May 5, 1942. M. THOMPSON 2,282,100

CONTROLLER FOR TELEPHONIC RECORDING

Filed Dec. 7, 1940 3 Sheets-Sheet 1

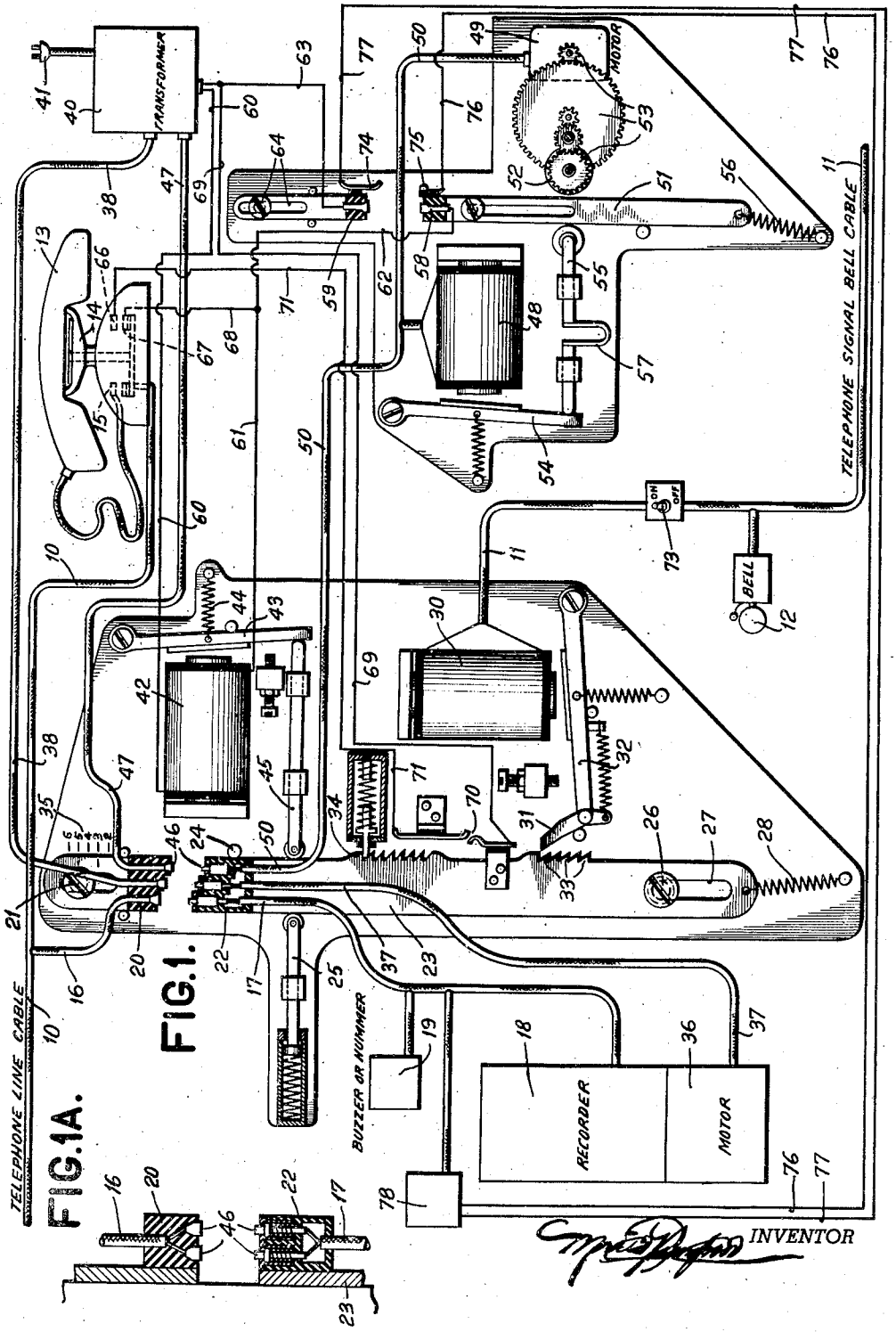


FIG.1.

FIG.1A.

