

Sept. 12, 1967

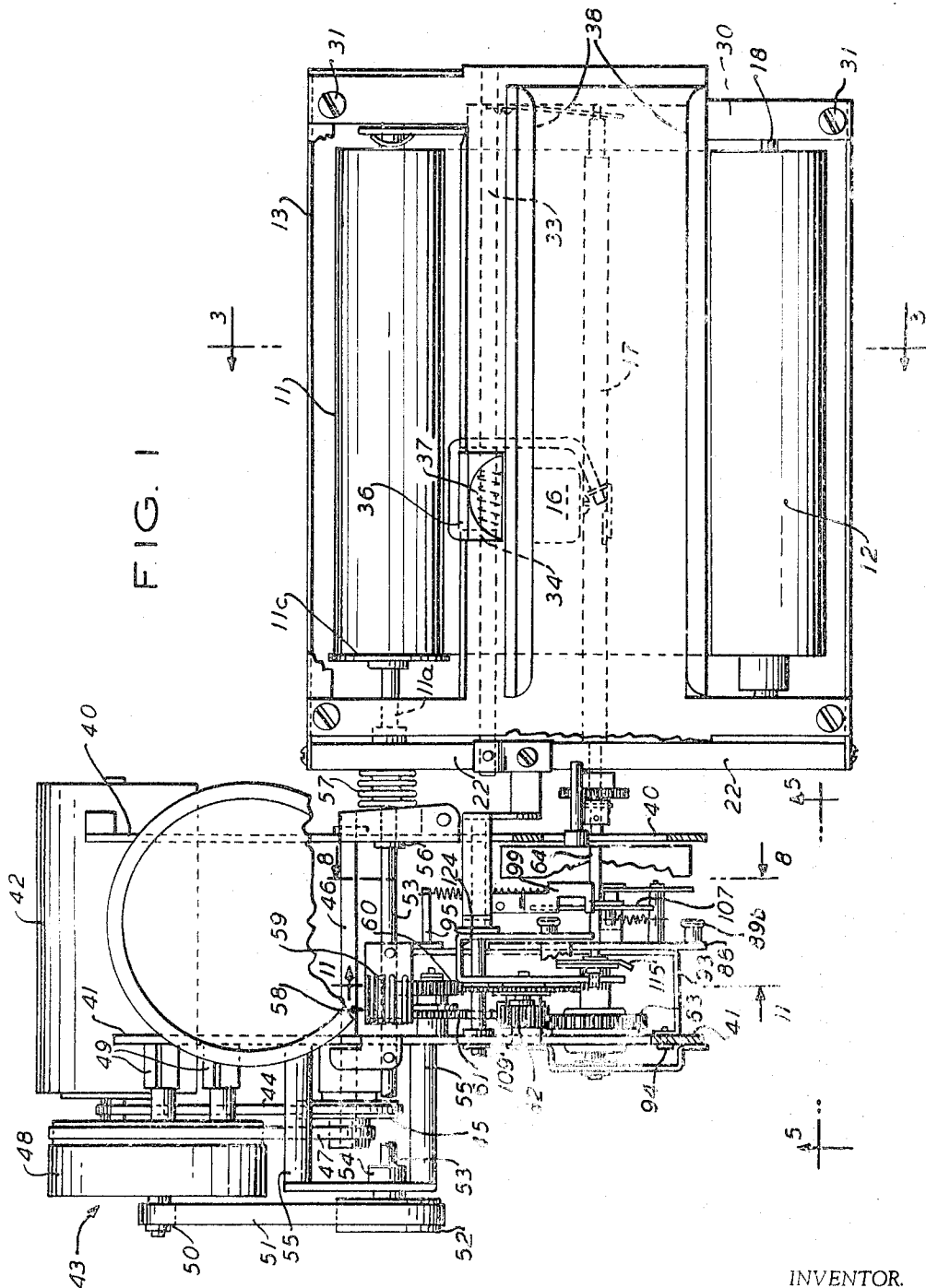
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3,341,668

DICTATING MACHINE WITH QUICK REVIEW APPARATUS

Filed April 17, 1964

5 Sheets-Sheet 1



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DICTATING MACHINE WITH QUICK REVIEW APPARATUS

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5 Sheets-Sheet 2

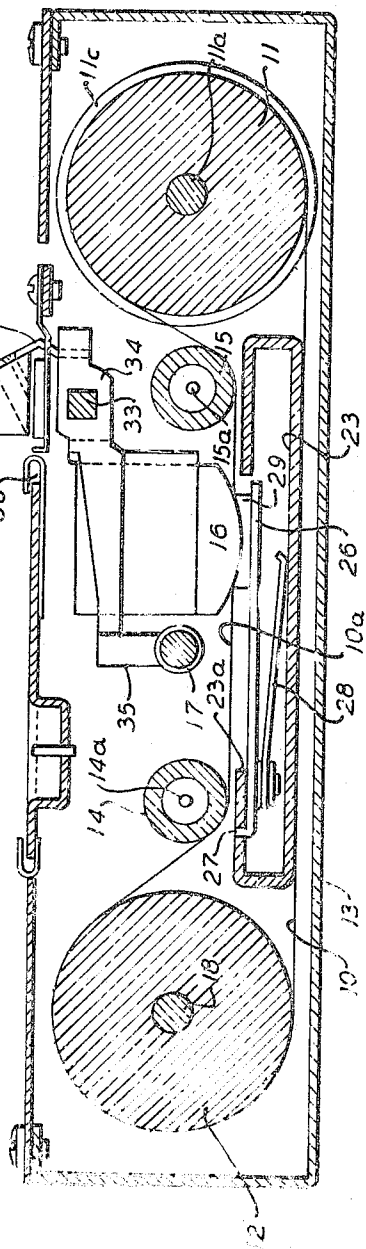
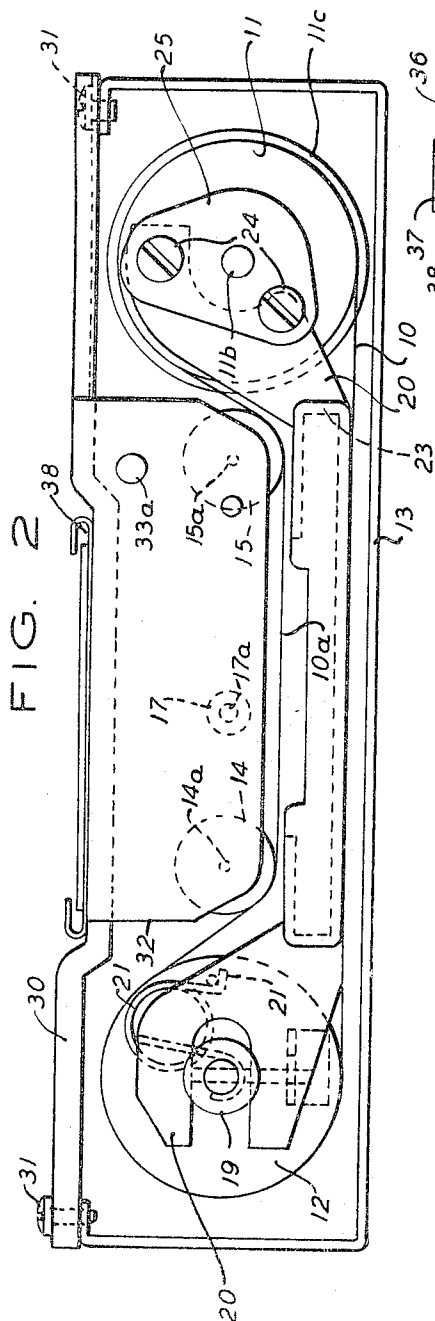


