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COMBINATION DICTATION-TRANSCRIBING MACHINE

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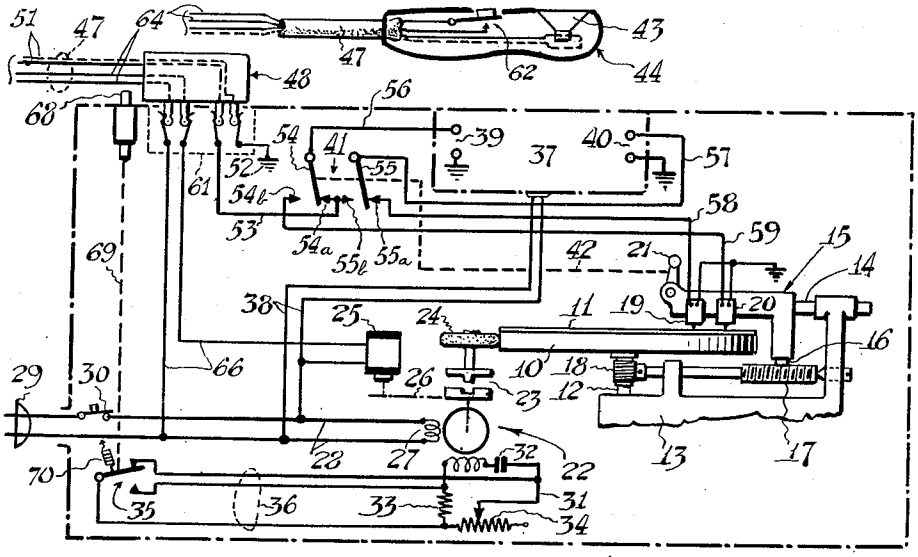


Fig. 1

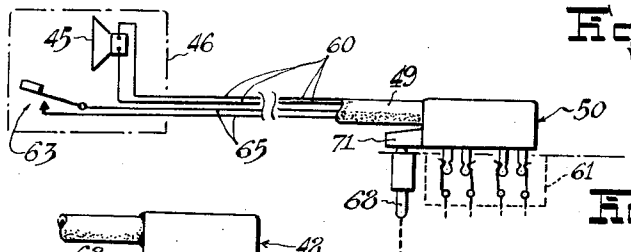


Fig. 1a

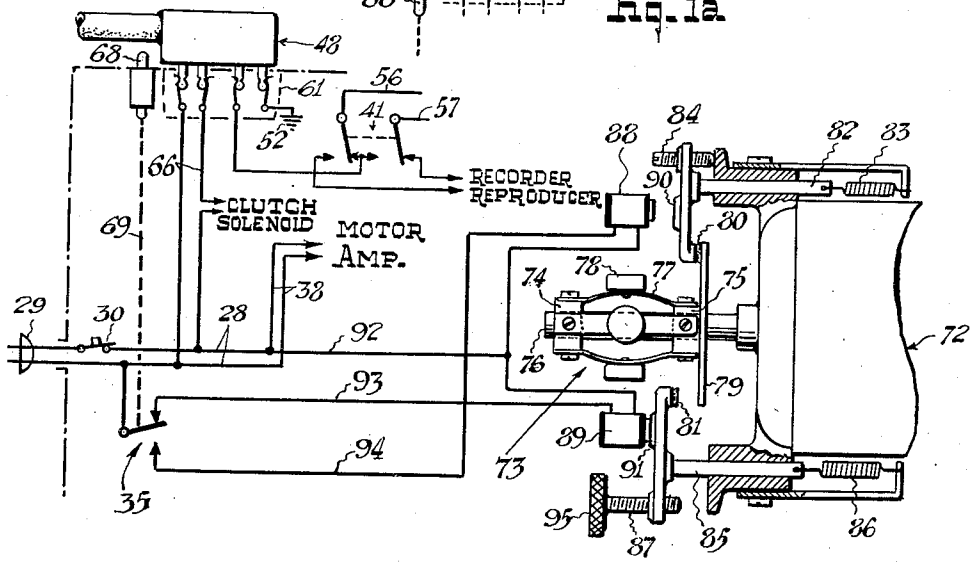



Fig. 2

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# COMBINATION DICTATION-TRANSCRIBING MACHINE

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This invention relates to combination phonographic machines which are adapted for selective use either for recording dictation or transcribing dictation.