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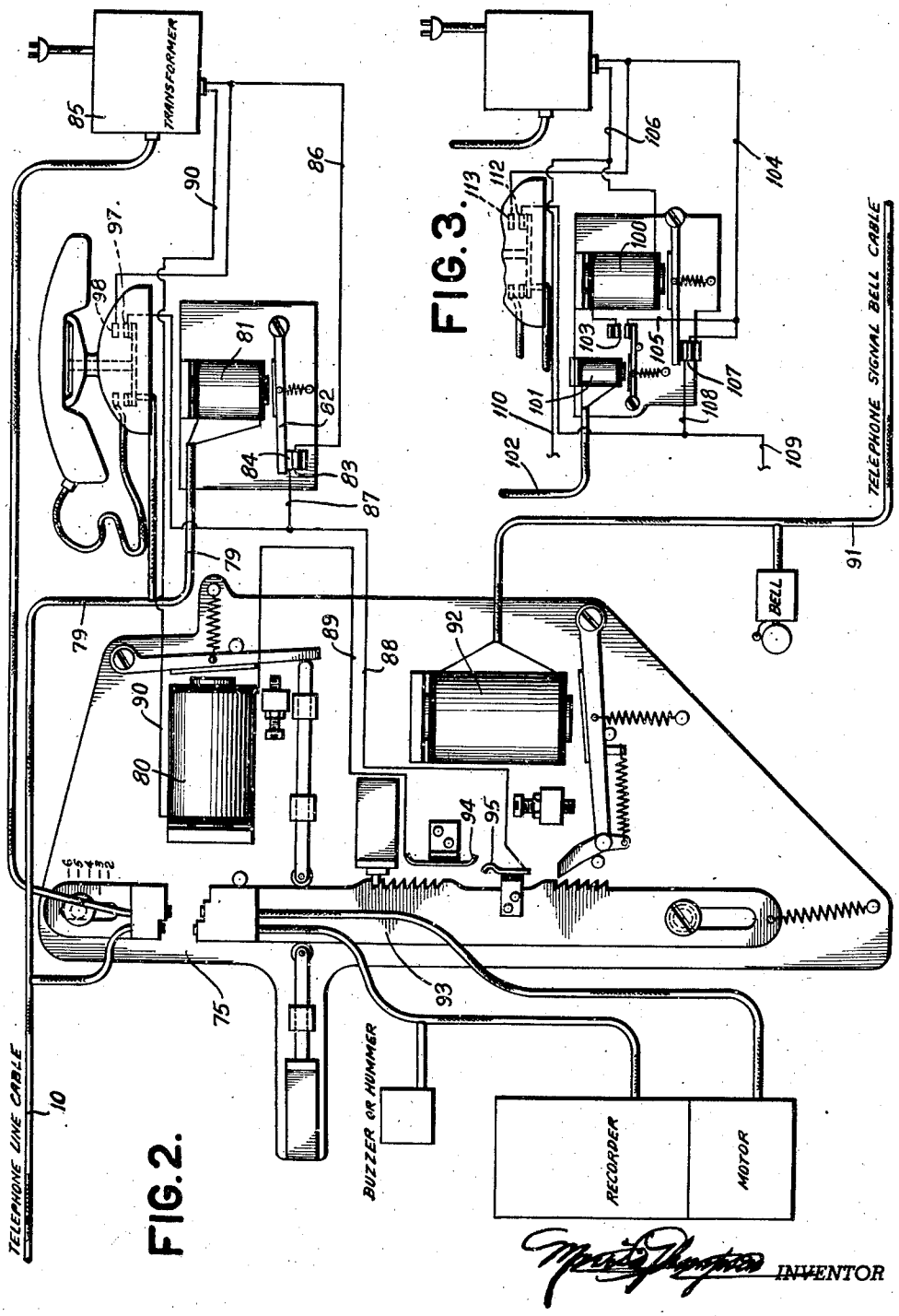


FIG. 3.

FIG. 2.

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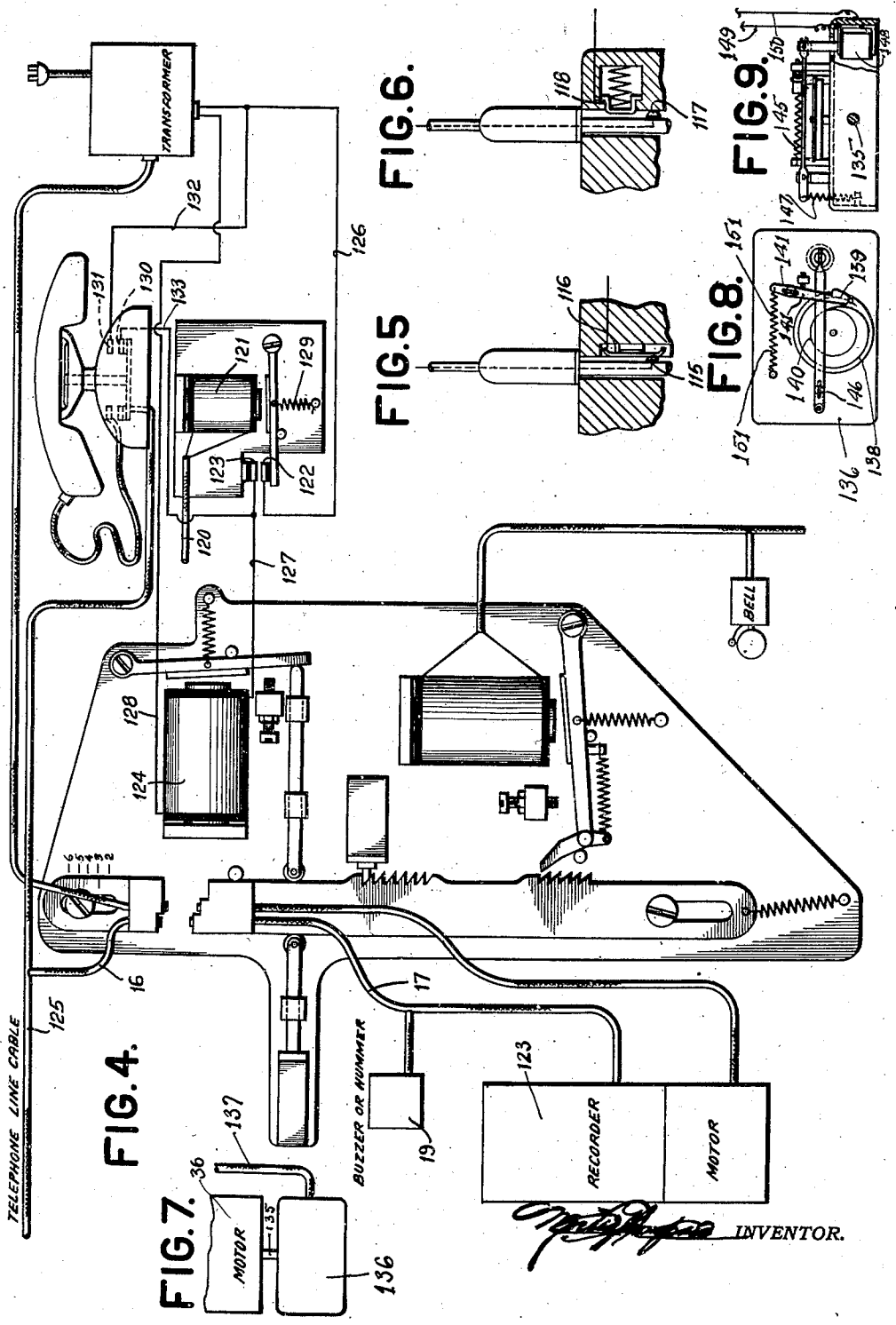


FIG. 4.