FIG. 3

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DICTATING MACHINE WITH QUICK REVIEW APPARATUS

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5 Sheets-Sheet 3

FIG. 4

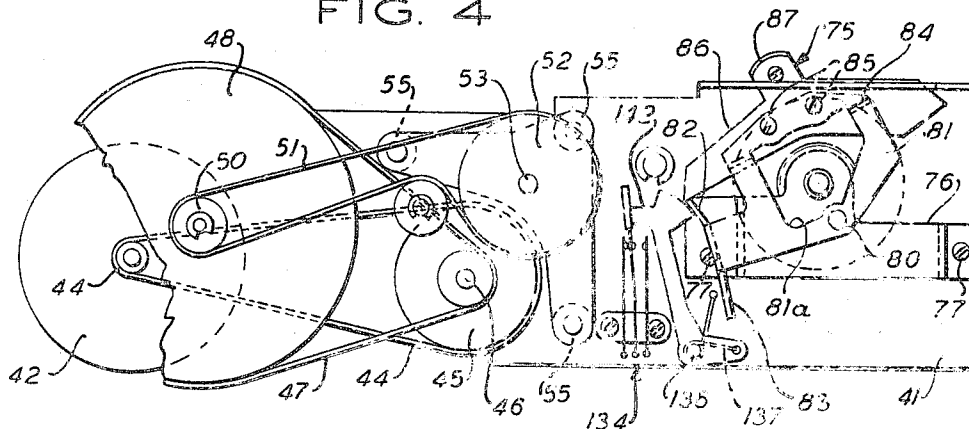


FIG. 6

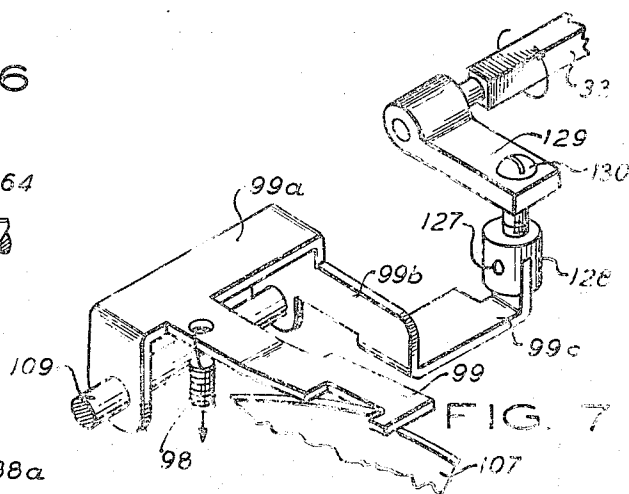
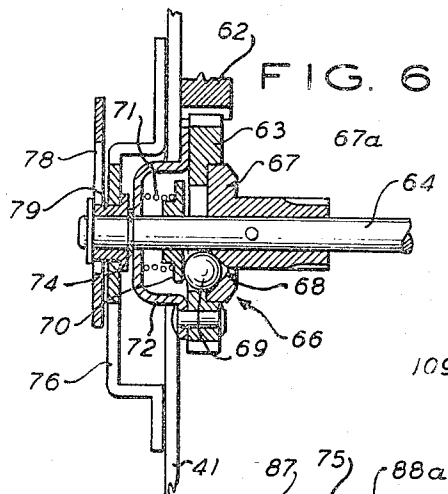
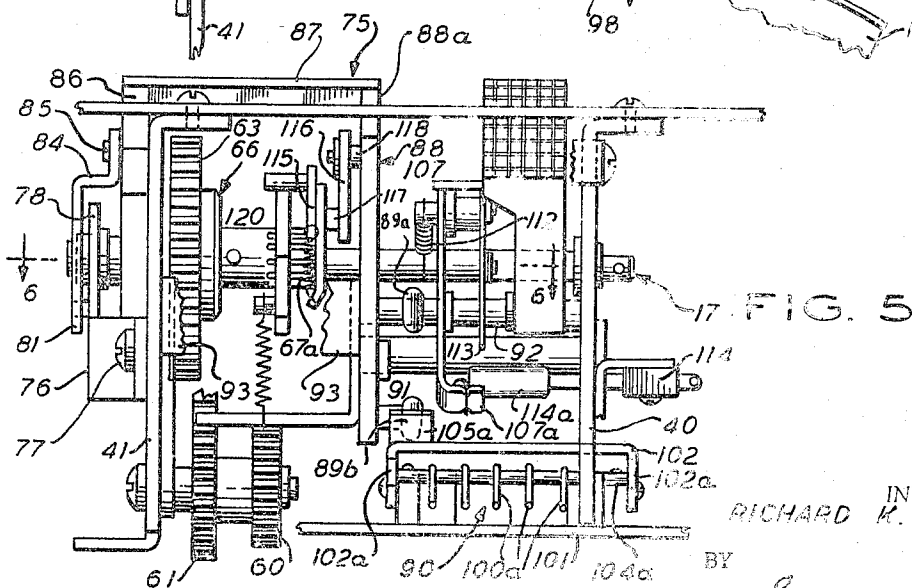


