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INFORMATION RECORDING APPARATUS

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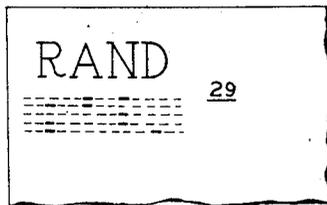
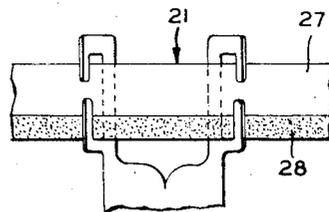
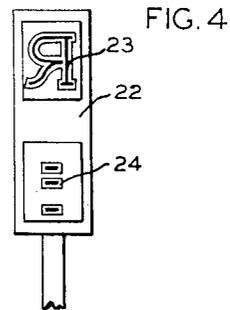
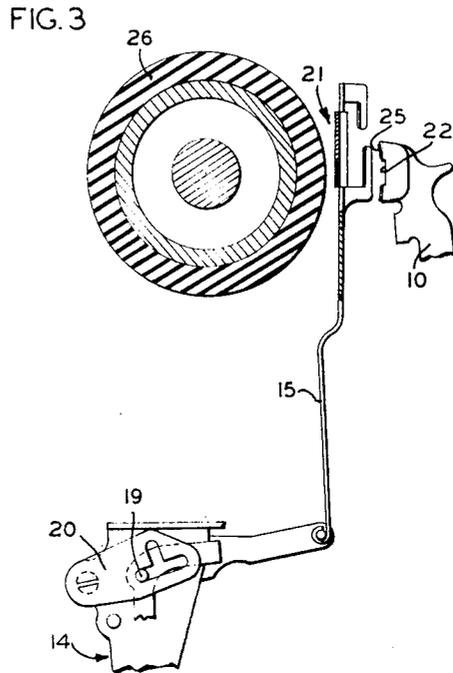
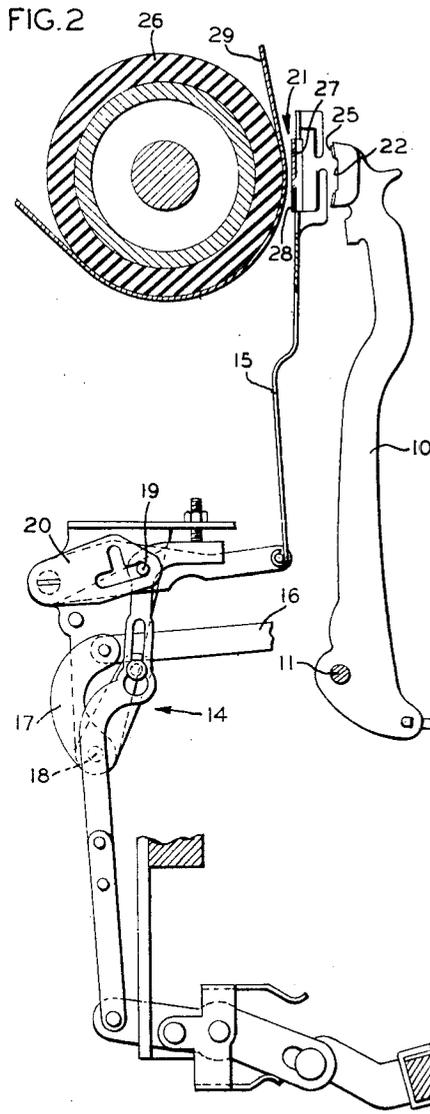


FIG. 6

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2,788,879

**INFORMATION RECORDING APPARATUS**

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1 Claim. (Cl. 197—1)

This invention relates to new and useful improvements in apparatus for recording information.

In modern information recording systems it is known to print characters on a sheet in ordinary non-magnetic ink. It is also known in such systems to print code character representations on sheets or tape in magnetic ink so that the code representations may be picked up by magnetic sensing heads.

It has been found desirable to modify a standard typewriter so that the type bars include the regular character as well as the code representation thereof. The main object of the invention is to provide a simple efficient apparatus to achieve the above result.

A further object is to provide a ribbon construction and operation which will permit the character and its code representation to be printed simultaneously, one in regular ink and the other in magnetic ink.

A still further object is to provide a ribbon shifting mechanism which will selectively permit the simultaneous printing above mentioned as well as to permit the character alone to be printed when the printing of the code representation is not desired as well as to lower the ribbon so that the typewriter may be used to produce stencils.

In general terms the invention includes a type bar on the face of which are disposed both the regular character and the code representation thereof. Associated with this novel form of type bar is an improved ribbon one portion of which is formed with magnetic ink and the remaining portion is formed of non-magnetic ink. The ribbon operation and the type bar operation are so related that the shift mechanism may be set to cause the printing of both the character and the code representation, the former in regular ink and the latter in magnetic ink so that the code representation may be subsequently sensed by any suitable magnetic head. The shift mechanism may also be so set that the magnetic portion of the ribbon may be removed from the path of the code representation whereby only the regular character is printed. Thus the type bar thus modified may be used in the regular manner or may be employed for the added purpose above mentioned. The shift mechanism also may be set so that neither the character or its code representation are printed.