FIG. 5

FIG. 6.

FIG. 7.

FIG. 8.

FIG. 9.

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# UNITED STATES PATENT OFFICE

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## CONTROLLER FOR TELEPHONIC RECORDING

Morris Thompson, Nyack, N. Y.

Application December 7, 1940, Serial No. 369,005

19 Claims. (Cl. 179—5.5)

This invention relates to the recording of telephonic messages.

Among the objects of the invention is to provide for automatically bringing into operation a suitable message receiving controller for recording any message which is desired to be delivered in the absence of establishment of the usual telephone connections.

Another object of the invention is to provide a device for controlling the recording of telephonic messages which lends itself readily to attachment for use in conjunction with the usual telephone circuits, and which will not interfere with the normal operation or use of the telephone.

Another object of the invention is to provide time controlling means whereby the duration of the recording of a message may be determined, and, if desired, the conclusion of the recording period may be made known to the caller so that he may know that the time available for recording his message is about to be concluded.

Another object is to provide means for use in conjunction with a device for recording telephonic messages and by which recording will be initiated following the elapse of a predetermined time interval after initiation of the telephone connection and by which the caller is apprised that he may start delivering the message he wishes to record for subsequent reference by the intended receiver.

Another object is to provide means for association with a device for recording telephonic messages by which the duration of time for the recording of a message is determinable at the will of the caller, or by a central operator, and may be extended indefinitely for the capacity of the recording device.

Further and other objects of the present invention will be hereinafter set forth in the accompanying specification and claims and demonstrated by the drawings which show by way of illustration preferred embodiments and the principle of my invention and what I now consider the best mode in which I have contemplated applying that principle. Other embodiments of the invention employing the same principle can be used and structural changes made as desired by those skilled in the art within the spirit of the appended claims and without departing from the present invention.

Having reference to the drawings, Fig. 1 shows a schematic arrangement and wiring diagram of a system for recording telephonic messages and which is provided with an automatic timing mechanism which is self-contained and easily attachable at the receiving station and does not require supplementing at a central switchboard.

Fig. 1A is a section of a detail of the switch contacts shown in Fig. 1 taken in a plane at right angles to the plane of the paper.

Fig. 2 is a modified arrangement providing for unlimited recording under control of circuit connections at the central switchboard.

Fig. 3 is still another modification providing for unlimited recording under the control of the central switchboard.

Fig. 4 is still another modification providing for unlimited recording under the control of the central switchboard and in which the duration of recording is controlled by an initiating impulse, and a concluding impulse current.

Fig. 5 demonstrates a form of switch applicable to a jack at the central switchboard for providing continuous current by which recording may be controlled in conjunction with either of the systems illustrated in Figs. 2 and 3.

Fig. 6 demonstrates a form of switch applicable to a jack at the central switchboard for providing an initiating impulse current and a concluding impulse current for controlling the duration of recording interval for the system illustrated in Fig. 4.

Fig. 7 shows the association of an announcing device, such as a phonograph, with a motor.

Fig. 8 is a plan of one form of phonographic device for making a voice announcement.

Fig. 9 is a side view of the phonographic device shown in Fig. 8.

Each of Figs. 1, 2 and 4 shows so much of the conventional telephone circuits at a subscriber station as is required to be understood for an understanding of the present invention including the line cable over which two-way communication is transmitted and by which the calling signal or bell is operated. For convenience of illustration, I have generally indicated the telephone line cable at 10 and in the interest of simplifying the disclosure I have shown a separate cable 11 for operating the telephone call signal. It will be understood that a single incoming cable may be used for transmitting the communication carrier current and the current for the calling signal, but for the present purposes these two currents will be referred to as having separate cables 10 and 11, irrespective of whether or not two or more conductors run between a central station and a subscriber station. 12 is the usual calling bell which advises of a potentially active telephone circuit for an incoming message.

The conventional telephone receiver 13, when

lifted from its base 14, closes the contacts 15 and establishes the telephonic circuit over the telephone line cable 10. In certain arrangements the calling current may be discontinued or rendered ineffective for bell operation upon the raising of the receiver. The devices and circuits described to this point are the usual ones which are employed in the usual telephone installation. No change is contemplated or necessary in the apparatus or circuits of the usual telephone system, although the same may be supplemented for certain applications as will later appear. My message recording controller, however, is adapted for installation by attachment to the usual telephone circuit without need of auxiliary appliances, as is explained hereinafter.

The message recording controller is designed to function to receive and record telephone messages to the exclusion of the usual telephone receiver so that when a call is not answered, the controller, after a lapse of predetermined time, will automatically initiate recording of the intended message. The length of time before the recorder is connected in the telephone circuit is adjustable in accordance with the amount of time that a particular receiving station should have for permitting answer by the person called. Some homes and offices will require different intervals of time for this purpose. When this interval of time has elapsed, the recorder becomes available for recording and some form of buzzer or other sounding device may be used, if desired, to apprise the caller that the recording mechanism is ready to receive a message. This buzzer may function for the duration of the operation of the recording means to keep the calling party informed that the recording connections are being maintained for his use.

