

Jan. 21, 1958

E. S. GILLETTE ET AL

2,820,639

MONITORS FOR COMMERCIAL PHONOGRAPHS

Filed June 10, 1954

3 Sheets-Sheet 1

Fig. 1.

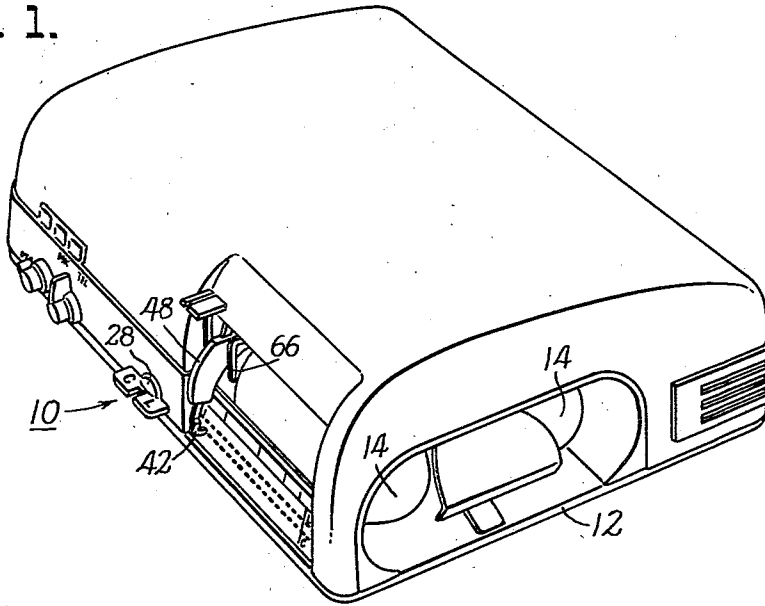
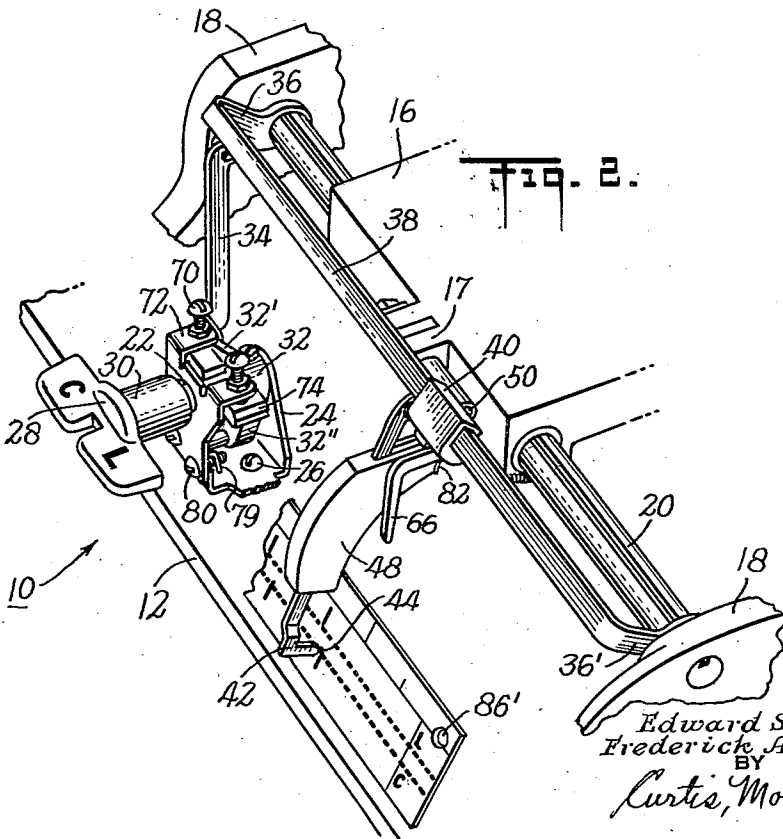


Fig. 2.



