

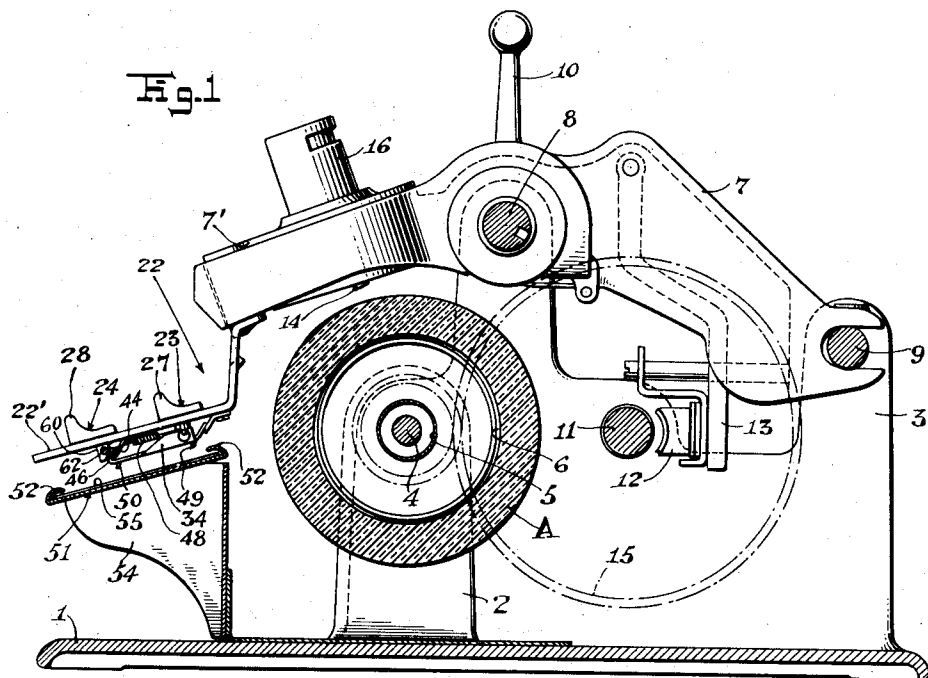
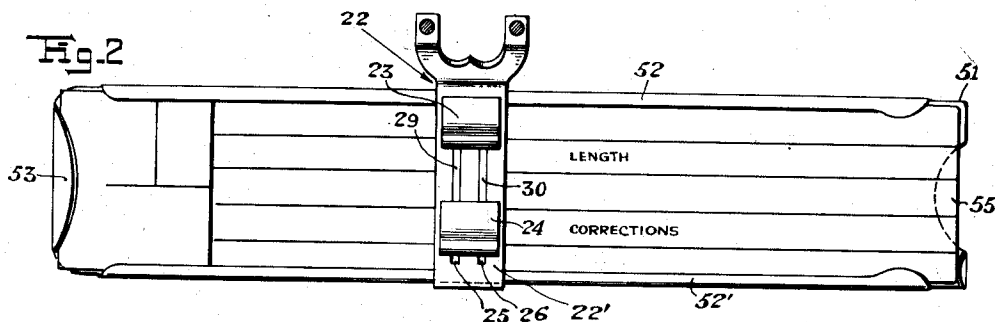
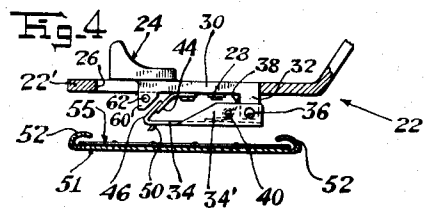
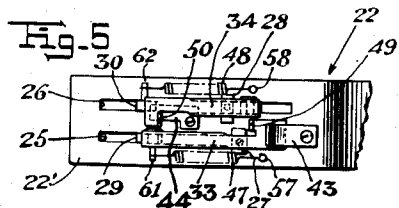
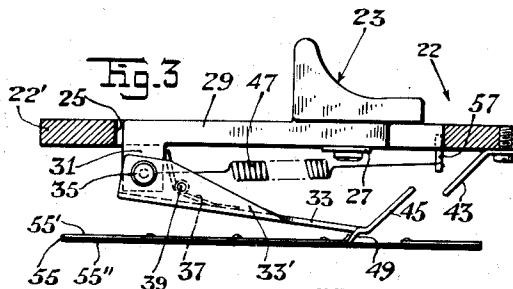
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MARKING DEVICE FOR INDEX BLANKS