It is often desirable, especially with private users of dictating machines, that they be able to convert their machines readily for use as standard transcribing instruments so that one machine may serve both purposes. One of the main features desirable in a transcribing machine is a facility for adjusting the drive speed so that a transcriber may set the machine to suit her tempo of transcribing; however, for dictation recording purposes the drive mechanism should always operate at a preset speed.

An object of this invention is to provide a combination dictating-transcribing machine having means adapted to set the drive mechanism to run at a preset speed as the machine is conditioned for normal use as a dictation-recording instrument, and adapted to provide for variable speed adjustment of the drive mechanism as the machine is conditioned for normal use as a transcribing instrument.

It is well understood that dictating machines are provided with shiftable means for adapting them for reproducing purposes at will as for "listening back" to selected portions of one's dictation to reconstruct one's line of thought during the dictation-recording operation. In such listening back it is desirable to maintain the drive mechanism at normal speed. For the purposes of this invention a mere shifting into reproducing for temporarily listening back to one's recorded dictation is not considered as a conditioning of the machine for use as a transcribing instrument.

A further object of my invention is to condition the drive mechanism for variable-speed operation as an incident of connecting a transcriber's hearing device and/or start-stop control to the machine, and to set the drive mechanism for operation at only a selected speed as an incident of connecting a dictator's microphone and/or start-stop control to the machine.

For the purposes of this invention it is to be understood that the "speed" of the drive mechanism refers to the speed of travel of the end elements of the drive mechanism—i. e., the record support and carriage—and that this speed may be altered by varying the speed of the drive motor itself or by varying the transmission ratio of the coupling mechanism between the motor and the stated carriage and record support.

Other objects and features of my invention will be apparent from the following description and the appended claims.

In the description of my invention reference is had to the accompanying drawings, of which:

Figure 1 is a diagrammatic view of the main components of a dictating machine incorporating my invention and showing the machine conditioned for normal use as a dictating instrument;

Figure 1*a* is a fractional view, largely diagrammatic, showing an alternative plug-type connector for the connector shown in Figure 1, which alternative connector is for conditioning the machine for use as a transcribing instrument; and

Figure 2 is a fractional view of circuits and components shown in Figure 1 but showing a mechanical-type speed control device instead of an electrical-type control device shown in Figure 1.



The dictating machine shown in Figure 1 comprises a record support **10**, for example a turntable, for carrying a disc record **11**, which turntable has a shaft **12** mounted for revolving movement on a frame **13** fractionally shown. The frame also supports a rod **14** partially overlying the turntable on which a carriage **15** is slidably mounted. The carriage has a feed nut **16** engaging a feed screw **17** rotatably mounted on the frame and geared at **18** to the shaft **12** to provide for traveling movement of the carriage as the turntable is rotated. Mounted on the carriage are recorder and reproducer translating devices **19** and **20** cooperable with the record. Either or both of these translating devices may be disengaged selectively from the record by a record-reproduce lever **21** on the carriage, but when both are disengaged the feed nut is disengaged also from the feed screw, all as is common in dictating machines well known in the art.

The drive mechanism comprises a drive motor generally referred to as **22** which is coupled through a clutch **23** to a drive wheel **24** frictionally engaging the rim of the turntable. The clutch **23** is controlled by a solenoid **25** coupled thereto as diagrammatically represented at **26**.