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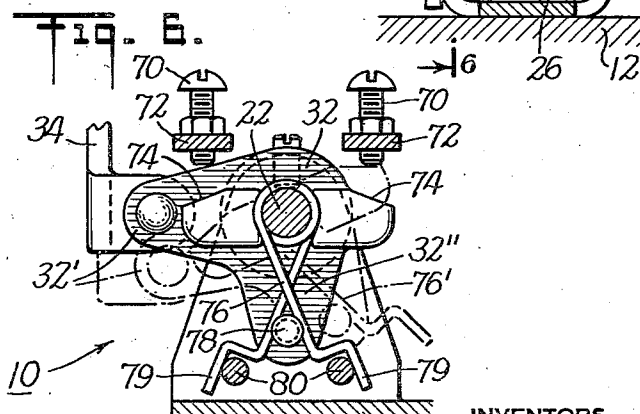
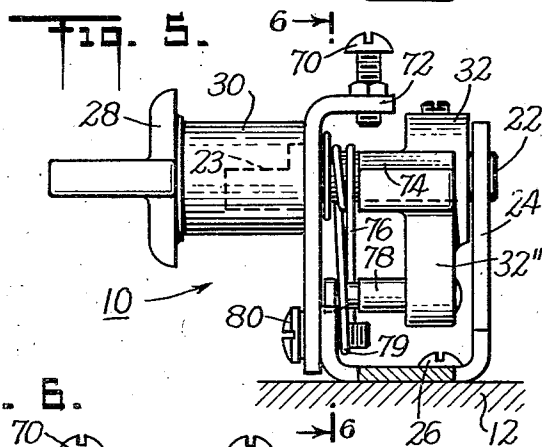
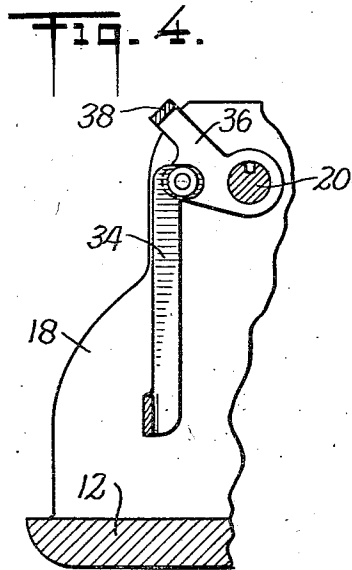
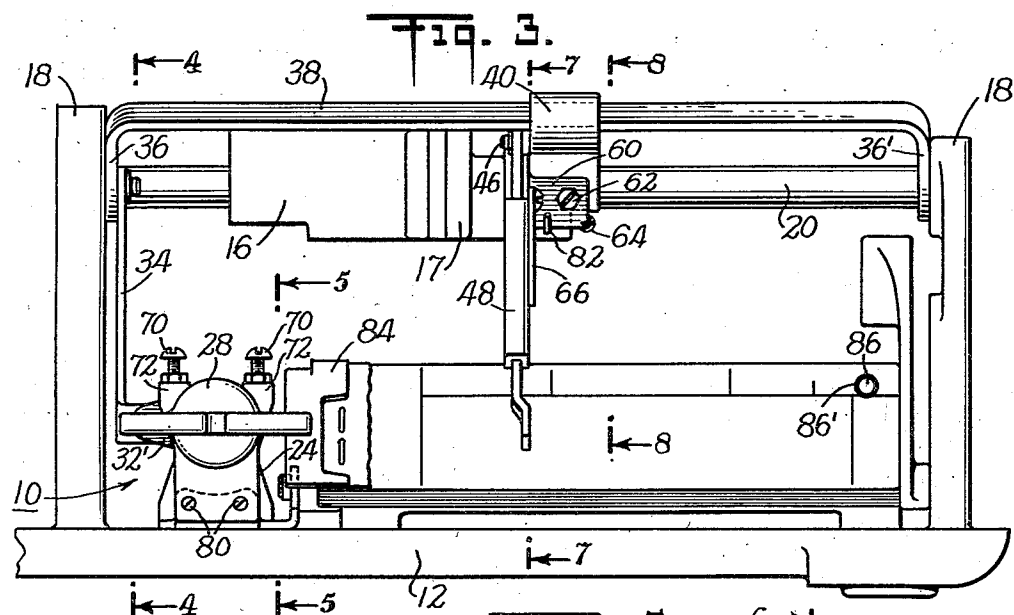
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3 Sheets-Sheet 3