Provision is also made for determining the duration of the operation of the recording means and which disconnects the recording means from the telephone circuit and restores the recording controller and associated circuits to normal condition of disuse so that conditions thereafter prevail as when the telephone circuit has been broken by the replacement of the receiver upon its base or hook. A chime or other distinguishing sounding device may be used to forewarn the person calling and transcribing a message that the duration of the period of time for recording the message is about to elapse so that he may conclude his message. Of course, the recording of the message may be continued by reinitiating a telephone call and thereby starting a new recording period. An auxiliary switch and circuit is provided which may be associated with the telephone receiver for cutting out the operation of the recorder when the receiver is raised from its base by one who wishes to discontinue the recording and receive the message verbally. This circuit is ineffective when the telephone is answered in its usual manner and before any recording has been initiated.

In the main, my invention provides for tapping the telephone line cable to take off a parallel connection 16 by which the communication circuits are connected through the cable 17 to the recording device 18. This recorder 18 may be any one of the several well-known types employing such arrangements as sound tracks or metal tapes or may be a dictaphone, for example. This same circuit connection 16, 17 also may be used to supply current to a buzzer or other signal device 19 for providing an audible indication of the operation of the recording device. The buzzer is to advise that the recorder is in circuit and that the calling party may record his message if he so chooses.

The ends of cables 16 and 17 are provided with contacts which are so mounted as to be engageable with each other for making the connection between these cables following the elapse of a predetermined period of time. While various forms of timing switches are available for this purpose, I have illustrated a form of switch which will accomplish the desired results. This switch includes a member 20 which is adjustably positionable by retaining screw 21 in engagement with a slot in said member. The terminal ends of cable 16 are carried by said member 20. The terminal ends of cable 17 are mounted in a movable block 22 which is carried by a post 23, so mounted as to move the terminals carried by block 22 into contact with the terminals carried by member 20. Resilient mountings are provided to insure closure of associated terminals when brought together. Such resilient means are shown in Fig. 1A, for example.

Post 23 is guided at its upper end by a fixed pin 24 and a spring-pressed follower 25 which biases the upper end of the post against the pin. In this position of the terminal block 22, the engaging terminals on the post are directly beneath the engageable terminals of the fixed block 20. The lower end of the post 23 is supported on a pin or screw 26 which engages slot 27 and allows for the vertical, as well as oscillatory, movement of the post. A spring 28 normally holds the switch-post 23 in its lowermost position which corresponds to the position of rest or of inaction of the message recorder.

Whenever a call is made, the operator or calling mechanism at the central station operates the call bell 12. The call bell current is utilized in the present invention for initiating movement of terminal post 23 which subsequently results in closing the connection between the telephone line cable 10 and the recorder 18. For accomplishing this I so connect a solenoid 30 as to cause its energization each time the call bell rings. Pawl 31, carried by the armature 32, engages teeth 33 upon the terminal post 23 and raises the terminal post upon each energization of the solenoid. A one-way retaining pawl and ratchet 34 is employed for maintaining the terminal post in each position to which it is raised by each operation of solenoid 30.

The initial spacing of the terminal blocks 20 and 22 and the contacts carried thereby provide the amount of time desired to be allowed between the first sounding of the call bell (or first impulse of signal current) and the closing of the contacts and during which it is expected that the telephone will be answered if there is someone available to do so. For each ring of the call bell, the terminal post 23 is raised one notch and if the telephone receiver 13 has not been lifted, the terminal blocks 20 and 22 will close the contacts carried thereby, say, after three or four rings, for example. The fixed setting of terminal block 20 determines the number of rings or lapse of time before the contacts are closed, and, as shown by the scale 35, the setting corresponds or is equivalent to three rings.

It is also necessary that the means for operating the recorder be connected for operation when the recorder is connected to the telephone line cable. Motor 36 is for operating the recorder and the same or similar switch means may be employed for its control. The motor has a cable

37 terminating in the terminal block 22. A power cable 38 terminates in terminal block 20 and establishes electrical connection with cable 37 when the two terminal blocks are brought together. Cable 38 is connected with any suitable source of power, such as transformer 40. This transformer is provided with a suitable cut-out switch and plug connection 41 for connection with the ordinary house circuit. It is apparent that the power cable 38 becomes operative to operate motor 36 whenever the recorder 18 is connected to telephone line cable 10, because of the common supporting means for their cables.

I have thus far described the means and circuits for initiating the recording of a message when the receiver is not lifted from its base. I contemplate the provision of means for automatically discontinuing the recording operation, either at the end of a predetermined elapse of time, or at the conclusion of a call by interruption of the telephone circuit.

In Fig. 1, I have shown means for discontinuing the connection between the telephone line cable and the recording means under the control of a timing mechanism which is associated with the message receiving or subscriber station. This includes a solenoid 42, an armature 43, which is biased away from the solenoid by a spring 44, and a follower 45 slidably mounted between the armature 43 and switch-post 23. Energization of the solenoid causes the armature and follower 45 to push the switch-post 23 to the left (Fig. 1) against the action of the spring plunger 25, with the result that the contacts carried by terminal blocks 20 and 22 are opened. At the same time, the detent at 34 is released from retaining action and the switch-post is snapped downwardly by spring 28. When the contacts carried by terminal blocks 20, 22 are separated, the solenoid 42 is immediately deenergized. The switch-post will remain in the position shown in Fig. 1 until such time as the recording mechanism is again brought into use.

