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REMOTELY CONTROLLED DICTATION SYSTEM

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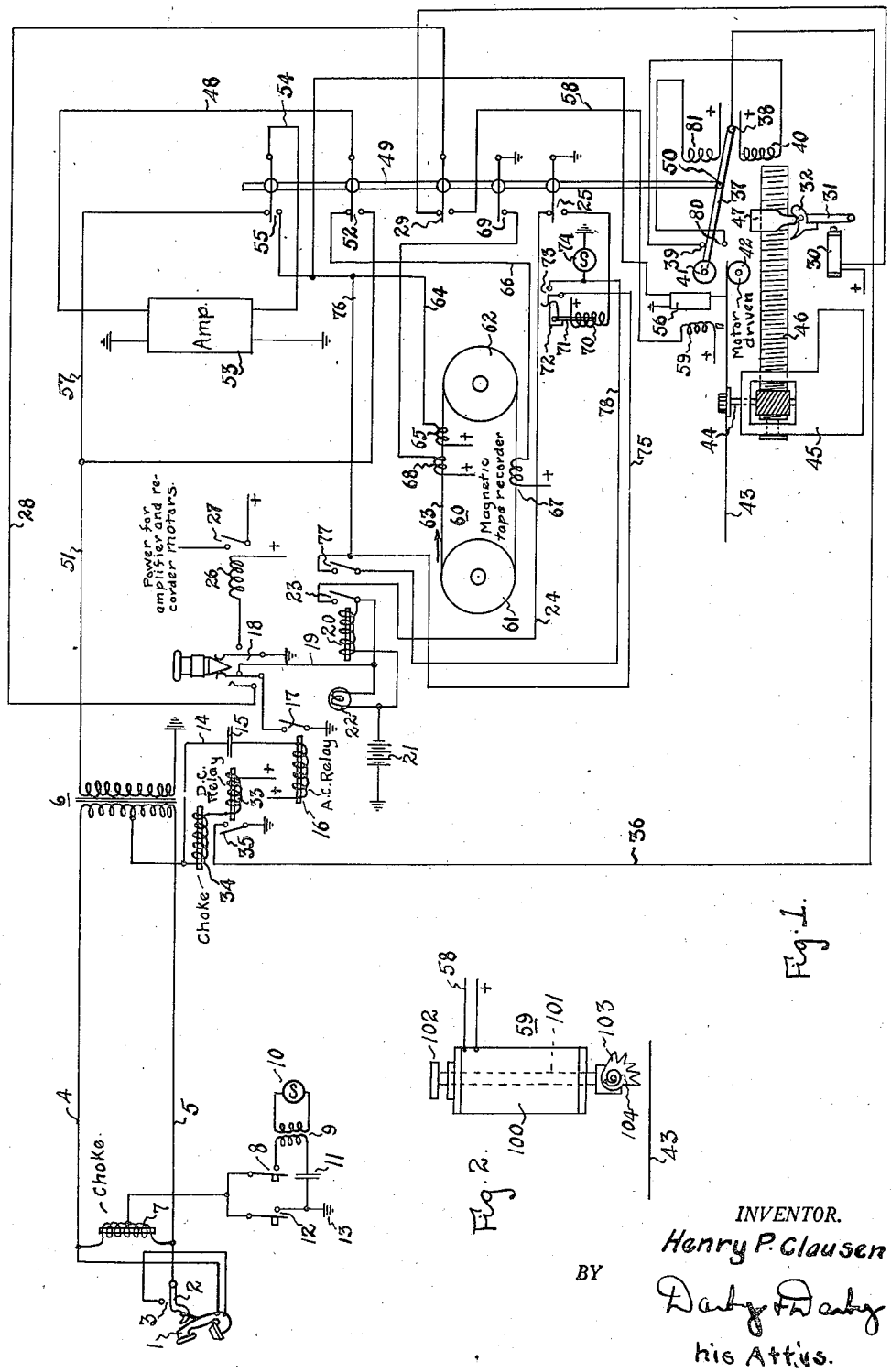


Fig. 1.

Fig. 2.

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REMOTELY CONTROLLED DICTATION SYSTEM

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26 Claims. (Cl. 179—6)

This invention relates to improvements in sound recording apparatus, remotely situated with respect to the source of sound, and controllable at least in part from the point of sound origination.

The general object of this invention is the provision of a sound recording system in which mechanism for making a permanent sound record is situated at a central station under the supervision of a central station operator, but which is connected to one or a plurality of remote dictation stations from which the dictator may signal the supervising operator and control the recording machine in so far as it is necessary to start and stop it and to make correction marks and finish marks on the record.

A more specific object of the invention is the provision of a secondary sound recording machine which makes a temporary record of successive portions of the sound being recorded, simultaneously with its recordation on the main recording machine, and from which temporary record immediately succeeding portions of the matter recorded on the main record may be repeated back to the dictator's station.

A still more specific object of this invention is the provision of an automatically operating control system, actuation of which is initiated from the dictation point, for stopping the main recording machine at any time, and immediately reproducing from the temporary record the immediately preceding recorded matter.

