July 22, 1941. L. THOMPSON 2,250,242

DISK DICTATING MACHINE

Filed Dec. 31, 1938 2 Sheets-Sheet 1

Fig. 1.

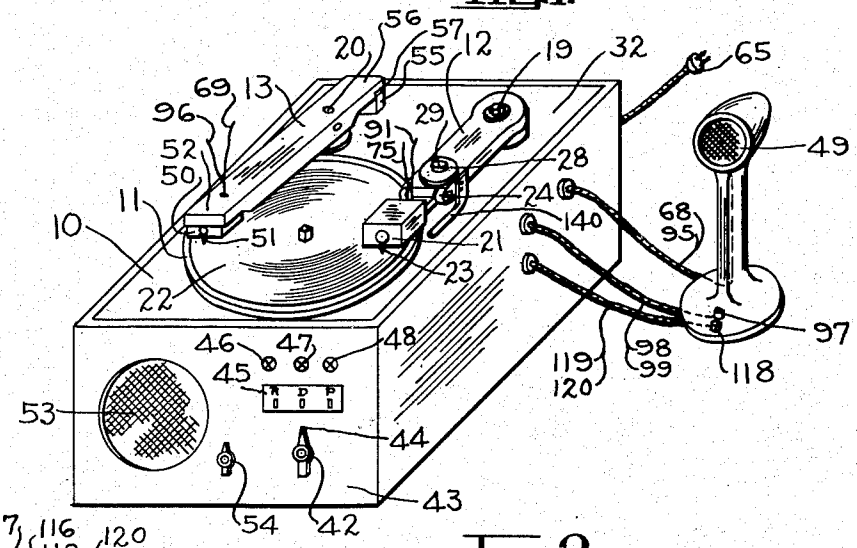


Fig. 2.

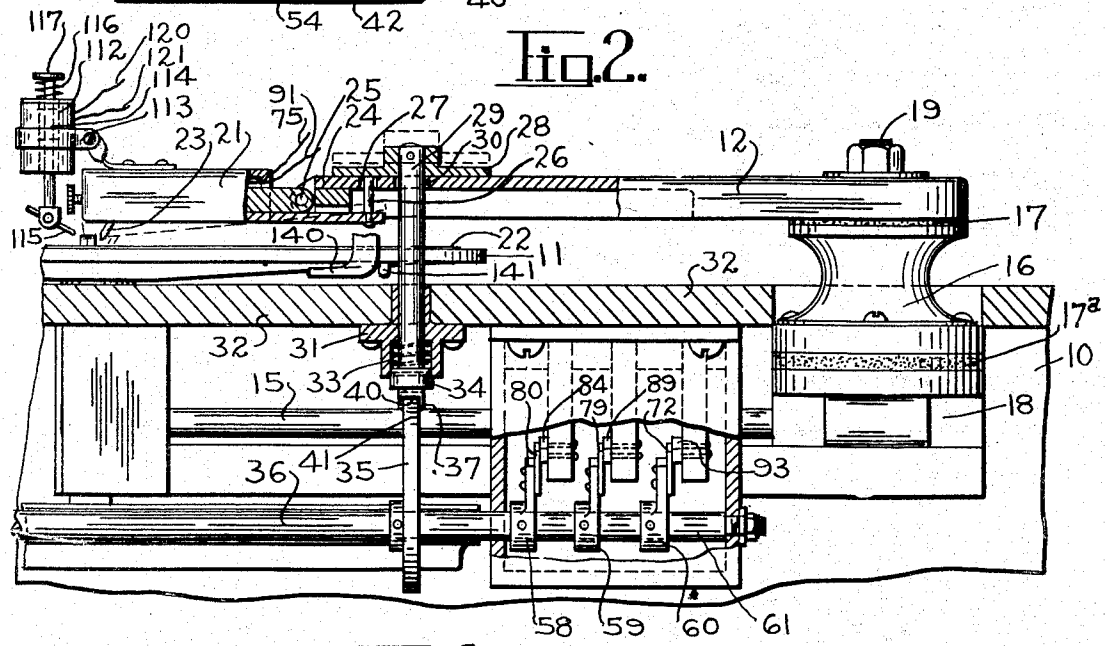
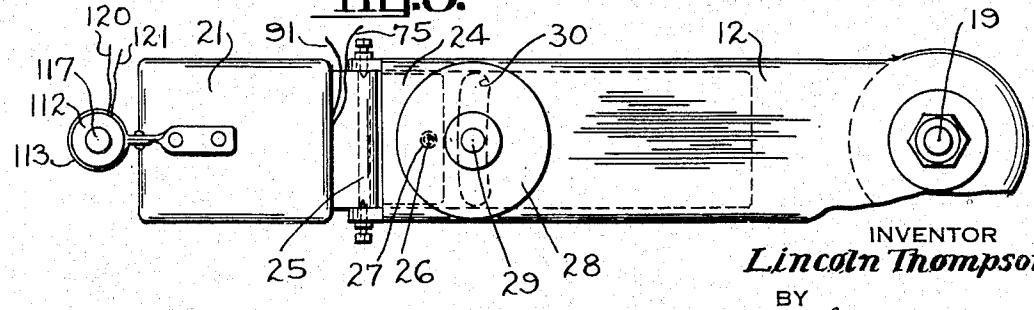


