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[54] **TELEPHONE-ANSWERING DEVICE**
 13 Claims, 6 Drawing Figs.

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 179/100.2 MI, 179/100.2 CA

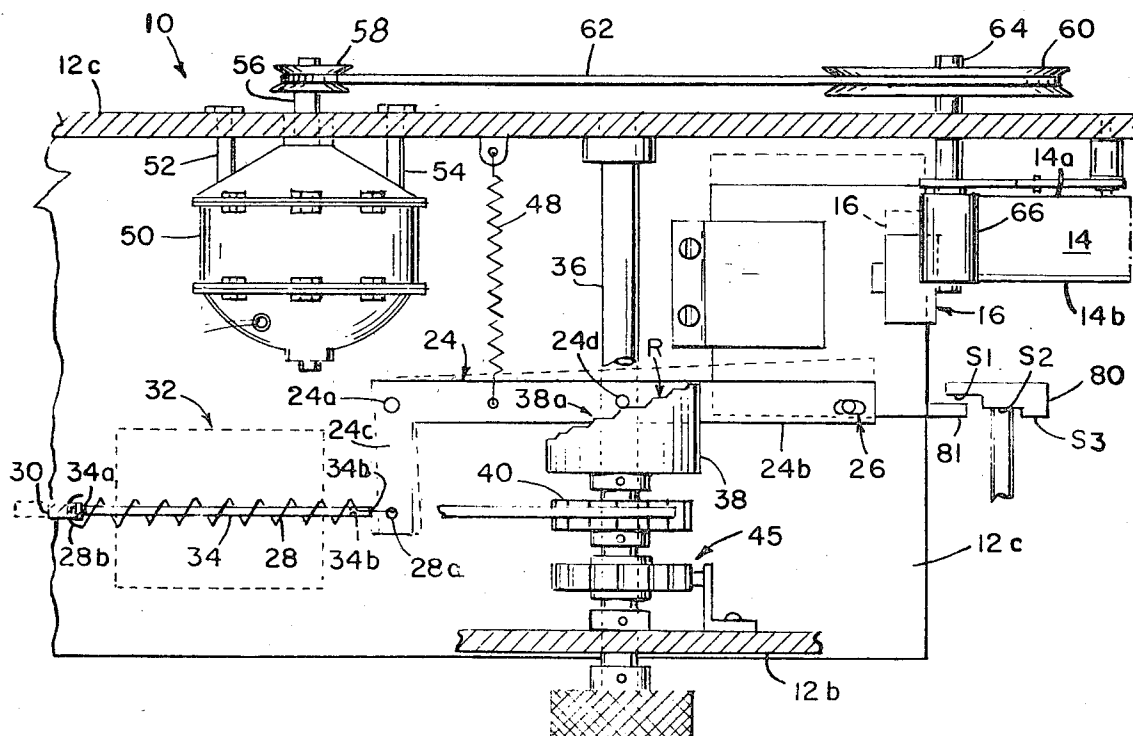
[51] Int. Cl. **H04m 1/64,**
 G11b 5/48, G11b 21/08

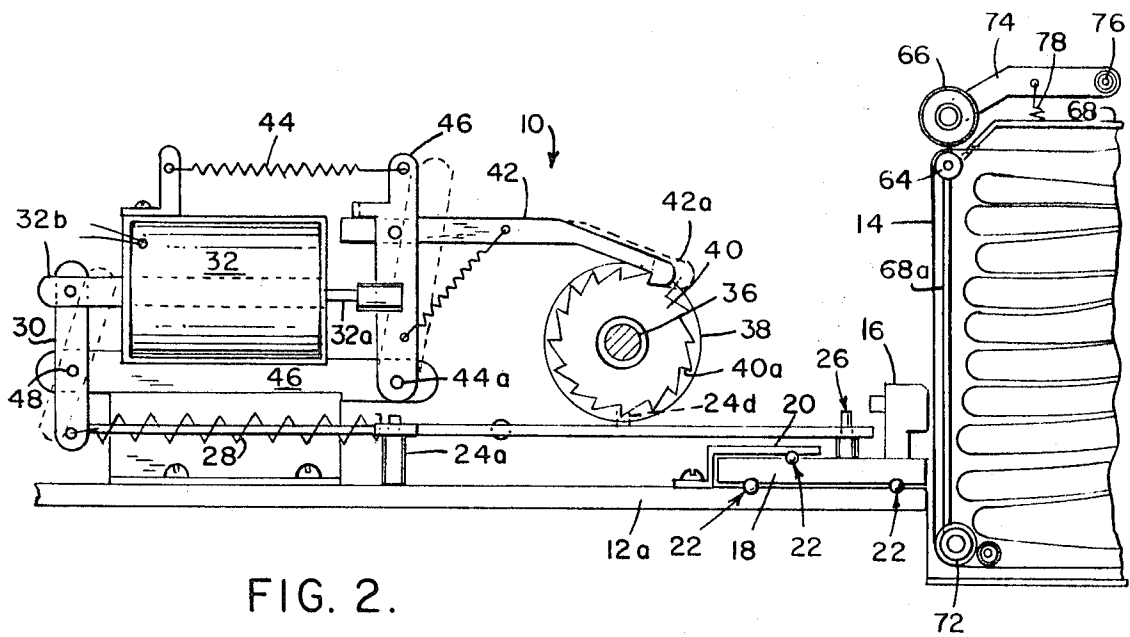
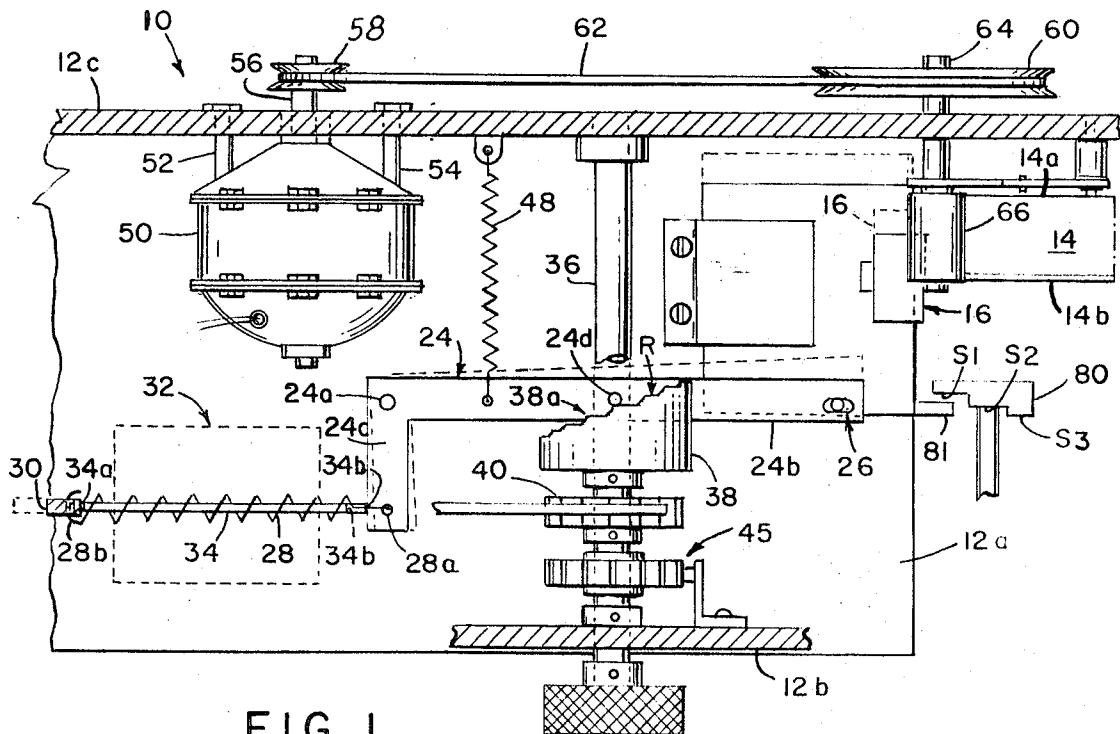
[50] Field of Search 179/6 R, 6,
 100.1 DR, 100.2 MD, 6 AC, 100.3 B, 100.2 CA;
 274/4 A, 11 A