A more detailed object of the invention is the provision of automatically operating means for recording on the temporary record an indication each time the main recording machine is stopped, so that the dictator after hearing the playback from the temporary record hears the recorded indication apprising him of the fact that the immediately preceding portion being repeated has been completed, so that he may again start the main machine and proceed with his dictation.

A further detailed object of this invention is to provide novel forms of marking indications on the permanent record, one of which visibly indicates by the separation between complete bits of dictation and the other of which is of a nature and is employed to provide several different methods of applying correction indications wherein the transcriber is apprised in advance of the point of correction so that she may ascertain the nature of the correction before proceeding so far as to require retyping.

Another object of the invention is to provide a system of this type which has but two controls to be consciously operated from the dictator station, one of which signals the supervising operator at the central station of the need for a machine, which serves to make correction marks on the record and which also serves to make finish indications on the record, and another control by the successive operation of which the main recording machine may be started and stopped.

Other and more specific objects of this invention will be apparent from the following detailed description of an embodiment thereof.

This invention resides substantially in the combination, construction, arrangement and relative location of parts, as will be described in detail below.

In the accompanying drawing,

Figure 1 is a schematic and diagrammatic layout of a system in accordance with the objects of this invention; and

Figure 2 is a side elevational view of the correction marking means for applying correction indication marks to the permanent record.

The exact nature of the invention, and the objects attained thereby, will be more completely and accurately understood from a detailed description of the system in accordance with this invention, followed by a detailed description of its operation.

No further general reference to the subject matter or its objects will therefore be recited.

The dictator's station is provided with a hand set 1 which, as is well known, comprises a microphone and a receiver united by a suitable hand grip structure. This hand set is adapted normally to be supported upon a hook or the like 2, which forms part of a switch 3 which is open when supporting the hand set. When the hand set is removed switch 3 closes, completing a circuit through a pair of conductors 4 and 5 to the primary of a repeating transformer 6. The circuit wires 4 and 5 are bridged by an inductive choke coil 7 which does not act as a short circuit for the electrical currents of the frequencies to be transmitted during recording.

The midpoint of the winding from the choke coil 7 is connected as shown, by a wire to one terminal each of a pair of normally open push button switches 8 and 12. These switches may be of any suitable construction and may even be incorporated in the hand set if desired. A fixed contact of switch 8 is connected through the primary of a suitable transformer 9, such as an ordinary 110 volt bell ringing transformer, and a blocking condenser 11 to ground at 13. The fixed

contact of switch 12 is grounded at 13, as shown. The primary of the transformer 9 is connected to a suitable alternating current source 10 which may be the ordinary 60 cycle lighting circuit.

The electrical midpoint of the primary of transformer 6 is connected by a wire 14 which includes a condenser 15 to an alternating current relay 16, the other terminal of whose winding is grounded through a source of energizing current. The capacity of the condenser 15 is selected so as to pass an alternating operating current for the relay 16 and block direct currents. Wire 14 is also connected in series with an inductive choke coil 34, with a direct current relay 33, the other terminal of which is connected to a suitable grounded current source. The choke coil 34 blocks the passage of alternating currents to the relay 33 while passing direct current thereto.

Relay 16 includes a switch 17, the movable blade of which is grounded and the fixed contact of which is connected by a wire to a movable contact of a switch 18. This movable contact normally engages a fixed contact which is connected by wire 19 to one terminal of a locking relay 20, and to one terminal of a signal lamp 22. The other terminals of the winding of relay 20 and of the signal lamp 22 are connected by a common lead to ground through a suitable current source 21. The locking relay includes a pair of switches 23 and 77. The movable contact of switch 23 is connected to wire 19 and the fixed contact is connected by wire 24 to ground through a switch 25 which is normally closed when the apparatus is not recording. Another and grounded movable contact in switch 18 cooperates with a fixed contact to complete the circuit to a relay 26, likewise connected to a suitable grounded current source. As diagrammatically illustrated, the relay 26 includes the normally open switch 27 which completes circuits in an obvious manner to the amplifier and the operating mechanism for the permanent and temporary recording machines, as will be apparent from the whole disclosure.

The first mentioned movable contact of switch 18 cooperates with a second fixed contact which is connected by wire 28 to a switch 29 closed when the machine is not recording, to a spacing or marking relay 30, the other terminal of which is connected to a suitable grounded current source. Relay 30 operates a pivotally mounted arm 31 on the upper end of which is pivotally mounted a latch or pawl 32, the function of which will be described later.

Direct current relay 33 includes a switch 35 the movable contact of which is grounded and the fixed contact of which is connected by wire 36 to a lever 37 which is pivotally supported at 38 and has on its other end an idler pressure roller 41. When lever 37 is in its raised position, as shown in the drawing, it engages a fixed contact 39 which is connected by wire to a magnet 40 positioned when energized to pull the lever 37 downwardly into its other position where it remains until actuated back to the position shown, as will be described in further detail later.