Fig. 3.



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Filed Dec. 31, 1938 2 Sheets-Sheet 2

Fig.4.

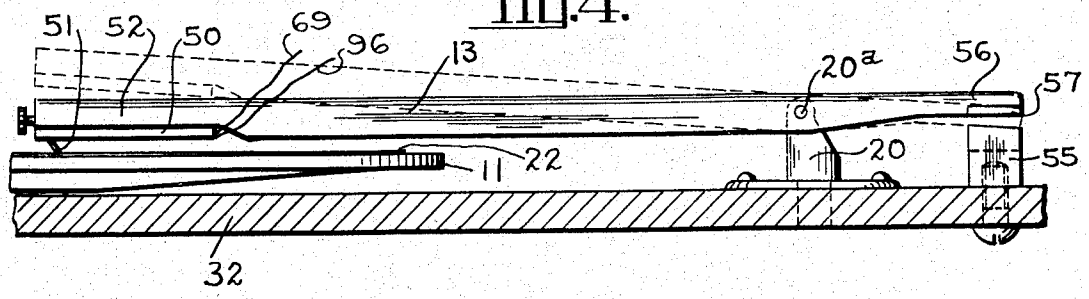


Fig.5.

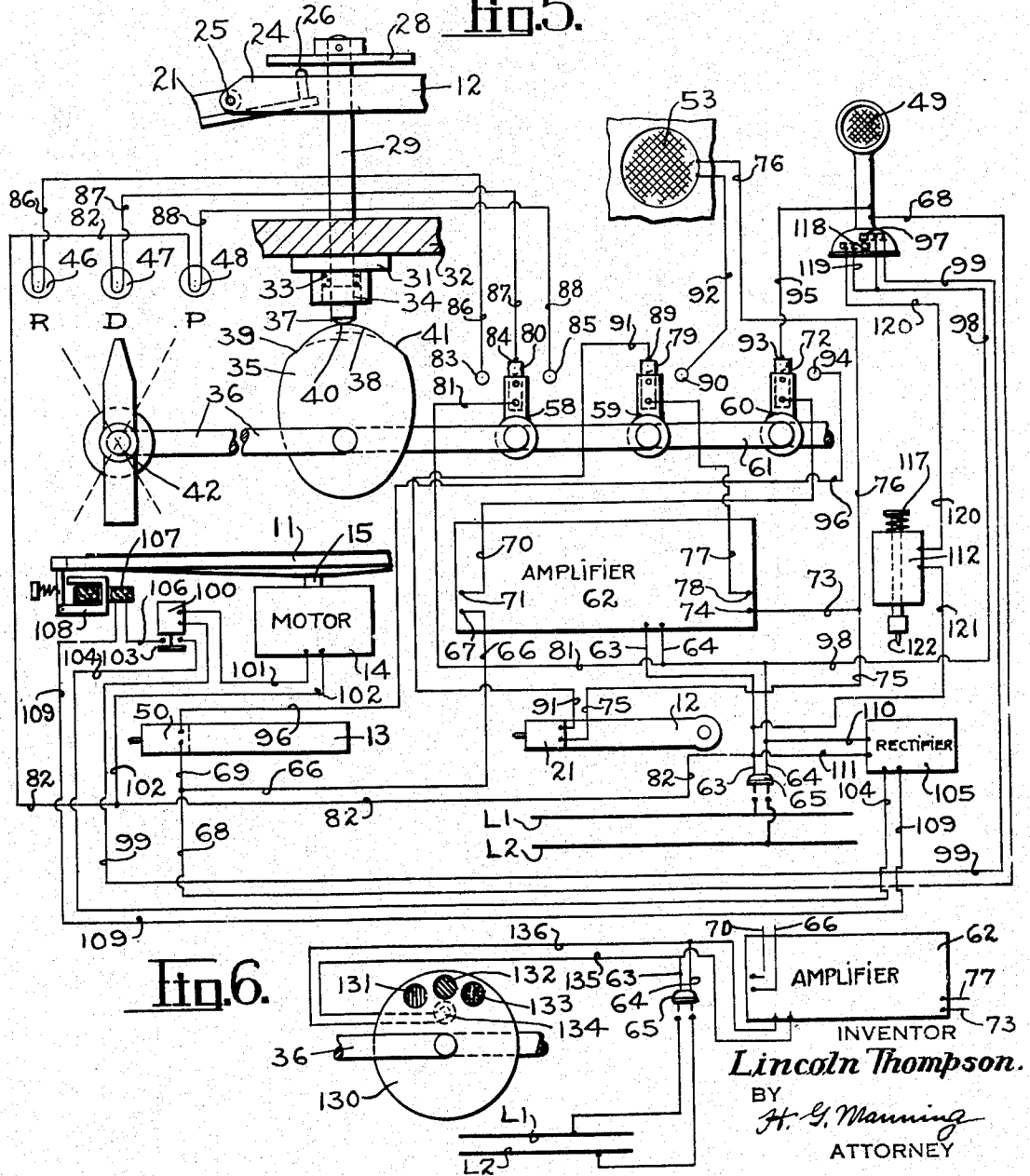


Fig.6.

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UNITED STATES PATENT OFFICE

2,250,242

DISK DICTATING MACHINE

Lincoln Thompson, Stamford, Conn., assignor to The Sound Scriber Corporation, Stamford, Conn., a corporation of Connecticut

Application December 31, 1938, Serial No. 248,690

11 Claims. (Cl. 179—100.4)

This invention relates to sound recording and reproducing machines, and more particularly to a dictating machine.

The dictating machine of the present invention is designed to operate on thin disk records having closely spaced grooves (about 165 per inch) and being rotated at slow speed (33 R. P. M.), such as were described in my copending application Serial No. 245,944, filed December 15, 1938, and entitled "Apparatus and methods of recording sound on thin disks." When a seven inch diameter record of this nature is transcribed, it will play for at least eight minutes per side, or sixteen minutes when both sides are recorded.

One advantage of such records is that no material is cut or shaved from the surface of the record—the recording being done by indenting and embossing a groove in the surface of the record. Moreover, since these records are very inexpensive, after being played back they are intended to be filed as permanent records or thrown away, thus eliminating the usual cumbersome and costly shaving mechanisms, such as are commonly used for cylinder records.

One object of the present invention is to provide an improved dictating machine whereby speech or music or other sounds may be accurately, cheaply, compactly, and permanently recorded on a disk record.

