

Feb. 2, 1932.

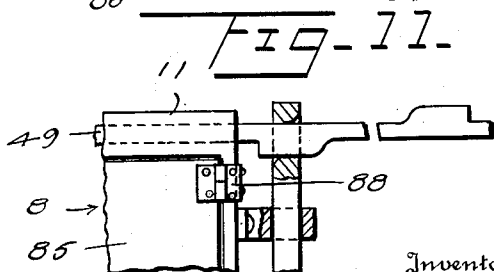
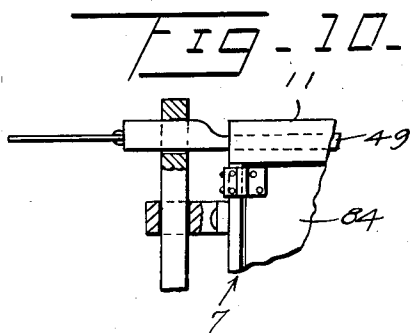
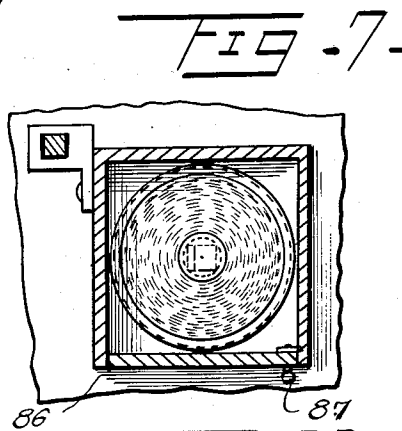
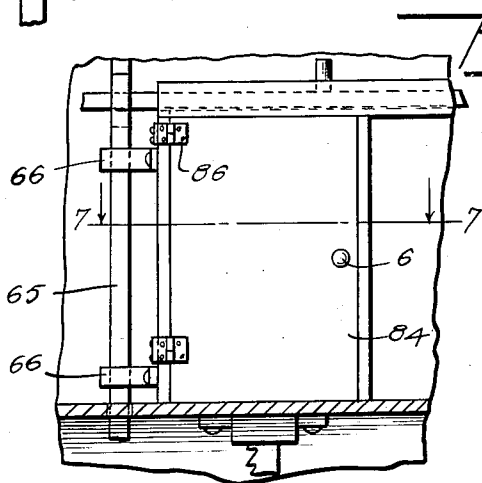
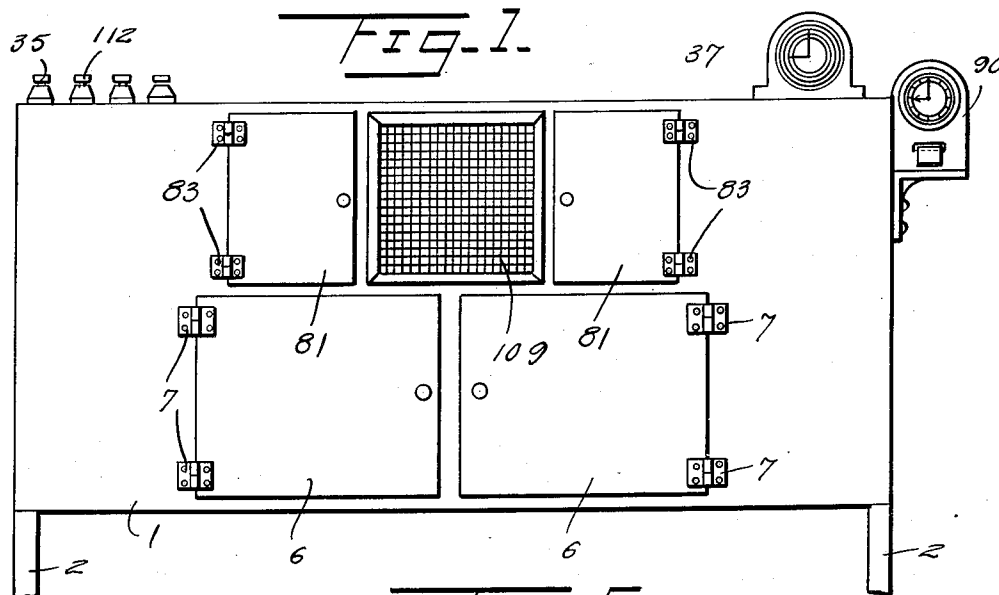
B. F. THORNTON

1,843,849

APPARATUS FOR AUTOMATICALLY TRANSMITTING MESSAGES OVER A TELEPHONE LINE

Filed April 7, 1930

5 Sheets-Sheet 1.



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Feb. 2, 1932.

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APPARATUS FOR AUTOMATICALLY TRANSMITTING MESSAGES OVER A TELEPHONE LINE

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5 Sheets-Sheet 2

FIG. 2.