The main sound recording machine may take various forms but in accordance with the diagrammatic illustration here it is of the type disclosed in full and complete detail in United States Patent No. 2,296,870 granted September 29, 1942. As disclosed in that patent, and diagrammatically illustrated here, the sound record 43 is a thin flexible disc of suitable material, such as cellulose acetate, although of course a rigid type of wax record could be used. The record 43 is mounted upon and keyed to, for rotation therewith, a vertical shaft 44 which is journalled in a carriage 45 mounted in any suitable manner for rectilinear movement radially with respect to shaft 44. On the shaft 44 is a threaded gear or worm which meshes with the threaded shaft 46 rotatably mounted in the carriage 45 so as to be incapable of axial movement with respect thereto. A fixed halfnut 47 is positioned so as to engage the threads of shaft 46 so that when that shaft rotates it is caused to move axially, carrying the carriage 45 with it. At this point it may be noted, as disclosed in the above patent, that the halfnut 47 is pivotally mounted so that it may be swung into and out of engagement with the threaded shaft 46.

Referring again to the pivoted armature 31 it will be seen that the pawl 32 is shaped so that upon initial movement of the armature towards the magnet of relay 30 the halfnut will be raised up out of engagement with the threads of shaft 46, after which the pawl engages the threads of the shaft and causes it to shift toward the left in an axial direction during the final movement of the armature. The cooperation between the shaped end of the nut 47 and the adjacent portion of the pawl 32 causes the pawl to pivot and swing into engagement with the threads of shaft 46 at about the time the nut is caused to disengage the threads of the shaft. Upon return movement of armature 31 the parts may drop back to the position shown in the drawing.

A power driven friction drive wheel 42 is positioned to engage the under surface of the record 43 opposite the point of engagement of the pressure idler roller 41 on the end of the lever 37. When the system is in operation a motor, not shown, causes continuous rotation of the drive wheel 42. This motor may be energized through switch 27 of relay 26.

Switches 25 and 29, previously mentioned, and switches 52, 55 and 69, each have a movable contact and are mounted so as to be insulated from each other on a common actuating member 49, which is pivotally connected at 50 to the lever 37 so that when the lever 37 is operated downwardly these switches are also operated, as will be described in more detail later.

One terminal of the secondary of the repeating transformer 6 is grounded and the other terminal is connected by wire 51 to one of the fixed contacts of switch 52. The movable contact of this switch is connected by wire 48 to one input terminal of an amplifier 53, the other terminal of which is grounded. One output terminal of the amplifier is grounded and the other output terminal is connected by wire 54 to the movable contact of switch 55. The fixed contact is connected by wire 57 to wire 51. The other fixed contact of switch 55 is connected by a wire, as shown, to one terminal of the recording head 56, the other terminal of which is grounded.

This recording head is of any suitable type, such as the electromagnetic type or the piezoelectric crystal type, and is provided with a stylus, as shown, for cutting, embossing, impressing or otherwise making a record on the record disc 43. A fixed contact of switch 29 is connected by wire 58 to one terminal of the correction marking magnet 59, the other terminal of which is connected to a suitable grounded current source.

At 60 is diagrammatically illustrated the magnetic wire or tape type of sound recording device in one form of which, as illustrated, an endless

magnetizable tape or wire is passed around a pair of aligned rotatably mounted pulleys 61 and 62. One or both of these pulleys are driven by a suitable motor, not shown, such as an electric motor which, if desired, may likewise be energized through switch 27. At this point it may be noted that the power supply for the amplifier 53 may also be energized through the switch 27. In the case of all circuits energized through switch 27, the manner of connection is obvious, and has therefore been omitted in order to simplify the drawing as much as possible.

The magnetic type recorder includes a suitable recording head 65 having a winding one terminal of which is grounded and the other of which is connected by a wire 64 to the lower fixed contact of switch 55. A pickup device 67 has a winding one terminal of which is connected by wire 66 to the upper fixed contact of switch 52. A magnetic wipeout device 68 has a winding connected by one terminal of a suitable grounded current source and by the other through a wire to the fixed contact of switch 69. These various parts of the magnetic type recorder are all well known in the art and are thus only diagrammatically illustrated.

A solenoid 70 has one terminal connected to a suitable grounded current source and the other terminal connected by a wire to the lower fixed contact of switch 25. A longitudinally reciprocable plunger 71 cooperates with the solenoid 70 and has pivotally mounted on its upper end a small bell crank lever 72 mounted as shown so that upon upward movement of the plunger 71 when the solenoid 70 is energized the bell crank 72 may pivot and pass a movable contact of switch 73 without closing the switch. When the plunger returns to normal position switch 73 is momentarily closed. The fixed contact of this switch is connected to a suitable source of alternating current 74, energized from a suitable grounded current source. This contact is also connected by a wire 78 to the movable contact of switch 77, forming part of a locking relay 20. The fixed contact of this switch is connected by wire 75 to the movable contact of switch 73 and by wire 76 to wire 64.