Another object is to provide a dictating machine of the above nature which may be selectively "reset," "recorded" and "played back" at the will of the operator.

Still another object is to provide a dictating machine of the above nature having means to mark the disk so that visual or audible indications will be given the transcriber when the dictation is interrupted or completed.

A still further object is to provide a dictating machine of the above nature having an improved form of pickup arm for playing back the sounds recorded on the record.

A still further object is to provide a disk dictating machine of the above nature having an improved apparatus for rapidly shifting from recording to transcribing and vice versa.

A still further object of this invention is to provide an improved disk record dictating machine of the above nature which will be relatively inexpensive to manufacture, simple in construction, compact, ornamental in appearance, and very efficient and durable in use.

With these and other objects in view, which will appear as the description proceeds, there have been illustrated on the accompanying drawings two forms in which the invention may be conveniently embodied in practice.

In the drawings:

Fig. 1 is a perspective view of an improved disk dictating machine embodying the present invention.

Fig. 2 is a broken sectional view in elevation of the same, taken through the sound recording arm shown in Fig. 1.

Fig. 3 is a broken top plan view of the sound recording arm, shown by itself.

Fig. 4 is a side view of a portion of the machine showing the pickup arm in operating position.

Fig. 5 is a diagrammatic layout of the various parts of the dictating machine, together with the controls therefor, and the electrical circuit connections.

Fig. 6 is a diagrammatic view of a modified form of signal apparatus employing only a single lamp.