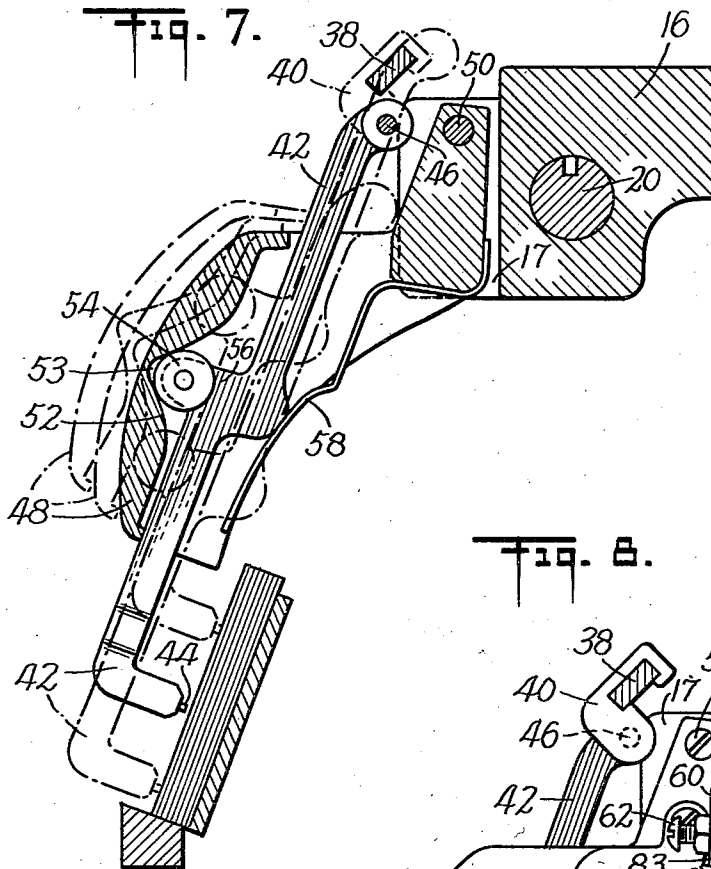


Fig. 8.

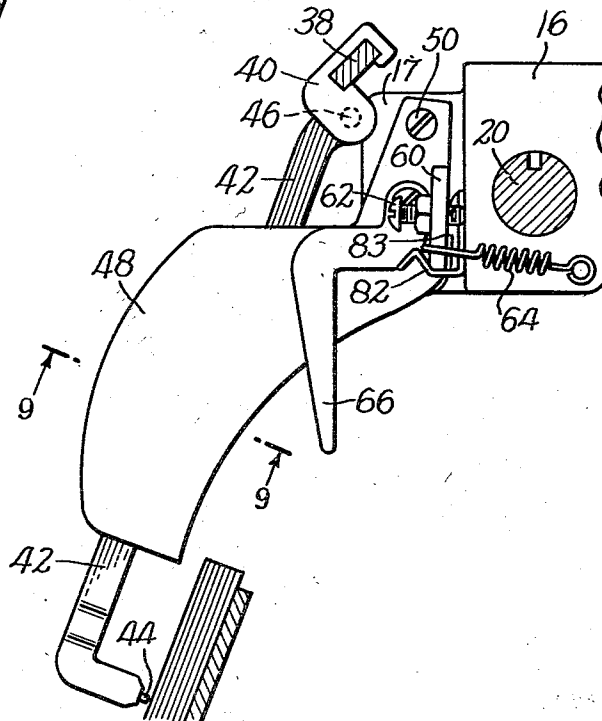
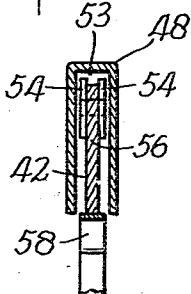


Fig. 9.



