This invention relates to an apparatus adapted to be employed by a telephone subscriber for the purpose of recording messages during his absence from his home or office, and has for one of its objects to provide a novel, simple and highly efficient apparatus of this character which shall be adapted to record the exact time of the receipt of the respective messages.

The invention has for a further object to provide an apparatus of the character stated which shall embody a turn table for a record disc, an electric motor for operating the turn table, a switch connected to the telephone line and adapted, when the central office connects the subscriber with a person who wishes to deliver a message to him, to close the motor circuit and thus effect the turning of the disc, and an electrically operated recording mechanism associated with the disc and connected to the line so as to record the message on the disc.

The invention has for a further object to provide an apparatus of the character stated which shall embody a magazine for blank discs, a magazine for discs upon which messages have been recorded, means adapted to be operated by the motor for the purpose of removing a recorded disc from the turn table and delivering it to its magazine and for delivering a blank disc from its magazine to the turn table, and a switch adapted to open the motor circuit after this change of discs has taken place, the apparatus being adapted to again operate to record a message when it is again connected to a telephone.

The invention has for a further object to provide an apparatus of the character stated which shall embody a time clock which shall be adapted to be operated by the disc changing mechanism and which when operated shall be adapted to stamp on the strip of paper the time of the recording or receipt of the respective messages, the strip bearing the time of the receipt of the respective messages in the order in which the records bearing the messages are deposited in their magazine.

The invention has for a still further object to provide an apparatus of the character stated which shall embody means adapted to permit the subscriber to record on a disc a message to be delivered by the apparatus forming the subject matter of my co-pending application filed April 7, 1930 and serially numbered 442,377.

The invention is hereinafter more fully described and claimed, and illustrated in the accompanying drawings, wherein:

Figure 1 is a view in front elevation of the message recording apparatus;

Figure 2 is a view partly in top plan and partly in horizontal section of the apparatus;

Figure 3 is a sectional view taken on the vertical planes indicated by the line 3—3 of Figure 2;

Figure 4 is a sectional view taken on the vertical plane indicated by the line 4—4 of Figure 2;

Figure 5 is a diagrammatic view of the apparatus;

Figure 6 is a sectional view taken on the vertical plane indicated by the line 6—6 of Figure 2;

Figure 7 is a sectional view taken on the horizontal plane indicated by the line 7—7 of Figure 6;

Figure 8 is a sectional view taken on the vertical plane indicated by the line 8—8 of Figure 2;

Figure 9 is a sectional view taken on the vertical plane indicated by the line 9—9 of Figure 2;

Figure 10 is a view partly in elevation and partly in vertical section illustrating the connection between the disc changing means and the means for raising the discs and the blank disc receiving magazine;

Figure 11 is a similar view illustrating the connection between the disc changing means and the recorded disc receiving magazine;

Figure 12 is a view in elevation of the cam for raising and lowering the turn table in its shaft, and

Figure 13 is a top plan view of the rack bar of the disc changing means.

The apparatus comprises a cabinet 1 which is supported by legs 2 and has a lower compartment 3 and an upper compartment 4. The lower compartment 3 is provided with
doors 5 which are hinged, as at 6, to the front side of the cabinet. This compartment is provided with shelves, not shown, and it is adapted to be used for the purpose of storing blank discs, discs upon which messages have been recorded, and other articles.

Magazines 7 and 8 are arranged vertically within the compartment 4 and at opposite sides of the transverse center thereof. The magazines 7 and 8 are of rectangular formation in cross section, and their open upper ends are spaced downwardly from the top of the cabinet 1.

Channeled guides 11 are arranged at the upper ends of the magazines 7 and 8. The top walls 11a and the side walls 11b of the guides 11 extend from the outer side of the magazine 7 to the corresponding side of the magazine 8. The end portions of the top walls 11a of the guides 11 overlie the upper ends of the magazines 7 and 8. The bottom walls 11c of the guides 11 have their upper sides arranged in horizontal alinement with the upper ends of the magazines 7 and 8, and they extend from the inner side of the magazine 7 to the corresponding side of the magazine 8. The bottom walls 11c of the guides 11 are provided centrally between the magazines 7 and 8 with downwardly offset portions 11e which are of arcuate formation in plan and cooperate to provide a seat, located below the bottom walls of the guides, for the reception of the disc upon which a message is to be recorded.