Referring now to the drawings wherein like reference numerals designate like parts throughout the several views, the numeral 10 denotes a rectangular casing within which most of the control means shown in Fig. 5 are disposed, and upon which are supported a disk record-supporting turntable 11, a recording arm 12, and a "pick-up" or play-back arm 13. The turntable 11 is adapted to be rotated by a motor 14 which is drivingly connected thereto by any desired means, not shown. The recording arm 12 is connected to the motor 14 through a shaft 15 driven by a feed mechanism, as more fully described in my prior Patent No. 2,133,596, dated October 18, 1938. The recording arm 12 is frictionally driven from a feed head 16 through a relatively weak friction slipping disk 17. The head 16 is driven by the shaft 15 from the motor 14 by gears, not shown, disposed in the gear box 18, said head 16 being engaged by a relatively strong friction brake 17a. By means of this construction, the recording arm 12 may be swung with respect to said power head 16 without backlash.

The turntable 11 is preferably mounted at the forward portion of the casing 10—the recording arm 12 being pivotally mounted on the right side (as viewed in Fig. 1) and being adapted to swing laterally over the turntable 11 on a post 19 extending upwardly through the casing 10 at the rear portion thereof.

The pickup arm 13 is pivotally mounted to laterally swing over the turntable 11 at the left side of the casing 10—being hinged on a horizontal pin 20a mounted in a vertical post 20 secured to the casing 10.

By means of the weak friction slipping disk 17, the recording arm 12 may be swung by hand to position a recording head 21 in any desired position over a disk record 22 located on the turntable 11.

The recording or embossing head 21 may be of any conventional form, in which an embossing stylus 23 is adapted to be electro-magnetically actuated to indent and emboss sound tracks of spiral formation in the disk record 22. The recording head 21 is pivoted at its rear section on a hinge pin 25 secured to the forward end 24 of the arm 12. The recording head 21 is provided with a rearward extension having an upwardly extending pin 26 thereon, which is adapted to pass through an opening 27 in the recording arm 12 in alinement with a circular brake plate 28 secured on the upper end of a vertical operating rod 29.

The rod 29 passes downwardly through an elongated arcuate stop slot 30 (see Fig. 3) formed in the recording arm 12, and said rod 29 is supported for vertical sliding in a bushing 31 secured to the top plate 32 of the casing 10. By means of this construction, the brake plate 28 may be moved downwardly to cause it to engage the upstanding pin 26 and tilt the head 21 upwardly about the hinge pin 25. This action will raise the stylus 23 out of contact with the disk record 22. Upward movement of the plate 28 on the contrary will release the head 21 and permit it to swing downwardly by gravity so that the stylus 23 may again engage the disk record 22. When the brake plate 28 is moved still farther downwardly, it will engage tightly with and lock the recording arm 12 and will hold said arm 12 against swinging movement during the operation of the pickup—the weak friction slipping disk 17 permitting continued operation of the motor 14 without driving the arm 12. The brake plate 28 is constantly urged downwardly by a coiled spring 33 which reacts between a collar 34 on the rod 29 and the housing 31.

In order to selectively hold the brake plate 28 in any one of its three operating positions, provision is made of a rotatable plate cam 35 secured on a horizontal shaft 36 located under the top plate 32 of the casing 10. The lower end 37 of the vertical rod 29 rides on the periphery 38 of the cam 35 (see Fig. 5). Thus, when the brake plate 28 is in its first position (as shown in full lines in Fig. 2), the lower end 37 of the rod 29 will engage the low portion 39 for locking the recording arm with the stylus up (as indicated in Fig. 2). When the rod end 37 is engaged by the high cam portion 40 of the cam 35, the brake plate 28 will be held up (as shown in dotted lines in Fig. 2 and in full lines in Fig. 5), whereby the arm 12 is released, and the stylus 23 will rest on the disk record 22; and third, when the rod end 37 is engaged by the intermediate camming surface portion 41, the brake plate 28 will be held partially down, whereby the lifting pin 26 is engaged by said brake plate, and the stylus 23 is still raised off of the disk record 22, but said recording arm 12 is not locked. Under these conditions the arm 12 may be manually swung back and forth to reset the stylus 23 within any desired groove upon the disk record 22 without backlash due to the weak friction disk 17 and the strong friction brake 17a.

In order to permit the cam 35 to be rotated into any one of its three operative positions, a selector knob 42 is disposed on the outside of the front wall 43 of the casing 10 (see Fig. 1). The knob 42 has a pointer 44 which is directed upwardly toward a section 45 upon the wall 43 containing the letters "R" (meaning "reset"), "D" (meaning "dictate"), and "P" (meaning "playback"), for visually indicating the operative position of the cam 35 and the setting of the machine parts. If desired, three electric lamps 46, 47 and 48, preferably of different colors, such as red, green and yellow, respectively, are also provided to indicate the operative position of the cam 35, and these lamps 46, 47 and 48 are disposed above the letters "R," "D" and "P," respectively.