FIG. 7



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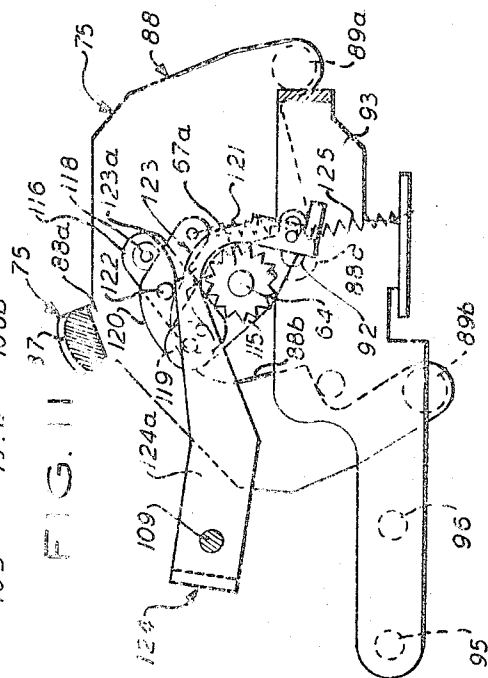
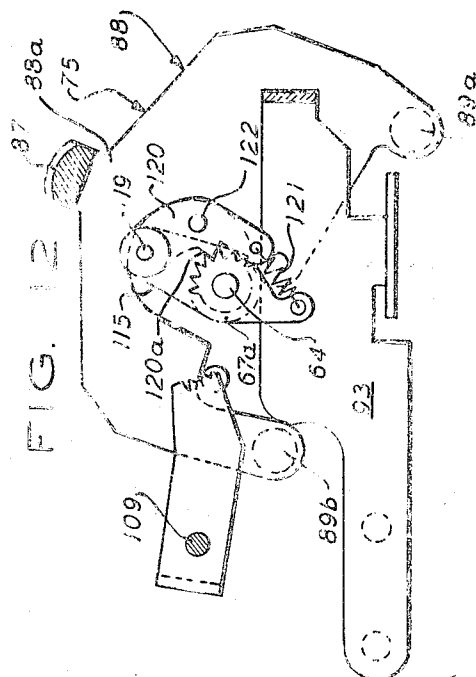
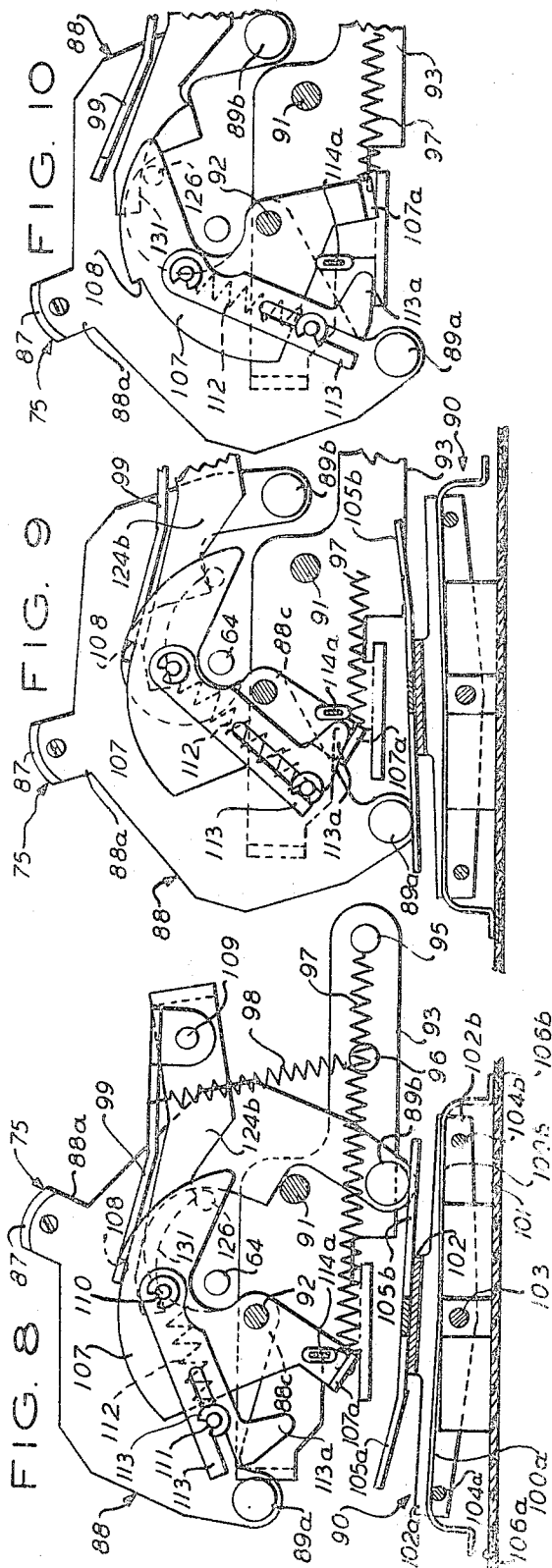
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3,341,668