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MONITORS FOR COMMERCIAL PHONOGRAPHS

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Application June 10, 1954, Serial No. 435,802

10 Claims. (Cl. 274—1)

This invention relates to correction devices or monitors for commercial phonographs of the kind comprising a recorder for recording and a reproducer for reproducing dictation, speeches, or other matter.

In connection with phonographs of this character it has been usual to employ memorandum sheets having printed thereon a scale, sometimes corresponding to a fixed scale on the phonograph, upon which sheets the dictator may note certain instructions and corrections, to be turned over to the transcriber as a guide in transcribing the sound record. A separate sheet accompanies each sound record transferred.

In the use of dictating machines memoranda of two kinds are customarily made by the dictator on the sheet. One, consisting of a symbol or mark intended to indicate the place on the record where a letter or other communication begins or ends. The other kind of memorandum refers to indications of error in what has been recorded, or other information regarding the same, which the dictator wishes to bring to the attention of the transcriber. Devices for this purpose heretofore proposed have consisted of various forms. According to one a plurality of recording or marking devices are provided for mechanically indicating different instructions at points predeterminedly spaced in position, in a direction transversely of the correction sheet, so as to indicate various different instructions.

Mechanical devices of this nature have not been wholly satisfactory, as they are cumbersome and take up too much space at the front of the machine, for in the past, not only have the marking devices themselves been carried along the front of the machine by reason of their attachment to the movable recorder carriage, but the control mechanism for the operation of the marking device or devices has similarly been mounted upon and movable with the carriage; has in fact formed part of the structure of the marking device.

Marking systems of the nature referred to above have progressed from the pencil mark on a sheet of printed paper, to semi-automatic systems where holes are punched out or pin points pressed through a paper strip, or where a metallic alloy stylus or roller makes marks on a sheet having a slightly abrasive surface. For a better understanding of such systems and their relation to the phonograph itself, reference may be had to U. S. Patents #2,055,141 and #2,072,055.

It is an object of the present invention to provide a simple, inexpensive and efficient monitoring device, adapted to avoid the defects mentioned and others inherent in the kinds of devices above discussed. Another object is to provide a marking device of the nature described, the control unit of which may be rigidly and remotely mounted on the frame of the machine, and yet readily operable to actuate a marking device mounted to move with the recorder carriage, to produce clean, straight and easily distinguishable marks.

Letters C and L may be shown on the control unit and on the indicating sheets to indicate respectively, correc-

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tion of error and length of letter, for any position of the carriage; the indicative marks being drawn one above the other upon the top sheet of a pad supported in a suitable relation to the marking device. The marks may be of different length and located in any suitable transverse position but as herein shown they are of the same length and are positioned respectively above or below a line or scale, which extends lengthwise the sheet, along the center line thereof, or closely parallel therewith.

Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements, and arrangements of parts as will be exemplified in the structure to be hereinafter described and the scope of the application of which will be indicated in the following claims.

In the accompanying drawings, in which is shown one of the various possible embodiments of this invention:

Fig. 1 is a front, top and right hand end perspective of a well known type of dictating machine having a marking device made in accordance with one embodiment of the invention.

Fig. 2 is a similar perspective view on an enlarged scale, with the machine hood removed and other parts omitted;

Fig. 3 is a front elevation with parts omitted which are not directly pertinent to the correction device and its controlling mechanisms.

Fig. 4 is a vertical sectional view taken on line 4—4 of Fig. 3;

Fig. 5 is a similar section taken substantially on line 5—5 of Fig. 3;

Fig. 6 is a vertical section taken on line 6—6 of Fig. 5; the solid lines showing the control unit in its unactuated normal condition and the broken lines showing parts thereof at the limit of operation in one direction.