The dictation or sound to be recorded is adapted to be received by a microphone 49 which is electrically connected to the embossing head 21 carried by the recording arm 12. By means of this arrangement, the sounds impinging upon the microphone after amplification cause the stylus 23 to vibrate and produce modulated sound tracks or grooves upon the disk record 22.

The playback arm 13 has a pickup head 50 and an inclined needle 51 secured upon the forward end 52 thereof, and the head 50 is electrically connected to a loud speaker 53 (head phones may be substituted therefor if desired) of conventional form which is mounted in the front wall 43 of the casing 10. The volume of sound emitted by the loudspeaker 53 is controlled by a knob 54 located just at the left of the selector knob 42. The arm 13 is swingable on a vertical axis about the post 20 to permit the needle 51 to move across the disk record 22.

The pickup arm 13 is also pivoted on a horizontal pin 20a carried on the top of the post 20 to permit said arm 13 to be swung to the dotted line position shown in Fig. 4, where it is adapted to be held temporarily by a permanent magnet 55, which exerts a strong attraction upon a soft iron armature 57 located in the rear end 56 of the pickup arm 13. The pickup arm 13 may be held in said dotted line position to keep the needle 51 out of disk-engaging position as long as desired.

In order to selectively connect the embossing head 21 and the loud speaker 53 so as to be electrically responsive to the microphone 49 and the pickup 50, respectively, as well as to light the proper indicating lamp 46, 47 or 48, provision is made of three rotary switch arms 58, 59 and 60, which are secured upon a rearwardly extending portion 61 of the cam shaft 36 for rotation therewith.

Referring now to Fig. 5, the parts of the dictating machine of this invention are shown schematically in association with the electrical controls and circuits therefor. Thus, a conventional form of vacuum tube amplifier is indicated at 62 which is connected by means of conductors 63 and 64 to a two-prong plug 65 adapted to be connected to a pair of line wires L1 and L2 in the usual manner.

A conductor 66 leading from one input terminal 67 of the amplifier 62 is connected by a conductor 68 to the microphone 49, and also by a conductor 69 to the pickup unit 50. Provision is also made of a conductor 70 leading from the other input terminal 71 of the amplifier 62, which conductor 70 is connected to a contact 72 on the rotary switch arm 60.

A conductor 73 leading from a terminal 74, at the output end of the amplifier 62, is connected by a conductor 75 to the sound groove embossing head 21, and by another conductor 76 to the loud speaker 53. A conductor 77 leading from the other output terminal 78 of the amplifier 62 is

connected to a contact 78 on the rotary switch arm 58. A contact 80 on the rotary switch arm 58 is also connected by a conductor 81 to the line wire L2 through the conductor 64 and the switch plug 65. A common conductor 82 leading to each of the lamps 46, 47 and 48 is connected to the line wire L1 through the conductor 63 and the switch plug 65.

The contact 80 on the switch arm 58 is adapted to selectively engage contact points 83, 84 and 85 connected to the lamps 46, 47 and 48 by conductors 86, 87 and 88, respectively, to selectively energize them. Moreover, the contact 79 on the switch arm 59 is adapted to selectively engage contact points 89 and 90 connected respectively to the embossing head 21 and the loudspeaker 53 by conductors 91 and 92. The contact 72 on the switch arm 60 is adapted to selectively engage contact points 93 and 94 connected respectively to the microphone 49 and the pickup unit 50 by conductors 95 and 96.

In order to control the starting and stopping of the turntable motor 14, provision is made of a conventional form of two-way push button switch 97, preferably mounted in the base of the microphone 49, said switch 97 being connected by a conductor 98 to the line wire L2 through the conductor 64 and the switch plug 65, and by a conductor 99 to the coil of a switch-actuating solenoid 100. A conductor 101 leads from the coil of the solenoid 100 to the motor 14, which is connected by a conductor 102 to the line wire L1 through the conductor 62, the conductor 63, and the switch plug 65.

The solenoid 100 automatically actuates a relay switch 103, when the motor 14 is energized by the push button switch 97 to close the circuit between a conductor 104 leading to a conventional form of current rectifier 105, and a conductor 106 leading to the coil 107 of a turntable brake 108 constructed as shown and described in applicant's copending application, Serial No. 242,598, filed November 26, 1938. A conductor 109 leads from the coil 107 to the output terminals of the current rectifier 105. The input terminals of the rectifier 105 are connected by conductors 110 and 111 to the line wires L2 and L1 through the conductors 64 and 63 respectively leading to the plug 65.