The deenergizing of solenoid 42 is accomplished immediately upon disengagement of a third group of terminals 46 carried by blocks 20 and 22. The third group of contacts 46 are closed when the terminal block 22 reaches its highest position. Contacts 46, mounted in block 20, are connected to a source of power such as transformer 40 by means of cable 47. The associated contacts carried by movable block 22 are connected to solenoid 48 and motor 49 by means of cable 50. The connection of cables 47 and 50 causes energization of solenoid 48 and actuation of motor 49. These are associated with a timing mechanism which governs the length of recording time by determining the moment of energization of solenoid 42.

Upon energization of solenoid 48 at the initiation of the recording period, contact rod 51 is pressed to the right against a friction wheel 52 which is driven through a train of reduction gears 53 by motor 49. Solenoid 48 causes this by the attraction of its armature 54 and the movement of slide 55 which carries the anti-friction member by which the contact rod 51 is pressed against friction wheel 52. A spring 57 allows for resilient pressure between contact rod 51 and its frictional driving wheel 52. As long as the motor and solenoid are energized (which is the duration of the recording period) the motor, through its reduction gears, will drive contact rod 51 against the action of its spring 56. When contact rod 51 reaches its highest position, it closes contacts 58, 59 and establishes a circuit through line 60, solenoid 42, line 61, line 62, and line 63 to the transformer 40.

The result of energization of solenoid 42 is to push the switch-post 23 to the left (Fig. 1) and open all of the contacts carried by terminal blocks 20 and 22, with the result that recording is concluded and the flow of electrical energy to solenoid 48 and motor 49 is discontinued.

Means are provided for adjusting the initial spaced relation of contacts 58 and 59 whereby the duration of the recording operation may be predetermined. By way of illustration I have shown in the drawings a pin and slot connection 64 for accomplishing this.

It is desirable that the person for whom a call is intended be able to disconnect the operation of the message recorder should he wish to receive the message verbally after the recording operation has started. For enabling this result I provide the receiving station with a pair of contacts in parallel arrangement with the automatically operable contacts 58, 59 so that solenoid 42 may be manually deenergized.

A convenient way of doing this is to attach such contacts to the receiver in such manner that they will be closed when the receiver is raised. As shown in Fig. 1, I have illustrated contacts 66, 67 for accomplishing that purpose. Contact 67 is attached to line 68 and the closing of contacts 66 and 67 causes current flow from transformer 40 to line 69, contacts 70 (when closed) line 71, contacts 66, 67, line 68, line 61, solenoid 42 and line 60 to the transformer 40. Accordingly, when the switch-post 23 is in a raised position and contacts 70 are closed, the lifting of the receiver 13 will cause the closing of contacts 66, 67 and the energization of solenoid 42 by which the switch-post is released from retention by pawl 34 and permitted to be restored to normal position. If the circuits through blocks 20, 22 had been closed they are opened and, in any event, all elements of the controller are restored to normal.

Contacts 70 on the switch-post are provided so as to assure no current flow from the transformer when the receiver is lifted from its base and used in the usual manner. With the switch-post in its lowest position the circuit through solenoid 42 is broken at 70 even though closed at 66, 67. Contacts 70 are so spaced as to maintain the circuit therethrough preferably for the full-movement of the switch-post after its first step of movement. This is arranged in this manner so that the switch-post will be returned to its normal position of disuse whenever the receiver is raised and contacts 66 and 67 are closed, even though the switch-post has not been raised sufficiently to institute message recording.

A double pole switch 73 may be provided in the solenoid circuit 30 for immobilizing the entire message recorder, at will.

In order that a party calling the subscriber station and using the recorder for recording a message may be forewarned that the duration of the recording period is about to expire, I propose to provide an arrangement capable of transmitting a distinctive signal over the telephone circuit prior to the elapse of the recording period. Such a signal would prepare the caller to close his message. This warning signal is attainable by a pair of contacts, 74, 75 mounted with relation to contacts 58, 59 so as to close prior to their closing. These contacts 74, 75 have series connections over lines 76, 77 with a chime or other

distinctive signalling device 70. The chime is tapped into telephone cable 17 so that it will be activated by the telephone current upon closure of contacts 74, 75. The signal emitted by the chime will thereby be made audible to the calling party.

The embodiment of the invention illustrated in Fig. 2 employs time controlling devices for controlling the duration of operation of the message recorder by means of a current maintained during the station-to-station hook-up through a central switchboard. The mechanism mounted on panel 75 may be similar to corresponding mechanism previously described with respect to Fig. 1. Solenoid 80, by which the operation of the message recorder is discontinued, is under control of electromagnet 81. This electromagnet may be connected through cable 79 with the telephone line circuit 10, as shown, and thereby energized when circuit connection is made between the calling and receiving stations, or it may be energized by an auxiliary line or circuit having contacts at the central station. The intention is that electromagnet 81 be energized immediately when the subscriber station is placed on a potentially active circuit, as when a subscriber station is being called. This may be accomplished mechanically or concomitantly with the insertion of the jack by the operator at the central switchboard. Solenoid 81 is maintained in an energized condition as long as the station-to-station condition is maintained.

The immediate effect of energizing solenoid 81 is to attract armature 82 and open contacts 83, 84, with the result that the circuit from the auxiliary source of power or transformer 85 over lines 86, 87, 88, 89 and 90 is maintained open. The opening of contacts 83, 84 to attain this open circuit occurs prior to the energization of bell circuit 91, and hence prior to the initial energization of solenoid 92. Accordingly, when contacts 83, 84 open, solenoid 92 will not have been energized and switch-post 93 will not have been moved from its normal position. This being the case, contacts 94, 95 will have been open when contacts 83, 84 were closed so that no current could have passed through solenoid 80.