Fig. 7 is a side view of the stylus actuating arm taken on line 7—7 of Fig. 3 showing three different positions of the marker with respect to its mounting and the correction sheet.

Fig. 8 is a similar side view taken on line 8—8 of Fig. 3 showing the cover or sheath for the stylus arm unsectioned; and Fig. 9 is a cross-section taken on line 9—9 of Fig. 8.

Like reference characters refer to like parts throughout the various views of the drawings.

In general, the indication marking device comprises a support for memorandum sheets, an indicator and means whereby the indicator and support have mutual relative movement in proportion to the relative movements of the recorder-reproducer carriage and the sound record-receiving means; said indicator comprising a marking member constructed to rest lightly upon, or be resiliently held slightly away from, the memorandum pad and movable towards and away from the pad to maintain correct operative position, in respect to the pad surface, as successive sheets are removed from the pad.

In accordance with the present invention the marker control unit 10 is supported in fixed position near the front of the machine base 12, to the left of the transverse center line thereof, see Figs. 1 to 3. As shown herein, the dictating machine to which the correction device is applied is of the type disclosed in U. S. Patent #2,371,116, wherein a continuous record medium in the form of a flexible belt (not shown) travels at a predetermined rate about a pair of horizontally parallel, rotatable drums 14 (see Fig. 1). A recorder-reproducer carriage 16 is driven in a suitable manner to advance from left to right, for making a sound record, or to back space the same in order to reproduce matter, previously recorded upon the surface of the continuous belt, by suitable sound

translating devices mounted on the carriage, which devices specifically form no part of the present invention.

Suitable power actuated means for effecting the drives of the carriage 16 and the drums or mandrels 14 may be mounted upon the base 12 and have bearings in the upright standards 18. The carriage 16 (as herein shown) is at its front, mounted to slide along a guide rod 20, supported in the standards 18.

The marker control unit 10, as disclosed herein, consists of a shaft 22 extending through a bracket 24 secured to the base 12, as by machine screws 26, or in any suitable manner. An operating knob 28 has a sleeve 30, extending through the front of the machine (see Fig. 1) into non-rotatable engagement with the forward end of shaft 22 (see Fig. 5), which end is slabbed (as at 23) to interfit with the interior of the sleeve 30. The operating knob 28 is provided with a pair of wings or control buttons, marked respectively C and L, the initial letters of the words "correction" and "length." Supported in fixed relation upon the shaft 22, is a bell crank member 32 having an arm 32' extending to the left (Fig. 6) and an arm 32'' extending downwardly. A link 34, pivotally connected to arm 32' at its lower end, is pivotally connected at its upper end to a rocker arm 36 of a bail 38 having a second rocker arm 36', both of which arms are mounted to rock on the guide rod 20. The bail 38 extends over the recording belt area of the machine and slidably supports a rider 40. A marker arm 42, which carries at its lower end a metallic marking stylus 44, is pivotally attached at its upper end, as at 46, to the rider 40.

The marker comprises an inverted U-shaped cover 48 (best seen in Figs. 7 to 9), pivotally mounted, as at 50, upon a forward extension 17 of the carriage 16. Thus the cover may swing about its pivot to various positions, as indicated in Fig. 7. The marker arm 42 may be moved lengthwise to occupy the different indicated positions.

The interior of the cover top is formed as a cam 52 (as shown) having a dwell area 53. Cooperative with the cam surface is a roller 54 carried by an upward extension 56 of the arm 42, a lower portion of said arm having contact with a leaf spring 58, which tends at all times to hold the roller against the cam surface. A plate-like extension 60 of the cover 48 supports an adjustment screw 62 which, by bearing against a surface of the carriage 16, provides means for nicely adjusting the lower limit position of the cover with respect to the carriage, toward which position it is biased by a spring 64. The cover also carries a pointer 66 that indicates the operable position of the sound recording device in respect to any selected position of its travel along the surface of the record receiving belt, or other medium.