Record marking apparatus

In order that the operator of this machine may indicate to the transcriber on the disk record 22 when a paragraph, letter or the like is completed, provision is made of mechanism to mark the disk 22 with a crayon in such a manner that the mark will be visible to the transcriber when the record is being played back. This mechanism comprises a solenoid 112 (Fig. 2) mounted in a suitable bracket 113 carried by the recording head 21. A plunger 114 is suspended within the solenoid 112 and is adapted to be acted upon by the latter when energized to force a marking crayon or pencil (preferably colored), 115 downwardly upon the record 22. A coiled spring 116 reacting against the solenoid 112 and a head 117 secured on the top of the plunger 114 normally maintains the pencil 115 out of contact with the disk record 22 except when the solenoid 112 is energized.

To energize the solenoid 112 whenever desired, provision is made of a push button switch 118 also mounted in the base of the microphone 49. A conductor 119 connects the switch 118 to the line wire L2 through the conductor 98, the conductor 64, and the switch plug 65, and a conductor 120 connects the switch 118 to the coil of the solenoid 112. Another conductor 121 connects the coil of the solenoid 112 to the line wire L1 through the conductor 63 and the switch plug 65.

While a marking pencil or crayon 115 is shown in Fig. 2 arranged in an inclined position with its point directed inwardly closely adjacent the stylus 23 to mark the disk, it will be understood that other forms of marking devices may be employed. Thus, in Fig. 5, a sharp pointed metallic punch 122 is illustrated and is adapted to indent the disk to cause visible and audible signals. It will also be understood that the apparatus may be so arranged that both the marking crayon 115 and the punch 122 may be used simultaneously, if desired, to provide both forms of signals upon the same record.

Modified indicator

In the modified form of the invention shown in Fig. 6, an arrangement is disclosed whereby two of the lamps 46, 47 and 48 of the first form may be omitted, and a single lamp 134 may be employed to indicate whether the apparatus is in condition for "resetting," "dictating" or "playing back." In this modified form, provision is made of an opaque disk 130 having three transparent lenses, a red one 131, a green one 132, and a yellow one 133, rigidly mounted thereon in position to be rotated in front of an opening (not shown) in the front wall 43 of the casing 10. The disk 130 is secured to the cam shaft 36 in front of the cam 35 and the single electric lamp 134 is disposed behind the disk 130 to illuminate the lenses 131, 132 and 133, respectively, according to the position of the cam 35. The lamp 134 is arranged to be lighted by the insertion of the plug switch 65 into its socket by means of a pair of conductors 135 and 136, respectively, connected to the conductors 63 and 64 leading to the line wires L1 and L2.

Warning signal

During the dictation, the recording head 21 will be gradually swung toward the center of the disk record 22, and after the desired number of sound grooves have been recorded, the record may be turned over for recording on its other side. To warn the user when the head 21 is approaching the recording limit, an angular spring finger 140 is secured to the arm 12 and extends downwardly and inwardly therefrom into position to be engaged by a pin 141 depending from the underside of the turntable 11. By means of this construction, it will be seen that whenever the pin 141 strikes the finger 140 (once at each revolution of the turntable), a "clicking" sound will be produced, thus audibly indicating that the limit of recording is approaching. Or, if desired, a switch-actuating arm (not shown) may be substituted for the spring finger 140, so that a signal lamp may be lighted for the same purpose.

Operation

In operation, when the user desires to record dictation on the disk record 22, it will only be necessary to plug the switch 65 into the line L1 and L2, and rotate the selector knob 42 into its central dictating position marked "D" on Figures 1 and 5. This action will cause the cam 35 to assume the position shown in Fig. 5 with the rod end 37 resting on the cam portion 40, whereby the brake plate 28 will be lifted away from the recording arm 12, releasing it and permitting the

embossing head 21 to oscillate up and down freely with respect to the arm 12. The switch contact 80 on the arm 58 will at this time engage the contact 84 to light the green lamp 47, and the contact 79 on the arm 59 will engage the contact 89 to connect the recording head 21 with the output terminals 74 and 78 of the amplifier 62. Also, the contact 72 on the arm 60 will at the same time engage the contact 93 to connect the microphone 49 with the input terminals 67 and 70 of the amplifier 62.