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MARKING DEVICE FOR INDEX BLANKS

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10 Claims. (Cl. 234—1)

This invention relates to indexing systems for phonographs, and especially for business phonographs of the type employed for the recordation and reproduction of dictation.

Such phonographs as they are employed in recordation may comprise relatively travelling elements such as a record and a sound box; and it is common practice to provide for use with each record an index blank on which may be made various indications relating to the matter recorded on the record—these indications being made by marking the index blank at points which identify corresponding points on the record.

It is an object of my invention to provide an improved indexing system of the class described.

It is another object to provide an indexing system of improved ease and accuracy of use.

It is another object to provide an improved indexing system wherein the marking means will operate over a long period of life without attention such as it is necessary to bestow upon pencils or the like.

It is another object to provide an improved indexing system wherein the marking of the index blank will be effected with a high degree of uniformity.

It is another object to provide an improved index blank for a system of the class described.

It is another object to provide a simplified and improved structure for supporting and actuating the marking means.

It is another object to provide an improved and simplified structure for supporting and selectively actuating a pair of marking means.

Other and allied objects will more fully appear from the following description and the appended claims.

In the description reference is had to the accompanying drawing, of which:

Figure 1 is a transverse vertical sectional view of a business phonograph wherein my invention has been embodied;

Figure 2 is a plan view of the index holder and blank of Figure 1 and of the structure for supporting and actuating the marking means;

Figure 3 is a vertical sectional view taken through the slot 25 of Figure 2, excepting that the slide member 29 operating in that slot, together with its immediately associated apparatus, is shown in elevation;

Figure 4 is a vertical sectional view taken through the slot 26 of Figure 2, excepting that the slide member 30 operating in that slot, together with its immediately associated apparatus, is shown in elevation; and

Figure 5 is a bottom view of the structure for supporting and actuating the marking means.

In the drawing only those parts of a conventional phonograph as will aid in a better understanding of the present invention are shown. These may include a base plate 1 having central standard 2 and end standards one of which appears as 3. Rotatably mounted on the standard 2 is a drive shaft 4, and surrounding the same is a mandrel shaft 5 to which is secured a shell 6 for carrying a record A. The mandrel shaft is adapted to be rotated in a clockwise direction by a motor (not shown), the rotation of the mandrel being controlled as by a convenient switch which may be located on the speaking tube of the machine. A carriage 7, supported upon guide rods 8 and 9 which are terminally supported by the end standards, is caused to travel relative to the record A as the latter is rotated. This travel is effected by a feeding mechanism comprising a feed screw 11, and a self-adjusting feed nut 12 carried by an arm 13 secured to said carriage 7 and adapted to bring said nut into engagement with said feed screw. For the sake of simplicity the means for rotating the feed screw 11 is shown schematically as the gear train 15. In the forward portion of the carriage 7 may be carried the sound box 7', provided with recording stylus 14, and if desired with a reproducing stylus (not shown). A control lever 10 may be provided in the carriage, rockable forward and backward from a neutral position, to selectively engage either the recording or the reproducing stylus with the record A. A neck 16 may extend upwardly from the sound box 7', forming a means for the attachment of a speaking tube (not shown) for the conveyance of sound to and from the sound box.

Positioned somewhat below and in front of the path of travel of the sound box is a holder 51 for an index blank, upon which indications may be made of the position occupied by the sound box relative to the record at the times of occurrence of various events in the recordation—such, for instance, as the beginnings and/or endings of individual pieces of correspondence, errors in the dictation, or the like. This index holder 51 may be in the form of a slightly inclined flat plate having the turned-over front and back flanges 52 and flange 53 at one end, an index blank or slip being slidable into the holder (i. e., under the flanges) from the other end. The holder 51 may be supported as by brackets 54 secured to the base 1.