DICTATING MACHINE WITH JOURNAL POWERED APPARATUS

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5 Sheets-Sheet 1



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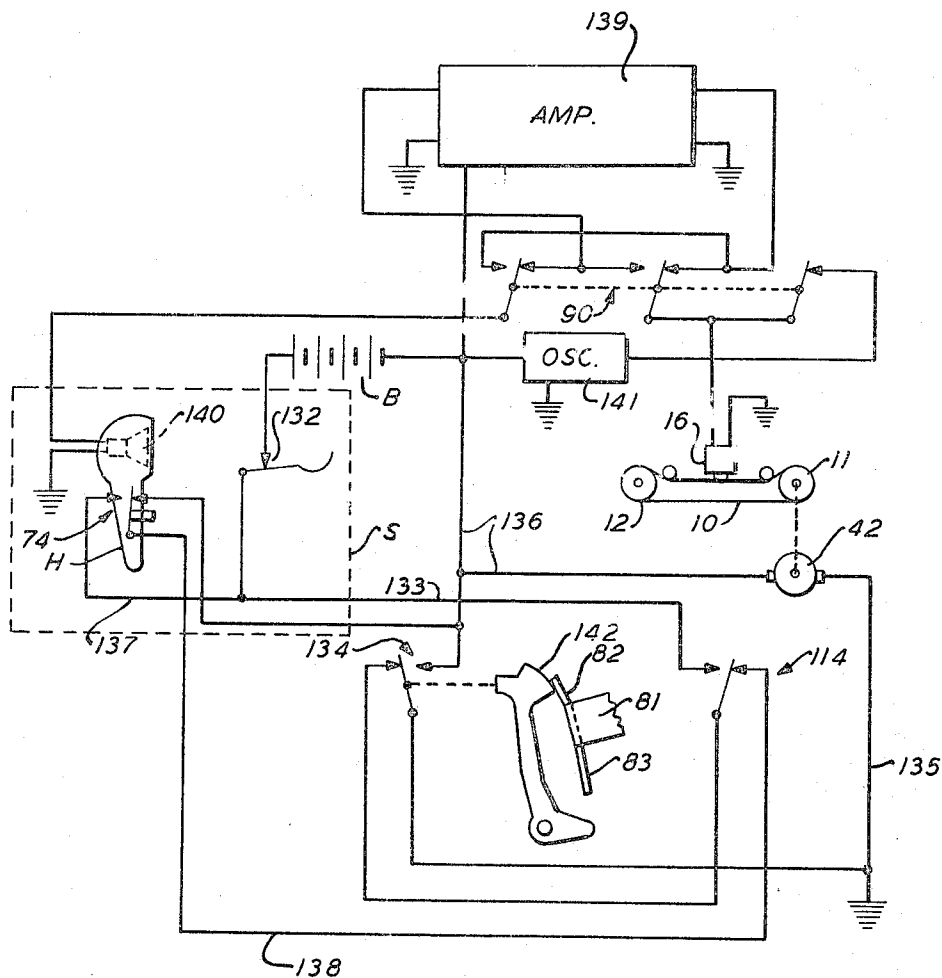
3,341,668

DICTATING MACHINE WITH QUICK REVIEW APPARATUS

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FIG. 13



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DICTATING MACHINE WITH QUICK REVIEW APPARATUS

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Filed Apr. 17, 1964, Ser. No. 360,552
9 Claims. (Cl. 179—100.2)

ABSTRACT OF THE DISCLOSURE

The invention relates to a magnetic type dictating machine which has one control means to enable the user to listen back to the last portion of his recording and other control means to enable the user to listen back to or to edit any portion of his recording at will. It includes a start-stop control on the dictator's handpiece, a record-reproduce lever on the machine biased into record position and a scan button on the head carriage. Upon shifting the record-reproduce lever to reproduce position the head carriage is backspaced by one step, the machine is placed into reproduce condition and the machine is started running until the lever is returned to record position. Upon pressing the scan button when the machine is in record condition, the record-reproduce lever is shifted to and biased into reproduce position and the head carriage is freed to enable it to be backspaced manually to any desired position. After the scan button is released the selected portion of the recording is played back by depressing the start-stop control on the handpiece.

An advantage of a dictating machine of the type which records on a magnetic record medium is that it permits editing of any selected portion of one's recording simply by backspacing the head carriage and re-recording over the selected area.

In performing an editing operation it is important that the dictator have facility to listen-back easily to find the exact point where the editing is to begin. Also, in using dictating machines it is important that the dictator have the facility for quickly reviewing a last portion of his dictation at will so that he may pick up the line of his thoughts to continue his dictation should he have been interrupted as by a telephone call during the dictating operation.

The present invention resides in a novel method and mechanism for controlling such dictating machines which permits the dictator to listen-back and/or edit his recorded dictation with a minimum of attention to the operation of the machine.

Another object of the invention resides in the details of construction which enable the desired control functions to be carried out in a facile and dependable manner.

Another object is to enable the dictator to shift easily from a quick review to a scan condition—i.e., a condition in which the machine is set for reproducing—by merely pressing a scan button which releases the head carriage for manual shifting movement.

These and other objects and features of the 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 top plan view of a dictating machine embodying the invention, with portions broken away;

FIGURE 2 is a right-end elevational view of the machine shown in FIGURE 1;

FIGURE 3 is a left-hand fractional section taken on the line 3—3 of FIGURE 1;

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FIGURE 4 is a left-hand elevational view of the machine shown in FIGURE 1;

FIGURE 5 is a front elevational view of a portion of the machine as seen from the line 5—5 of FIGURE 1;

FIGURE 6 is a fractional section taken on the line 6—6 of FIGURE 5;

FIGURE 7 is an isometric view of the coupling mechanism between the scan button and the latch for the RR control lever;

FIGURE 8 is a left-hand fractional section taken on the line 8—8 of FIGURE 1 and showing the RR control mechanism in record position;

FIGURE 9 shows this same mechanism in the reproduce position which it assumes while the RR control lever is held in a forward reproduce position for quick review;

FIGURE 10 shows this same mechanism in a set reproducing position which it assumes when it is tripped from record position by depressing the scan button;

FIGURE 11 is a right-hand fractional section taken on the line 11—11 of FIGURE 1 and showing the RR control mechanism in record position;

FIGURE 12 is a view similar to FIGURE 11 showing the RR control mechanism in reproduce position; and

FIGURE 13 is a schematic diagram of the audio and control circuits of the machine.

The dictating machine shown in the accompanying figures is of the type using a magnetic belt record 10. The transport mechanism for the belt record is in a right half portion of the machine and comprises a rearward drive mandrel 11 and a forward take-up mandrel 12. As shown in FIGURES 2 and 3, the belt record is led from the underside of the rearward mandrel parallel to the base of the housing 13 to the underside of the front mandrel, and is led back from the front mandrel to the back mandrel below two spaced idler rollers 14 and 15 to provide a run 10a of the record which is depressed to a level only slightly above the bottom run. It is across the top side of this run 10a of the belt record that a magnetic head 16 is driven by a feed screw 17 to describe a helical track on the belt record as the drive mandrel is rotated.