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ABSTRACT: A telephone-answering device of the type utilizing a shifting position playback and recording head, wherein the head is urged through movement by an expanding member, such as a spring, which in each operating interval is expanded a prescribed extent effective to cause a theoretical maximum extent of movement in such head, but wherein usual operation contemplates the limiting of head movement to selected lesser extents than said theoretical maximum to thereby provide plural recording positions for the head. The difference between theoretical and actual head movement is readily allowed for by expansion of the spring.





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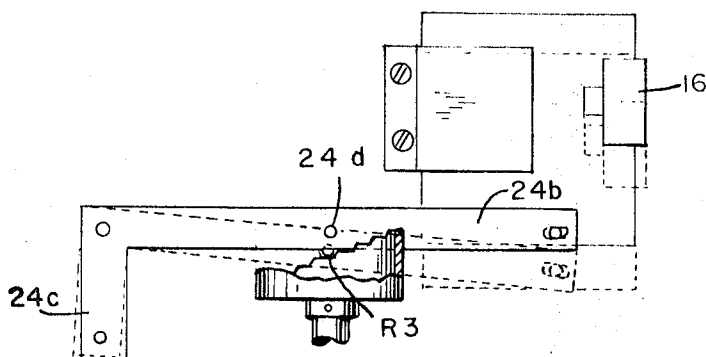


FIG. 3 A.

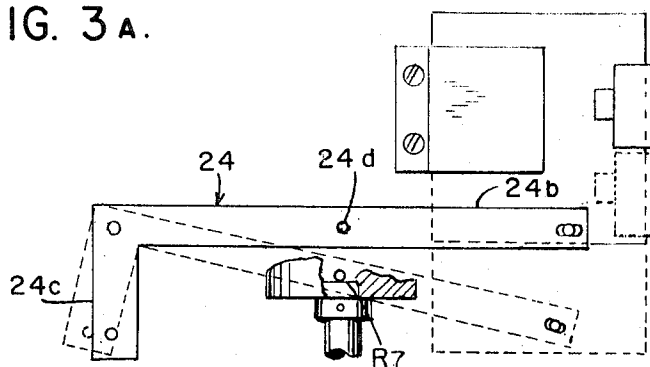


FIG. 3 B.

