21 and the cam 22. Movement of the cam 22, as has been explained before, moves the bell crank arm 27 and the bell crank arm 36, thus closing the telephone circuit and placing the reproducing mechanism in operation.

It is to be noted that the bell crank lever 46 is rigidly connected to a lever arm 74 which, when the device is in operation, closes a circuit breaker 75, said circuit breaker being indicated in the initiating circuit in Fig. 5. As soon as the coil 67 has been energized, therefore, and the brake arm 43 released, the simultaneous movement of the bell crank lever 46 causes the arm 74 to move away from the circuit breaker 75, thereby opening the circuit and discontinuing the energization of the coil 67.

Each record 9 may contain several different messages of any desired duration. Each message may be selected manually by placing the tone arm 13, and particularly the guide and index member 42 attached thereto, into the proper notch 40 on the member 39, said notches coinciding in length and in position with the length and position of the sound records on the disc 9. The duration of the messages is also influenced by the cam 22, the position of the indentations such as the indentations 41 and 76 limiting the duration of the responding device. As shown in Fig. 1, the indentations 41 and 76 are substantially 180 degrees apart.

In other words, the device at the beginning of a response will be in the position shown in Fig. 1, and such response will be terminated when the roller 32 is forced into the depression 76 or at the end of one-half revolution of the cam 22. During such one-half revolution, however, the motor has imparted a fairly large number of rotations to the disc 9 and rotatable table 8 by reason of the gears 21 and 23, so that a message of appreciable length may be thus reproduced.

It is to be understood that the cam 22 may be replaced by other cams having a greater or less number of indentations, causing the record to turn a smaller or greater number of times before the receiver hook 4 is depressed.

It is to be understood that when the roller 32 enters one of said depressions the bell crank lever 27 will be caused to move on its pivot 28, thereby causing the arm 30 to depress the hook 4, thus terminating the transmission of the record being reproduced from the disc 9.

The movement of the bell crank lever 27 at the termination of the message causes an upward movement of the arm 77 of the bell crank lever 27. The arm 77 or an extension thereof comes in contact with a hinged end 78 of the bell crank lever 46. A pin 79 extends downwardly from the rotatable table 8 and is adapted to contact with the hinged

end 78 of the bell crank lever 46 when said hinged end 78 has been raised by the arm 77. When the pin 79 comes in contact with the hinged end 78 it causes the bell crank lever 76 to pivot on the point 47 in an anti-clockwise direction (Fig. 3), thereby causing the brake arm 43 to contact with the flange of the table 8 and stopping the rotation of said table.

The location of pin 79 with respect to the position of the hinged end 78 should be carefully determined, as after the pin 79 has contacted with the hinged end 78 so as to seat the brake arm 43, the momentum of the rotatable table 8 should be sufficient to cause the pin 79 to slide by and substantially out of contact with the hinged end 78, it being understood that the hinged end 78 moves upwardly by pivoting on point 47.

If desired, a slight depression of short length may be formed in the periphery or flange of the table 8 so as to facilitate the slippage of the table 8 and of pin 79 out of contact with the hinged end 78 before the brake pad 45 firmly grips the edge of the table. In this manner the device is automatically stopped at the expiration of a predetermined time and placed in condition for response to a subsequent incoming call.

In order to regulate the speed of rotation of the table 8, a governor may be provided. Said governor may include a worm gear 80 mounted upon the shaft 24, said gear 80 being in engagement with a worm 81 mounted upon a shaft 82 journaled in suitable bearings 83 and 84. Any suitable type of governor may be mounted on the shaft 82. As shown in Fig. 1, the governor may comprise a collar 85 adapted to be adjustably positioned on the shaft 82, and a collar 86 slidably mounted on the shaft 82. The collars 85 and 86 may be connected together by means of flexible members 87 provided with weights 88. The collar 86 may be attached to a disc 89. Rotation of the shaft 82 will cause the weights 88 to move away from the shaft 82 by centrifugal action, such movement causing the collar 86 and the disc 89 to move toward the fixed collar 85.

A pivoted brake arm 90 may be provided to contact with the inner surface of the disc 89 and to be urged away from said disc by a compression spring 91. The opposite end of the brake arm 90 may be adjustably positioned as by means of a set screw 92 to which access may be had from the exterior of the case 6. In this manner, the permissible travel of the disc 89 may be regulated by adjusting the set screw 92, further travel being stopped by the braking action of brake arm 90 against the side of disc 89.

Although the description given hereinabove relates to a device employing a spring motor, it is to be understood that an electric motor may be substituted for the spring motor 18 by only a very slight modification.