The magazine 7 contains discs 12 upon which the messages are to be recorded, and the magazine 8 is adapted to receive the discs 12 upon which messages have been recorded. The uppermost blank disc 12 in the magazine 7 is arranged in the ends of the guides 11, and is moved along the guides into alinement with the seat 11d, and when it reaches this point it moves downwardly out of the guides into the seat. This disc is supported for rotation by a turn table 13 which is fixed to a vertical shaft 14 below the upper pointed end of the shaft. When the machine is at rest, the turn table 13 and the upper end of the shaft 14 occupy a position below the upper surface of the seat 11d so as to permit the disc 12 to be moved into the seat. During the initial phase of the operation of the apparatus, the shaft 14 is moved upwardly, with the result that the upper end of the shaft is carried through the opening in the disc 13, and the turn table 13 is carried into contact with the lower side of the seat. During the next phase of the operation of the apparatus, the shaft is supported in this position and rotated, with the result that the disc is turned and a message recorded thereon. During the next or third phase of the operation of the apparatus, the shaft 14 moves downwardly so as to free it and the turn table 13 from engagement with the disc 12. During the final or fourth phase of the operation of the apparatus, the disc is moved into the magazine 8 and a blank disc is moved into the seat 11d so as to reset the apparatus for the recording of another message.

An electric motor 16 is arranged within the compartment 4, and the leads 17 thereof are connected to a plug 18 adapted to be engaged in a wall or other socket in the subscriber's home or office. A vertical shaft 19, supported by a bearing bracket 20, is arranged in parallel relation to the shaft 14 and at right angles to the armature shaft 21 of the motor 16. A spur gear 22 is fixed to the shaft 14 and meshes with a similar gear 23 fixed to the shaft 19, and a beveled gear 24 fixed to the armature shaft 21 meshes with a similar gear 25 fixed to the gear 23. The gear 22 may slide vertically with respect to the gear 23, so as to permit the shaft 14 to be vertically adjusted in the manner and for the purpose stated. A cam 26 is fixed to the armature shaft 21, and the lower end of the shaft 14 rests upon the periphery of the cam. The cam 26 is of such formation that it will, during the first phase of the operation of the motor 16, raise the shaft 14 and support it in this position during the second phase of the operation of the motor, and it will, during the third phase of the operation of the motor 16, permit the shaft to move downwardly.

An arm 27 is pivotally mounted at one end, as at 28, in the compartment 4 of the cabinet. The arm 27 is provided at its free end with an electrically operated recording mechanism 29 which may be of any well known or appropriate construction and includes a stylus 30 bearing upon the disc 12 carried by the turn table 13. The recording mechanism 29 is connected by leads 31 to the wires 32 of a telephone line so as to effect the operation of the mechanism as the result of a person speaking in a transmitter connected to the line, the operation of the mechanism recording the messages of such person on the disc 12.