The front mandrel is journaled on a shaft 18 having end bearings 19 which are mounted slidably in slotted frame members 20 and which are biased forwardly by torsion springs 21 (one shown) to hold the belt record under tension. To remove the record from the machine the front mandrel is pressed rearwardly to relieve the tension so that the belt record will slide easily off the mandrels, and an ejection finger (not shown) is then actuated to grip the record frictionally and slide it to the right sufficiently so that the end of the record can be gripped by the hand to draw the record from the machine. Similarly, when a record is to be mounted in the machine the front mandrel is again pressed inwardly while the record is moved partially onto the mandrels and then again a finger (not shown) frictionally engages the record and draws it inwardly until the inner edge of the record strikes against a flange 11c on the drive mandrel, whereupon the front mandrel is released to place the record again under tension.

Along the left side of the housing 13 for the transport mechanism is a heavy front-to-back extending frame member 22 (FIGURE 1) on which is mounted in cantilever fashion a hollow rigid channel shaped frame member 23 which extends rightwardly through the space between the mandrels and through the space between the top and bottom runs of the belt record to the right end of the machine. Secured rigidly as by brazing to the right end of this channel frame member 23 is the bridge member 20 which is slotted at its forward end portion as before-

mentioned to carry the end bearing 19 for the front mandrel. The rearward portion of the bridge member 20 overlaps the end of the drive mandrel and is secured by screws 24 to a somewhat oval shaped plate 25 which carries a bearing for the right end of a shaft 11b for this mandrel.

Within the hollow channel frame member 23 is a plate 26 extending throughout the width of the belt record. This plate has pair of lugs turned upwardly at its forward edge which engage apertures in a top flange 23a of the channel frame member to form pivot points 27 for the plate. The plate is biased upwardly by a cantilever spring 28 which bears against the bottom wall of the channel frame member. On the top face of the plate 26 is a felt pad 29 which extends upwardly through a slot in the channel frame member. This felt pad extends throughout the width of the belt record and is biased upwardly under influence of the cantilever spring 28 to form a yieldable backing for the portion of the run 10a of the belt record which is engaged by the magnetic head 16.

Bridging the top of the housing 13 at the right end thereof is a heavy bracket 30 secured in place by screws 31. From the central portion of this bracket there is a depending plate 32 having bearings 14a and 15a for the right ends of the idler rollers 14 and 15, a bearing 17a for the feed screw 17 and a bearing 33a for a rock shaft 33 of square cross section on which a carriage 34 for the magnetic head 16 is splined. The bearings for these parts at the left side of the belt record are supported suitably by the frame member 22. The head carriage 34 is biased by its own weight to hold a feed nut 35 thereon in engagement with the feed screw. A finger 36 extends upwardly from the rear portion of the head carriage through a slot in the top wall of the housing and carries a finger piece or button 37—herein referred to as the scan button—which when pressed rearwardly raises the feed nut from the feed screw to permit the carriage to be shifted by hand. This tilting of the head carriage to free the feed nut from the feed screw also turns the shaft 33 slightly clockwise (FIGURE 3) to perform a control operation on the RR mechanism as is hereinafter described. On the top face of the housing 13 ahead of the finger piece 37 there is a channel 38 for receiving slidably an index slip on which length and correction marks may be made to aid the transcriber in reproducing the dictation, as is well known in the art.

Secured to the left side of the frame member 22 in spaced parallel relation thereto is a pair of frame plates 40 and 41. Mounted on the rearward portion of these frame plates is an electric motor 42 which is coupled through a speed reduction 43 to the shaft 11a of the drive mandrel as shown in FIGURES 1 and 4. This speed reduction mechanism comprises a belt 44 running from the drive shaft of the motor 42 to a step pulley 45 mounted on a shaft 46 journaled in the frame plates 40 and 41. The step pulley 45 is in turn coupled by an elastic belt 47 to a flywheel 48 journaled in a bearing (not shown) supported by studs 49 extending from the left frame plate 41. The flywheel has a small pulley 50 coupled by an inelastic belt 51 to a drive pulley 52 on a shaft 53. This shaft is supported in alignment with the drive mandrel shaft 11a by a bearing 54 carried by studs 55 extending from the frame plate 41 and by a second bearing 56 mounted in the frame plate 40. The shaft 53 is coupled to the drive mandrel shaft 11a through a bellows 57 to allow for possible misalignment between the two shafts.

The driven shaft 53 is also coupled to the feed screw 17 through a gear reduction train 58 mounted on the frame plate 41 as shown in FIGURE 1. This gear train comprises a pinion gear 59 secured to the shaft 53, a step gear 60, another step gear 61, an idler gear 62 and a gear 63 on a shaft 64 journaled in bearings in the frame plates 41 and 40. The shaft 64 is axially in line with the feed screw 17 and is coupled thereto through a univer-

sal coupling 65 to allow for possible misalignment between the shafts.

By way of example, the speed of the drive motor may be 2800 r.p.m., and the speed reduction ratio of the coupling mechanism 43 may be 70 to cause the drive mandrel to be turned at 40 r.p.m. Further, the drive mandrel may have such diameter as to drive the belt record at a speed of 12 r.p.m. The speed reduction ratio of the gear train 58 may be $16\frac{2}{3}$ to drive the feed screw 17 at 2.4 r.p.m. Thus, the belt record is turned five revolutions for each revolution of the feed screw. In other words, a one-fifth revolution of the feed screw will displace the magnetic head 16 by the pitch distance between two track convolutions on the record.