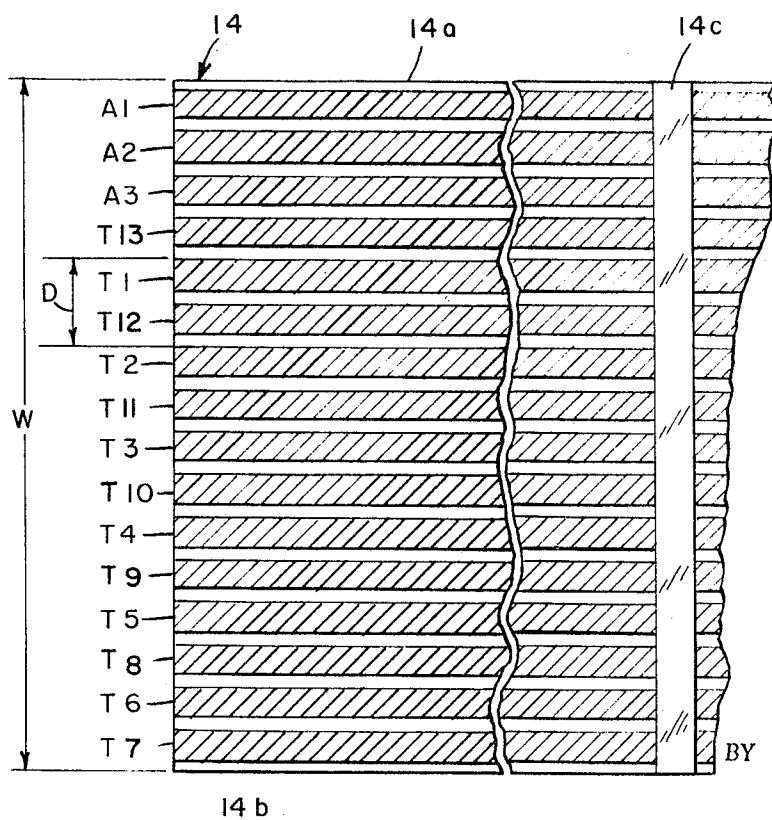


FIG. 4.

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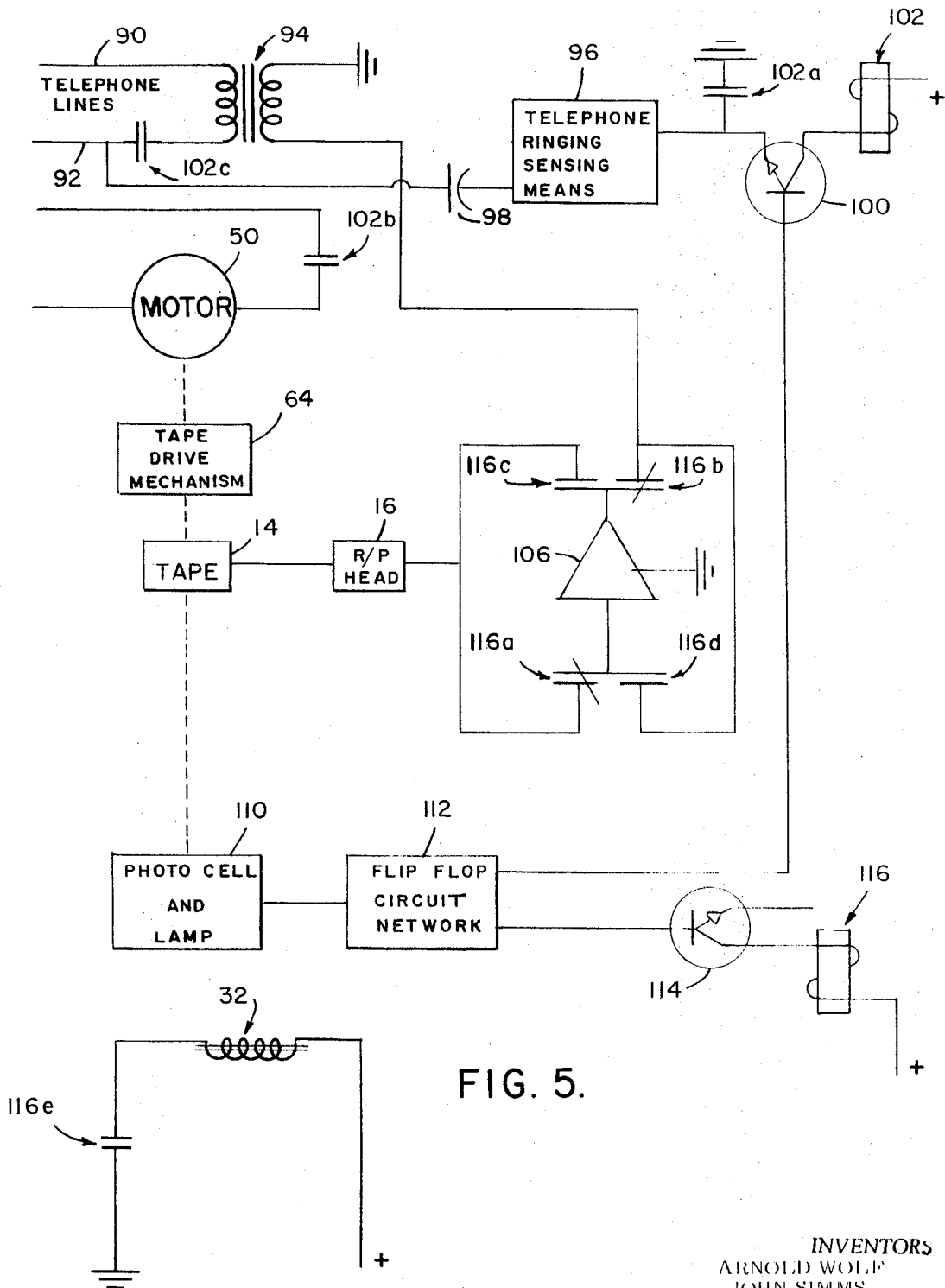


FIG. 5.

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TELEPHONE-ANSWERING DEVICE

The present invention relates generally to an improved device for automatically answering a telephone call by transmitting a prerecorded announcement to a caller and recording a dictated message from the calling party, and more particularly to improved means for affecting alternately, the announcement playout and incoming message recording.