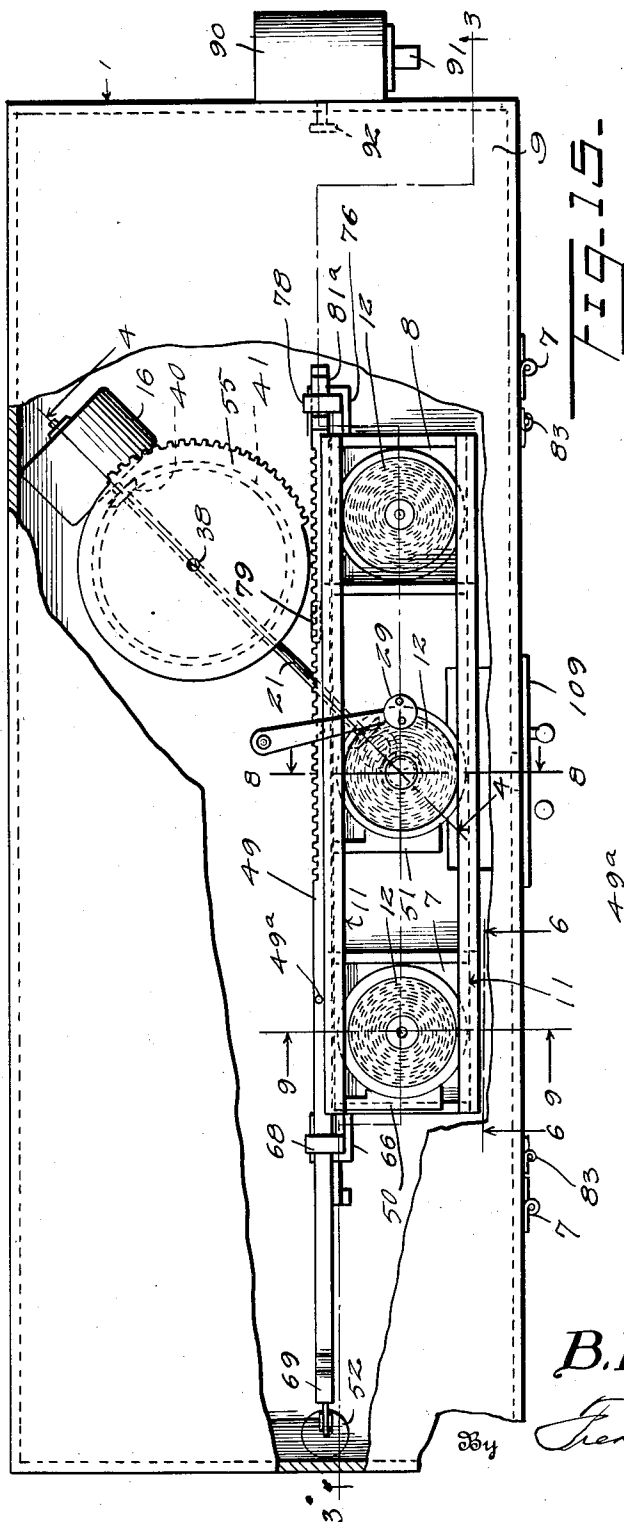


FIG. 15.

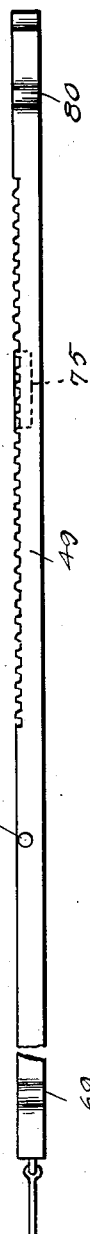
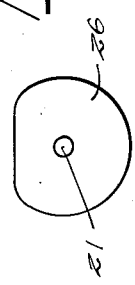


FIG. 14.