In order that the feed screw may be shifted in a reversing direction by discrete steps equivalent to the track pitch on the record, a detent clutch 66 is interposed between the gear 63 and shaft 64 as shown in FIGURE 6. This detent clutch comprises a collar 67 pinned to the shaft 64 and on which the gear 63 is journaled. The collar 67 has five equally spaced recesses 68 in its end face. In these recesses are respective rollers 69 held by a plunger 70 on the shaft 64 under pressure of a compression spring 71 interposed between the plunger and cup 72 secured to the gear 63. A retainer ring 74 in the shaft 64 forms a thrust bearing which holds the gear 63 on the collar 67. Since the gear 63 is held stationary by the gear train when the motor is not running, the detent clutch 66 acts to limit any movement imparted to the shaft 64 to one or more steps of which each step is one-fifth revolution of the shaft—the distance of movement of the shaft to displace the head 16 by one track pitch on the record.

The RR (record-reproduce) control mechanism of the machine is mounted in the forward portion thereof between the two frame plates 40 and 41. This RR control mechanism has the following functions: (1) to condition the circuitry of the machine for recording and leave start-stop control with the hand switch 74 on the handpiece H when the RR control lever 75 is in record (rearward) position shown in FIGURES 1, 5 and 8; (2) to shift the circuitry to reproduce condition, backspace the head 16 by a one track pitch and to activate the amplifier and start the drive motor when the RR control lever 75 is moved manually from record to reproduce position shown in FIGURE 9, herein referred to as the "review" position; and (3) to shift the circuitry to reproduce condition and return start-stop control to the hand switch 74 on the handpiece H when the control lever is shifted to reproduce position responsive to depressing the scan button 37 preparatory to manually shifting the head 16 across the record. As will appear, the RR control lever 75 is subjected to one spring biasing which causes it to snap back to record position when it is released from its review position, and is subjected to another spring biasing which causes it to be snapped forwardly into a set reproduce position when the scan button 37 is depressed.

The RR control lever 75 is of an inverted U-shaped construction which straddles the frame plate 41 as shown in FIGURE 5. Secured to the left side of the frame plate 41 is a wide U-bracket 76 having an upstanding finger 78 which carries an end bearing 79 (FIGURE 6) for the shaft 64. Staked to this bracket at a short distance below and to the front of the bearing 79 (FIGURE 4) is a pivot stud 80 for the left leg of the RR control lever 75. This left leg of the RR control lever comprises a rocker plate 81 which has a central opening 81a to clear the bearing 79. Extending rearwardly of the rocker plate is an arm provided with upstanding and depending fingers 82 and 83 for a switch control operation hereinafter described. The upper portion of the rocker plate is offset at 84 towards the frame plate 41 and is secured by screws 85 to a front-to-back extending obliquely shaped bar 86 which is contiguous with the left side of the frame plate 41. The bar 86 has a centrally disposed upstanding finger secured to a knurled cross bar 87 which forms the finger

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piece of the RR control lever. Secured to the right end of this finger piece is the upstanding finger 88a of another rocker bar 88 which is however of a generally inverted U-shape as shown in FIGURES 8 to 12. This rocker bar has two depending legs to which are staked respective knob-like studs 89a and 89b for operating an RR switch 90 mounted on the base of the machine as shown in FIGURES 8 and 9. The rocker bar has also a central cutout 88b (FIGURE 11) to clear the shaft 64 and has an inwardly extending apertured finger 88c pivoted on a shaft 92 to form the second pivot point for the RR control lever. The shaft 92 is carried at its right end by the frame plate 40 and at its left end by a bracket 93 secured by screws 94 to the right side of the frame plate 41. The bracket 93 extends across from the frame plate 41 to the rocker bar 88 and then extends rearwardly along the rocker bar and beyond the rearward end thereof whereat it is supported by a stud 91 staked to the frame plate 40. The stud 91 also forms a stop for locating the RR lever 75 in record position as shown in FIGURE 8.

The rearward arm of the bracket 93 provides a mounting for two pins 95 and 96 to which are attached respective bias springs 97 and 98 for the RR control mechanism. The spring 97 is the bias spring for holding the RR control mechanism in reproduce position, and the spring 98 biases a pawl 99 for latching the RR control lever 75 in record position as is herein more fully described.

The RR control switch 90 comprises two series of cantilever mounted spring contacts 100a and 100b extending from a central insulating base 101, and a rocker 102 comprising side members bridged by a cross member which spans the insulating base of which the side members are pivoted on studs 103. Each side member has both forward and backward extending fingers 102a and 102b of which the forward fingers are bridged by a cross pin 104a and the back fingers are bridged by a cross pin 104b. These cross pins are made of insulating material and underlie the cantilever spring contacts. Secured as by spotwelding to the rocker 102 are forwardly and rearwardly extending arms 105a and 105b which intersect the terminal paths of the knobs 89a and 89b on the right leg 88 of the RR control lever 75. Thus, when the RR control lever 75 is pressed rearwardly into record position the knob 89b strikes against the fingers 105b to lift the front set of spring contacts 100a out of contact from the respective terminals 106a and to allow the rear set of spring contacts 100b to engage the set of respective terminals 105b responsive to their own biasing. Vice versa, when the RR control lever 75 is swung forwardly into review or reproduce position the knob 89a strikes against the finger 105a to lift the rear set of contacts 100b from the terminals 106b and to allow the forward terminals 100a to engage the terminals 106a.

To the right of the RR control lever 75 there is a latch lever 107 of a hook-shape (FIGURES 8 to 10) which is pivoted also on the shaft 92. This latch lever has a depending arm 107a to which the spring 97 is connected to bias the lever counterclockwise as it appears in FIGURE 8. The upper part of the latch lever has an arcuate peripheral surface provided with a step 108 which coacts with a pawl 99 to latch the lever in a rearward position corresponding to the record position of the RR control lever. The pawl 99 is pivoted on a cross pin 109 carried by the frame plates 40 and 41. Connected between a pin 110 on the latch lever 107 and a pin 111 on the rocker bar 88 is a tension spring 112 which normally holds the latch lever counterclockwise in a position defined by abutment of the latch lever against pin 111. Thus, when the latch lever is latched by the pawl 99 the RR control lever is held yieldably in record position by the spring 112. The spring 112 allows the RR control lever to be moved forwardly into review position and when released in that position will return the RR control lever to record position.