A fixed contact 80 cooperates with the pivoted lever 37 so as to engage it when the lever is down, and is connected by a wire to a magnet 81 positioned above the lever 37 so as to raise it when energized. The other terminal of magnet 81, as in the case of magnet 40, is connected to a suitable grounded current source. For the sake of clarity, the lever 37 is shown in the drawing extending radially of the record 43, but in the actual machine, as shown in the above mentioned patent, this lever will extend tangentially. Likewise the axis of rotation of the driving roller 42 is in the plane of the paper, parallel to the axis of rotation of the idler roller 41.

Figure 2 needs little further reference in detail. The correction marking device 59 shown in Figure 2 consists of a solenoid 100 having an axially slidable plunger 101 with a magnetizable armature 102 at its upper end. On its lower end is pivotally mounted a member 103 having a plurality of radial prongs, as shown, of a thickness as desired, as for example of a thirty-second to a sixteenth of an inch. A spring 104 has one end fastened to the member 103 and the other end to the plunger 101, so that the member is normally held in the position shown. One tooth is vertical over the record when the parts are in inactive position. When the circuit to the solenoid 100 is energized, armature 102 is attracted and the vertical prong is pressed against the record. Since the record is revolving the pivoted member 103 revolves with it, so that the record is successively engaged by the sharpened prongs and as many short impressions are made on the record transversely of the sound grooves as there are prongs, assuming that the magnet 100 remains energized until the full movement of the member 103 is accomplished. Should the magnet 100 remain energized beyond this point, the terminal prong simply drags on top of the record without injuring it, and as soon as the magnet is deenergized a spring, not shown, raises the plunger whereupon the spring 104 snaps the member 103 back to original position.

The short radial impressions on the record overlap several record grooves so that during transcription the stylus of the reproducing head will engage them several grooves in advance of the point where the correction is to be made. To notify the transcribing operator of the imminence of a correction, the stylus of the reproducing head successively engaging these impressions causes a clicking sound in the transcriber's receiver sufficient to attract attention without seriously affecting the intelligibility of the recorded matter.

All of the operations of this system will now be described in detail. It will first be noted that all of the parts are in the position shown in Figure 1, so that switches 55, 52, 29 and 25 are closed on their upper contacts and switch 69 is open. Switch 18 is in the position shown and the switches of the various relays are open as shown. The dictator's station may be as remote as desired from the central station at which is placed the recording equipment under the control of a supervising operator. The supervising operator will have a plurality of machines under supervision and his central station may be connected by a plurality of lines to an equal number of remote distating stations, or by assigning one line to a plurality of remote stations the number of connected dictator stations may be greater than the number of lines and recording machines. The person desiring to dictate will remove his hand set 1 from the hook 2 whereby switch 3 closes. The dictator then momentarily closes switch 8 sending a 60 cycle alternating current through the two halves of choke 7 from its center point, lines 4 and 5, and the two halves of the primary of transformer 6 to wire 14 through condenser 15, the winding of relay 16, and back through the ground. Thereupon switch 17 closes completing a circuit through the connected portion of switch 18, wire 19, relay 20, and to ground through the current source 21, as well as through the signal lamp 22 in parallel. At this time, of course, relay 33 does not operate.

The energization of relay 20 causes switches 23 and 77 to close, whereupon relay 20 is locked up through a holding circuit including switch 23, wire 24 and switch 25. The closing of switch 77 connects tone generator 74 to the recorder 65 to impress a note or tone on the tape 63. It may be noted that in one type of operation, but not the preferred, the drive motor for the magnetic temporary recorder can run continuously so that the wire 63 is always in motion. In the preferred operation the motor for the magnetic recorder will be set in motion by the supervising operator at the central station upon suitable signal to him, as will now be described.

When the signal lamp 22 is lighted the supervising operator is apprised of the fact that one of the dictators on the line 4—5 wishes to dictate, so that he depresses the operating button of switch 18 to break the circuit including wire 19 and complete a circuit including wire 28, and close the circuit to the relay 26. Thereupon switch 27 closes, starting the motor which drives the roller 42 and supplying current to the amplifier 53, as previously described. Since the holding circuit for magnet 20 is not yet broken, the drive motor for the magnetic temporary recorder 60 will be energized by the closing of the switch 27, and as the tone generator 74 remains connected through switch 77, the magnetic tape will be started up to record the tone on it.

The operation of switch 18 also partially completes a circuit from switch 17 (normally open at this time) through wire 28, switch 29, and marking or spacing relay 30 so that record 43 may be shifted a short distance radially in preparation for the beginning of new dictation. To complete this circuit in case such spacing is desired the dictator need only energize relay 16, by momentarily closing switch 8, to cause switch 17 to close. The stylus of the recording head 56 will scratch a radial line across this space but this is not detrimental. By the time everything is in operation, including the warming up of the amplifier 53, the recorded note on the magnetic wire 63 will have gotten around to the pickup device 67, sending a signal through wire 66, upper contact of switch 52, and wire 48 to the input of the amplifier 53. From the input of the amplifier this signal passes through wire 54, the upper contact of switch 55, wire 57, wire 51, transformer 6, to the receiver of the hand set 1, notifying the dictator that the system is ready for recording.