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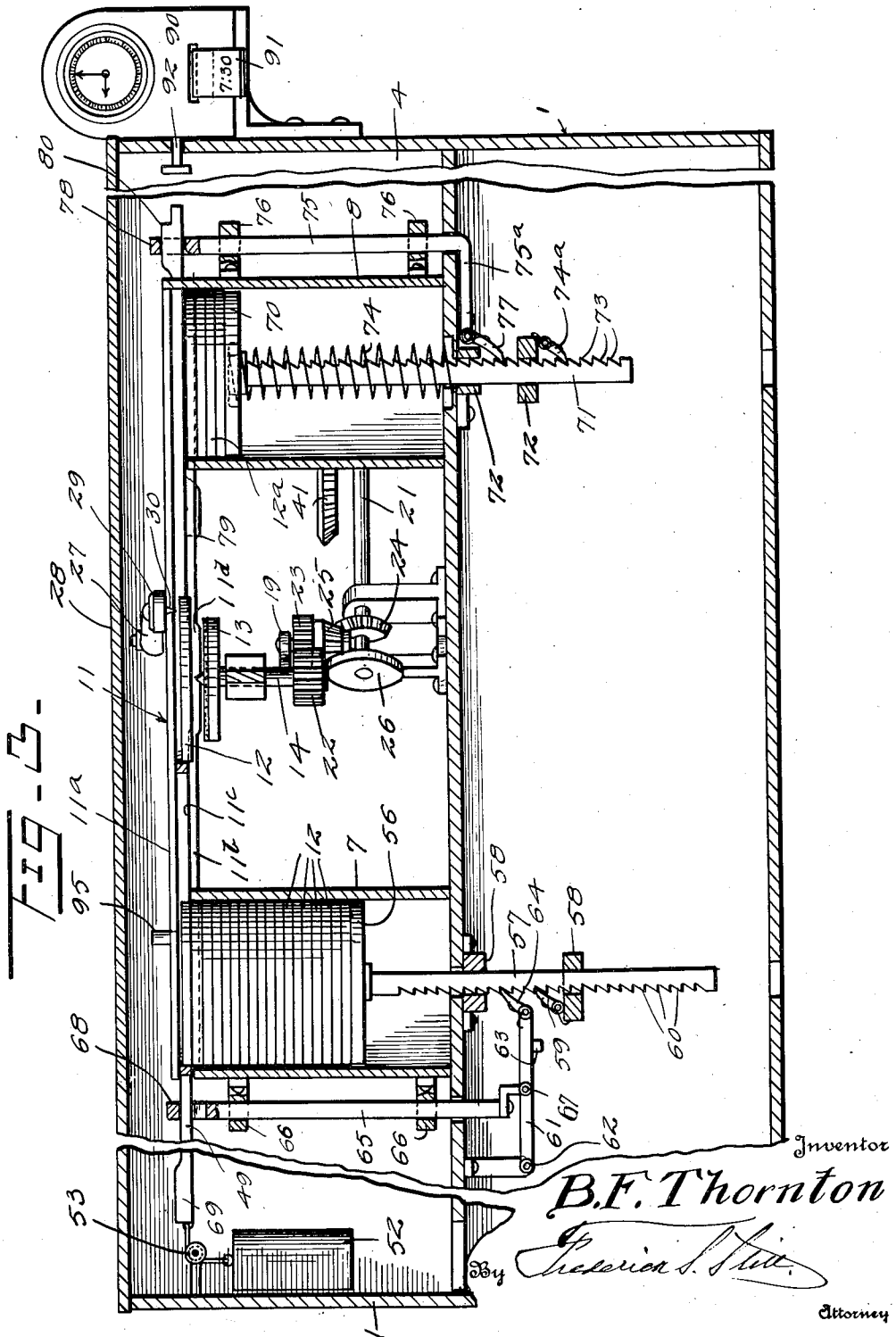
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5 Sheets-Sheet 4

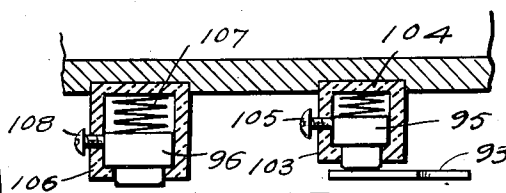
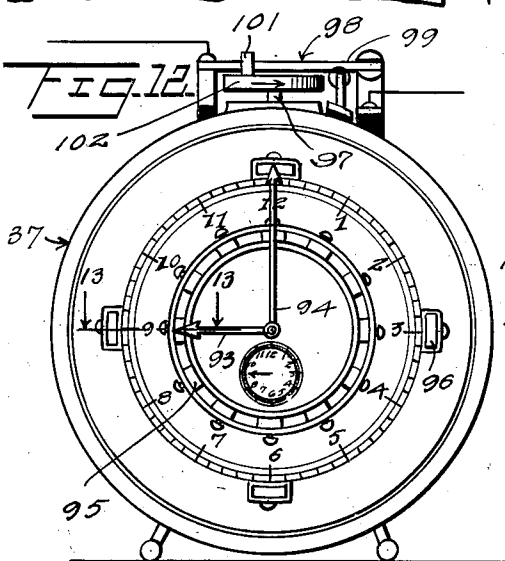
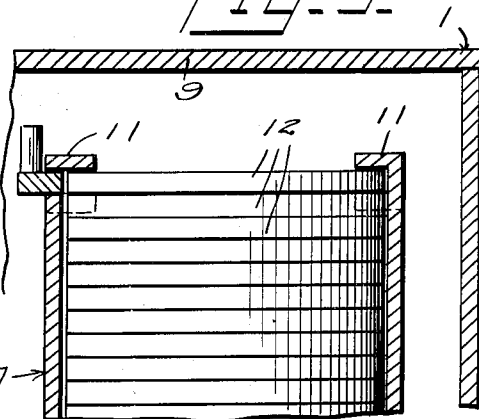


Fig. 13. Inventor
B. F. Thornton

By Fredrick S. Hill Attorney

Feb. 2, 1932.