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Pivoted on the pin 110 of the latch lever is a lever arm 113 which has a slotted end portion slidably engaging the pin 111 on the rocker bar 88 (FIGURES 8 and 9). When the RR control lever is swung forwardly to review position while the latch lever is held in place by the pawl 99, the lever arm 113 is turned counterclockwise about the pin 110 as a center, causing a finger 113a thereof to strike against a pole member 114a of a review switch 114 bracketed to the frame plate 40 as shown in FIGURE 5. Operation of this review switch starts the drive motor 42 running as is later described.

Pivoted on the shaft 64 between the two legs of the RR control lever is a double-armed lever 115 one arm of which is coupled by a link 116 to the rocker bar 88. The link 116 is pivoted to a pin 117 on an intermediate portion of the lever 115 and to a pin 118 on the rocker bar 88 (FIGURE 11). Pivoted at 119 to the outer end of the lever 115 is a pawl 120 having a single tooth 120a intermediate its length for engaging a pinion gear 67a formed on the hub of the collar 67 pinned to the shaft 64. The pawl 120 is biased towards the gear 67a by a tension spring 121 connected at its far end to the lever 115. The pawl is however normally held out of engagement with this gear by a pin 122 on a central portion of the pawl riding on an arcuate cam 123 provided on an arm 124a of a U-shaped lever 24 pivoted on the shaft 109. As shown in FIGURE 1, the lever 124 straddles the rocker bar 88. This lever 124 is biased by a tension spring 125 connected between the arm 124a and bracket 93 as shown in FIGURE 11. Responsive to this biasing force the lever 124 is urged downwardly into a position defined by abutment of the second arm 124b against a pin 126 on the latch lever 107.

When the RR control lever 75 is moved forwardly from record position to review position the pin 122 on the pawl 120 rides immediately off a lobe 123a of the cam 123 (FIGURE 11) to allow the pawl 120 to engage the gear 67a under influence of a spring 121. In the continued movement of the RR control lever 75 to review position the pawl turns the shaft 64 in a backspacing direction through 72°—which is the distance of one interval of the detent clutch 66. This is an expanded interval of movement of the shaft 64 relative to the angular movement of the RR control lever produced by reason of the pivot axis 92 of the RR control lever being offset from the shaft 64. Thus, when the RR control lever is shifted to review position the head carriage is backspaced by one track, the machine is conditioned for reproducing and the machine is started running. If the RR control lever is reciprocated a plurality of times to review position before it is held in that position the head carriage will be backspaced by a corresponding number of tracks before the machine is started running.

When the scan button 37 is depressed to release the head carriage feed nut 35 from the feed screw 17 the pawl 99 is released by its coupling with the square shaft 33 to which the head carriage is splined, an isometric view of this coupling being shown in FIGURE 7. The pawl 99 has a hub 99a of a bail form pivoted at each end on the shaft 109. From one of the turned-down lugs of the bail 99a there is an integrally extending arm 99b provided with a sidewise extending finger 99c. Pivoted at 127 to a lug extending upwardly from the finger 99c is an internally threaded collar 128. Secured to an end of the square shaft 33 is an arm 129 and extending freely through an apertured end portion of this arm is a bolt 130 threaded into the collar 128 to provide an adjustable connection between the shaft 33 and the pawl 99. As the scan button 37 is depressed the shaft 33 is turned counterclockwise, as it appears in FIGURE 7, to turn also the pawl 99 counterclockwise to lift it from the latch lever 107.

The instant the pawl 99 is released from the latch lever 107, the latch lever and the RR control lever 75 are propelled with a snap movement by the spring 97 to reproduce position. In the initial movement of the latch

lever from its latched position the pin 126 thereon engages an arcuate cam face 131 on the arm 124b. of the U-shaped lever 124 to lift sufficiently the cam 123 on the other arm 124a of this lever so that the pawl 120 is guided free of the gear 67a during the movement of the RR control lever to reproduce position. Thus, no backspacing movement of the head carriage is produced when the RR control lever is snapped forwardly to reproduce position responsive to depressing the scan button 37.

Further, when the RR control lever 75 is spring propelled to reproduce position responsive to depressing the scan button 37 the lever arm 113 is moved bodily about the shaft 92 as a center, causing the finger 113a to describe a path which clears the switch arm 114a as shown in FIGURE 10. The drive motor is therefore not started by the spring propulsion of the RR control lever to reproduce position. The spring propulsion of the RR control lever to reproduce position therefore merely shifts the circuitry to reproduce condition, leaving the start-stop control of the machine with the switch 74 on the handpiece H at the dictator's station.

When the RR control mechanism is in reproduce condition as above-described, the dictator may reproduce any portion of the recorded record but selection of the portion to be reproduced is now made by pressing the scan button 37 and shifting the head carriage to the desired position. When it is decided next to shift the machine back to record condition the dictator merely presses the RR control lever 75 rearwardly until it is again latched by the pawl 99 engaging the catch 108 on the latch lever 107. Such shifting of the RR control mechanism to record condition merely shifts the circuitry to record condition responsive to the operation of the RR control switch 90, while leaving the start-stop control with the switch 74 on the hand piece H at the dictator's station.

The control circuitry of the machine shown in FIGURE 13 includes a battery B which is connected across the drive motor 42 to start the motor running when the handpiece H is removed from an on-off cradle switch 132 at the dictator's station S and the review switch 114 is operated, the circuit running from the battery B via the on-off switch 132, lead 133, left contact of review switch 114, left or off contact of a motor brake switch 134, lead 135, the motor 42 and a lead 136. Alternatively, when the review switch is not operated the motor circuit is completed when the dictator's start-stop switch 74 is pressed, the circuit now running via the on-off switch 132, lead 137, left contact of switch 74, lead 138, motor brake switch 134 and the lead 135 as before.

The motor brake switch 134 is mounted on the left side of the frame plate 41 (FIGURE 4) and is held normally in its left contact position by pressure of one or the other of the fingers 82 and 83 of the RR control lever 75 against a switch lever 142 pivoted at 136. During movement of the RR control lever between record and review or reproduce positions one of the fingers 82 or 83 moves away from the switch lever 142 and the switch lever in turn moves away from the switch responsive to a bias spring 137 to allow the switch 134 to close with its right contact but immediately thereafter the other finger strikes the lever 142 to return the switch 134 to its left contact. This momentary closure of the switch 134 with its right contact places a direct short across the motor 42 to brake the motor to a stop position during transit of the RR control lever from one position to the other.