The circuit of the motor 16 includes, in addition to the leads 17 and the plug 18, a normally opened electromagnetic switch 33, a normally opened mechanically operated switch 34, and a normally opened manually operable switch 35. The magnet 36 of the switch 33 is connected to the wires 32 of the telephone line by leads 37 so that the switch will be closed when the operator of the central office connects the apparatus with the telephone of a person to whom it is desired to record a message. The closing of the switch 33 results in the closing of the circuit of the motor 16 which operates for a predetermined period of time. During the operation of the motor 16, the turn table 13 and shaft 14 are moved upwardly, and the disc 12 now carried by the turn table is rotated to record the message. The disc is turned for a period
sufficient to permit the recording of a message greater in length than the average. After the recording of the message, the electromagnet 36 is de-energized as the result of the “hanging up” of the receiver by the person who delivered the message. The de-energization of the magnet 36 results in the opening of the switch 33, but does not result in the opening of the motor circuit, for the reason that the circuit is closed by the switch 34 which moved into closed position during the raising of the turn table 13 and shaft 14 and which regulates the time of each operation of the apparatus. After the recording of the message, the turn table 13 and shaft 14 move downwardly, and thereafter the disc bearing the message is moved into the magazine 8 and a fresh disc from the magazine 7 is moved into the seat 11a. Immediately after this change in discs has taken place, the switch 34 moves into opened position, with the result that the motor circuit is broken and the apparatus comes to rest. The switch 34 is carried by a vertical shaft 22 which is journaled in bearings 39 and driven from the armature shaft 21 by bevel gears 40 and 41. The gear 40 is fixed to the armature shaft 21, and the gear 41 is fixed to the shaft 38. The switch 34 comprises a sleeve 42 which is made of insulating material and fixed to the shaft 38, a segmental contact strip 43 which is embedded in the sleeve, and contact brushes 44 and 44a. The contact strip 43 is electrically connected to the shaft 38, as at 43a, the contact 44 engages the contact strip and the contact 44a engages the shaft. The contacts 44 and 44a are connected across the leads 17 by leads 43.

The switch 35 is connected across the leads 17 by leads 46, and is provided in order to enable the subscriber to close the motor circuit when he desires to record a message upon a disc supported by the turn table 13, the message being recorded through the medium of a microphone 47 connected to the leads 46 by leads 48. The message thus recorded may be transmitted over a telephone line through the medium of the apparatus forming the subject matter of my co-pending application and adapted also to audibly reproduce the messages recorded by this apparatus.

The disc on which the message has been recorded is, after the movement of the turn table 13 and spindle 14 into their normal or lowered position, moved along the guides 11 into the magazine 8, and a blank disc is moved along the guides from the magazine 7 into the seat 11a by means which comprises a rack bar 49 slidably mounted in one of the guides 11 and provided with disc engaging arms 50 and 51.

The rack bar 49 is held in normal position by a weight 52 which is connected to the rack bar by a cable 53 passing over a pulley 54. When the rack bar 49 is in normal position, the arm 50 is located at the left side of the uppermost disc in the magazine 7, and the arm 51 is arranged at the left hand side of the disc in the seat 11a. During its operation, the rack bar 49 moves to the right, with the result that the disc in the seat 11a is moved into the magazine 8 and the uppermost disc in the magazine 7 is moved into the seat. The rack bar is operated from the shaft 38 through the medium of a segmental pinion 55. The pinion 55 engages the rack bar 49 immediately after the turn table 13 and spindle 14 return to their normal position, and it moves out of engagement with the rack bar immediately after the breaking of the motor circuit by the switch 34. The rack bar 49, after being released by the movement of the pinion 55 out of engagement therewith, is returned to normal position by the weight 52. The disc moved into the seat 11a occupies a position below the path of the arm 51 so as to permit this arm to return to its normal position without contacting with the disc.

The magazine 7 is provided with a platform 56 upon which the blank discs are arranged and which moves upwardly each time a disc is withdrawn from the magazine, the distance of the movement of the platform being equal to the thickness of a disc. The platform 56 is carried by a rod 57 which is slidably mounted in bearings 58. A spring pressed pawl 59, carried by one of the bearings 58, engages one of a series of rack teeth 60 on the rod 57 for the purpose of supporting the platform 56 against accidental downward movement. A lever 61 is pivoted at one end, as at 62, and rests at its other or free end upon a stop 63. A spring pressed pawl 64 is pivoted to the free end of the lever 61 and engages one of the rack teeth 60 of the rod 57. A vertical bar 65 slidably mounted in guides 66 carried by the magazine 7, is pivoted at its lower end, as at 67, intermediate the ends of the lever 61, and is provided at its upper end with a loop 68 through which the left hand end of the rack bar 49 slides. This end of the rack bar 49 is provided with a cam 69 which, when the rack bar is in normal position, is arranged to the left of the loop 68 and which when the rack bar is moved to the right contacts with the loop and raises the bar 65. This movement of the bar 65 raises the free end of the lever 61 with the result that an upward movement is imparted to the platform 56, the movement imparted to the platform being equal to the thickness of a disc. When the rack bar 49 is returned to its normal position, the cam 69 passes out of contact with the loop 68, with the result that the bar 65 is released and moves downwardly. This movement of the bar 65 returns the lever 61 to normal position, the platform 56 being
held against downward movement by the pawl 59.