To begin dictation the dictator momentarily closes switch 12, sending direct current over the lines 4 and 5 to relay 33. This closes switch 35 and completes a circuit through wire 36 to lever 37, contact 39, and magnet 40. Lever 37 is pulled downwardly causing the idler roller 41 to frictionally engage the record 43 with the power driven roller 42. With the record gripped as described, it will be caused to revolve, and it in turn rotates spindle 44 and the worm mounted thereon, so that threaded shaft 46 is caused to rotate. The rotation of shaft 46 causes it to progress slowly in an axial direction, moving the carriage 45 and the record 43 mounted thereon away from the stylus of the recording head 56. Thus the stylus impresses a spiral record on the record tablet gradually increasing in diameter, that is, recording begins near the center of the record tablet and finishes near the periphery. This is all disclosed in the above-mentioned patent.

The downward movement of lever 37 has carried the switch operator 49 with it, closing the movable contact of switch 55 on its lower fixed contact, and completing a circuit from the output of the amplifier 53 to the recording head 56 in an obvious manner. Likewise the movable contact of switch 52 has completed the input circuit of the amplifier from the secondary of the transformer 6 and broken the circuit to the pickup device 67 of the temporary recorder.

Switch 29 has broken the circuit to the spacing device 30 and connected the correction marking device 59 to wire 28. The closing of switch 69 has completed the circuit for the magnetic wipe-out device 68. The movable contact of switch 25 has broken the holding circuit for lockup relay 20 and completed the circuit for the solenoid 70. Plunger 71 moves upwardly but, as described, switch 73 does not close. Signal lamp 22 is extinguished at the time the lockup relay 20 is deenergized. Switch 17 of relay 16 is, of course, open.

At this time the main and temporary recording machines are in operation and all sounds impressed upon the microphone of the hand set 1 are recorded on each. At any time during recording the dictator may energize the correction marking device 59 to make correction indication marks on the record 43 by momentarily closing switch 18.

The closing of switch 8 merely energizes, as before, the A. C. relay 16. In this case, however, the closing of switch 17 of the relay completes a circuit through wire 28, the lower contact of switch 29, and wire 58, to the correction marking device 59. It will be noted that this marking device is operable while the permanent record 43 is in motion. It is likewise apparent that the spacing marking device 30 may not be operated at this time because its circuit is broken at switch 29.

It will be noted that the output of amplifier 53 is also impressed upon the recording device 65 of the tape machine through wire 64 so that everything recorded on the permanent record is also being recorded on the temporary record. However the magnetic wire 63 is of rather limited capacity so that as the wire 63 moves into the wipe-out device 68 all the recorded matter is neutralized or wiped off the wire at a point just before it again reaches the recording device 65. At any time during dictation the dictator may stop the main recording machine by again momentarily closing switch 12 which, as before, energizes relay 33. The closing of its switch 35 in this case, however, completes a circuit through wire 36, lever 37, lower contact 80, and magnet 81, to raise the lever 37 and shift the switches connected to the operator 49. The raising of idler roller 40 removes the pressure on the record 43 and the permanent recording machine stops immediately.

The circuit to solenoid 70 is broken and plunger 71 descends so that the bell crank 72 momentarily closes switch 73 to impress a tone signal, as before, on the magnetic wire 63 through wires 75 and 76 (switch 77 is open). Switch 69 opens so that the wipe-out device is deenergized. The spacing marking device is put back in circuit at switch 29 but the entire circuit is not completed because switch 17 is open. Correction marking device 69 is now out of circuit. Pick-up device 67 is connected at switch 52 to the input of amplifier 53. Recorder 56 is taken out of circuit but the output of the amplifier 53 is connected to the transformer 6. Pickup device 67 being in circuit, the matter recorded on the wire 63 is fed through wire 66, switch 52, wire 48, through the amplifier 53, from the amplifier through wire 54, switch 55, wire 57 and wire 51 to transformer 6. It is passed through the transformer to the receiver of the hand set 1, where the dictator will hear it.

The dictator hears the terminal portion of the matter previously dictated for a period of the desired length, within the capacity of the temporary recording machine. The pickup device 67 may be positioned along the wire 63 and the further to the left it is positioned the greater the amount of the previously dictated matter will be

repeated back to him. Thus this mechanism gives a dictator a chance to listen back into his dictation in the event that he wishes to check its accuracy, pick up his thread of thought, or find a point where an insertion or correction is to be made. The note recorded on the wire 63 is at the tail end of the recording so that when the dictator hears that note he is apprised of the point where he stopped recording on the main machine. This is a useful feature of the invention because the wipe-out device 68 is not in operation for several reasons, as for example because it is preferable not to eliminate the matter recorded on the wire at this time in the event that the dictator needs repetition thereof. Upon hearing the note recorded on the wire 63, or before if the dictator desires, he may again momentarily close switch 12 which will start the main recording machine and complete all circuits as previously described. At the end of his dictation the dictator will momentarily close switch 12 and he may then close switch 8 to operate the space marking device 30 to space the previously recorded matter, as for example a letter, from the matter about to be recorded, giving a visible indication to the transcriber of the end of the various separate matters dictated.