The modifications which need be made are diagrammatically illustrated in Fig. 6. Electric current from a suitable source may be supplied by lines 93 to an electric motor 18'. A circuit breaker 94 is preferably mounted in the supply line to the motor, the line 93 also supplying electric current to a transformer or other voltage reducing device 95 from which electric energy is obtained for the initiating circuit. The circuit breaker 94 is preferably actuated by the arm 74 and is indicated in position in Fig. 3.

When the initiating circuit is closed by contact of the arm 53 with contact point 58, the coil 67 is energized, causing armature 68 to rush the rod 70 and thereby move the toggle arm 48, releasing the brake arm 43. Such movement simultaneously moves arm 74 which opens the circuit breaker 75 and closes the circuit breaker 94. The closing of circuit breaker 94 permits the motor 18' to operate.

As described hereinabove, the initiating mechanism depends upon the movement of the clapper rod 55 of the call box. Instead of depending upon the movement of the clapper arm 55, it has been found possible to utilize the vibrations of the bell box in actuating the automatic responding device. This modification is shown in Fig. 7 and comprises a carbon microphone element 100 which is suitably attached to the bell box, such microphone element 100 being preferably connected through a coil 101 with the grid circuit of a three-element vacuum tube 102. The plate circuit of this tube (or the final tube of a multiple stage amplifier) is then passed through a sensitive relay 103 which causes a pair of contacts 53' and 58' to close. These contacts take the place of the contacts 53 and 58 in the initiating circuits shown in Figs. 5 and 6.

It is to be noticed that the automatic responding device described hereinabove is in no direct manner connected with the signalling current of the telephone instrument. It depends entirely upon the vibrations set up by the signalling current, such as for example the vibrations of the call box itself or the vibrations of the bell clapper. The mechanism responds to these vibrations, closes the telephone circuit and reproduces a message directing said message to the receiver or mouthpiece of a telephone instrument. Means have been provided for automatically resetting the reproducing mechanism at the end of each reproduction or message (the element 42 sliding along the niche 40 until it reaches the starting position). Means have been provided whereby the duration of the messages can be controlled (variation in the cam 22 and the niches 40); means have been also provided for regulating the speed of reproduction (the governor mounted on shaft 82 and the adjusting device including brake arm 90).

The device is simple to construct and is extremely compact.

In operation, the sound records 9 will bear appropriate messages, for example, to the effect that an automatic device is responding to the incoming call and that the person being called is not available but could be reached by calling a certain number or station, or that a message could be left for him by calling a certain number or bureau. This message may be reproduced slowly and repeated in part if desired. At the conclusion of the message the apparatus automatically hangs the telephone receiver up again and resets itself for a subsequent call.

If desired, a counting mechanism may be made a part of the device, said counting mechanism being actuated by the bell crank lever 27 or the bell crank lever 36 so that when the owner of said device returns, he may determine at a glance the number of calls which had been received and answered by the device.

It is to be understood that numerous changes and modifications may be made in the general appearance and arrangement of the various elements without departing from the scope of the invention, and all such changes and modifications as come within the scope of the appended claims are embraced thereby.

We claim:

1. In an apparatus for automatically responding to and answering incoming telephone calls, the combination of a rotatable table adapted to receive a sound record, means for driving said table, a tone arm and diaphragm, means for raising and lowering the tone arm from and into operative contact with a sound record on said table, brake means adapted to stop and restrain rotation of said table, means actuated by vibration of a signal bell clapper in the telephone circuit for releasing the brake, said means including an initiating circuit and an electro-magnet adapted to be energized when said circuit is closed by the vibrations of said signal bell.

2. In an apparatus for automatically responding to and answering incoming telephone calls, the combination of a rotatable table adapted to receive a sound record, means for driving said table, a tone arm and diaphragm, means for raising and lowering the tone arm from and into operative contact with a sound record on said table, brake means adapted to stop and restrain rotation of said table, and means actuated by vibration of a signal bell in the telephone circuit for releasing the brake, said means including an initiating circuit and an electro-magnet adapted to be energized when said circuit is closed by the vibration of said signal bell, and an armature adapted to actuate brake releasing mechanism when said electro-magnet is energized.

3. An apparatus for automatically re-

sponding to and answering incoming telephone calls, comprising a rotatable table adapted to receive a sound record, means for driving said table, means for regulating the speed of rotation of said table, a tone arm and diaphragm, means for raising and lowering the tone arm from and into operative contact with a sound record on said table, brake means adapted to stop and restrain rotation of said table, means actuated by vibration of a signal bell for releasing the brake, said means including an initiating circuit and an electro-magnet adapted to be energized by the vibrations of said signal bell when said circuit is closed, a cam adapted to be driven by said table driving means, and a bell crank lever adapted to be actuated by said cam to open and close a telephone circuit.