When contacts 94, 95 are closed as a result of subsequent movement of switch-post 93, the circuit from the transformer over lines 86, 87, 88, 89, solenoid 80 and line 90 will have already been opened by the energization of solenoid 81 and the consequent opening of contacts 83, 84. Accordingly, no current can flow through the switch restoring solenoid 80 until contacts 94, 95 are closed and either contacts 83, 84 or contacts 97, 98 are closed.

At the conclusion of active station-to-station telephone connection, solenoid 81 is deenergized and contacts 83, 84 are immediately closed, with the result that solenoid 80 is energized and the switching mechanism is restored to its normal position, whereby any recording operation that may have been in progress will be discontinued. From this it will be apparent that the length of the recording operation may be determined at the central station by the mechanism or operator who has control of the station-to-station connection.

The receiver-controlled contacts 97, 98 are in parallel connection with contacts 83, 84, with the result that if the receiver is raised from its base and contacts 97, 98 are closed, solenoid 80 is energized and the switch mechanism 93 is immediately thrown out and any recording operation is concluded.

The circuit arrangement shown in Fig. 3 is designed to operate the control of the duration of the message recording operation by the continuous flow of current at the receiving station. In this embodiment of the invention, instead of operating solenoid 100 by current directly controlled at the central station switchboard, an auxiliary solenoid 101 is provided. This solenoid, as in the case of solenoid 81 of Fig. 2, is maintained energized so long as current is flowing through the telephone line cable or an auxiliary cable 102. The energization of solenoid 101 causes the closing of contacts 103 and the completion of a circuit through solenoid 100, including lines 104, 105 and 106. This causes the opening of contacts 107, which assures that solenoid 80 of Fig. 2 remains deenergized during the telephone circuit connection.

At the completion of the telephone connection, solenoid 101 is deenergized, with the result that contacts 103 are opened. This results in breaking the circuit through solenoid 100. Deenergization of solenoid 100 permits contacts 107 to close, thereby causing energization of solenoid 80 of Fig. 2, through wires 104, 108, 109 and 110. As in the circuit diagram shown in Fig. 2, receiver contacts 112 and 113 are connected in parallel with contacts 107 so that they will close the circuit through solenoid 80 as soon as the party for whom the message is intended raises the receiver from its standard. It will be understood that contacts similar to 94 and 95 of Fig. 2 will be employed to assure an open circuit for solenoid 80 when the subscriber station is not in use and contacts 107 are closed.

With reference to the embodiment illustrated in Figs. 2 and 3, it is desired to point out that the current for maintaining solenoids 81 and 101 energized during telephone connection may be obtained by the use of an auxiliary circuit having contacts at the central switchboard. For example, as shown in Fig. 5, one of such contacts 115 may be mounted on a telephone jack and the other contact 116 may be in the form of an elongated spring member. When the jack is inserted for making telephone connection, the contacts 115 and 116 will close an auxiliary circuit such as that included in the cable 102 of Fig. 3. In this manner solenoid 101 would be maintained energized so long as the telephone connection were maintained, and at the conclusion of the telephone connection the circuit would be broken by the withdrawal of the jack. It is to be noted that the provision of an auxiliary solenoid, such as that shown in Fig. 3, is of particular advantage when a weak controlling current is used.

The embodiment of the invention illustrated in Fig. 4 contemplates the use of a current impulse at the beginning of the telephone connection and the use of another current impulse at the end of the telephone connection for concluding the operation of the message recorder. The interval of the recording period may be determined at the switchboard by the provision of contacts 117 and 118, Fig. 6. Contact 117 is so placed on the jack as to wipe contact 118 in passing and close the circuit therebetween each time the jack is introduced and withdrawn from its socket.

Referring to Fig. 4, the auxiliary circuit in cable 120 is closed by the contacts 117 and 118 of Fig. 6 when the jack is introduced into its

socket. Solenoid 121 thereby receives an impulse which causes the closing of contacts 122, 123. The closing of these contacts causes energization of solenoid 124 and the consequent kicking out of the connection between the telephone line circuit 125 and the recorder, as has been explained. The circuit for solenoid 124 is established through wires 126, 127 and 128. This occurs prior to the institution of the operation of the message recorder so the circuit-breaking movement of the switch-post is ineffectual except for reinstituting the commencement of the period during which the switch-post moves before recording can take place.

Following the initial energization of solenoid 124, contacts 122 and 123 are immediately opened by the action of spring 129 and remain open until contacts 117 and 118 are again closed by the withdrawal of the jack. At the conclusion of the telephone connection solenoid 121 is again energized, with the result that the switch-post will be moved so as to break the switch connections governing the message recording.

As in the other modifications contacts 130 and 131 are provided for energizing solenoid 124 to break the connections between the telephone line circuit 125 and the recorder 123 at the will of a receiving party. The circuit is over lines 132, 133, 127, solenoid 124, line 128.

A device for apprising that a message may be recorded may embody or take the form of a reproducer with a record of a voice making some such announcement as "You may record your message for the duration of the hum. Go ahead, please." Different statements may be made to suit the particular instrumentalities in use, such as would be required, for example, if the buzzer is used only for signalling the initiation of the recording period.