There are telephone-answering devices of the kind herein contemplated in which it is necessary to use two separate decks having two magnetic tapes and two separate record/playback heads in order to provide for the playout of a recorded announcement and subsequent recording of an incoming message. One tape is used for the announcement and the other tape is used for the incoming message. In addition, the use of two separate tapes requires, besides two separate heads, the use of two separate tape drive systems and their ancillary components. Furthermore, electrical switching means are necessary to switch from one deck operation to the other deck operation.

While such prior art telephone-answering devices generally provide commercially acceptable service, there is no one known model that is completely satisfactory from the viewpoint of economical cost of production, or economical maintenance and repair.

Broadly, it is an object of the instant invention to provide an improved telephone-answering device overcoming the foregoing and other shortcomings of the prior art. Specifically, it is an object to provide a telephone-answering device of the type having only one record/playback head operatively arranged to provide both announcement playout and incoming message-recording functions, such functioning being effectively coordinated with shifting movement of the head between playback and recording positions thereof relative to a single magnetic recording tape.

Additionally, it is an object of the invention to provide a telephone-answering device using only a single magnetic tape, a single record/play head and a single tape drive system.

It is a further object of this invention to use a record/play head which is shiftable transversely across the recording tape.

A further limitation which exists with prior art telephone answering devices is their being limited to only one announcement message. If a second announcement message is desired it can be achieved only by recording the second announcement message on the first announcement, thereby erasing it. Conversely, if it is desired to repeat the first announcement message it has to be recorded again resulting in the erasure of the second recorded announcement message. It is evident from the foregoing, that in the instance where a user of the answering equipment desires to have different styles of announcement messages on leaving his office for lunch hour, on leaving for the day or for weekends, this would entail considerable inconvenience to the user to repeatedly have to rerecord a new announcement at each instance of leaving his office.

It is accordingly an object of the instant invention to overcome this shortcoming by facilitating the possibility of recording multiple announcements on the recording tape, adjacent to each other. The user can select any one of the multiple announcements, at any time, by turning a selector control thus shifting the movable head to the desired announcement position.

The above brief description, as well as further objects, features and advantages of the present invention, will be more fully appreciated by reference to the following detailed description of a presently preferred, but nonetheless illustrative embodiment in accordance with the present invention, when taken in conjunction with the accompanying drawings, wherein:

FIG. 1 is a simplified plan view of a telephone-answering device according to the present invention wherein positions of movement of moving parts thereof are illustrated in phantom and full line perspective;

FIG. 2 is a front elevational view projected from FIG. 1 in which positions of movement of a movement-actuating means providing the positions of movement of FIG. 1 are, in turn, illustrated in phantom and full line perspective;

FIGS. 3A and 3B are greatly simplified plan views which best illustrate the selection of different recording tracks, the positions of movement of moving parts of the device again being illustrated in full line and phantom line perspective;

FIG. 4 is a plan view, on a greatly enlarged scale, of a magnetic recording tape suitable for use in the telephone-answering device hereof; and

FIG. 5 is a circuit diagram of exemplary electrical controls for the telephone-answering device.

Reference is now made to the drawings and in particular to the simplified showing in FIGS. 1, 2 of a telephone-answering device demonstrating objects and advantages of the present invention, such device being generally designated 10 and appropriately enclosed within a housing, only the bottom wall 12a and front and rear walls 12b, 12c, respectively, of which are shown in FIGS. 1, 2. The illustrated embodiment of the device 10 utilizes an endless loop of recording tape 14 on which, as will be subsequently described in greater detail herein, there is provided either one or several announce tracks which, as the name implies, has an appropriate message which announces to the telephone caller that the party being called is not available and which further invites the caller to then dictate a message which is recorded by the device 10. Thus, also as will be subsequently described in greater detail herein, the recording tape 14 additionally has appropriate delineated or reserved areas for recording a message dictated by the telephone caller. These areas shall be referred to in this description and in the appended claims as potential plural message recording tracks even though each is not technically a track until a message has been recorded therealong. Cooperating with the recording tape 14 is a combination playback and recording head 16, of conventional design, which is effective, as generally understood, to provide an audio reproduction or playout of the message previously recorded on the tape announce track or tracks (as the case may be) and also to produce a recording of the caller's message on the tape recording tracks. To achieve this functioning, the head 16, according to the present invention, is movable from a starting announcement playout position adjacent one side 14a of the tape, along which it will be understood there is provided the previously referred to announce tracks and which playback position is illustrated in phantom perspective in FIG. 1, transversely across the width of the tape 14 for a selected extent to a message recording position, such as is illustrated in full line in FIG. 1. At the selected message-recording position the head 16 is then adjacent a potential message-recording track of the tape 14 and is operated, in a well understood manner, to record the message being dictated by the caller.

Turning now to the structural details by which the foregoing transverse movement of the head 16 is achieved, as is clearly illustrated in FIGS. 1, 2, head 16 is appropriately rigidly secured to a plate 18 having confined slidable movement along the housing bottom wall 12a, the plate 18 being movable beneath a combination guide and holding bracket 20 at one end and elsewhere having strategically located bearing and groove arrangements 22 which cooperate to confine plate 18 to movement transversely of the tape 14, as already noted. An L-shaped member 24 pivotally mounted at the juncture of its legs, as at 24a, is connected at the free end of its longer leg 24b to the plate 18, such connection being achieved by a pin and slot 26 which, as generally understood, makes allowance for the pivotal movement of the member 24 about the pivotal axis 24a while imparting sliding movement to the plate 18 which is tangential to the axis 24a. At the free end of its short leg 24c, member 24 is connected, at 28a, to one end of a helical spring 28 which is connected at its opposite end 28b to the lower pivoting end of the lever 30 which, in turn, is actuated through pivoting movement by a solenoid 32, the details of which pivotal movement will subsequently be described in greater