The magazine 8 is provided with a platform 70 upon which the record bearing discs rest and which moves downwardly each time that a disc is moved into the magazine, the distance of the movement of the platform being equal to the thickness of a disc. The platform 70 is carried by a rod 71 which is slidable mounted in bearings 72 and provided with ratchet teeth 73. The platform 70 is supported by a coil spring 74 which surrounds the rod 71 between one of the bearings 72 and the platform, and the platform is held against upward movement under the influence of the spring by a spring pressed pawl 74b carried by one of the bearings and engaging one of the teeth 73.

A vertical bar 75 is slidable mounted in guides 76 carried by the magazine 8 and is provided with an angular lower end 75a which underlies the magazine and is provided with a spring pressed pawl 77 which engages one of the teeth 73. The bar 75 is provided at its upper end with a loop 78 through which the right hand end of the rack bar 49 slidably passes. This end of the rack bar 49 is provided at its lower side with a cam 79 and at its upper side with a cam 80. The cam 79 is located at the left hand side of the loop 78 and the cam 80 is located within the loop when the rack bar 49 is in normal position. During the movement of the rack bar 49 to the right, which results in a disc bearing a message being moved into the magazine 8, the cam 80 moves out of the loop 78, and the cam 79 moves into the loop. The cam 79 moves the bar 75 downwardly. During this movement of the bar 75, due to the engagement of the pawl 70 with one of the teeth of the rod 71, the platform 70 is moved downwardly for a distance equal to the thickness of a disc, and this movement of the platform occurs before the disc bearing a message is moved into the magazine 8. During the movement of the rack bar 49 to its normal position, the cam 79 moves out of the loop 78 and the cam 80 moves into the loop, the cam 80 returning the bar 75 to and supporting it in its normal position.

The compartment 4 is provided with doors 81 and 82 which are hinged, as at 83, to the front of the compartment. These doors permit access to be had to the magazines 7 and 8 and the pawls 59, 64, 74b and 77, for the purpose of permitting them to be retracted when it is desired to move the platform 56 into its lowermost position and the platform 70 into its uppermost position. The magazines 7 and 8 are provided with doors 84 and 85, respectively, which permit a fresh supply of blank discs to be placed in the magazine 7 and the message bearing discs to be removed from the magazine 8, the doors being accessible after the opening of the doors 81 and 82. The door 84 is hinged, as at 86, to the magazine 7 and is secured in closed position by a latch 87. The door 85 is hinged, as at 88, to the magazine 8, and is secured in closed position by a latch 89.

A time clock 90 is mounted upon the cabinet 1 to the right of the magazine 8. The clock 90 is of well known construction, and is adapted when actuated to stamp the time of its actuation on a strip of paper 91. The strip 91 is fed from the clock 90 in a step by step manner, after the stamping thereon of the time of each actuation of the clock. The clock 90 is actuated each time that a message bearing disc is moved into the magazine 8 and the actuation thereof is effected through the medium of the rack bar 49 which, when it moves to the right, contacts with the actuating bar 92 of the clock. The time of the transmission of the respective messages is stamped on the strip 91 in the order in which the discs bearing the messages are moved into the magazine 8. The strip 91 is separated into sections, and the respective sections thereof, which have the time stamped thereon that the respective messages were recorded, are pasted on the respective discs bearing the transmitted messages.

