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CORRECTION AND END-OF-LETTER MARKER FOR DICTATING MACHINE

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Fig. 1.

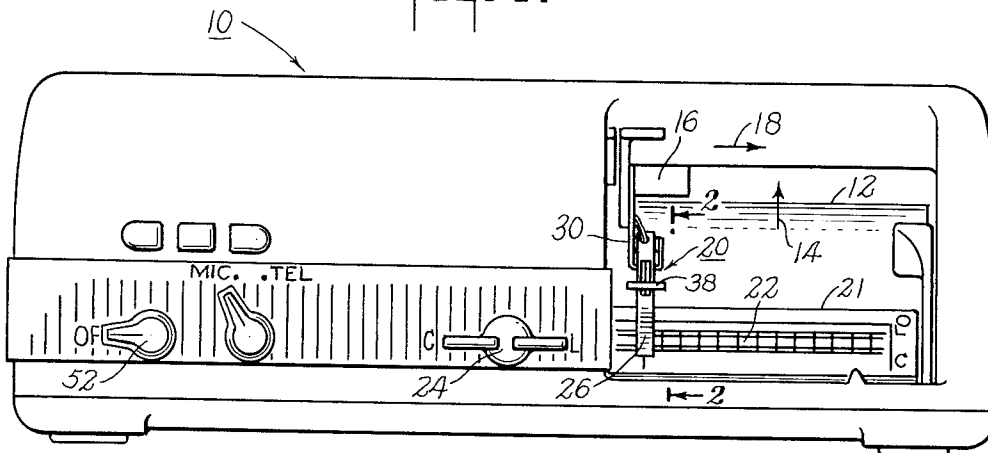


Fig. 2.

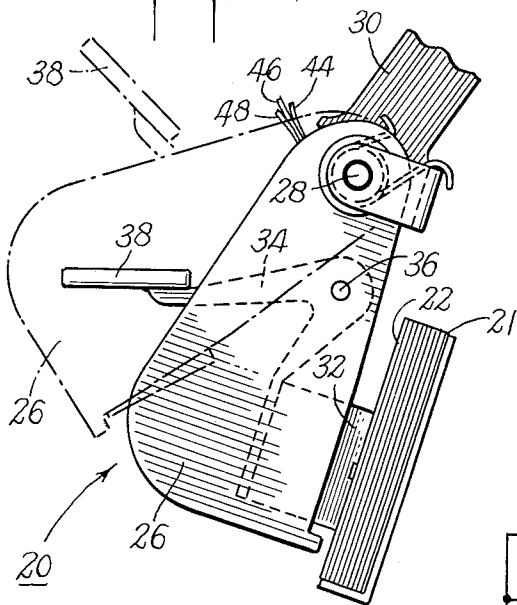


Fig. 3.

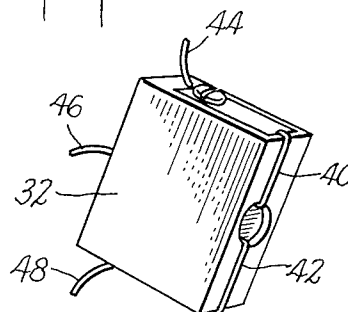
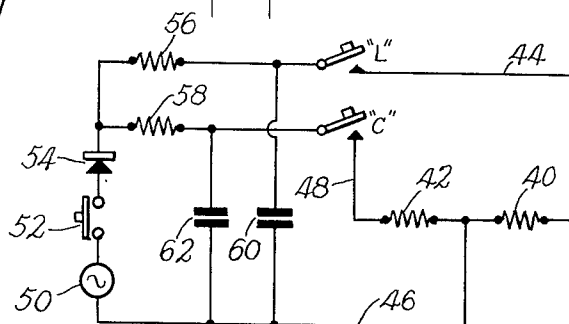


Fig. 4.



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CORRECTION AND END-OF-LETTER MARKER FOR DICTATING MACHINE

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4 Claims. (Cl. 346-76)

This invention relates to an improved arrangement in a dictating machine for indicating the point on a record of a correction or the end of a letter or the like on a paper slip associated with the record.