When he has completed all his dictation he replaces the hand set on the hook, opening switch 3 and disconnecting his station from the line so that it will be available to any other dictator connectable to the line. The system disclosed provides no direct method of signalling the supervising operator that the dictator is now through. With the system as disclosed the supervising operator, noticing that the main machine is idle for a period of time, may then operate switch 18 back to the position shown. It is, of course, apparent that it would be very simple to provide some form of additional signal to notify the supervisor that the dictator is through, but no effort has been made to include such a feature in this disclosure.

From the above description it will be apparent to those skilled in the art that the subject matter of this invention is capable of embodiment in other physical forms, particularly by variation in the details in the circuits and circuit connections, without departing from the novel subject matter of the invention. I do not, therefore, desire to be strictly limited to this disclosure which has been given purely in an illustrative sense, but rather by the scope of the appended claims.

What is claimed is:

1. In a dictation recording system, a central station having a main and an auxiliary sound recording machine, a microphone receiver at a remote dictator station, a line and circuits connecting the dictator station with the central station so that both machines simultaneously record all signals impressed upon the microphone, a supervisor's signal at the central station, means for energizing the supervisor's signal from the dictator's station, means at the central station for setting the auxiliary machine in operation, means operated at the same time for recording a note on the auxiliary recording machine, and means operated from the auxiliary recording machine over said line to signal the dictator through his receiver that the main recording machine is ready for operation.

2. In a dictation recording system, a central station having a main and an auxiliary sound recording machine, a microphone receiver at a remote dictator station, a line connecting the dictator station with the central station, a supervisor's signal at the central station, means for energizing the supervisor's signal from the dictator's station, means at the central station for setting the auxiliary machine in operation, means operated at the same time for recording a note on the auxiliary recording machine, means operated from the auxiliary recording machine over said line to signal the dictator through his receiver that the main recording machine is ready for operation, and means at the dictator station for starting and stopping the main recording machine at will.

3. In a dictation recording system, a central station having a main and an auxiliary sound recording machine, a microphone receiver at a remote dictator station, a line connecting the dictator station with the central station, a supervisor's signal at the central station, means for energizing the supervisor's signal from the dictator's station, means at the central station for setting the auxiliary machine in operation, means operated at the same time for recording a note on the auxiliary recording machine, means operated from the auxiliary recording machine over said line to signal the dictator through his receiver that the main recording machine is ready for operation, and means at the dictator station for starting and stopping the main recording machine at will, said auxiliary machine running continuously whereby exerything recorded on the main machine is recorded on the auxiliary machine.

4. In a dictation recording system, a central station having at least one main sound recording machine including a sound recording head, an associated auxiliary recording machine having a recording head and a reproducing head, a remote dictator's receiver microphone station, a line connecting the dictator's station with the central station, a supervisor's signal at the central station, means operable at the dictator's station over said line for energizing said supervisor's signal, means at the central station for preparing the main recording machine for operation and for setting the auxiliary recording machine in operation, means for impressing a signal on the recording head of the auxiliary recording machine to record the signal thereon, and means for connecting the pickup head of the auxiliary recording machine with said line to transmit the said signal to the dictator's machine to indicate that the main recording machine is ready to receive dictation.

5. In a dictation recording system, a central station having at least one main sound recording machine including a sound recording head, an associated auxiliary recording machine having a recording head and a reproducing head, a remote dictator's receiver microphone station, a line connecting the dictator's station with the central station, a supervisor's signal at the central station, means operable at the dictator's station over said line for energizing said supervisor's signal, means at the central station for preparing the main recording machine for operation and for setting the auxiliary recording machine in operation, means for impressing a signal on the recording head of the auxiliary recording machine to record the signal thereon, means for connecting the pickup head of the auxiliary recording machine with said line to transmit the said signal to the dictator's machine to indicate that the main recording ma-

chine is ready to receive dictation, and means at the dictator's station for starting and stopping the main recording machine.

6 In a dictation recording system, a central station having at least one main sound recording machine including a sound recording head, an associated auxiliary recording machine having a recording head and a reproducing head, a remote dictator's receiver microphone station, a line connecting the dictator's station with the central station, a supervisor's signal at the central station, means operable at the dictator's station over said line for energizing said supervisor's signal, means at the central station for preparing the main recording machine for operation and for setting the auxiliary recording machine in operation, means for impressing a signal on the recording head of the auxiliary recording machine to record the signal thereon, means for connecting the pickup head of the auxiliary recording machine with said line to transmit the said signal to the dictator's machine to indicate that the main recording machine is ready to receive dictation, and means at the dictator's station for starting and stopping the main recording machine, said auxiliary recording machine running continuously and continuously recording all sounds recorded on the main recording machine.