A principal aspect of the present invention

concerns the index blank—e. g., the blank 55, illustrated as held in holder 51—and the means, which may be arranged in known manner to travel with the carriage adjacent the index blank, for the marking or making of indications thereon. According to this aspect the marking means operates by removing material from or engraving, the surface of the index blank; and in order to provide good readability of the marks so made, the blank may comprise a body of one color and a surface coating of material of another color—the latter being removed by the operation of the marker to expose a line of the body color. The first color may be characteristic of the body throughout, or merely of the body surface proper if the marker is arranged not to disrupt this surface. The thin surface coating of other color may be a printed one of ink; it is preferably, however, a painted-, brushed-, flowed- or sprayed-on coating of a varnish, lacquer, enamel or the like, suitably plasticized so that it remains reasonably soft and tender, as distinguished from becoming extremely hard and brittle. Preferably of course the body is relatively hard or tough, so that the marker will remove surface, but not body, material. The first, or body, color may for example be black, and the surface material color white, though no limitation to these particular colors is intended. In the enlarged Figure 3 the exemplary illustration of the index slip shows, in somewhat exaggerated thickness, the black body material 55' and the white surface coating 55'.

I have found particularly desirable, with an index blank of this character, the use of marking or material-removing means which is always pressed against the blank with constant pressure in the operation of effecting a desired mark. Accordingly my invention embraces an improved structure carried by the carriage over the index blank, provided with one or more finger-pieces or the like and with means responsive to simple finger-piece manipulation for moving appropriate marking means over the index blank surface with a predetermined pressure. This structure, which in itself may have utility with markers other than material-removing means, may now be described in detail. The description is presented of a structure arranged for the making of transverse marks on the index blank in each of two longitudinally extending regions thereon—marks in one of these regions for example being intended to denote length of dictated matter, and marks in the other to denote corrections or errors. It will be understood, however, that there is intended no limitation to this particular number or significance of marking regions.

A frame 22 is secured to the front of the carriage, extending first downwardly therefrom and then forwardly over the index blank in its main portion 22'. In this frame are provided two parallel slots 25 and 26, transverse to the direction of movement of the carriage and thus to the illustrated index blank. In these slots are retained respective slide members 29 and 30, of lengths less than those of the slots, and slidable longitudinally of the latter; the retention of each in its slot is effected by securing to its top a respective finger-piece 23 or 24, and to the bottom of each a respective retaining flange 27 or 28. Each finger-piece and retaining flange is of course wider than the slot; desirably each finger-piece is almost as wide as the frame 22, the two finger-pieces being kept from interfering with each other by securing one to its slide member

(e. g., 23 to 29) at the rear of that member, and the other to its slide member (e. g., 24 to 30) at the front of that member.

By the slide members 29 and 30 there are supported the respective markers 49 and 50. Each such support is effected through the intermediary of a respective arm 33 or 34, each of which may be provided at and near one extremity with folded-up side flanges 33' or 34'; these side flanges are pivoted (at 35 and 36, respectively) to respective lugs 31 and 32 downhanging from extremities of the respective slide members 29 and 30. The lug 31 may hang down from the front extremity of slide member 29, the arm 33 extending rearwardly from the pivot point 35; the lug 32 may hang down from the rear extremity of slide member 30, arm 34 extending forwardly from the pivot point 36. The markers 49 and 50, hereinafter further mentioned, are shown extending downwardly from near the rear of arm 33 and from near the front of arm 34, respectively. To provide the desired predetermined pressure of the markers against the index blank, the arms 33 and 34 are biased toward the blank; and since gravity may provide an insufficient bias, there may be employed spring biasing means such as torsion spring 37 encircling pin 39 (between flanges 33') and terminally bearing against lug 31 and arm 33, and torsion spring 38 encircling pin 40 (between flanges 34') and terminally bearing against lug 32 and arm 34.