It should be apparent from the foregoing description, taken in connection with the accompanying drawings, that to prepare the apparatus for recording messages, it is only necessary to fill the magazine 7 with blank discs and thereafter close the switch 35. The resulting operation of the apparatus affects the transfer of one of the discs from the magazine 7 to the seat 114, and thereafter the switch 35 is opened. When the subscriber wishes to record any messages that might be telephoned to him during his absence from his home or office, he notifies the operator at the central office that all messages are to be recorded. He does this by closing a switch 93 which lights a green lamp in the central office, and he closes a switch 94 in one of the leads 36. The caller will be notified by the central operator that the subscriber is not in his home or office but any message that he might wish to transmit may be recorded on the apparatus. The operator then plugs in the calling cord to effect the closing of the switch 33, and thereafter connects the caller to the apparatus. The closing of this switch results in the energization of the motor 16. As the result of the turning of the motor 16, the turn table 13 and shaft 14 are moved upwardly into engagement with the disc on the seat 114, and the disc is elevated into engagement with the stylus 30 of the recording mechanism 29. This takes place immediately after the caller is connected with the apparatus. The disc rotates under the stylus 30 during the transmission of the caller's message, and the disc is rotated for a period.
slightly longer than necessary to record a message of more than average length.

After this period of the rotation of the disc, the turn table 13 and shaft 14 move downwardly, with the result that the disc is lowered out of engagement with the stylus 50 and deposited on the seat 11a. Immediately after this takes place, the pinion 55 moves into engagement with the rack bar 49, and it moves the rack bar 49 to the right, with the result that the disc is moved into the magazine 8, the clock 90 is operated to record the time of the recording of the message, and a fresh disc is moved from the magazine 7 into the seat 11a. Immediately after the pinion 55 moves out of engagement with the rack bar 49, the rack bar is returned to normal position by the weight 52, and the motor circuit is broken by the switch 54. A lug 95 on the rack bar 49 contacts with the arm 27 and returns the recording mechanism 29 to its normal position during the movement of the rack bar to the right, and during the movement of the rack bar to the left, the lug moves away from the arm so as not to interfere with the movement of the arm during the recording of a message. During the operation of the apparatus, the circuit of a red lamp in the central office, and including leads 96 connected to the leads 45, is closed by the switch 34. This lamp is used to notify the central office that the apparatus is in operation, and the circuit thereof is broken by the switch 34 when the apparatus comes to rest. If the message is not completed when the apparatus comes to rest, the operator can again close the switch 33 with the result that the balance of the message will be recorded on the fresh disc now on the turn table.

When the subscriber wishes to record messages for transmission through the medium of the apparatus forming the subject matter of my co-pending application, he closes the switch 33 and operates a switch 97 to break the connection between the recording mechanism 29 and the telephone line and to connect the microphone 47 to the recording mechanism. After recording his message or messages, the operator closes the switch 97 so that the machine will be ready for operation on the closing of the switches 93 and 94. The current for the operation of the recording mechanism 29 during the recording of messages by the subscriber is supplied from the source with which the plug 18 is connected, one of the leads 48 being connected directly to one of the leads 31, another of the leads 48 being connected to the other lead 31 by the switch 97 and to one of the leads 17, and the remaining lead 48 being connected to the other of the leads 17. As the circuit connecting the recording mechanism 29 to the telephone line is broken when the subscriber is recording his message or messages, this use of the apparatus will not be noticed in the central office. At this time, the switches 93 and 94 are opened, and in view thereof, the central office will understand that the apparatus is not to be connected to a caller but that a caller may be connected to the telephone of the subscriber, and such connection will not interfere with the operation of the apparatus.

It should also be understood that the apparatus is entirely automatic in its operation, that it will operate on direct or indirect current and without the aid of batteries, and that it may be manufactured and sold and maintained in a high state of efficiency at comparatively little cost.