7. In a dictation recording system, a central station having at least one main sound recording machine including a sound recording head, an associated auxiliary recording machine having a recording head and a reproducing head, a remote dictator's receiver microphone station, a line connecting the dictator's station with the central station, a supervisor's signal at the central station, means operable at the dictator's station over said line for energizing said supervisor's signal, means at the central station for preparing the main recording machine for operation and for setting the auxiliary recording machine in operation, means for impressing a signal on the recording head of the auxiliary recording machine to record the signal thereon, means for connecting the pickup head of the auxiliary recording machine with said line to transmit the said signal to the dictator's machine to indicate that the main recording machine is ready to receive dictation, means at the dictator's station for starting and stopping the main recording machine, said auxiliary recording machine running continuously and continuously recording all sounds recorded on the main recording machine, and means operable each time the main recording machine is stopped for connecting the pickup head of the auxiliary recording machine with said line whereby the dictator receivers back a terminal portion of the matter recorded.

8. In a dictation recording system, a central station having at least one main sound recording machine including a sound recording head, an associated auxiliary recording machine having a recording head and a reproducing head, a remote dictator's receiver microphone station, a line connecting the dictator's station with the central station, a supervisor's signal at the central station, means operable at the dictator's station over said line for energizing said supervisor's signal, means at the central station for preparing the main recording machine for operation and for setting the auxiliary recording machine in operation, means for impressing a signal on the recording head of the auxiliary recording machine to record the signal thereon, means for connecting the pickup head of the auxiliary recording machine with said line to transmit the said signal to the dictator's machine to indicate that the main recording machine is ready to receive dictation, means at the dictator's station for starting and stopping the main recording machine, said auxiliary recording machine running continuously and continuously recording all sounds recorded on the main recording machine, and means for recording a signal on the auxiliary recording machine each time the main recording machine is stopped.

9. In a dictation recording system, a central station having at least one main sound recording machine including a sound recording head, an associated auxiliary recording machine having a recording head and a reproducing head, a remote dictator's receiver microphone station, a line connecting the dictator's station with the central station, a supervisor's signal at the central station, means operable at the dictator's station over said line for energizing said supervisor's signal, means at the central station for preparing the main recording machine for operation and for setting the auxiliary recording machine in operation, means for impressing a signal on the recording head of the auxiliary recording machine to record the signal thereon, means for connecting the pickup head of the auxiliary recording machine with said line to transmit the said signal to the dictator's machine to indicate that the main recording machine is ready to receive dictation, means at the dictator's station for starting and stopping the main recording machine, said auxiliary recording machine running continuously and continuously recording all sounds recorded on the main recording machine, means for recording a signal on the auxiliary recording machine each time the main recording machine is stopped, and means for connecting the pickup head of the auxiliary machine to said line each time the main recording machine is stopped whereby a terminal portion of the previously recorded matter is heard at the dictator's station, terminated by the signal recorded on the auxiliary recording machine at the time the main recording machine is stopped.

10. In a dictation recording system, a main sound recording machine, a recording head for said machine, means for causing relative circumferential and radial movement between a record tablet in said machine and said recording head, means for causing relative radial movement only and in a forward direction between a record in said machine and said recording head, a dictator's station having a microphone and a receiver, a line connecting the dictator's station with said machine, and control devices at the dictator's station connected to said line, the operation of one of said control devices energizing said means to cause relative circumferential and radial movement, and the operation of the other of said control devices energizing said means to cause relative radial movement forwardly.

11. In a dictation recording system, a main sound recording machine, a recording head for said machine, means for causing relative conjoint circumferential and radial movement between a record tablet in said machine and said recording head, means for causing relative forward radial movement only between a record in said machine and said recording head, a dictator's station having a microphone and a

receiver, a line connecting the dictator's station with said machine, and control devices at the dictator's station connected to said line, the operation of one of said control devices energizing said means to cause relative conjoint circumferential and radial movement, and the operation of the other of said control devices energizing said means to cause relative forward radial movement only, when said means for causing relative circumferential movement is deenergized.

12. In a sound recording system of the type described, a record tablet support, a recording head for recording sounds on a record table when mounted on said support, means for causing relative circumferential movement of the record tablet with respect to said head, means for causing relative radial movement of said record tablet with respect to said head, means for impressing correction markings on said record tablet, a dictator's station having a microphone, a line for connecting the microphone to said recording head, and a pair of control devices at the dictator's station connected to said line, the operation of the first of said control devices causing the energization and deenergization of said means for causing relative circumferential movement, and the other of said control devices causing energization of said means for causing radial movement when said means for causing circumferential movement is deenergized, and for causing energization of said correction marking means when said means for causing circumferential movement is energized.

13. In a sound recording system, a pair of sound recording machines, means for starting and stopping one of said machines, means for causing the other of said machines to operate continuously when the system is in use, means for simultaneously recording the same signals on both of said machines, means for reproducing the recorded signals from the continuously operating machine whenever said starting and stopping means is operated to stop said other machine, and means for applying a location signal to said continuously operating machine whenever said starting and stopping means is operated to stop said other machine.