Excepting when a finger-piece is manipulated to move its slide member in its transverse slot, its associated marker is desirably held out of contact with the index blank, to avoid the making of an unnecessary longitudinal mark. Accordingly I may provide means normally biasing each slide member to a predetermined position in its slot, and means responsive to its occupation of this position for holding the associated marker out of contact with the blank. Such biasing means for the slide member 29 may be a tension spring 47 terminally secured to a vertical pin 57 fixed in the bottom of frame 22 and to a horizontal pin 61 extending leftwardly from the lug 31; for the slide member 30 it may be a tension spring 48 terminally secured to a vertical pin 58 fixed in the bottom of frame 22 and to a horizontal pin 62 extending rightwardly from an auxiliary lug 60 downhanging from the front of slide member 30. In each case the normal position for the slide member is caused to be its most rearward one in its slot. The means for holding the marker 49 out of contact with the blank may be provided by an inclined extension 45 of the free rear end of arm 33 (extending upwardly and rearwardly), and an inclined lug 43 secured to (and extending downwardly and forwardly from) the frame 22—in position such that as slide member 29 in rearward movement approaches its normal (most rearward) position, the inclined extension 45 engages the inclined lug 43 and is forced upwardly therealong by the continued action of spring 47, moving the arm 33 about its pivot to raise the marker from the index blank. The analogous means for marker 50 may be provided by an inclined (folded-back) extension 46 of the free front end of arm 34 (extending upwardly and rearwardly), and an inclined lug 44 secured to (and extending downwardly and forwardly from) the frame 22—in position such that as slide member 30 in rearward movement approaches its normal (most rearward) position, the inclined extension 46 engages the inclined lug 44 and is forced upwardly

therealong, raising the marker 50 from the index blank.

The parts being assumed to be in their normal positions, with the markers 49 and 50 out of contact with the index blank, it will be understood that forward movement of either finger-piece 23 or 24 will produce movement of its associated marker principally forward, or transverse, of the index blank; and that in response to such movement, by reason of its associated torsion spring 37 or 38, the marker is first brought into contact with the index blank, and thereafter maintained in predetermined pressure against the blank as it is moved forwardly (transversely) thereacross, effecting removal of the surface material 55' along a transverse line. Figure 3 by way of example shows the finger-piece 23 and associated elements, including marker 49, at a late instant in the operation of forward movement of that finger-piece; the other figures by way of example illustrate the elements in their normal positions. Upon release and consequent rearward movement of the manipulated finger-piece, it and its associated elements will of course execute a return to their normal positions, during most of which the marker will remain in contact with the index blank; material removal during the return movement, however, may be rendered negligible or altogether obviated by suitable inclination and shape of the marker, for example, a downward and forward inclination, and an acute angular shape in its most forward edge only.

The reversals between the supports of the markers 49 and 50 to the respective slide members 29 and 30 cause the normal positions of markers 49 and 50 to be materially separated in the forward and rearward, or transverse, direction; the length of the slots 25 and 26 being limited, the regions on the index blank over which the respective markers may operate are limited to two discrete, longitudinally extending regions of small transverse width. Thus marker 49 may operate within the region indicated in Figure 2 by the legend "Length", and the finger-piece 23 may accordingly be manipulated by the dictator for making length indications; the marker 50 may operate within the region indicated by the legend "Corrections", and the finger-piece 24 may accordingly be manipulated by the dictator for making error or correction indications. Other longitudinal regions remaining on the index blank, as well as the left-hand end region, afford space for other notations which it may be desired to make manually thereon.

The discreteness of the regions of operation of the two markers permits each to be centralized in the frame 22—which is desirable since it aligns all marks relating to the same point or moment in the recordation. Thus it will be noted, from the bottom view of Figure 5, that in its free rearward extremity and its extension 45 the arm 33 is shown as widened to extend just beyond the center of the frame 22; the marker 49 may if desired be formed by turning down the inner end of the widening portion. Likewise in its free forward extremity and its extension 46 the arm 34 is shown as correspondingly widened; and the marker 50 is shown as correspondingly formed.