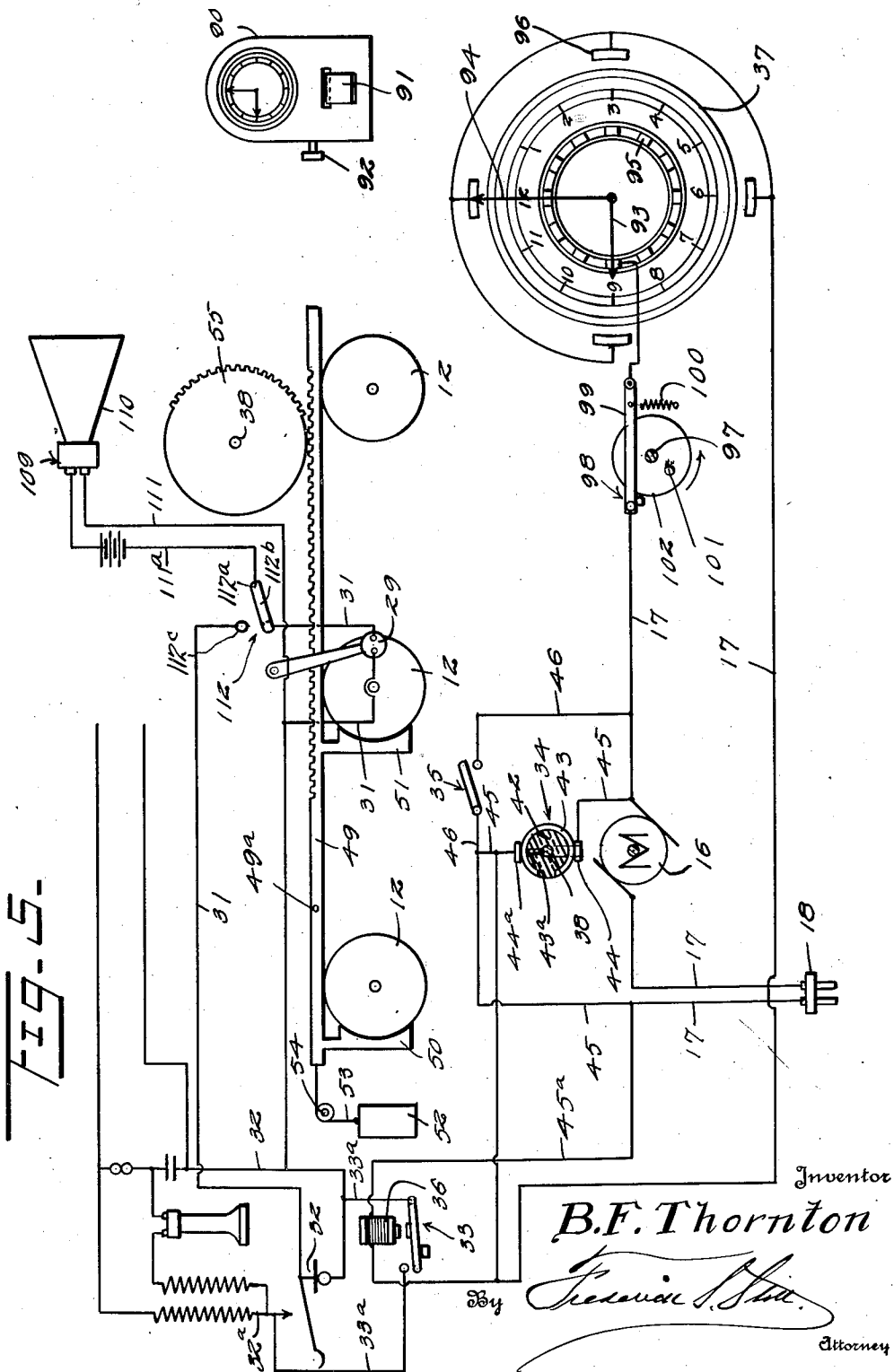
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APPARATUS FOR AUTOMATICALLY TRANSMITTING MESSAGES OVER A TELEPHONE LINE

Filed April 7, 1930

5 Sheets-Sheet 5



UNITED STATES PATENT OFFICE

BENJAMIN F. THORNTON, OF HARRISBURG, PENNSYLVANIA

APPARATUS FOR AUTOMATICALLY TRANSMITTING MESSAGES OVER A TELEPHONE LINE

Application filed April 7, 1930. Serial No. 442,377.