4. An apparatus for automatically responding to and answering incoming telephone calls, comprising a rotatable table adapted to receive a sound record, means for driving said table, means for regulating the speed of rotation of said table, means for adjusting said regulating means, a tone arm and diaphragm, means for raising and lowering the tone arm from and into operative contact with a sound record on said table, brake means adapted to stop and restrain rotation of said table, and means actuated by vibration of a signal bell clapper for releasing the brake, said means including an initiating circuit and an electro-magnet adapted to be energized when said circuit is closed by the vibration of said signal bell.

5. An apparatus for automatically responding to and answering incoming telephone calls, comprising a rotatable table adapted to receive a sound record, means for driving said table, means for regulating the speed of rotation of said table, a tone arm and diaphragm, means for raising and lowering the tone arm and diaphragm, means for raising and lowering the tone arm from and into operative contact with a sound record on said table, brake means adapted to stop and restrain rotation of said table, means actuated by vibration of a signal bell for releasing the brake, said means including an initiating circuit and an electro-magnet adapted to be energized by the vibrations of said signal bell when said circuit is closed, a cam adapted to be driven by said table driving means, a bell crank lever adapted to be actuated by said cam to open and close a telephone circuit, and an operative connection between said bell crank lever and means for raising and lowering the tone arm.

6. An apparatus for automatically responding to and answering incoming telephone calls, comprising a rotatable table adapted to receive a sound record, means for driving said table, means for regulating the speed of rotation of said table, means for adjusting said regulating means, a tone arm and

diaphragm, means for raising and lowering the tone arm from and into operative contact with a sound record on said table, means for positioning said tone arm with respect to a record and for returning said tone arm to original position when said tone arm is raised, brake means adapted to stop and restrain rotation of said table, means actuated by vibration of a signal bell clapper in a telephone circuit for releasing the brake, said means including an initiating circuit and an electro-magnet adapted to be energized when said circuit is closed by the vibrations of said signal bell, and an armature adapted to actuate brake releasing mechanism when said electro-magnet is energized; a cam adapted to be driven by said table driving means, and a bell crank lever adapted to be actuated by said cam to open and close a telephone circuit, and an operative connection between said bell crank lever and means for raising and lowering the tone arm.

7. In an apparatus for automatically responding to and answering incoming telephone calls, the combination of a rotatable table adapted to receive a sound record, means for driving said table, brake means adapted to stop and restrain rotation of said table, and means actuated by vibration of a signal bell in a telephone circuit for closing an initiating circuit and releasing said table brake, said means including an electro-magnet in said initiating circuit and an armature adapted to actuate said brake releasing mechanism when said initiating circuit is closed.

8. In an apparatus for automatically responding to and answering incoming telephone calls, the combination of a rotatable table adapted to receive a sound record, means for driving said table, brake means adapted to stop and restrain rotation of said table, and means actuated by vibration of a signal bell clapper in a telephone circuit for closing a separate initiating circuit and releasing said table brake, said means comprising a pivoted contact arm adapted to be moved by the signal bell clapper and close an initiating circuit including an electro-magnet, and an armature adapted to actuate brake releasing mechanism when said initiating circuit is closed.

9. In an apparatus for automatically responding to and answering incoming telephone calls, the combination of a rotatable table adapted to receive a sound record, means for driving said table, brake means adapted to stop and restrain rotation of said table, means actuated by vibration of a signal bell in a telephone circuit for closing an initiating circuit and releasing said table brake, and means for opening said initiating circuit after said table brake is released.

10. In an apparatus for automatically responding to and answering incoming telephone calls, the combination of a rotatable

table adapted to receive a sound record, means for driving said table, brake means adapted to stop and restrain rotation of said table, means actuated by vibration of a signal bell in a telephone circuit for closing an initiating circuit and releasing said table brake, said means including an electro-magnet in said initiating circuit and an armature adapted to actuate said brake releasing mechanism when said initiating circuit is closed, and means for opening said initiating circuit after said table brake is released.

11. An apparatus for automatically responding to and answering incoming telephone calls, comprising a rotatable table adapted to receive a sound record, means for driving said table, a cam adapted to be driven by said table driving means, a bell crank lever adapted to be actuated by said cam to open and close a telephone circuit, brake means adapted to stop and restrain rotation of said table, and means actuated by vibration of a signal bell in a telephone circuit for closing an initiating circuit and releasing said table brake, said means including an electro-magnet in said initiating circuit and an armature adapted to actuate said brake releasing mechanism when said initiating circuit is closed; said brake releasing mechanism including a toggle arm and a bell crank lever having a hinged end, an arm connected to said bell crank lever adapted to lower said hinged end when said telephone circuit is closed and to raise said hinged end when said telephone circuit is open, and a pin on said rotatable table adapted to contact with said hinged end and apply said brake when said hinged end is up.