The operation of the device is simple and reliable. It will be seen by reference to the drawings, that pressure on the L side of the control button causes the bail 38 to rise and with it the rider 40, thus pulling the marking arm 42 and its stylus 44 upward. This in turn, because of the cam 52, causes the marking arm to push the stylus 44 into contact with the pad sheet and move the stylus a distance of about $\frac{1}{4}$ ", upward across the sheet, leaving a straight transverse mark on the sheet, above the centrally disposed scale, which is printed on said sheet, as indicated in Figures 1, 2 and 3.

Pushing down on the bottom or wing marked C will reverse the direction of motion and produce a downwardly directed "correction" mark on the paper below the scale.

As said above, the stylus is normally held clear of the paper in a position directly over the scale on the pad sheet. In this position the marker roller 54 engages the dwell 53 in the cam surface inside the cover 48. As the roller is moved in either an up or down direction, out of the dwell 53 it is pushed by the cam towards the top sheet of the correction pad, in turn pushing the stylus into contact with the paper at the positions 1 or c (indi-

cated in Fig. 2). This movement is opposed by the before mentioned spring 58.

It will be understood that the cover pivots downwards about the pivots 50 as far as the screws 62 permits, the coil spring 64 determining the pressure being applied to the stylus, thus permitting it to ride over irregularities and taking care of changes of position required by the tearing off of correction sheets from the pad.

The stylus 44 is preferably a round bar of hard alloy steel, about .015" in diameter. The paper engaging end is cut at a 90° angle and is slightly concaved to give a better scraping edge. A pressure of approximately 1 to 2 ounces is required to remove a narrow strip from off the surface of the paper correction sheet, so as to produce a satisfactory indication mark. To obtain this result the upper surface of the paper sheets are prepared with a suitable light colored coating applied over a dark background coating, which may be black, red, green or of other contrasting color. The sheet background above the scale may be of a different color than that below the scale, to make the different indication marks more readily distinguishable.

As presently constructed the operating knob 10 is rotatable through an angle of about 25° and then automatically returns to its central position when pressure is removed from the wing. The angle of rotation is adjustable by changing the relative position of a pair of adjustment screws 70 which are threaded into horizontal portions 72 of the bracket member 24. When properly adjusted the ends of these screws act as stops against suitable surfaces 74 of the bell crank member 32, thus limiting the angle of rotation of the knob.

The means for returning the knob to its central position comprises a formed wire spring 76 (see Figs. 5 and 6). As the knob is rotated in either direction a pin 78 engages one of the two ends 79 of the spring and pushes it to one side, in resilient opposition to the movement of the pin. When the knob is released the spring turns the knob back to neutral or central position. A single wrap of the spring 76 around the shaft 22 holds the spring in position. The ends 79 of the spring normally rest against the screws 80. In Fig. 6 the broken lines at 76' show the spring in one of its distorted positions.

The indication sheets are made up into pads of approximately 25 sheets each. To mount a pad in the machine the marker, cover and all, is raised and held in suitable position (see Fig. 8) by engagement of a holding spring 82 against a surface 83 of the cover 48. The end of the pad is then pushed by hand to its required position with its left end clasped between a pair of spring clips 84 (Fig. 3). The right end of the pad is held in position by a pin 86 which is tapered at its outer end to guide the pin into a hole 86', punched through the pad from back to front, as shown in Fig. 3.

The paper sheets are made of comparatively thin paper stock approximately .004" thick, which is coated first with a smooth glossy colored coating providing the background mentioned above. The top removable coating of suitable nature is then applied and finally printed upon with any matter which is to appear on the sheet.

It will be seen from the above description of the present invention that it is one well adapted to carry out the objects hereinbefore set forth in a thoroughly practical manner, that the single stylus will readily produce straight vertical marks located above and below the indication sheet scale so as to be clearly distinguishable and that the control unit, while easily operable, will not obstruct the view of the recording area; and that the position of the said recording or reproducing device at any moment will be clearly indicated by the pointer 66 on the carriage.