It should be further understood that when alternating current is employed to effect the operation of the apparatus, a step down transformer will be inserted between the plug 18 and the leads 17 and a step down transformer will be inserted between the plug 18 and leads 48, and that when direct current is employed, suitable resistance will be interposed between the plug 18 and these leads. This apparatus and the apparatus forming the subject matter of my co-pending application may be incorporated in a single cabinet in order to permit a telephone subscriber to record messages or to transmit messages during his absence from his home or office.

While I have described the principle of the invention, together with the apparatus which I now consider the preferred embodiment thereof, it is to be understood that the apparatus shown is merely illustrative and that such changes may be made, when desired, as fall within the scope of the invention as claimed.

I claim:

1. An apparatus for recording telephonic messages, comprising a turn table adapted to receive a record disc, electrically operated mechanism for recording a message on the disc and adapted to be connected to a telephone line, normally idle means adapted to rotate the turn table, means adapted to be connected to the telephone line and adapted on the connection of a telephone with said recording mechanism to render said rotating means operative, means adapted after the operation of the turn table for a predeter-

2. An apparatus for recording telephonic messages, comprising a turn table adapted to receive a record disc, electrically operated mechanism for recording a message on the disc and adapted to be connected to a telephone line, normally idle means adapted to rotate the turn table, means adapted to
connected to the telephone line and adapted on the connection of a telephone with said recording mechanism to render said rotating means operative, means adapted after the operation of the turn table for a predetermined period of time to remove the disc from the turn table and to place a fresh disc thereon, means adapted to be operated by said disc changing means and adapted when operated to record the time of the receipt of each message, and means adapted to render said rotating means inoperative after the fresh disc has been placed on the turn table.

3. An apparatus for recording telephonic messages, comprising a turn table adapted to receive a record disc, means for supporting the turn table for upward movement from a normal position, means for raising the turn table and supporting and rotating it in raised position for a predetermined period of time, means for recording a message on the disc when the turn table is in raised position and adapted to be connected to a telephone line, and means, an electric motor for the, a normally opened electromagnetic switch included in said circuit and adapted to be connected to the telephone line, a switch included in the circuit and adapted to break the circuit after the expiration of a predetermined period of time, a microphone, and means connecting the microphone to the recording mechanism and at the same time breaking the connection between the recording mechanism and the telephone line.

6. An apparatus for recording telephonic messages, comprising an electrically operated recording mechanism adapted to be connected to a telephone line, a turn table adapted to receive a record disc and adjustable to permit the disc to be moved into and out of operative relation to the recording mechanism, a normally idle motor connected to the turn table, means adapted to render the motor inoperative when a telephone is connected to the line, means adapted to be operated by the motor and connected to the turn table for supporting the disc in operative relation to the recording mechanism for a predetermined period of time, and means adapted to render the motor inoperative after the expiration of such time.

7. An apparatus for recording telephonic messages, comprising a magazine adapted to receive blank discs, a seat spaced from the magazine and adapted to receive a disc on which a message is to be recorded, guides extending from the magazine to the seat to permit a disc to be moved from the magazine to the seat, a magazine adapted to receive the discs on which messages have been recorded, guides extending from the magazine to the seat to permit the disc in the seat to be moved into a said second magazine, means for moving a disc from the seat to the second magazine and for moving a disc from said first magazine to the seat, means rotating the disc in the seat, and means for recording a message on the disc during its rotation.

8. An apparatus for recording telephonic messages, comprising a magazine adapted to receive blank discs, a seat spaced from the magazine and adapted to receive a disc on which a message is to be recorded, guides extending from the magazine to the seat to permit a disc to be moved from the magazine to the seat, a magazine spaced from the seat and adapted to receive discs on which messages have been recorded, guides extending from the seat to said second magazine to permit the disc to be moved from the seat to the magazine, platforms movable in the magazines, means operable to impart a step by step upward movement to the platform in said first magazine and to impart a step by step downward movement to the platform in said magazine, means operable to move a disc from said first magazine to the seat and to
move a disc from the seat to said second magazine, means operable to turn the disc in the seat for a predetermined period of time and thereafter operable to actuate said second means, and means for recording a message on the rotating disc.