An amplifier 139 for the machine is connected in parallel with the drive motor 42. Thus, whenever the handpiece H is removed from the cradle switch 132 and either the review switch 114 or the start-stop switch 74 is operated the amplifier 139—which is preferably of a transistor type—is activated for operation of the machine. The RR control switch 90 shown in record position in FIGURE 13 contacts a microphone 140 of the handpiece H to the input of the amplifier 139 and connects the output of the amplifier to the recorder 16. Simultaneously,

the battery B activates a bias oscillator 141 and the switch 90 connects the output of this oscillator also to the recorder 16. When the RR control switch, 90 is thrown to its left or reproduce position the bias oscillator is cut off and the recorder 16 now operating as a reproducer is connected to the input of the amplifier and the output of the amplifier is connected to the transducer 140 now operating as a speaker.

The embodiment of my invention particularly shown and described is intended to be illustrative and not necessarily limitative of my invention since the same is subject to changes and modifications without departure from the scope of my invention, which I endeavor to express according to the following claims.

I claim:

1. In a dictating machine including a rotatable record support, a record-reproduce head mounted for traveling movement relative to said support, and drive means for rotating said support and advancing said head: the combination of a manual scan control depressible to release said head from said drive means and shiftable while in a depressed position to backspace or advance said head across the record support, a record-reproduce control and means responsive thereto for conditioning said machine respectively for record and reproduce as said record-reproduce control is shifted into record and reproduce positions, spring means responsive to depressing said scan control while said machine is conditioned for recording for shifting said machine into reproduce condition and concurrently biasing said record-reproduce control in reproduce position, other spring means rendered operative as said record-reproduce control is shifted to record position for biasing said control into record position, and means responsive to reciprocating said record-reproduce control from record to reproduce position and back again for backspacing said head by the pitch distance between successive track convolutions for each reciprocation.

2. In a dictating machine having means for driving a record-reproduce head relative to a supported record: the combination of manually depressible scan means for uncoupling said head from said drive means to enable the head to be shifted manually at will, a record-reproduce lever and means controlled thereby for shifting said machine into record and reproduce conditions as said lever is shifted to record and reproduce positions, means operable by said manually depressible scan means when said machine is in record condition for shifting the machine into reproduce condition, means for placing said machine in record condition as record-reproduce lever is shifted to record position including spring means rendered operative by moving said record-reproduce lever to record position for yieldably holding the lever in record position, and means operable by moving said record-reproduce lever from record position to reproduce position against the force of said spring means for backspacing said head by a given step relative to the supported record and causing said machine to run in reproduce condition until said record-reproduce lever is released and returned by said spring means to record position.

3. The combination set forth in claim 2 including other spring means rendered operative by depressing said scan means for biasing said record-reproduce lever into reproduce position.

4. The combination set forth in claim 2, including a latch for detenting said record-reproduce lever in record position, other spring means rendered operative upon release of said latch for shifting said record-reproduce lever to reproduce position, and means responsive to depressing said scan means for releasing said latch.

5. The combination set forth in claim 2 including a carriage for said head, a feed screw and a drive nut on said carriage for advancing said head by said feed screw, said scan means being operable to disengage said feed nut from said feed screw when the scan means is depressed, including means operable by said record-repro-

duce lever when the same is moved manually from record to reproduce position for turning said feed screw to back-space said carriage by a given step.

6. In a dictating machine including a record support, a record-reproduce head mounted for traveling movement relative to said support and a drive motor for rotating said support and advancing said head to cause the head to describe successive track convolutions on a supported record: the combination of a record-reproduce lever and means controlled thereby for shifting said machine into record and reproduce conditions respectively as said lever is shifted to record and reproduce positions, a dictator's handpiece including a start-stop control for said drive motor, means operable during a shifting of said record-reproduce lever between record and reproduce positions for momentarily shorting said drive motor to brake the motor to standstill, and means rendered effective upon said record-reproduce lever reaching reproduce position for causing said head to be backspaced by one step and the machine to be started running in reproduce condition.

7. In a dictating machine including a record support, a record-reproduce head mounted for traveling movement relative to said support and a drive motor for rotating said support and advancing said head to cause the head to describe successive track convolutions on a supported record: the combination of a record-reproduce mechanism including a record-reproduce control lever for conditioning said machine for record and reproduce respectively as said lever is shifted to record and reproduce positions, an intermediate lever pivoted coaxially with said record-reproduce lever, a first spring means for normally holding said record-reproduce lever in a fixed position relative to said intermediate lever, a second spring means connected to said intermediate lever and urging said intermediate lever against said stop to shift said record-reproduce lever to reproduce position, a pawl for latching said intermediate lever as said record-reproduce lever is moved manually from reproduce to record positions, said first spring means allowing said record-reproduce lever to be moved manually to reproduce position while said intermediate lever is latched and for returning the record-reproduce lever to record position upon release from reproduce position, a motor start switch, an actuating lever for said switch pivoted to said intermediate lever and operated by movement of said record-reproduce lever to reproduce position while said intermediate lever is held latched for operating said

switch to start said motor, and ratchet means operable by movement of said record-reproduce lever from record to reproduce position while said intermediate lever is held latched for backspacing said head by one track convolution on the record.

8. The combination set forth in claim 7 including a scan member depressible to uncouple said head from said drive motor to allow the head to be shifted manually across the record support, means operable by depressing said scan member for unlatching said pawl to cause the record-reproduce lever to be shifted to reproduce position by said second spring means, and means operable by the movement of said intermediate lever during said shifting of said record-reproduce lever by said second spring means to reproduce position for disabling said ratchet means to prevent a backspacing of said head by said ratchet means responsive to depressing said scan member.

9. The combination set forth in claim 7, including means for unlatching said pawl to cause said intermediate lever and record-reproduce lever to be moved in unison by said second spring means to place said record-reproduce mechanism in reproduce condition, said record-reproduce lever and intermediate lever having their common pivot axis offset from the pivot axis of said actuating lever for causing said actuating lever to describe a path of movement free of said motor start switch when said record-reproduce lever and intermediate lever are moved in unison.

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