As many possible embodiments may be made of the above invention without departing from the scope thereof, it is to be understood that all matter herein set forth or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

We claim:

1. In apparatus of the character described, in combination, a frame, a movable carriage, a replaceable instruction-indication pad or sheet held in fixed relation to said frame, marking means comprising a single stylus movably mounted on and with said carriage and operable into two positions of marking relation to said indication sheet; and control means for said marking means comprising a bracket on said frame, an indicator control member associated with said bracket and movable to different instruction positions relatively to said bracket and means forming a continuous mechanical linkage operatively connecting said indicator member with said marking means in all positions of travel of said carriage.

2. Apparatus as in claim 1, in which said indicator control member comprises a shaft pivotally mounted in said bracket to rotate between a plurality of operative positions, means normally biasing said shaft to an inoperative position, and means for turning said shaft to a selected one of two operative positions to cause said marking means to move into a corresponding one of the two marking positions relative to said indicator sheet.

3. Apparatus as in claim 2 in which said turning means comprises a normally operable winged knob mounted on said shaft to project beyond the front of the apparatus.

4. Apparatus as in claim 1, in which said linkage means includes a bail rockably supported on said frame and extending parallel to the path of travel of said carriage, a link pivotally connecting said bail and a lever on said control means, a rider slidably mounted on said bail, a marker arm having at one end a stylus for making marks on said sheet, said marker arm being pivotally connected to said rider, and means whereby said marking arm and stylus may be actuated by movement of said bail selectively to mark on said sheet either one of the two instruction markings corresponding in position on said sheet with a selected actuation of said control means.

5. As in claim 4, in which said stylus actuating means comprises a camming device pivotally mounted on said carriage and having a dwell surface area for holding said marking arm and stylus in a central inoperative position, and other surfaces for advancing the stylus into contact with the said sheet and moving said stylus across said sheet to mark thereon a selected instruction through the actuation of said bail by said control means.

6. In a dictating machine, in combination a frame, a movable recorder carriage, an instruction-indication sheet held in fixed relation to said frame, marking means driven with said carriage relative to said sheet, said marking means being movable towards and away from said sheet and in either of two opposite directions in the plane of said sheet to make either of two distinctive marks on said sheet, control means on said frame, linkage means operatively connecting said control means with said marking means to effect said movement in either of two opposite directions, and camming means comprising a curved member engageable with a cam follower, said camming means being operatively associated with said marking

means to effect said movement towards and away from said sheet upon operation of said control means.

7. Dictating machine as in claim 6, in which resilient means is operative upon both said control means and said camming means to return the marking means to its initial position when the control means is released by the operator.

8. Dictating machine as in claim 6, in which the extent of movement of the control means and the extent of movement of the camming means are both controlled by adjustable means.

9. In a dictating machine, in combination, a frame, a movable recorder carriage, a support on said frame for holding an instruction-indication sheet in fixed relation to said frame, control means on said frame, a bail rotatably mounted on said frame and connected to said control means by a linkage, a rider slidably mounted on said bail for movement with said carriage, marking means secured to said rider and movable towards and away from said support and in either of two opposite directions in the plane of said sheet in accordance with movements imparted to said bail by said control means and camming means pivotally mounted on said carriage and operatively associated with said marking means to effect said movement towards and away from said support upon operation of said control means, said camming means comprising a cover member extending down over said marking means and having a curved inner surface formed with a recess in the central portion thereof to receive a cam follower arranged to actuate said marking means.

10. In a dictating machine, the combination including a frame, a movable recorder carriage, an indication sheet supported in fixed relation to said frame, marking means comprising a single marking element driven with said carriage over said indication sheet, said marking element being shiftable into two different positions of marking relation to said indication sheet to make either of two distinctive marks thereon; and control means for selectively moving said marking element into either of said two different positions, said control means comprising mounting means secured in fixed relation with respect to said frame, an indicator control member supported by said mounting means and movable to different positions relative thereto, and mechanical linkage means continuously connecting said indicator control member with said marking means in all positions of travel of said carriage and operative to shift said marking element in response to changes in positioning of said control member.

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