A phonograph having a record provided with the desired message may be automatically put into operation at the closing of the controlling switch 20, 22, so that the message would be delivered over cables 16, 17, at the initiation of the telephone connection through the controlling switch. A form of mechanism for accomplishing this and for giving the desired announcement is illustrated in Figs. 7, 8 and 9. This mechanism is in the form of an ordinary disk phonograph 136 which may be driven through a shaft 135 having connection with the shaft of motor 36 (Fig. 1). Cable 137 provides electrical connection with cable 17, by which the recorded message may be transmitted over the telephone line cable 10 when the controlling switch is closed. As shown in Fig. 8, the record has a groove 138 with sound characteristics for sending the desired announcement over the telephone line. The stylus of the pick-up 139 rests upon the record and picks up the announcement as the record is rotated. At the conclusion of the announcement, the stylus will run over a blank groove 140 and remain idle until the rotation of the phonograph disk is concluded at the end of the recording period. The pick-up is mounted at the end of an arm 141 in such a manner as to permit it to be raised from the record as well as to be moved laterally as the record is rotated. This arm 141 is supported upon a bridge 145 which constitutes a lever pivoted at 146. This lever is normally in a raised position in which it is held by a spring 147. Arm 144 carrying the pick-up is held away from the record in an elevated position (Fig. 9) by the bridge 145 when the phonograph is in disuse. Solenoid 148 is provided for pulling bridge 145 downwardly to permit the pick-up 139 to descend upon the record. Solenoid 148 is energized at the time the controlling switch 20, 22 is closed, and this may be accomplished by connecting the leads 149 and 150 with the power supply leads of cable 37 or of cable 50 (Fig.1), whichever is most convenient. Accordingly, the pick-up 139 will be permitted to descend into the sound groove or track at the initiation of the recording period.

At the conclusion of the recording period and upon deenergization of solenoid 148, bridge 145 will rise and cause the needle to be removed from the record. Spring 151 will restore the pick-up to its announcement-initiating position (Fig. 8) and hold it there until another recording period is instituted and solenoid 148 is energized.

In accordance with the provisions of the patent statutes, I have herein described the principle of operation of my invention, together with the apparatus which I now consider to represent the best embodiments thereof, but I desire to have it understood that the apparatus disclosed is only illustrative and that the invention can be carried out by other means. Also, while it is designed to use the various features and elements in the combinations and relations described, some of these may be altered and others omitted and some of the features of each modification may be embodied in the others without interfering with the more general results outlined, and the invention extends to such use, within the scope of the appended claims.

What is claimed is:

1. A message receiving controller for use at a subscriber station for controlling the reception of telephonic messages over a telephone line circuit comprising a message receiver, a second message receiver at the same subscriber station, switch means having engageable contacts for connecting said second named message receiver in circuit with the telephone line circuit, time controlled means for operating said switch means for causing same to connect said second message receiver in circuit with said telephone line circuit so that it can receive signal current from the line circuit, and means for automatically rendering said time controlled means inoperative to close said engageable contacts upon connection of said first message receiver in said telephone line circuit.

2. A message receiving controller for use at a subscriber station for controlling the reception of telephonic messages over a telephone line circuit comprising a message receiver, switch means having engageable contacts for connecting said message receiver in circuit with the telephone line circuit, a second message receiver at the same subscriber station, a call signal circuit for said subscriber station, and means operated by said call signal circuit for closing said contacts to place said second message receiver in circuit with the telephone line circuit said means being operative only after more than one call signal.

3. A message receiving controller for use at a subscriber station for controlling the reception of telephonic messages over a telephone line circuit comprising a message receiver, switch means having engageable contacts for connecting said message receiver in circuit with the telephone line circuit, a call signal circuit, means operated by said call signal circuit for closing said contacts to place said message receiver in circuit

with the telephone line circuit, and means for opening said contacts following a predetermined time interval after their closing.

4. A message receiving controller for use at a subscriber station for controlling the reception of telephonic messages over a telephone line circuit comprising a message recording device normally disconnected from said telephone line circuit, switch means having engageable contacts for connecting said message recording device in circuit with the telephone line circuit, a call signal circuit, and means operated by said call signal circuit for closing said contacts to place said message recording device in circuit with the telephone line circuit.

5. A message receiving controller for use at a subscriber station for controlling the reception of telephonic messages over a telephone line circuit comprising a message recording device normally disconnected from said telephone line circuit, switch means having engageable contacts for connecting said message recording device in circuit with the telephone line circuit, means for operating said message recording device, including a circuit independent of said telephone line circuit, other contacts controlled by said switch means for closing said independent circuit, a call signal circuit, and means operated by said call signal circuit for operating said switch means to place said message recording device in circuit with the telephone line circuit and to close said circuit for operating said message recording device operating means.

6. A message receiving controller for use at a subscriber station for controlling the reception of telephonic messages over a telephone line circuit comprising a message recording device, switch means having engageable contacts for connecting said message recording device in circuit with the telephone line circuit, a call signal circuit, means operated by said call signal circuit for operating said switch means to close said contacts to place said message recording device in circuit with the telephone line circuit, and means for opening said contacts following the elapse of a predetermined time interval after their closing.

7. A message receiving controller for use at a subscriber station for controlling the reception of telephonic messages over a telephone line circuit comprising a message recording device, switch means having engageable contacts for connecting said message recording device in circuit with the telephone line circuit, means for operating said message recording device, including a circuit independent of said telephone line circuit, other contacts controlled by said switch means for closing said independent circuit, a call signal circuit, means operated by said call signal circuit for operating said switch means to place said message recording device in circuit with the telephone line circuit and to close said circuit for operating said message recording device operating means, time controlled means for determining the duration of closure of said contacts, means for initiating operation of said time controlled means including a circuit having terminals closeable by switch means, and a circuit operated by said time controlled means for causing displacement of said switch means to open all of said circuits.