The drive mechanism is controllable to revolve the turntable at either a preset speed or at any one of a range of speeds. This is conveniently accomplished by using a variable speed motor, for example one of the shaded pole induction type. Such a motor has an energizable field winding **27** connectable to a source of A. C. power as via a power circuit **28** and plug **29** of which the power circuit may include a master switch **30** for connecting and disconnecting power to and from the machine. The motor has also a closed circuit winding **31** including a condenser **32**, a fixed resistor **33** and a variable resistor or rheostat **34**. A single-pole double-throw switch **35** is connected to this closed circuit winding via three lead wires **36** to cause the rheostat to be shorted when the switch is in one position—the position it occupies in the Figures—and to cause the fixed resistor **33** to be shorted when the switch is thrown to its other position. When the rheostat is shorted the motor runs at a preset speed according to the resistance value of the fixed resistor **33**. This preset speed is one which will drive the turntable at normal speed for recording. On the other hand, when the short is removed from the rheostat and the fixed resistor is shorted—which is accomplished by throwing the switch **35** to its other position—the speed of the motor may be varied by adjusting the rheostat. This facility to vary the speed is provided only when the machine is conditioned normally for use as a transcribing instrument so as to enable the transcriber to operate the machine at any desired speed to suit her tempo for transcribing dictation.

The audio circuit of the machine comprises an amplifier **37** energizable via leads **38** connected to the power circuit **28**, and having a pair of input terminals **39** and a pair of output terminals **40** one of each of which may be grounded to simplify the circuit wiring. This amplifier is usable either for recording or reproducing by shifting the circuits thereto by means of a changeover switch **41** of the double-pole double-throw type. This changeover switch is coupled mechanically to the record-reproduce

lever 21 by a linkage 42 (diagrammatically shown) to cause it to be shifted automatically as the lever 21 is operated. When the machine is to be used for recording dictation, a dictator's microphone 43 of a dictator's handset 44 is connected thereto, and alternatively when the machine is to be used for transcribing dictation a receiver or speaker 45 of the transcriber's equipment 46 is to be connected to the machine. The handset 44 is connected by a cable 47 and plug 48 of which the latter is insertable in a jack generally referred to as 61. Alternatively, the transcriber's equipment 46 is connected by a cable 49 and respective plug 50 insertable in the jack 61 in place of the plug 48.

When the dictator's handset is connected to the machine and the lever 21 is in record position, connection is made from the dictator's microphone via a shielded wire 51 of the cable 47 and plug 48 to the jack 61, whereat the shield of this wire has a ground connection 52 and the wire is connected onwardly through lead wire 53 to contacts 54*a* and 55*b* of the two sections of the changeover switch 41. Contact 54*a* now makes with pole 54 connected by lead 56 to the input 39 of the amplifier, in view of the record-reproduce lever being in record position, and the output 40 of the amplifier is connected by lead 57 to the pole 55 of the changeover switch, which pole now makes with contact 55*a* connected by lead wire 58 to the recorder 19.

Alternatively, when the transcriber's equipment 46 is connected to the machine and the record-reproduce lever 21 is in reproduce position, connection is made from the reproducer 20 via lead wire 59 to contact 54*b* now making with pole 54 connected to the amplifier input. At the same time the amplifier output is connected via the lead wire 57 to the pole 55 now making with contact 55*b* connected by lead wire 53 to the jack 61. At this jack the lead wire 53 is connected to one of a pair of lead wires 60 of the cable 49, the other of which is here connected to the ground 52. The pair 60 of lead wires is connected to the receiver 45 of the transcriber's equipment 46 to complete connection of the receiver to the output of the amplifier.

As is the usual practice, the dictator's handpiece 44 is equipped with a manual start-stop switch 62 and the transcriber's equipment 46 with a hand- or foot-operable start-stop switch 63. These switches are connectable via respective lead wires 64 and 65 of cables 47 and 49 to contacts of the respective plugs 48 and 50. When one of the plugs is inserted in the jack 61 a through connection is made from the respective start-stop switch to a pair of lead wires 66 to complete connection of the start-stop solenoid 25 across the power circuit 28.