detail. At this convenient point in the description, however, it should be noted that in response to pivotal movement of the lever 30, as from its full line to its phantom line positions depicted in FIGS. 1, 2 spring 28 is correspondingly expanded and a force urgency is created in this member which is effective to urge the member 24 through clockwise pivotal movement about the axis 24a. Consistent with this functioning of the spring 28, there is a spacing rod 34 freely disposed within the helical turns of the spring. Specifically, rod 34 is free of attachment to either the lever 30 or leg 34b although it is in abutment with those elements prior to operation of the solenoid 32. Thus, upon operation of the solenoid 32 and movement of the lever 30 to its pivoted position of movement as depicted in phantom line perspective, spacing rod 34 and, more particularly, end 34b thereof is moved to a clearance position out of contact with the short leg 24c and, in the usual circumstances of operation of the device 10, does not come back into contact with this leg until after an announcement payout and message recording interval of operation of the device 10.

In the foregoing description of operation it will be understood that the movement of the lever 30, as provided by the solenoid 32, is of an extent which is effective in causing head movement of an extent at least equal to the width W of the tape 14 such that the theoretical extent of the movement which can be imparted to the head 16, as measured from the starting position adjacent the edge 14a, is completely across the width of the tape to the opposite side 14b. In practice, however, movement of head 16 is limited to only a portion of this theoretical extent of travel and, further, such limitation of movement is operatively arranged to coincide with the positions of movement required of the head 16 such as is necessary to provide a selected one of the possible recording positions for the head adjacent the various potential tape-recording tracks. In other words, in each announcement payout and message recording interval of operation of the device 10, the expansion of the helical spring 28 which serves as the prime mover of the member 24 is conducted to an extent necessary to theoretically produce movement in the head 16 to the full extent of at least the width of the tape 14 though, in usual circumstances, the member 24 and thus the head 16 mounted thereon actually moves only a portion of this distance.

The head-movement limiting mechanism, or more particularly, the track-selecting means of the device 10 includes a transversely oriented shaft 36 appropriately journaled for rotation in bearings supported in the housing front and rear walls 12b, 12c. In the illustrated embodiment hereof, which has been simplified so as not to obscure the invention, there is rigidly mounted on a medial portion of the shaft 36 and thus rotatable in unison therewith a cylindrical member 38 having an edge 38a in facing relation to the member 24 and having as its significant structural aspect a circumferentially arranged series of accurately machined, molded or otherwise appropriately provided recesses, herein individually and collectively designated R. The specific position of the member 38 along the shaft 36 is such that a selected individual one of the recesses R will be engaged by an upstanding pin 24d mounted in the medial portion of the long leg 24b and thus in an advantageous position, during pivotal movement of the long leg 24b, to make this engagement and thus provide a selected one of 13 recording positions for the head 16, each such recording position aligning with a cooperating recording track of the tape 14. In other words, location of the recessed edge 38a in the path of pivotal movement of the pin 24d on the member long leg 24b results, during each operating interval of the device 10, in engagement of this pin against a surface defining a specific recess R and, as a consequence, limits clockwise pivotal movement of the member 24 and thus the transverse movement of the head 16 to a specific position of movement adjacent the tape 14, this position of movement being more particularly one in which the head 16 is appropriately adjacent a potential recording track of the tape 14.

To better understand the cooperating relationship between the recesses R and the positions of movement of the head 16

relative to the tape 14, reference should be made to the enlarged scale illustration of the tape 14 in FIG. 4. As already noted, one or possibly three announce tracks A1, A2 and A3 are allotted on the tape 14 adjacent the edge 14a. The potential message recording tracks are arranged longitudinally of the tape 14 in side-by-side positions across the prescribed width W of the tape 14. These potential message recording tracks are designated in FIG. 4 by the reference letter T followed by an arithmetic number in the order in which the tracks are utilized; thus track T1 is the first of these recording tracks to be utilized in the recording of a message dictated by a telephone caller and is followed in use by recording track T2 and so forth until all 13 of the available recording tracks are used, it being understood that the invention is in no way limited to the use of only 13 recording tracks but that more or less than this number may be used. As illustrated in FIG. 4, however, it will be noted that the tracks intended to be sequentially used in the operation of the device 10 are alternately spaced with each other such that, for example, successively utilized recording tracks T1 and T2 are separated by recording track T12. As a result of this alternate spacing, the distance D between successively used tracks, as exemplified by tracks T1, T2, is larger than what would be the required distance if the successively used recording tracks were adjacent each other. This alternate spacing or interleaving of successively used tracks has been found to minimize cross talk between adjacent tracks. The invention, however, is not limited to the alternate spacing of the recording tracks T since this feature is only preferred but not essential.

Still referring to FIGS. 1, 2, rigidly mounted on shaft 36 adjacent the cylindrical member 38 is a ratchet 40 having the usual circumferentially spaced peripheral teeth 40a. Cooperating with the ratchet 40 is a pawl 42 having a hook 42a which, in practice, meshes with the ratchet teeth 40a during the interval of operation of the device 10 that solenoid 32 is deenergized and return spring 44 is then effective in urging the meshing pawl 42 through movement causing counterclockwise rotation of the shaft 36. Naturally, rotation of the shaft 36 in turn results in rotation of the cylindrical member 38 and thus the positioning of the next recess R for engagement with the upstanding pin 24d. Any holding mechanism, such as the recessed wheel and detent arrangement 45 may be used to hold the shaft 36 and member 38 in each discreet position of rotation.