12. An apparatus for automatically responding to and answering incoming telephone calls, comprising a rotatable table adapted to receive a sound record, means for driving said table, a cam adapted to be driven by said table driving means, a bell crank lever adapted to be actuated by said cam to open and close a telephone circuit, brake means adapted to stop and restrain the rotation of said table, and means actuated by vibration of a signal bell clapper in a telephone circuit for closing a separate initiating circuit and releasing said table brake, said means comprising a pivoted contact arm adapted to be moved by the signal bell clapper and close an initiating circuit including an electro-magnet and an armature adapted to actuate brake releasing mechanism when said initiating circuit is closed, said brake releasing mechanism including a toggle arm and a bell crank lever having a hinged end, an arm connected to said bell crank lever adapted to lower said hinged end when said telephone circuit is closed and to raise said hinged end when said telephone circuit is open, and a pin on said rotatable table adapted to contact with said hinged end and apply said brake when said hinged end is up.

13. An apparatus for automatically responding to and answering incoming telephone calls, comprising a rotatable table adapted to receive a sound record, means for driving said table, a cam adapted to be driven by said table driving means, a bell crank lever adapted to be actuated by said cam to open and close a telephone circuit, brake means adapted to stop and restrain the rotation of said table, and means actuated by vibration of a signal bell clapper in a telephone circuit for closing a separate initiating circuit and releasing said table brake, said means comprising a pivoted contact arm adapted to be moved by the signal bell clapper and close an initiating circuit including an electro-magnet and an armature adapted to actuate brake releasing mechanism when said initiating circuit is closed, said brake releasing mechanism including a toggle arm and a bell crank lever having a hinged end, means for opening said initiating circuit after said table brake is released, an arm connected to said bell crank lever adapted to lower said hinged end when said telephone circuit is closed and to raise said hinged end when said telephone circuit is open, and a pin on said rotatable table adapted to contact with said hinged end and apply said brake when said hinged end is up.

14. An apparatus for automatically responding to and answering an incoming telephone call, comprising a rotatable table adapted to receive a sound record, means for driving said table, a tone arm and diaphragm, means for raising and lowering the tone arm from and into operative contact with a sound record on said table, a cam adapted to be driven by said table driving means, a bell crank lever adapted to be actuated by said cam to open and close a telephone circuit, brake means adapted to stop and restrain rotation of said table, means actuated by vibration of a signal bell in a telephone circuit for closing an initiating circuit and releasing said table brake, said means including an electro-magnet in said initiating circuit and an armature adapted to actuate said brake releasing mechanism when said initiating circuit is closed, said brake releasing mechanism including a toggle arm and a bell crank lever having a hinged end, an arm connected to said bell crank lever adapted to lower said hinged end when said telephone circuit is closed, and to raise said hinged end when said telephone circuit is open, and a pin on said rotatable table adapted to contact with said hinged end and apply said brake when said hinged end is up.

15. An apparatus for automatically responding to and answering incoming telephone calls, comprising a rotatable table adapted to receive a sound record, means for driving said table, a tone arm and a diaphragm connected thereto, means for raising

and lowering the tone arm from and into operative contact with a sound record on said table, means for positioning said tone arm with respect to a record and for returning
5 said tone arm to original position when said tone arm is raised, a cam adapted to be driven by said table driving means, a bell crank lever adapted to be actuated by said cam to open and close a telephone circuit, an operative
10 connection between said bell crank lever and means for raising and lowering the tone arm, brake means adapted to stop and restrain rotation of said table, means actuated by vibration of a signal bell clapper in a telephone
15 circuit for closing a separate initiating circuit, and releasing said table brake, said means comprising a pivoted contact arm adapted to be moved by the signal bell clapper and close an initiating circuit including an
20 electro-magnet and an armature adapted to actuate brake releasing mechanism when said initiating circuit is closed, said brake releasing mechanism including a toggle arm and a bell crank lever having a hinged end, an arm
25 connected to said bell crank lever adapted to lower said hinged end when said telephone circuit is closed and to raise said hinged end when said telephone circuit is open, and a pin on said rotatable table adapted to contact
30 with said hinged end and apply said brake when said hinged end is up.

Signed at Los Angeles, Calif., this 12th day of August, 1929.

JAMES R. McKELDIN.
FRANCIS W. MAXSTADT.

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