The two-way push button switch 97 will now be actuated to release the turntable brake 108 and permit the driving motor 14 to start the turntable substantially instantly. Any speech, music or other sounds reaching the microphone 49 will then be amplified and recorded upon the disk record 22. The recording of the record may be continued until the record is completed, or if desired, the recording may be interrupted at any time. The stopping point may be marked on the record by means of the solenoid-actuated pencil 115 (or punch 122) which is energized by the actuation of the marking switch 118. The dictation may also be interrupted at any time for resetting the recording head to another position on the record. The selector knob 42 will then be turned to the reset position R.

When the knob 42 is in the "reset" position "R," the end 37 of the vertical rod 29 will rest on the cam portion 41 of the cam 35, and the head 21 will be raised from the disk 22. The recording arm 12 may now be moved to the position on the record where the recording is to continue. When in "reset" position, the red lamp 46 will be lighted due to the engagement of the contact 80 on the switch arm 58 with the contact 83.

The recorded sound may then be played back by turning the knob 42 to the play-back position "P." At this time the cam 35 will be positioned so that the lower end 37 of the rod 29 rests on the cam portion 39, thus causing the brake plate 28 to tightly engage the recording arm 12, whereby it will be prevented from swinging, and maintaining the head 21 and stylus 23 up out of contact with the record 22. The yellow light 48 will be lighted during "playback" by the engagement of the contact 80 on the arm 58 with the contact 85, the contact 79 on the arm 59 being then in engagement with the contact 90 to connect the loudspeaker 53 with the output terminals 74 and 78 of the amplifier 62, and the contact 72 on the arm 60 is in engagement with the contact 94 to connect the pickup unit 50 instead of the microphone 49 with the input terminals 67 and 70 of the amplifier 62. The loud speaker 53 is at the same time substituted for the cutting head 21. The pickup unit arm 13 is then manually tilted downwardly, releasing it from the magnetic catch 55, and the needle 51 may be gently lowered into the desired sound groove on the disk 22.

After the desired portion of the recorded matter has been played back, the machine may be readily arranged for further dictation by raising the pickup unit arm 13 until the armature 57 engages the magnet 55, the latter acting as a "hook" to keep the pickup clear of the record. The machine may then be again "reset" as above described by turning the knob 42 first to the reset position "R," thus releasing the brake plate 28 from the recording arm 12.

The selector knob 42 will then be swung to the dictating position "D," causing the embossing head 21 to be automatically lowered upon the record and simultaneously connecting the microphone 49 and embossing head 21 into the amplifier circuits. To indicate the point where the dictation terminated, the operator may close the switch 118 and cause the crayon 115 to visibly mark the record or the punch 122 to strike the record groove to cause a slight indentation therein which will produce an audible indication when played back. If desired, instruction relative to the dictation, such as corrections, etc., may be written directly upon the disk record 22 by means of a pencil or crayon without injury to the record grooves. When the end of the record is approached, the contact of the finger 140 with the pin 141 will give an audible signal to the dictator.

While there have been disclosed in this application two forms in which the invention may be embodied, it is to be understood that these forms have been shown for the purpose of illustration only, and that the invention is not to be limited to the specific disclosures, but may be modified and embodied in various other forms without departing from its spirit. In short, the invention includes all the modifications and embodiments coming within the scope of the following claims.

Having thus fully described the invention, what is claimed as new and for which it is desired to secure Letters Patent is:

1. In a dictating machine, a driven turntable, a disk record supported thereon, a sound recording head mounted for swinging movement over said disk record, a pickup head mounted for swinging movement over said disk record, a vacuum tube amplifier, a microphone, a loud speaker, and means to selectively electrically connect said microphone and said pickup to the input terminals of said amplifier, means to selectively connect said recording head and said loudspeaker to the output terminals of said amplifier, means to visually indicate the electrical connection selected, and means to magnetically retain said pickup raised from the record while recording.

2. In a dictating machine, a turntable for supporting a disk record, a sound groove forming head, a recording arm pivoted to swing on a vertical axis for supporting said head, a pin depending from said turntable, and an angular spring arm carried by said recording arm and having an inturned end in alinement with said pin to give an audible repeated warning signal when the end of the recording area is reached.

3. In a dictating machine, a driven turntable, a disk record supported thereon, a sound recording head mounted for swinging movement over said disk record, a pickup head mounted for swinging movement over said disk record, a vacuum tube amplifier, a microphone, a loudspeaker, means to selectively electrically connect said microphone and said pickup to the input terminals of said amplifier, means to selectively connect said recording head and said loudspeaker to the output terminals of said amplifier, means to visually indicate the electrical connection selected, means to magnetically retain said pickup head from the record while recording, and brake means to hold said recording head from swinging across the record while said pickup is playing back the record.