This invention relates to an apparatus adapted to be used for the purpose of automatically transmitting messages over a telephone line to a telegraph 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 transmit messages recorded on a disc through the medium of the apparatus forming the subject matter of my co-pending application filed April 7, 1930, and serially numbered 442,378, to the end that the telephone subscriber may take advantage of the cheaper night rates without remaining at his home or office and without employing a secretary or other person during such time.

The invention has for a further object to provide an apparatus of the character stated which shall be adapted to notify the central telephone office that a message is about to be transmitted, which shall be adapted to thereafter transmit the message, and shall be adapted to record the exact time of the transmission of the message.

The invention has for a further object to provide an apparatus of the character stated which shall be adapted to transmit a plurality of messages one after the other and at intervals of fifteen minutes or other period of time.

The invention has for a further object to provide an apparatus of the character stated which shall embody a time switch adapted when closed to notify the central office that a message is about to be transmitted, a turn table for a disc on which the message has been recorded, an electric motor for operating the turn table, a time switch in the motor circuit and controlling said first switch, and a sound reproducing mechanism associated with the disc and connected to the telephone line so as to transmit the message over the line.

The invention has for a further object to provide an apparatus of the character stated which shall embody a magazine for the discs bearing the messages to be transmitted, a magazine for the discs after the messages have been transmitted, means adapted to be operated by the motor for the purpose of removing a disc from the turn table and delivering

it to said second magazine and for delivering a disc from said first magazine to the turn table, and a switch adapted to open the motor circuit after this change in discs has taken place, the apparatus being adapted to again operate when the time switch in the motor circuit is again closed.

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 a strip of paper the time of the transmission of the respective messages, the strip bearing the time of the transmission of the respective messages in the order in which the discs are delivered from the turn table to the second mentioned magazine.

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 transmitting 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 a vertical plane 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 in one of the magazines;

Figure 11 is a similar view illustrating the connection between the disc changing means and the means for lowering the discs in the other magazine;

Figure 12 is a view in front elevation of the time switch used in connection with the apparatus;

Figure 13 is a sectional view taken on the horizontal plane indicated by the line 13—13 of Figure 12;

Figure 14 is a view in elevation of the cam for raising and lowering the turn table and supporting it while in operation, and

Figure 15 is a 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 discs bearing messages to be transmitted over a telephone line or to be reproduced, as herein-after set forth.

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 upper side 9 of the cabinet.

Channeled guides 11 are arranged at the upper ends of the magazines 7 and 8. The top walls 11^a and the side walls 11^b 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 11^c of the guides 11 overlie the upper ends of the magazines 7 and 8. The bottom walls 11^d 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 11^d of the guides 11 are provided centrally between the magazines 7 and 8 with downwardly offset portions 11^e 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 bearing a message to be transmitted.

The magazine 7 contains discs 12 bearing messages to be transmitted, and the magazine 8 is adapted to receive the discs after the messages have been transmitted. The uppermost 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 11^e. When it reaches this point, the disc 12 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 positions below the seat 11^e so as to permit the disc 12 to move 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 12, and the turn table 13 is carried into contact with the lower side of the disc. 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 the message recorded thereon is transmitted. During the next or third phase of the operation of the apparatus, the shaft 14 moves downwardly so as to deposit the disc upon the seat 11^e, and thereafter move the shaft and turn table to a position below the disc. During the final or fourth phase of the operation of the apparatus, the disc is moved into the magazine 8 and another disc is moved from the magazine 7 into the seat 11^e so as to reset the apparatus for the transmission of another message.

An electric motor 16 is arranged within the compartment 4, and the leads 17 thereof are connected to a plug 18 and 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 bevel 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 motor, 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, permit the shaft to move downwardly.

An arm 27 is pivotally mounted at one end, as at 28, in the top of the cabinet. The arm 27 is provided at its free end with a reproducer 29, of the electrical type, which may be of any well known or appropriate construction and which includes a stylus 30 bearing upon the disc 12 carried by the turn table 13. The reproducer 29 is connected by leads 31 to the wires 32 of a telephone line so as to effect the transmission of a message upon the disc 12 carried by the turn table 13.

A switch 33 is connected by leads 33^a to one of the wires 32 and to the wire 32^a of the telephone line. The circuit of the motor 16 includes, in addition to the lead 17 and the plug 18, a normally opened mechanically operated switch 34, a normally opened manually operable switch 35, the magnet 36 of the switch 33, and a time switch 37. The switch 37, which will hereinafter be fully described, is adapted, at intervals of fifteen minutes, to close this circuit, to maintain it closed by the switch 34 and to close it one, two or more times, depending upon the number of messages to be transmitted, and it is adapted thereafter to become inoperative to effect the closing of the circuits until it is again set. The closing of this circuit results in the closing of the switch 33, which when closed lights a red lamp in the central office, and also results in the operation of the motor 16. 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 effect the transmission of the message. After the switch 37 moves into circuit breaking position, which will occur immediately after the closing of the switch 34, this circuit is maintained closed by the switch 34 until after the transmission of the message.