An object of this invention is to provide an improved marking system of the above kind wherein the marking element itself is not consumed, i.e. is permanent, but yet gives a readily seen mark on a paper slip supplied for use with it.

Another object is to provide such a system which is trouble free, has a long service life and which is inexpensive.

These and other objects will in part be understood from and in part pointed out in the description given hereinafter.

For convenience in transcribing a dictation record, it is desirable to have some means of indicating corrections and/or end-of-letter points on the record. In most dictating machines this is accomplished by means of a marking system which provides a separate slip, tab or card of paper or the like upon which the marks can be made, usually positioned adjacent the record and traversed by a marking device as the recorder carriage traverses the record.

In dictating machines using such a marking system, an important problem in the past has been how to make a mark of sufficient clearness and definition. The use of pencil lead or of ink as the marking medium has, of course, been tried—but this presents the difficulty of having to renew the medium periodically. Human nature being what it is, this necessity to renew usually results in the non-use or non-usability of the marker and makes for an irritating inconvenience.

Alternatively, permanent markers, such as a brass stylus, have been tried but these usually gave too faint a mark to be satisfactory. Others, although they gave a clear mark, required very expensive or perishable slips, cards or the like. The present invention seeks to overcome these difficulties.

In accordance with this invention, a very efficient and inexpensive marking system for a dictating machine is provided. The marking element includes a simple and small size heating element carried on the dictating machine carriage in proximity to a pad of paper slips of heat-sensitive material. By activating the heating element, a very definite and easily distinguishable mark is produced on the tab. Further according to the invention, an arrangement is provided for energizing the heating element which is operable, either directly at the dictating machine or remotely to produce, for example, either of two different marks, one for corrections and the other for end-of-letter indications. This arrangement gives reliable operation and is quite inexpensive; in addition since it can be controlled by the master switch of the dictating machine, accidental marks when the machine is not in use are prevented. The heat sensitive paper from which the paper slips, tabs or cards are made is commercially available at low cost and can be stored for long periods without deteriorating. It is not easily marked mechanically as by scratches and the like, and therefore can stand relatively rough handling.

A better understanding of the invention together with

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a fuller appreciation of its many advantages will best be gained from a study of the following description given in connection with the accompanying drawings in which:

FIGURE 1 is a front view of a dictating machine fitted with a heat-operated marking arrangement according to the invention;

FIGURE 2 is a greatly enlarged side view of the heat-marking device and heat-sensitive slips, taken as indicated by lines 2-2 in FIGURE 1;

FIGURE 3 is a somewhat more enlarged perspective view of the heating element in the device of FIGURE 2; and

FIGURE 4 is a diagram of an electrical circuit embodying features of the invention and adapted to selectively energize the heating element of FIGURE 3 according to the invention.

A dictating machine, generally indicated at 10 in FIGURE 1, includes an endless belt record 12 adapted to be moved in the direction of arrow 14 past a recording head 16. This head 16 is moved by a carriage laterally and slowly in the direction of arrow 18 when record 12 rotates, thereby tracing out a helical path or sound track on the belt record 12.

Mounted for lateral movement along with head 16 is a marker device 20 which extends downward and rides in front of a pad 21 of paper indicator slips 22. A mark made on a slip 22 by marker 20 corresponds to and indicates a correction or end-of-letter point on record 12. When the operator of the dictating machine wishes to make such a mark he depresses one end of a double-ended control lever 24, on the left end "C" to make a "correction" indication or on the right end "L" to make an "end-of-letter" mark.

The enlarged side view of the marking device 20 shown in FIGURE 2 includes a housing 26 mounted on a shaft 28 carried on the end of the arm 30 which in turn is supported from the movable carriage of recording head 16. Housing 26 is spring urged into the full line position shown but can be swung back to the dotted line position to permit, for example, the removal of a marked slip 22 from the pad 21.