9. An apparatus for recording telephonic messages, comprising a magazine adapted to receive blank discs, a seat spaced from the magazine and adapted to receive a disc on which a message is to be recorded, guides extending from the magazine to the seat to permit a disc to be moved from the magazine to the seat, a magazine spaced from the seat and adapted to receive discs on which messages have been recorded, platforms moveable in the magazines, means operable to impart a step by step upward movement to the platform in said first magazine and to impart a step by step downward movement to the platform in said second magazine, means operable to move a disc from said first magazine to the seat and to move a disc from the seat to said second magazine, means operable to raise the disc from the seat and rotate it for a predetermined time and to thereafter lower the disc on to the seat, said means being adapted thereafter to operate said second means, and means for recording a message on the rotating disc.

10. An apparatus for recording telephonic messages, comprising a magazine adapted to receive blank discs, a seat spaced from the magazine and adapted to receive a disc on which a message is to be recorded, guides extending from the magazine to the seat to permit a disc to be moved from the magazine to the seat, a magazine spaced from the seat and adapted to receive discs on which messages have been recorded, platforms moveable in the magazines, means operable to impart a step by step upward movement to the platform in said first magazine and to impart a step by step downward movement to the platform in said second magazine, means operable to move a disc from the seat to said second magazine, means operable to raise the disc from the seat and rotate it for a predetermined time and to thereafter lower the disc on to the seat, said means being adapted thereafter to operate said second means, and means for recording a message on the rotating disc, and means for recording the time of the receipt of each message.

11. An apparatus for recording telephonic messages, comprising a magazine adapted to receive blank discs, a magazine adapted to receive discs on which messages have been recorded, a turn table between the magazines, means for delivering a disc from said first magazine to the turn table and for delivering a disc from the turn table to said second magazine, means for recording a message on the disc carried by the turn table, and means for rotating the turn table for a predetermined period and thereafter operating said first means.

12. An apparatus for recording telephonic messages, comprising a magazine adapted to receive blank discs, a magazine adapted to receive discs on which messages have been recorded, a turn table arranged between the magazines and mounted for upward and downward adjustment, means for supporting a disc for engagement by the turn table during the upward adjustment thereof and adapted to receive the disc during the downward adjustment of the turn table, means adapted to adjust the turn table upwardly, then rotate it for a predetermined period and thereafter adjust the turn table downwardly, means adapted to record a message on the disc during the rotation of the turn table, and means operable by said second means and adapted after the downward adjustment of the turn table to move the disc on the supporting means to said second magazine and to move a disc from said first magazine on to the supporting means.

13. An apparatus for recording telephonic messages, comprising a member adapted to have a message recorded thereon, means rotatably supporting said member, an electric motor for operating said means, an electric circuit including the motor and a normally opened switch, electrical means adapted when energized to close the switch and adapted to be connected to the telephone line for energization by the calling current, a second normally opened switch included in the said circuit and operable by the motor to close said circuit after the closing of said first switch and maintain it closed for a predetermined period of time, and means adapted to be connected to the telephone line for recording a message on said member during the rotation thereof.

14. An apparatus for recording telephonic messages, comprising a member adapted to have a message recorded therein, means rotatably supporting said member, an electric motor for operating said means, an electric circuit including the motor and a normally opened switch, electrical means adapted when energized to close the switch and adapted to be connected to the telephone line for energization by the calling current, a second normally opened switch included in the said circuit and operable by the motor to close said circuit after the closing of said first switch and maintain it closed for a predetermined period of time, means adapted to be connected to the telephone line for recording a message on said member during the rotation thereof, and
means operable by the motor after the operation of said first means for a predetermined period of time to remove said member from said first means and position a fresh member thereon.

In testimony whereof I affix my signature.

BENJAMIN F. THORNTON.