After the transmission of the message, the turn table 13 and shaft 14 move downwardly, and thereafter the disc bearing the transmitted message is moved into the magazine 7 into the seat 11^a. Immediately after this change in discs has taken place, the switch 34 moves into opened position, with the result that the switch 33 opens and the motor circuit is broken and the apparatus comes to rest, and is not again set in operation until the circuit is again closed by the switch 37.

The switch 34 is carried by a vertical shaft 38 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 disc 42 which is made of insulating material and fixed to the shaft 38, a segmental contact strip 43 which is embedded in the periphery of the disc, and contact brushes 44 and 44^a. The contact strip 43 is electrically connected to the shaft 38, as at 43^a, the contact 44^a bears against the contact strip, and the contact 44 bears against the shaft. The contacts 44 and 44^a are connected across the leads 17 by leads 45.

The switch 35 is connected by leads 46 to the leads 17, and is provided in order to enable the subscriber to close the motor circuit when he desires to listen to messages automatically recorded through the medium of the apparatus forming the subject matter of my co-pending application.

The disc on the turn table 13 is, after the

transmission of its message and the movement of the turn table and spindle 14 into their normal or lowered position, moved along the guides 11 into the magazine 8, and a disc bearing another message to be transmitted is moved along the guides from the magazine 7 into the seat 11^a by means which comprises a rack bar 49 slidably mounted in one of the guides 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 11^a. During its operation, the rack bar 49 moves to the right, with the result that the disc in the seat 11^a 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 11^a 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 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 slidably passes. 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 and 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 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 slidably 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 of the platform, and the platform is held against upward movement under the influence of the spring by a spring pressed pawl 74^a carried by one of the bearings and engaging one of the teeth 73.

A vertical bar 75 is slidably mounted in guides 76 carried by the magazine 8 and is provided with an angular lower end 75^a 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 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 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, 74^a 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 discs to be placed in the magazine 7 and the 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 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.

The time switch 37 comprises a clockworks, not shown, an hour hand 93, a minute hand 94, an annular series of contacts 95 arranged to be engaged by the hour hand, and an annular series of contacts 96 arranged to be engaged by the minute hand. The contacts 95 are connected to one of the leads 17, and the contacts 96 are connected to another of these leads. The clockworks is similar to that of an alarm clock, and the arbor 97, which corresponds to the alarm arbor of such clock, is employed to open a normally closed switch 98 in one of the leads 17. The blade 99 of this switch is normally held in closed position by a spring 100, and a pin 101, carried by a disc 102 on the arbor 97, contacts with and moves the switch blade into opened position after the apparatus has been operated to transmit one, two or more messages.

It should be apparent from the foregoing description, taken in connection with the accompanying drawings, that to prepare the apparatus for transmitting messages, it is only necessary to place in the magazine 7 the discs on which the messages have been recorded, to close the switch 35 for a period suf-

ficiently long to result in the movement of one of the discs from the magazine 7 to the seat 11^a, and to thereafter set the time switch 37. The time switch 37 may be set to effect the operation of the apparatus for the purpose of transmitting one message at any desired time, and it may also be set to effect the operation of the apparatus two or more times at intervals of fifteen minutes. The contacts 95 are mounted in an insulating ring 103 for movement into and out of operative position with respect to the hour hand 93. They are yieldingly held in operative position with respect to the minute hand 94 by springs 104, and are adapted to be held in inoperative position with respect to the minute hand by screws 105. The contacts 96 are mounted in an insulating ring 106 for movement into and out of operative position with respect to the minute hand 94. They are held in operative position with respect to the minute hand 94 by springs 107, and are adapted to be held in inoperative position with respect to the minute hand by screws 108.

If one message is to be transmitted at 8:45 p. m., all of the contacts 95 except that one directly opposite the character 8 on the dial of the switch 37, are moved into and secured in inoperative position, and all of the contacts 96 except that one directly opposite the character 9 of the dial are moved into and secured in inoperative position. It will thus be seen that when the hour hand 93 and minute hand 94 point to 8:45, the circuit of the motor 16 and magnet 36 will be closed, as the result of the hour hand contacting with the operative contact 96. The energization of the magnet 36 and the motor 16 results in the lighting of a red lamp located in the central office and the operation of the apparatus. During the operation of the apparatus, the turn table 13 and shaft 14 will be moved upwardly into engagement with the disc on the seat 11^a, and the disc will be carried into engagement with the stylus 30 of the reproducing mechanism 29. The disc is next rotated under the stylus in order to effect the transmission of the message, and the disc is rotated for a period slightly longer than necessary to transmit a message of more than average length. After this period of rotation of the disc, the turn table 13 and shaft 14 move downwardly, with the result that the disc is withdrawn from in engagement with the stylus 13 and deposited on the seat 11^a. Immediately after this takes place, the pinion 55 moves into engagement with the rack bar 45, and it moves the rack bar 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 transmission of the message, and a disc bearing another message is moved from the magazine 7 into the seat 11^a.