8. A message receiving controller for use at a subscriber station for controlling the reception of telephonic messages over a telephone line circuit comprising a message recording device, a receiver for connection with said telephone line circuit, switch means having engageable contacts for connecting said message recording device in circuit with the telephone line circuit, a call signal circuit, means operated by said call signal circuit for closing said contacts to place said message recording device in circuit with the telephone line circuit, and circuit means under the control of said receiver for breaking said connection of said message recording device with said telephone line circuit when connection between said receiver and line circuit is established.

9. A message receiving controller for use at a subscriber station for controlling the reception of telephonic messages over a telephone line circuit comprising a message recording device, switch means having engageable contacts for connecting said message recording device in circuit with the telephone line circuit, a receiver for connection with said telephone line circuit, means for operating said message recording device, including a circuit independent of said telephone line circuit, other contacts controlled by said switch means for closing said independent circuit, a call signal circuit, means operated by said call signal circuit for operating said switch means to place said message recording device in circuit with the telephone line circuit and to close said circuit for operating said message recording device operating means, and means for automatically opening said circuits during a recording operation upon connection of said receiver in said telephone line circuit.

10. A message receiving controller for use at a subscriber station for controlling the reception of telephonic messages over a telephone line circuit comprising a message recorder, switch means for connecting said message recorder to said telephone line circuit, circuit controlled means for actuating said switch means to circuit closing position, other circuit means for breaking the connection of said message recorder with said telephone line circuit, and time controlled means for energizing said last named circuit.

11. A message receiving controller for use at a subscriber station for controlling the reception of telephonic messages over a telephone line circuit comprising a message recorder, switch means for connecting said message recorder to said telephone line circuit, circuit controlled means for actuating said switch means to circuit closing position, other circuit means for breaking the connection of said message recorder with said telephone line circuit, a telephone receiver, and contacts operable by said telephone receiver for breaking the connection of said message recorder with said telephone line circuit.

12. A message receiving controller for use at a subscriber station for controlling the reception of telephonic messages over a telephone line circuit comprising a message recorder, switch means for connecting said message recorder to said telephone line circuit, circuit controlled means for actuating said switch means to circuit closing position, other circuit means for breaking the connection of said message recorder with said telephone line circuit, circuit connections for controlling the operation of said other circuit means for breaking the connection of said message recorder with said telephone line circuit, and means for controlling the energization of said last named circuit connections, said means comprising contacts which are closed when the telephone line circuit is made potentially active at the central station and maintained closed so

long as the telephone line circuit is kept potentially active.

13. A message receiving controller for use at a subscriber station for controlling the reception of telephonic messages over a telephone line circuit comprising a message recorder, switch means for connecting said message recorder to said telephone line circuit, circuit controlled means for actuating said switch means to circuit closing position, other circuit means for breaking the connection of said message recorder with said telephone line circuit, circuit connections for controlling the operation of said other circuit means for breaking the connection of said message recorder with said telephone line circuit, and means for controlling the energization of said last named circuit connections, said means for controlling the energization of said last named circuit connections comprising contacts which are momentarily closed when the telephone line circuit is opened at the central switch-board at the conclusion of telephone connection with the subscriber station.

14. A message receiving controller for use at a subscriber station for controlling the reception of telephonic messages over a telephone line circuit comprising a message recorder, switch means for connecting said message recorder in circuit with the telephone line circuit, a call signal circuit, means operated thereby for moving said switch means into circuit closing position, and timing devices for limiting the duration of connection of said message recorder with said telephone line circuit, said timing devices including a solenoid and armature for tripping said switch means, a circuit for energizing said solenoid, motor controlled means for closing said last named circuit, and circuit means for initiating operation of said motor controlled means when said message recorder records.

15. The combination set forth in claim 14 in which means is provided for varying the length of time period for operation of the message recorder.

16. A message receiving controller for use at a subscriber station for controlling the reception of telephonic messages over a telephone line circuit comprising a message recorder, switch means for connecting said message recorder in circuit with the telephone line circuit, a call signal circuit, electro-magnetic means operated thereby, a step-by-step operating mechanism for actuation by said electro-magnetic means for advancing said switch means to circuit-closing position at each energization of said call signal circuit, and means for tripping said switch means out of circuit making position for discontinuing connection of said message recorder in circuit with said telephone line circuit.

17. A message receiving controller for use at a subscriber station for controlling the reception of telephonic messages over a telephone line circuit comprising a message receiver, switch means having engageable contacts for connecting said message receiver in circuit with the telephone line circuit, and current impulse controlled means for operating said switch means for causing same to energize said message receiver, said impulse controlled means being adjustable for closing the switch contacts for various series of current impulses.

18. A message receiving controller for use at a subscriber station for controlling the reception of telephonic messages over a telephone line circuit comprising a message receiver, switch means having engageable contacts for connecting said message receiver in circuit with the telephone line circuit, a call signal circuit, and current impulse means operated by said call signal circuit for closing said contacts to place said message receiver in circuit with the telephone line circuit, said current impulse means being adjustable to operate on more than one impulse.

19. A message receiving controller for use at a subscriber station for controlling the reception of telephonic messages over a telephone line circuit comprising a message receiver, an apprising device for giving an audible announcement over the telephone line circuit, switch means having engageable contacts for connecting said message receiver and apprising device in circuit with the telephine line circuit, and time controlled means for operating said switch means for causing same to energize said message receiver.

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