While I intend no limitation thereto, I may mention as a specific example of an indexing blank which I have found advantageous in the practice of this invention, a blank formed of Bristol board of the order of .010" thick and having its top surface printed a solid black—and

thereover a sprayed-on white coating of a solution made up as follows: 20 ccs. of a solution of nitro-cellulose (ratio of 1 grm. $\frac{1}{2}$ second nitro-cellulose to 4 ccs. of amyl acetate); 15 grms. zinc oxide; 50 ccs. amyl acetate; and 8 ccs. castor oil. It will of course be understood that in turn upon this white coating may be printed any legends and/or dividing lines for regions of the index blank which may be desired.

It will finally be understood that while I have disclosed my invention in terms of a specific embodiment thereof, I intend no unnecessary limitations by virtue of the details of that embodiment; rather in the appended claims I undertake to express the scope of my invention, limited only by the state of the art.

I claim:

1. In apparatus of the character described including an index blank and a frame arranged for travel thereover: means, carried by said frame for travel over said blank, for engraving said blank; and means operable at will to move said engraving means relative to said frame transversely of said travel, and across and with predetermined constant pressure against said blank.

2. In apparatus of the character described including an index blank and a frame arranged for travel thereover: engraving means carried by said frame for travel over said blank in normal spaced relation to said blank; and means operable at will for first bringing said engraving means into contact with said blank and thereafter moving the same, transversely of said travel, across said blank with predetermined constant pressure thereagainst.

3. In apparatus of the character described including an index blank and a frame arranged for travel in a path spaced therefrom: a member carried by said frame and continually biased to a normal position relative thereto but movable against its bias transversely of said travel; a marker supported by said member for movement toward said blank and biased to contact with said blank; and means, responsive to occupation by said member of said normal position, for holding said marker out of contact with said blank.

4. In apparatus of the character described including an index blank and a frame arranged for travel in a path spaced therefrom: a marker carried by said frame in normal spaced relation to said blank; means for producing movement of said marker principally transverse of and parallel to said blank; and means responsive to said movement for first bringing said marker into and thereafter maintaining the same in contact with said blank.

5. In apparatus of the character described including an index blank and a frame arranged for travel in a path spaced therefrom: a marker carried by said frame in normal spaced relation to said blank; a finger-piece carried by said frame and arranged for transverse movement therein substantially parallel with said blank; and means responsive to said finger-piece movement for first bringing said marker into contact with said blank and thereafter moving the same transversely across said blank with predetermined pressure thereagainst.

6. In apparatus of the character described including an index blank and a frame arranged for travel in a path spaced therefrom: two slide members, said frame being provided with two parallel slots transverse of said travel for said slide members respectively; two mutually ad-

jacent and oppositely directed arms terminally pivoted, respectively to one end of one and to the opposite end of the other of said slide members, for movement toward said blank; and two

- 5 marking means respectively secured to said arms.
7. The combination according to claim 6, wherein the marking means are aligned with each other transversely of said blank.

8. In apparatus of the character described including an index blank and a frame arranged for travel thereover: means, carried by said frame for travel over said blank, for marking said blank; and means operable at will to move said marking means relative to said frame transversely of said travel, and across and with predetermined constant pressure against said blank.

9. In apparatus of the character described including an index blank and a frame arranged
20 for travel thereover: marking means carried by

said frame for travel over said blank in normal spaced relation to said blank; and means operable at will for first bringing said marking means into contact with said blank and thereafter moving the same, transversely of said travel, across
5 said blank with predetermined constant pressure thereagainst.

10. In apparatus of the character described including an index blank and a frame arranged for travel thereover: a marker carried by said frame in normal spaced relation to said blank; means operable at will for producing a substantial displacement of said marker transverse of said travel; and means for biasing said marker against said blank, responsive to said displacement with a substantially constant biasing force throughout substantially the entire range of said displacement.

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