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 32, and the circuit of the motor is broken by the switch 34, which during the initial operation of the apparatus moved into closed position. During the movement of the rack bar 49 to the right, a lug 49^a thereon contacted with the arm 27 and returned the transmitting mechanism 29 to its normal position, and during the movement of the rack bar to the left, the lug was carried away from the arm so as not to interfere with the movement of the arm during the transmission of the message. To permit the switch 34 to maintain the switch 33 closed during the operation of the apparatus, the switch 33 is included in circuit with the switch 34 by one of the leads 45 and a lead 45^a.

If it is desired to transmit two or more messages, two or more of the contacts 95 are released for movement into operative position, and all of the contacts 96 are released for movement into operative position, the time switch 37 now being set to close the motor circuit two or more times at intervals of fifteen minutes, and in order to insure the stopping of the apparatus after transmission of the messages, the mechanism of the time switch 37 is set to open the switch 98 after the expiration of the period required to transmit the messages.

This apparatus also comprises, for the purpose of reproducing the message recorded by the apparatus forming the subject-matter of my copending application, a microphone 109 of well-known construction and having an amplifying horn or chamber 110. A lead 111 extends from the microphone 109 to one of the leads 31, and a lead 111^a extends from the microphone to the contact 112^a of the switch 112. This switch also comprises a blade 112^b and a second contact 112^c which are interposed in the other of the leads 31. When the blade 112^b is in engagement with the contact 112^c, the switch 112 establishes an operative connection between the telephone line and the reproducer 29. When the blade 112^b is in engagement with the contact 112^a, the connection between the telephone line and the reproducer 29 is broken, and an operative connection is established between the reproducer and the microphone 109. To reproduce the messages, it is only necessary to place the records bearing the messages in the magazine 7, and thereafter close the switch 35 and swing the switch blade 112^b into engagement with the contact 112^a. When the switch blade 112^b is in this position, the connection between the telephone line and the reproducer 29 is broken, and in view thereof the reproducing of the messages through the medium of the microphone 109 will not be noticed at the central office.

It should be also understood that the apparatus is entirely automatic in its operations, that it will operate on direct or indirect cur-

rent 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 an 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 that when direct current is employed, a suitable resistance will be inserted between the plug 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 transmit messages or record messages during his absence from his home or office.

While I have described the principle of the invention, together with the structure which I now consider the preferred embodiment thereof, it is to be understood that the structure 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 transmitting a message over the line wires of a subscriber's telephone, comprising a record provided with the message, a normally idle rotatable support for the record, electrically operated means for rotating the support, a reproducer of the electrical type having a stylus engaging the record, conductors connecting the reproducer to the line wires, a normally opened switch in one of said conductors, electrically operated means for closing the switch, an electric circuit including said support rotating means and said switch closing means, and automatic means in said circuit for closing it at a predetermined time and maintaining it closed for a predetermined interval to effect the operation of the support and the closing of the switch at such time and for such interval.

2. An apparatus for transmitting a message over the line wires of a subscriber's telephone, comprising a record provided with the message, a normally idle rotatable support for the record, electrically operated means for rotating the support, a reproducer of the electrical type having a stylus engaging the record, conductors connecting the reproducer to the line wires, a normally opened switch in one of said conductors, electrically operated means for closing the switch, an electric circuit including said support rotating means and said switch closing means, a time switch in said circuit for closing it at a predetermined time to effect the operation of the support and the closing of the switch, and means in said circuit and under the control of the support rotating

means for maintaining said circuit closed for a predetermined period of time.

3. An apparatus for transmitting messages over the line wires of a subscriber's telephone, comprising records provided with the messages, a normally idle rotatable support adapted to receive one of the records, electrically operated means for rotating the support, a reproducer engaging the record on the support and connected to the line wires, a normally opened switch in said connection, electrically operated means for closing the switch, an electric circuit including said support rotating means and said switch closing means, automatic means in said circuit for closing it at predetermined intervals and maintaining it closed for predetermined periods of time to effect the operation of the support and the closing of the switch at such intervals and for such periods of time, and means adapted after the transmission of a message to remove the record from the support and place a fresh record thereon to effect the transmission of different messages during the respective periods of time said circuit is closed.

4. An apparatus for transmitting messages over the line wires of a subscriber's telephone, comprising records provided with the messages, a normally idle rotatable support adapted to receive one of the records, electrically operated means for rotating the support, a reproducer engaging the record on the support and connected to the line wires, a normally opened switch in said connection, electrically operated means for closing the switch, an electric circuit including said support rotating means and said switch closing means, automatic means in said circuit for closing it at predetermined intervals and maintaining it closed for predetermined periods of time to effect the operation of the support and the closing of the switch at such intervals and for such periods of time, and means operable by the support rotating means after the transmission of a message for removing the record from the support and placing a fresh record thereon to effect the transmission of different messages during the respective periods of time said circuit is closed.