As is clearly shown in FIG. 2, pawl 42 is appropriately rigidly connected to extend laterally of a pivotally mounted lever 46 engaged at its upper end also to a return spring 44, at its lower end pivotally connected, as at 44a, to a horizontally oriented support 46, and engaged at its medial area to an extending portion 32a of the solenoid plunger. Thus, during a power stroke of the plunger 32a, lever 46 is pivoted from its full line position to its phantom line position as depicted in FIG. 2 and in the process pawl 42 is disengaged from the ratchet 40 and moved into its ready position, also depicted in phantom line perspective in FIG. 2. The opposite end of the solenoid plunger 32b is connected to the upper end of the previously noted lever 30 which is also pivotally connected, as at 48, to the support 46 but at the opposite extending end thereof. Lever 30, when urged through pivotal movement during operation of the solenoid 32 and thus in response to the power stroke of the solenoid plunger 32b, causes expansion of the spring 28 and thus movement of the head 16, all as previously described herein. From the foregoing, it should therefore be appreciated that movement of the pawl 42 from its ready position into its meshing position in which it causes rotation of the shaft 36 occurs during movement of the member leg 24b back to its original starting position and thus when the pin 24d is out of contact with the recesses R and the cylindrical member 38 is thus free to rotate with the shaft 36. Facilitating this return of the member 24 to its starting position is a return spring 48 connected between this member and the housing rear wall 12c. Any appropriate technique of regulating the urgency of the opposing springs 28 and 48 may be

employed to achieve clockwise and then reverse return movement of lever 24. For example, a preferred technique is prestretching spring 28 to produce a force urgency therein almost equal to that of spring 48 such that the subsequent additional expansion thereof occurring upon operation of solenoid 32 is clearly effective to overcome the resistance of spring 48.

Completing the device 10 is a tape drive mechanism for moving the endless loop of tape 14 longitudinally past the head 16 during the playback and recording positions of the head. The preferred embodiment for this mechanism, as illustrated in FIGS. 1, 2 includes a motor 50 appropriately mounted on supports 52, 54 on housing rear wall 12c and having a drive shaft 56 extending through this housing wall and mounting a pulley 58 on the free end thereof. Entrained about this pulley and about a cooperating pulley 60 is a pulley belt 62 which is effective in transmitting the rotational power of the motor 50 to a capstan shaft 64 mounting the pulley 60. As is perhaps best shown in FIG. 2, the endless loop of tape 14 is contained within a housing 68, the major length portion of the tape being arranged in folds and threaded over an end of the shaft 64 and a guide roller 72 such that the tape has a run along the outside of the tape housing front wall 68a and, during such run, passes in close playback and recording proximity to the head 16. The capstan shaft 64 is powered in rotation during operation of the motor 50 and thus causes longitudinal movement of the tape 14, an appropriate nip pressure for driving the tape 14 being applied by an elastomeric roller 66 journaled for rotation in a lever 74 which is pivotally mounted at one end, as at 76, to the housing front wall 12c and biased through pivotal movement via spring 78 against the tape 14 interposed between the roller 66 and shaft 64.

Description will now be made of a typical announcement payout and recording interval of operation of the device 10 with specific reference to the plan views of FIGS. 3A, 3B, and 4. As already noted, an exemplary embodiment of the tape 14, as clearly shown in FIG. 4, includes several announce tracks, A1, A2 and A3 as well as a plurality of potential recording tracks, as exemplified by tracks T1—13. The determination of the specific one or number of announce tracks A1, A2 or A3 available for use is a function of the starting position of head 16, such starting position being in turn a function, as clearly illustrated in FIG. 1, of which one of three seats S1, S2 or S3 on wheel 80 is dialed into position to accommodate a cooperating laterally extending pin 81 in seating relation when plate 18 is biased by spring 48 to its starting position.

As is clearly illustrated in FIG. 4, the endless loop of tape 14 includes a transversely oriented segment 14c which cooperates, in a manner which will soon be described in detail, with a photocell to produce an appropriate signal indicating initially that the end of an announce track, either of track A1, A2 or A3, has been reached and thereafter causing movement of the head 16 from one such announce track to one of the recording tracks that is selected as a function of the particular recess R which is engaged by the upstanding pin 24d during pivotal movement of the member 24, all as has been previously described. The longitudinal movement of the tape 14 naturally moves the selected recording track past the head 16 which then operates, in a well understood manner, to record the dictated message of the caller along the recording track. When the transparent segment 14c is again encountered, the signal from the cooperating photocell is at this time effective to terminate the operation of the telephone-answering device 10 and cause all moving parts thereof to return to their initial starting position in preparation for the next successive playback and recording interval of operation.

By way of providing concrete examples of operating intervals of the device 10 for purposes of this description, reference is made to FIG. 3A which illustrates movement of the head 16 from its initial starting playback position, as illustrated in full line, adjacent the announce track A1, to a recording position, illustrated in phantom line perspective, adjacent a recording track located in the medial portion of the tape 14, as for example adjacent recording track T3. This

selected positioning of the head 16 is achieved by engagement of the upstanding pin 24d, during pivotal movement of the member leg 24b in a recess located approximately midway between a point of shallowest and greatest depth of the cylindrical wall which defines the member 38, such recess being specifically designated R3 in FIG. 3A and being understood to be that recess which is correlated with the tape 14 to provide a position to the head 16 adjacent the track T3. Assuming successive operating intervals of the device 10, ultimately these uses will result in utilization of succeeding recording tracks which, for present purposes, will further be assumed to include tracks T4—6, inclusive, thus leaving recording track T7 as the next recording track available for use. Since track T7 is located adjacent the far end 14b of the tape 14, extensive movement is required of the head 16. As illustrated in FIG. 3B, member 38 will thus be understood at this time to have rotated to a position of rotation in which recess R7, the recess defined by the shallowest extent of the wall of member 38, is then in position to be engaged by the pin 24d, such engagement occurring upon pivotal movement of member 24, all as is clearly illustrated in phantom line perspective in FIG. 3B.