Spring mounted within housing 26 is an insulating block 32 whose front face is lightly pressed against the top slip 22 of the pad 21. Block 32 is carried by an arm 34 which is pivoted to housing 26 at 36 and which also carries a finger plate 38 by which the block and housing can be retracted to their dotted line positions when desired.

Referring to FIGURE 3, the insulating block 32 has recessed in its front face two heater wires 40 and 42 which are adapted to be heated selectively by an electric current thereby to put a mark as desired on the top slip 22 of the pad 21 as shown in FIGURES 1 and 2. Wire 40 is connected between lead 44 and lead 46, and wire 42 between lead 46 and 48.

Referring to FIGURE 4 wherein heater wires 40 and 42 are represented schematically by resistor symbols, lead 46, which is common to both of the heater wires, is connected to one side of an alternating voltage supply 50. The other side of this supply runs to a master power switch 52 for machine 10. When this switch is closed, current flows through a rectifier 54 and through each of two resistors 56 and 58 to charge two capacitors 60 and 62, respectively. By pressing the "L" or the "C" switch, both normally-open and operated selectively to closed position by the double-ended control lever 24 seen in FIGURE 1, heater wire 40, or 42, is energized thereby to make a mark on the heat sensitive slip 22.

Resistors 56 and 58 are advantageously chosen so that, if switch "L" or "C" is held down for longer than it takes to discharge capacitor 60, or 62, the current which can

flow through wire 40, or 42, is too small to effect substantial heating of the wire. Thus each mark produced on a slip 22 will have the same quality as every other mark so long as switch "L," or "C," is completely closed for the short time necessary to discharge capacitor 60, or 62, through its heater wire.

Capacitor 60 and 62 can be different in size and, if so, the discharge of one into its respective resistance wire 40, or 42, will produce a mark on a slip 22 different from the mark produced by the other resistance wire and its capacitor. If desired, a single capacitor can be used to energize, through the two switches "L" and "C," both of the wires 40 and 42. Alternatively, a single heater wire can be used with two capacitors to produce two marks of different intensity.

The invention has been tested using slips 22 made of various types of heat-sensitive material. Similar heat sensitive paper is now on the market being sold under the trademark "Thermo-Fax." In these tests very satisfactory results were obtained using the ordinary power line supply voltage of about 115 volts, and condensers of about 10 microfarads capacity each.

The above description is intended in illustration and not in limitation of the invention. Various minor changes and modifications in the apparatus illustrated may occur to those skilled in the art and these may be made without departing from the spirit or scope of the invention as set forth.

I claim:

1. In a recording machine of the character described, a pad of slips of heat-sensitive visual indicating material mounted on the machine, a heat marking means including a resistance element adapted to traverse said slips in close proximity thereto in accordance with the position of a recording head relative to a dictation record and the like in said machine, and means to selectively energize said marking means to produce visible marks of uniform quality on the top one only of said slips, said means to energize including a capacitor, a source of di-

rect voltage, a resistor connecting said source to said capacitor, and a manually operable switch in series with said resistance element and said capacitor, said resistor being large enough to prevent effective heating of said heat marking means after said capacitor has been discharged even on prolonged actuation of said switch, said capacitor being large enough to produce a visible mark on said slip without burning it.

2. The combination of elements as in claim 1 in which said resistance element includes a first heating wire and a second heating wire spaced therefrom, said wires being adapted to produce marks at laterally spaced points on said top slip, each of said heating wires being energized by a respective capacitor and a respective manually operable switch, each of said capacitors being charged from said source.

3. The combination of elements as in claim 2 in which each of said wires includes a single resistance wire filament mounted in a front face of a heat-insulating block, said filaments lying along a straight line which is generally transverse to the direction of travel of said heat marking means relative to said slip, said filaments being recessed slightly into the front face of said block, said block being resiliently urged lightly into contact with the surface of said slip.

4. The combination of elements as in claim 2 in which said capacitors are connected to said source of voltage in series with the main power switch of said machine.

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