5. An apparatus for transmitting messages over the line wires of a subscriber's telephone, comprising records provided with the messages, a normally idle rotatable support adapted to receive one of the records, electrically operated means for rotating the support, a reproducer engaging the record on the support and connected to the line wires, a normally opened switch in said connection, electrically operated means for closing the switch, an electric circuit including said support rotating means and said switch closing means, a time switch in said circuit for closing it at predetermined intervals to

effect the operation of the support and the closing of the switch, means in said circuit and under the control of the support rotating means for maintaining said circuit closed
 5 for a predetermined period of time, and means operable by the support rotating means after the transmission of a message for removing the record from the support and placing a fresh record thereon to effect
 10 the transmission of different messages during the respective periods of time said circuit is closed.

6. An apparatus for transmitting messages over the line wires of a subscriber's
 15 telephone, comprising records provided with the messages, a normally idle rotatable support for one of the records, electrically operated means for rotating the support, a reproducer engaging the record on the support and connected to the line wires, a normally
 20 opened switch in said connection, electrically operated means for closing the switch, an electric circuit including said support rotating means and said switch closing means, a
 25 time switch in said circuit for closing it at predetermined intervals to effect the operation of the support and the closing of the switch, means in said circuit and under the control of the support rotating means for
 30 maintaining said circuit closed for a predetermined period of time, means adapted after the transmission of a message to remove the record from the support and place a fresh
 35 record thereon to effect the transmission of different messages during the respective periods of time said circuit is closed, and a normally closed switch in said circuit and adapted to be opened by the time switch
 40 after the time switch has closed said circuit a predetermined number of times.

7. In an apparatus of the character set forth, a reproducer, a record support normally occupying a position below the repro-
 45 ducer with the record out of engagement with the reproducer, means mounting the support for rotation for upward movement to carry the record into engagement with the reproducer and for return to normal position, electrically operated means for moving
 50 the support upwardly, for thereafter rotating the support and for thereafter freeing the support for return to normal position, an electric circuit including said second means, means for closing said circuit to
 55 effect the operation of said second means, and record transferring means adapted to be operated by said second means to move a record from the support for placing a fresh one thereon when the support is in normal
 60 position.

8. In an apparatus of the character set forth, a reproducer, a record support normally occupying a position below the repro-
 65 ducer with the record out of engagement with the reproducer, means mounting the

support for rotation and for upward movement to carry the record into engagement with the reproducer and for return to normal position, electrically operated means for
 70 moving the support upwardly, for thereafter rotating the support and for thereafter freeing the support for return to normal position, an electric circuit including said second means, a time switch in said circuit for
 75 closing it at a predetermined period of time to effect the operation of said second means, and record transferring means adapted to be operated by said second means to move a record from the support and place a fresh
 80 one thereon when the support is in normal position.

9. In an apparatus of the character set forth, a reproducer, a record support normally occupying a position below the repro-
 85 ducer with the record out of engagement with the reproducer, means mounting the support for rotation and for upward movement to carry the record into engagement with the reproducer and for return to normal position, electrically operated means for moving
 90 the support upwardly, for thereafter rotating the support and for thereafter freeing the support for return to normal position, an electric circuit including said second means, a time switch in said circuit for closing
 95 it at a predetermined period of time to effect the operation of said second means, means in said circuit and under the control of said second means for maintaining said circuit closed for a predetermined period of
 100 time, and record transferring means adapted to be operated by said second means to move a record from the support and place a fresh record thereon when the support is in normal
 105 position.

10. In an apparatus of the character set forth, a reproducer, a record support normally occupying a position below the repro-
 110 ducer with the record out of engagement with the reproducer, means mounting the support for rotation and for upward movement to carry the record into engagement with the reproducer and for return to normal position, electrically operated means for moving
 115 the support upwardly, for thereafter rotating the support and for thereafter freeing the support for return to normal position, an electric circuit including said second means, a time switch in said circuit for closing it at
 120 predetermined intervals to effect the operation of said second means, means in said circuit and under the control of said second means for maintaining said circuit closed for predetermined periods of time, record transferring means adapted to be operated by said
 125 second means to move a record from the support and place a fresh one thereon when the support is in normal position, means in said circuit and under the control of said second means for maintaining said circuit closed
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for a predetermined period of time, and a normally closed switch in said circuit and adapted to be opened by the time switch after the time switch has closed said circuit a predetermined number of times.

5 In testimony whereof I affix my signature.
BENJAMIN F. THORNTON.

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