As is perhaps best understood from FIGS. 3A, 3B, and more particularly from the full line and phantom line illustrations of the positions of movement of these FIGURES, use in advantageously made of the geometry of lever legs 24b, 24c which, in a well understood manner, provides amplification of the pivotal traverse of leg 24c in the output pivotal traverse of leg 24b. For this reason, the power stroke of solenoid 32 and thus the expansion of spring 28 need only be proportional to the maximum travel required of the head 16, the final output movement being supplemented by the movement amplification characteristic of lever 24.

Any one of numerous electrical controls can be provided for operating the telephone-answering device 10 in the manner just described, but for completeness sake, a circuit diagram for a preferred arrangement of such electrical controls is illustrated in FIG. 5, to which FIGURE reference is now made. As clearly illustrated therein, connected to the incoming telephone lines 90, 92 is a transformer 94 coupling the telephone circuit to a telephone-ringing sensing means 96, this portion of the circuit further including a conventional DC blocking capacitor 98 functioning in a well-understood manner to block the telephone line direct current from the sensor 96. Upon receipt of a telephone-ringing signal, the previously noted telephone-ringing sensing means 96 is effective to bias a transistor 100 into its conduct condition thereby operating relay 102. The operation of relay 102 in turn results in the closing of a first set of relay contacts 102a (located adjacent the sensing means 96), a second set of contacts 102b and also a third set of contacts 102c, with the following results: closing of contacts 102a grounds the emitter of transistor 100, thus maintaining the same in its conductive condition, closing of contacts 102b completes the circuit for the tape drive motor 50, thus rendering this motor operative, and closing of contacts 102c will seize the telephone line.

As already noted, operation of motor 40 operates the previously described tape drive mechanism, illustrated in diagrammatic block form in FIG. 5 and designated with the reference numeral 64 of the previously noted drive shaft, to thereby cause longitudinal movement of the endless loop of tape 14 past the combination recording and playback head 16. At this time, during the operating interval of the device 10, a prerecorded announcement recorded on one of the tape announce tracks, A1, A2 or A3 is played out to the telephone lines 90, 92 via the head 16, along the conductors through normally closed contacts 116a, through the amplifier 106, along the conductors through the normally closed contacts 116b, and finally through the telephone transformer 94.

As additionally already noted, at the completion of the payout of the message on the announce track, the tape transparent segment 14c ultimately passes between a photocell and lamp arrangement 110 triggering, in a well-understood manner, the photocell. The photocell, in turn, triggers a con-

ventional flip-flop circuit network 112, which at this time will be understood to be flipped into a state effective to bias a cooperating transistor 114 into conductivity. It will further be understood that the flip-flop state of the network 112 is also at this time in such a condition that the previously noted transistor 100 is driven to further saturation.

Operation of the transistor 114 energizes the coil of a relay 116 causing closure of relay contacts 116e. The closing of relay contacts 116e completes the circuit for the solenoid 32. As already noted, operation of solenoid 32 is effective in shifting the head 16 from its starting playback position adjacent an announce track to a recording position adjacent a recording track, such position being a function of the recess R on member 38 presented for engagement by the upstanding pin 24d of the member 24. Operation of relay 116 also has the effect of shifting the input connection of the amplifier 106 via the normally open contacts 116d to the telephone transformer 94. Thus, the incoming message being dictated by the caller is now fed into the amplifier 106 and recorded on a tape-recording track via normally open contacts 116c and head 16.

When the endless loop of tape 14 completes its cycle of longitudinal movement, the tape transparent segment 14c is again passed between the photocell and lamp arrangement 110, thereby triggering the photocell which again triggers the flip-flop circuit network 112, flipping this circuit at this time into a state so as to bias both the previously noted transistors 100 and 114 into their cutoff conditions. The cutoff of transistor 100 releases relay 102 causing deactivation of the motor 50 and release of the telephone line while the release of relay 116 deactivates the solenoid 32. Upon deactivation of the solenoid 32, the return spring 48 biases head 16 back to its starting position adjacent the announce tracks of the tape 14. Additionally, due to the release of relay 116, the input and output of the amplifier 106 is again connected to the head 16 and telephone transformer 94, respectively. Thus, the telephone-answering device 10 is returned to its starting or standby condition preparatory to operation for succeeding playback and recording intervals.

A latitude of modification, change and substitution is intended in the foregoing disclosure and in some instances some features of the invention will be employed without a corresponding use of other features.

We claim:

1. A telephone-answering device adapted to play out an announcement in response to an incoming call and to record an incoming message comprising announcement ployout and message recording means including a recording surface provided with a first section of a prescribed width having at least one announce track adjacent one side of said recording surface and a second section adjacent to said first section, said second section having a prescribed width with plural message recording tracks across said prescribed width of said second section, a playback and recording head, resilient means exerting an urging force of a prescribed extent on said head to normally maintain said head in a starting position adjacent said announce track of said first section, movement-actuating means, signal means disposed on said first section at an end of said announce track to activate said movement-actuating means subsequent to an announcement ployout, said movement-actuating means being operatively connected to pivoted member linkage means, said pivotal member linkage means being operatively connected to said head for moving said head from said starting position of said first section transversely across said recording surface to said second section in a message-recording position adjacent a selected one of said plural message-recording tracks in opposition to said resilient means an actuation of said movement-actuating means by said signal means, and track selecting means disposed in a path of movement of said pivotal member means to engage said pivotal member means to limit movement of said head adjacent to said selected one of said plural message-recording tracks.

2. A telephone-answering device as defined in claim 1, wherein said recording surface is a part of an endless loop of a recording tape.