4. In a dictating machine for recording and reproducing sound vibrations, a driven turntable for supporting a disk record, a recording arm mounted to move over said record, a recording stylus-carrying head connected to said arm by a

horizontal pivot, said head having an upstanding pin at its rear end, said arm having an aperture above said pin and alined therewith, a brake plate for engaging said pin and the top surface of said arm, a vertical rod passing downwardly through said arm for supporting said brake plate, and manually controlled cam means for selectively holding said plate in one of three positions to permit said stylus to engage said record for recording, to hold said stylus in raised position and permit swinging for "resetting" of the recording arm, and to lock said raised arm from swinging during play-back of said record by a pickup mechanism.

5. In a dictating machine for recording and reproducing sound vibrations, a record, a recording arm mounted to move over said record, a recording stylus-carrying head connected to said arm by a horizontal pivot, said head having an upstanding pin at its rear end, said arm having an aperture above said pin and alined therewith, a brake plate for engaging said pin and the top surface of said arm, a vertical rod passing downwardly through said arm for supporting said brake plate, and manually controlled cam means for selectively holding said plate in one of three positions to permit said stylus to engage said record for recording, to hold said stylus in raised position and permit swinging for "resetting" of the recording arm, and to lock said raised arm from swinging during playback of said record by a pick-up mechanism.

6. In a dictating machine for recording and reproducing sound vibrations a record, a recording arm mounted to move over said record, a recording stylus-carrying head connected to said arm by a horizontal pivot, said head having an upstanding pin at its rear end, said arm having an aperture above said pin and alined therewith, a brake plate for engaging said pin and the top surface of said arm, a downwardly spring-pressed vertical rod passing downwardly through said arm for supporting said brake plate, and manually controlled cam means for selectively holding said plate in one of three positions to permit said stylus to engage said record for recording, to hold said stylus in raised position and permit swinging for "resetting" of the recording arm and to lock said raised arm from swinging during playback of said record by a pickup mechanism.

7. In a dictating machine, a driven record, a stylus-holding recording arm, means to drive said recording arm over said record, a pickup-carrying arm mounted to move freely across said record, means to hold said recording arm with the stylus raised from said record in position to permit "resetting" of said arm, and means to lock said recording arm in raised position during playback by said pickup, the driving means of said recording arm including friction slipping mechanism to permit the driving mechanism to operate continuously even when the recording arm is locked from movement across the record.

8. In a dictating machine, a driven record, a sound-recording head carrying arm movably mounted with respect to said record, a pickup head movably mounted with respect to said record, an amplifier, a microphone, a loudspeaker, means to selectively connect said microphone or said pickup to the input terminals of said amplifier, means to selectively connect said recording head or said loudspeaker to the output terminals of said amplifier, means to raise said recording head from the surface of said record to permit resetting of said recording arm, means to hold said recording arm from movement across the record during playback of said pickup, and means to visually indicate whether the machine is set for resetting, dictation, or playback.

9. In a dictating machine for recording and reproducing sound vibrations, a driven turntable for supporting a disk record, a recording head for forming grooves in the surface of said record, means to move said head across the surface of said record, a pickup also movably mounted with respect to said record, a microphone for receiving dictation, an amplifier, a loudspeaker, means to selectively connect said microphone or said pickup to the input terminals of said amplifier to energize said groove-forming head or said loudspeaker respectively, means to simultaneously lift said recording head from said record, and shift the electrical connections of said amplifier from said microphone to said pickup, means to hold said recording head in elevated position while not recording, and a friction-slipping brake for preventing movement of said head across said record while said turntable continues to rotate.

10. In a dictating machine, a driven turntable, a disk record supported thereon, a sound recording head mounted for swinging movement over said disk record, a pickup head mounted for swinging movement over said disk record, a vacuum tube amplifier, a microphone, a loudspeaker, means to selectively electrically connect said microphone or said pickup to the input terminals of said amplifier, means to selectively connect said recording head or said loudspeaker to the output terminals of said amplifier, means to visually indicate the electrical connection selected, and brake means to hold said recording head from swinging across the record while said pickup is playing back the record.

11. In a dictating machine, a driven disk record, a sound-recording head carrying arm movably mounted with respect to said record, a pickup head movably mounted with respect to said record, an amplifier having input and output terminals, a microphone, a loudspeaker, means to selectively connect said microphone or said pickup to the input terminals of said amplifier, means to selectively connect said recording head or said loudspeaker to the output terminals of said amplifier, means to raise said recording head from the surface of said record to permit playback by said pickup, and means to hold said recording arm in a stationary position during said playback.

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