14. In a sound recording system, a pair of sound recording machines, means for causing one of said recording machines to operate continuously when said system is in use, means at a remote dictator's station and connected to said other machine for starting and stopping it, means for supplying signals to be recorded from said remote station to both of said machines simultaneously, and means including a manual control at said remote station for signalling at said machines the desire of a dictator to use them

15. In a sound recording system, a pair of sound recording machines, means for causing one of said recording machines to operate continuously when said system is in use, means at a remote dictator's station and connected to said other machine for starting and stopping it, means for supplying signals to be recorded from said remote station to both of said machines simultaneously, manual means at said remote station for signalling at said machines the desire of a dictator to use them, means at said machines for preparing them for operation, and means controlled by said manual means for applying correction marks to the record of said other machine.

16. In a sound recording system, a pair of sound recording machines, means for causing one of said recording machines to operate continuously when said system is in use, means at a remote dictator's station and connected to said other machine for starting and stopping it, means for supplying signals to be recorded from said remote station to both of said machines simultaneously, manual means at said remote station for signalling at said machines the desire of a dictator to use them, means at said machines for preparing them for operation, means controlled by said manual means for applying correction marks to the record of said other machine, and means controlled as an incident to the starting and stopping of said other machine for causing reproduction of the record from said continuously operating machine.

17. In a sound recording system, a pair of sound recording machines, means for causing one of said recording machines to operate continuously when said system is in use, means at a remote dictator's station and connected to said other machine for starting and stopping it, means for supplying signals to be recorded from said remote station to both of said machines simultaneously, manual means at said remote station for signalling at said machines the desire of a dictator to use them, means at said machines for preparing them for operation, means controlled by said manual means for applying correction marks to the record of said other machine, means controlled as an incident to the starting and stopping of said other machines for causing reproduction of the record from said continuously operating machine, and means conditioned by said last means whereby said manual means may be actuated to cause a desired spacing between recordings on the record of said other machine.

18. In a sound recording system, a main recording machine for producing a permanent sound record, a continuously running auxiliary machine for temporarily recording the same record recorded on the permanent record, a dictator's station connected to said machines for supplying signals to be recorded to both of said machines, means at said dictator's station for starting and stopping said main machine, means controlled by said last means for causing the reproduction of the record from said auxiliary machine at said dictator's station whenever said main machine is stopped, and means controlled from the dictator's station for applying correction marks to said permanent record when desired.

19. In a sound recording system, a main recording machine for producing a permanent sound record, a continuously running auxiliary machine for temporarily recording the same record recorded on the permanent record, a dictator's station connected to said machines for supplying signals to be recorded to both of said machines, means at said dictator's station for starting and stopping said main machine, means controlled by said last means for causing the reproduction of the record from said auxiliary machine at said dictator's station whenever said main machine is stopped, means controlled from the dictator's station for applying correction marks to said permanent record when desired, and means at said dictator's station for spacing recordings on said main record whenever desired.

20. In a sound recording machine having a record which is in motion during the recording,

a movably mounted marking device, and means for moving the marking device into contact with said record, said marking device being moved by said record to apply spaced radial marks thereon.

21. In a marking device of the type described for a sound recording machine employing a record tablet, a member mounted over the record tablet for vertical reciprocation, a pronged marking device pivotally mounted on said member, means for resiliently holding said pronged marking device in normal position, and means for moving said member so that the marking device engages the record whereby the motion of the record causes the prongs to successively impress radial grooves therein spaced circumferentially.

22. In a dictation recording and reproducing system, a main sound recording and reproducing machine, an auxiliary sound recording and reproducing machine, a dictator's receiver and microphone, circuits connecting said receiver and microphone with said recording machines, a dictator's switch, a tone signal generator, relay means and circuits controlled by said dictator's switch for connecting said signal generator to said auxiliary machine, a supervisor's switch, forward spacing means for said main machine, and means controlled by said supervisor's switch for completing the drive motor circuits for said machines and placing said dictator's switch in control of said spacing means, whereby the tone signal is recorded on and then repeated by the auxiliary machine to energize said receiver, and said dictator's switch upon operation energizes said spacing means.

23. The combination of claim 22 characterized in that said dictator's switch is connected to said line.

24. In a dictation recording and reproducing system, a main sound recording and reproducing machine, an auxiliary sound recording and reproducing machine, a dictator's receiver and microphone, circuits connecting said receiver and microphone with said recording machines, a dictator's switch, a tone signal generator, relay means and circuits controlled by said dictator's switch for connecting said signal generator to said auxiliary machine, a supervisor's switch, forward spacing means for said main machine, and means controlled by said supervisor's switch for placing said dictator's switch in control of said spacing means, whereby the tone signal generator is connected to said auxiliary machine and said dictator's switch upon operation energizes said spacing means.

25. The combination of claim 24 characterized in that the dictator's switch is connected to said line.

26. In a sound recording system, a pair of sound recording machines, means for causing one of said recording machines to operate continuously when said system is in use, means at a remote dictator's station and connected to said other machine for starting and stopping it, means for supplying signals to be recorded from said remote station to both of said machines simultaneously, means including a manual control at said remote station for signalling at said machine the desire of a dictator to use them, means for causing forward spacing movement of said main machine and means also controlled by said manual control for operating said spacing means.

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