The present preferred form which the invention may assume is illustrated in the drawings, of which,

Fig. 1 is a front to rear vertical section through a typewriter in which the invention is embodied and showing the parts as normally at rest;

Fig. 2 is a similar view showing the parts in the position to print both the character and the code representation;

Fig. 3 is a partial section showing the parts in position to print only the regular character in non-magnetic ink;

Fig. 4 is a detail of the front of the face of the improved type bar;

Fig. 5 is a detail partial elevation of the improved ribbon employed; and,

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Fig. 6 is a detail view of a printed word with code representations below.

Referring to the specific form of the invention illustrated, with particular reference to Fig. 1, a type bar 10, pivoted at 11, is connected by a link 12 to a bell crank 13 which is operated by a type key in a well known manner (not shown). The operation of this bell crank, through mechanism generally indicated at 14, actuates the ribbon guide 15 to position the ribbon selectively in three positions. The operation of this mechanism is well known and is shown and described in U. S. Patent No. 2,638,199, issued to F. W. Schremp on May 12, 1953, and entitled "Power-Operated Typewriter," with special reference to Fig. 2 thereof. The manipulation of a link 16 selectively will rock arm 17 fixed to shaft 18 and through the elements described in the above mentioned patent will position a pin 19 in a slot in an arm 20 to determine the throw of the guide 15. The ribbon as shown in Fig. 1 is in the lower selected position; in Fig. 2 it is shown in an intermediate position; and in Fig. 3 it is shown in the uppermost position. In the lowermost position the ribbon 21 is below the path of movement of the face 22 of the type bar and no printing takes place and this position can be used for stenciling work.

On the face of the type as shown in Fig. 4, there is shown a character representation 23 on the upper portion of the face 22 and a code representation 24 of this same character just below it. The impression surfaces of these representations are curved as shown at 25 in the figures. The arc of this curve is concentric with the curvature of the platen 26 so that simultaneous printing of the two representations may be achieved.

The ribbon 21 has a portion 27, shown as the upper portion, and impregnated with non-magnetic ink, and another portion 28, shown as the lower portion, and impregnated with magnetic ink. It is to be noted that the vertical width of the area 23 must be at least as great as the vertical height of the code representation 24, and that the vertical distance between the character 23 and its code representation 24 disposed therebelow, is at least as great as the vertical width of the area 23. It is further to be noted that the vertical width of the area 27 is sufficient to receive the impact of the character 23 in two positions of the ribbon.

In the operation of the device, with the link 16 set in one of its three positions (Fig. 1) the ribbon guide 15 will not be lifted and nothing will be printed, but the type can be used for stencil work if desired. With the said link in another position, the ribbon guide will be lifted to the position shown in Fig. 2 in which position it will be seen that both the upper and lower representations will be pressed against their respective portions of the ribbon so that the character itself will be printed on the sheet 29 in regular non-magnetic ink while the code representation of the said character will be printed in magnetic ink whereby said magnetic impression may subsequently be sensed by any suitable magnetic sensing head. With the link 16 adjusted in still another position the ribbon is moved up to the position shown in Fig. 3 in which the character itself is printed on the paper but the magnetic inked portion of the ribbon is raised above the point of impact of the code representation thereof and this is therefore not printed. It is obvious therefore that, with the link in this last position the machine may be used as an ordinary typewriter.

It will be obvious that the main advantage of this invention resides in the fact that an ordinary typewriter may be used and need be modified only to the extent of changing the faces of the type bars and providing this specially formed ribbon. It is simple in construction, relatively

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inexpensive to make, and involves no major alterations in the standard typewriter.

While I have described what I consider to be a highly desirable embodiment of my invention, it is obvious that many changes in form could be made without departing from the invention, and I, therefore, do not limit myself to the exact form herein shown and described, nor to anything less than the whole of my invention, as hereinafter set forth, and as hereinafter claimed.

What I claim as my invention, is:

In an apparatus for recording information, a ribbon having portions respectively impregnated with magnetic material and non-magnetic material, a character-bearing means having thereon a character and a code representation thereof vertically spaced therefrom, means to advance said character-bearing means against the ribbon, and means to shift the ribbon into either of two positions with respect to the character-bearing means, the vertical width of the area of the ribbon bearing the magnetic material being at least as great as the vertical height of the code representation, the vertical distance between the character and the code representation being greater than

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the vertical width of the magnetic portion of the ribbon, the vertical width of the non-magnetic area of the ribbon being sufficient to receive the impact of the character in each of said two positions of the ribbon, in one of which positions both the character and code representation are printed and in the other of which only the character is printed.

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