Connection of the machine to operate either as a dictating instrument or as a transcribing instrument, as by connecting either plug 48 or plug 50 to the jack 61 as described, is adapted to set the motor 22 to run either at a preset speed suitable for recording or at a variable speed according to the positioning of the rheostat 34. For this purpose there is provided in proximity with the jack 61 a control for the motor 22 differentially operable according to whether the plug 48 or plug 50 is connected to the jack 61. This control may conveniently be a plunger 68 connected to the pole of switch 35 as diagrammatically represented at 69. The switch 35 may be biased into the position shown—the positioning for setting the motor 22 to operate at a preset speed for recording—as by a spring 70 which spring is effective also to hold the plunger yieldably in a projecting position. The plug 48 for connecting the dictator's microphone and/or start-stop control to the machine is shaped to clear the plunger 68 so as not to disturb the normal positioning of the switch 35 when the machine is conditioned to operate as a dictating instrument. However, the plug 50 for connecting the transcriber's receiver and/or start-stop control to the machine has a finger 71 projecting therefrom which, when the plug is inserted in the jack 61, comes to bear against the plunger and presses it inwardly to shift the switch 35 into its other position. Thus, when the plug 50 is inserted to condition the machine for use as a transcribing instrument, the resistor 33 of the motor speed control circuit 31 is shorted and the rheostat 34 is inserted in its place to enable the speed of the drive mechanism to be varied by adjusting the rheostat.

Although the shifting of the drive mechanism between operation at a preset speed and operation at a variable speed is conveniently accomplished by whether or not a dictator's equipment or a transcriber's equipment is connected to the machine, it will be understood that it may be accomplished within the province of my invention by any means operated as an incident to conditioning the machine for normal use either as a dictating instrument or as a transcribing instrument. For example, in dictating instruments where special facilities are provided for listening back for quick review of one's dictation, this shifting of the drive mechanism may be accomplished by the record-reproduce lever for shifting the machine between record and reproduce conditions.

Furthermore, it will be understood that the manner and means of setting the drive mechanism for operation either at a fixed or variable speed may be accomplished in any suitable manner according to my invention. By way of further illustration, a drive motor 72 may be provided in place of the motor 22 before described, which motor has a mechanical friction-type governor 73 for controlling its speed according to the setting of the governor, as shown in Figure 2. Such governor, which is well known, may comprise a fixed collar 74 and a shiftable collar 75 on a shaft 76 of the motor. These collars are interconnected by flat springs 77 and mounted on the central portions of these springs are flyweights 78 to cause the movable collar 75 to shift along the shaft of the motor as the speed of the motor varies. Secured to the movable collar 75 is a disk 79 and cooperable with this disk is one or another of two friction pads 80 and 81. The friction pad 80 is mounted on a plunger 82 urged by a spring 83 to move the pad 80 into engagement with the disk 79 but the innermost position of the pad is set by an adjusting screw 84. Similarly, the friction pad 81 is mounted on a plunger 85 urged by a spring 86 to move the pad 81 into engagement with the disk 79 but the innermost position of this pad is set by an adjusting screw 87.

Either of the friction pads 80 and 81 may be held withdrawn from the range of travel of the disk 79 by respective electromagnets 88 and 89 operating respectively on armature members 90 and 91 provided on the respective plungers 82 and 85. The electromagnets 88 and 89 are connected via three leads 92, 93 and 94 to the power circuit 28 and switch 35 in such manner that when the switch 35 is in the position shown—the position which it occupies to condition the drive mechanism for operation at a speed normal for recording—only the electromagnet 89 is connected across the power supply, and when the switch 35 is thrown to its other position only the electromagnet 88 is connected across the power supply. When the electromagnet 89 is energized the friction pad 81 is prevented from influencing the governor and the motor speed is subject only to the positioning of the other pad 80. Although this pad is adjustable by screw 84, the screw 84 is to be adjusted to set the speed to normal for recording and then left in that position; accordingly, this screw is provided only with a screwdriver slot to permit adjustment thereof. On the other hand when the switch 35 is thrown in the conditioning of the machine for use as a transcribing instrument, causing the electromagnet 88 to be energized and the electromagnet 89 to be deenergized and subjecting the governor therefore to influence only of the friction pad 81, the speed of the motor will depend on the adjusting screw 87. Since the speed of the motor is now to be adjustable according to the desire of the transcriber, the screw 87 is provided with a rela-

tively large knob 95 which is also conveniently positioned within reach of the transcriber to render it readily adjustable by hand. Thus, as in the embodiment of Figure 1, the speed control apparatus of the drive mechanism is set to cause the drive mechanism to operate at a fixed predetermined speed when the machine is conditioned to operate as a dictating instrument and is set to enable ready adjustment of the speed of the drive mechanism when the machine is conditioned to operate as a transcribing instrument.