3. A telephone-answering device adapted to play out an announcement in response to an incoming call and to record an incoming message comprising announcement ployout and message-recording means including a recording surface provided with a first section of a prescribed width having at least one announce track adjacent one side of said recording surface and a second section adjacent to said first section, said second section having a prescribed width with plural message-recording tracks across said prescribed width of said second section, a playback and recording head, resilient means exerting an urging force of a prescribed extent on said head to normally maintain said head in a starting position adjacent said announce track of said first section, movement-actuating means, first signal means disposed on said first section at an end of said announce track to activate said movement-actuating means subsequent to an announcement ployout, said movement-actuating means being operatively connected to pivoted member linkage means, said pivotal member linkage means being operatively connected to said head for moving said head from said starting position of said first section transversely across said recording surface to said second section in a message-recording position adjacent a selected one of said plural message-recording tracks in opposition to said resilient means on actuation of said movement-actuating means by said first signal means, track-selecting means disposed in a path of movement of said pivotal member means to engage said pivotal member means to limit movement of said head adjacent to said selected one of said plural message-recording tracks, and second signal means disposed on said second section at an end of each of said plural message-recording tracks to deactivate said movement-actuating means subsequent to a message recording interval to allow said resilient means to return said head to said starting position adjacent to said announce track of said first section of said recording surface.

4. A telephone-answering device as defined in claim 3 wherein said track-selecting means is a rotatable member having an edge provided with plural recesses effective to limit movement of said head as a function of the depth of one of said recesses engaged by said pivotal member linkage means during movement thereof.

5. A telephone-answering device as defined in claim 3 wherein said track-selecting means includes an element provided with means to alternately space said head in order of its contemplated use with respect to said plural message-recording tracks so that one recording track is interposed between a pair of successively selected ones of said plural message-recording tracks.

6. A telephone answering device as defined in claim 3 including a second resilient means, said pivotal member linkage means and said second resilient means having an operative interposed position between said movement actuating means and said head, said second resilient means being expanded during each message-recording interval a distance proportional to the extent of movement of said pivotal member linkage means as permitted by said track-selecting means.

7. A telephone-answering device as defined in claim 6 wherein said second resilient means is connected at one end to said pivotal linkage member means and at its opposite end to said movement-actuating means.

8. A telephone-answering device as defined in claim 3 wherein said movement-actuating means is a solenoid having a piston with a prescribed stroke of proportionally lesser extent than the combined prescribed widths of said first and second sections of said recording surface, the proportion being a function of a movement amplification characteristic of said pivotal member linkage means.

9. A telephone-answering device adapted to play out an announcement in response to an incoming call and to record an incoming message comprising announcement ployout and message-recording means including a recording surface pro-

vided with a first section of a prescribed width having plural announce tracks adjacent one side of said recording surface and a second section adjacent to said first section, said second section having a prescribed width with plural message-recording tracks across said prescribed width of said second section, a playback and recording head, resilient means exerting an urging force of a prescribed extent on said head to normally maintain said head in a starting position adjacent a selected one of said announce tracks of said first section, movement-actuating means, first signal means disposed on said first section at an end of said announce track to activate said movement-actuating means subsequent to an announcement payout, said movement-actuating means being operatively connected to pivoted member linkage means, said pivotal member linkage means being operatively connected to said head for moving said head from said starting position of said first section transversely across said recording surface to said second section in a message-recording position adjacent a selected one of said plural message-recording tracks in opposition to said resilient means on actuation of said movement-actuating means by said first signal means, track-selecting means disposed in a path of movement of said pivotal member means to engage said pivotal member means to limit movement of said head adjacent to said selected one of said plural message-recording tracks, and second signal means disposed on said second section at an end of each of said plural message-recording tracks to deactivate said movement-actuating means subsequent to a message-recording interval to allow said resilient means to return said head to said starting position adjacent to said selected one of said announce tracks of said first section of said recording surface.

10. A telephone-answering device as defined in claim 9 including an announce track-selecting means operatively arranged in the return path of movement of said head and effective to limit movement thereof to a position adjacent a selected one of said announce tracks.

11. A telephone answering device adapted to play out an announcement in response to an incoming call and to record an incoming message comprising announcement payout and

message-recording means including an endless loop of recording tape provided with a first section of a prescribed width having at least one announce track adjacent one side of said recording tape and a second section adjacent to said first section, said second section having a prescribed width with plural message recording tracks across said prescribed width of said second section, a playback and recording head, movement-actuating means including a solenoid, signal means disposed on said first section at an end of said announce track to activate said solenoid of said movement-actuating means subsequent to an announcement payout, said solenoid being provided with piston means of a prescribed stroke, spring means operatively connected between said piston means and pivoted member linkage means so as to resiliently urge said pivotal member linkage means through a pivotal movement upon operation of said solenoid, said pivotal member linkage means being operatively connected to said head for moving said head during said pivotal movement from a starting position adjacent said announce track of said first section transversely across said recording tape to said second section in a message-recording position adjacent a selected one of said plural message-recording tracks on actuation of said solenoid by said signal means, track-selecting means disposed in a path of movement of said pivotal member means to engage said pivotal member means to limit movement of said head adjacent to said selected one of said plural message-recording tracks.

12. A telephone-answering device as defined in claim 11 wherein said track selecting means is a rotatable member having an edge provided with plural recesses effective to engage with said pivotal member linkage means at different positions of pivotal movement thereof as a function of the depth of said one recess against which engagement is actually made.

13. A telephone-answering device as defined in claim 12 wherein said solenoid is operatively connected to additionally cause rotative movement of said rotatable member of said track selecting means to thereby enable movement of said head to a different message-recording position in successive recording intervals.

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