It will be understood that other variations and modifications of the embodiments herein particularly shown and described may be made within the scope of my invention, which I endeavor to express according to the following claims.

I claim:

1. In a dictating and transcribing machine including a first device for supporting a record for revolving movement, a second device including record-cooperable record-reproduce means, one of said devices being mounted for traveling movement, and variable speed drive means for revolving said first device and concurrently imparting traveling movement to said one device: the combination of means for selectively conditioning said machine either for use as a dictating instrument or for use as a transcribing instrument; selectively operable speed control means associated with said drive means and including a variable speed control device for setting the drive means to operate at a normal speed for recording dictation or for placing said drive means for variable speed operation under influence of said variable speed control device; and means for controlling said speed control means by said conditioning means to cause said drive means to operate at said normal speed when said machine is conditioned for use as a dictating instrument and to cause said drive means to operate at a speed according to the setting of said variable speed control device when said machine is conditioned for use as a transcribing instrument.

2. In a dictating and transcribing machine including a first device for supporting a record for revolving movement, a second device including record-cooperable record-reproduce means, one of said devices being mounted for traveling movement, and variable speed drive means for revolving said first device and concurrently imparting traveling movement to said one device: the combination of speed control means for said drive means including a variable speed control device; means selectively operable for setting the speed of said drive means at a predetermined speed normal for recording or for placing said drive means under influence of said variable speed control device; means for selectively conditioning said machine either for recording or for transcribing dictation; and means controlled by said conditioning means and coupled to said speed control means for setting said drive means at said normal speed when said machine is conditioned for recording dictation and for placing said drive means under influence of said variable speed control means when said machine is conditioned for transcribing dictation.

3. The combination set forth in claim 1 including a microphone for dictation use; a hearing device for transcribing use; connecting means for said microphone and hearing device adapted for alternatively connecting said microphone and hearing device to said machine; and means differently responsive to said connecting means according to whether said microphone or hearing device is connected to said machine for conditioning said drive means for normal speed operation when said microphone is connected to the machine and for conditioning said drive means for operation at different speeds according to the positioning of said variable speed control device when said hearing device is connected to said machine.



4. The combination set forth in claim 1 including a start-stop control for a dictator's use, a start-stop control for a transcriber's use, connecting means for said start-stop controls adapted for alternatively connecting one or the other to said machine, and means differently responsive to said connecting means according to which of said start-stop controls is connected to said machine for conditioning said drive means to operate at normal speed when said dictator's start-stop control is connected to the machine and for conditioning said drive means to operate at variable speed according to the positioning of said variable speed control device when said transcriber's start-stop control is connected to said machine.

5. In a dictating and transcribing machine including a first device for supporting a record for revolving movement, a second device including record-cooperable record-reproduce means, one of said devices being mounted for traveling movement, variable speed drive means for revolving said first device and concurrently imparting traveling movement to said one device, a microphone for a dictator's use and a hearing device for a transcriber's use: the combination of a plug and jack connector means for connecting said microphone to said machine; a plug and jack connector means for alternatively connecting said hearing device to said machine; speed control means for said drive means including a variable speed control device; and means controlled by said connector means for conditioning said speed control means to cause said drive means to operate at a fixed predetermined speed when said microphone is connected to said machine and to operate at a variable speed according to the setting of said variable speed control device when said hearing device is connected to said machine.

6. In a dictating and transcribing machine including a first device for supporting a record for revolving movement, a second device including record-cooperable record-reproduce means, one of said devices being mounted for traveling movement, variable speed drive means for revolving said first device and concurrently imparting traveling movement to said one device, a microphone for a dictator's use and a hearing device for a transcriber's use: the combination of an audio circuit for said machine including an input-output jack and switch means for selectively conditioning said machine either for recording signals fed to the machine via said jack or for reproducing recorded signals and feeding them to an output circuit via said jack; plug-type connector devices for said microphone and hearing device respectively each adapted for plug-in connection with said jack; a variable speed control device for said drive means; means including an operable element in proximity with said jack for abling and disabling said variable speed control device; and means associated with one of said connector devices for causing operation of said element as said one connector device is plugged in and removed from said jack.

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