# United States Patent [19]

**Dodds**

[11] **3,785,471**

[45] **Jan. 15, 1974**


[54] **LETTER PLACEMENT INDICATOR FOR TYPEWRITERS AND MEANS RESPONSIVE TO THE INDICATOR FOR SIMULTANEOUS SETTING OF MARGIN STOPS**


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[22] Filed: **Aug. 30, 1971**

[21] Appl. No.: **176,015**

[52] **U.S. Cl.** ..... **197/63,** 197/187, 197/189

[51] **Int. Cl.** ..... **B41j 21/02**

[58] **Field of Search** ..... 197/63, 140, 142, 197/143, 179, 180, 182, 187, 188, 189, 190, 191, 192, 194



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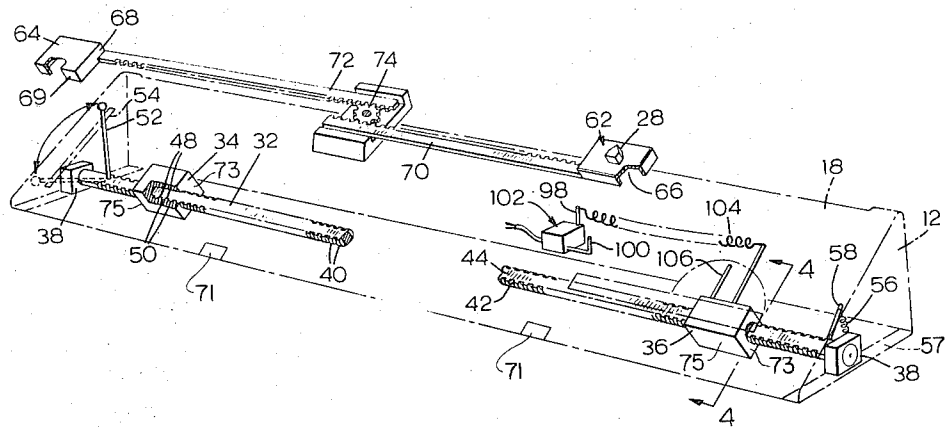
*Primary Examiner*—Ernest T. Wright, Jr.



[57] **ABSTRACT**

A typewriter includes a mechanism for automatically positioning margin stops to correspond to a predetermined position of a letter placement indicator. A visual end-of-line arrangement, a visual envelope positioning device and visual colored tab setting indicators are provided.


**8 Claims, 6 Drawing Figures**



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SHEET 1 OF 2

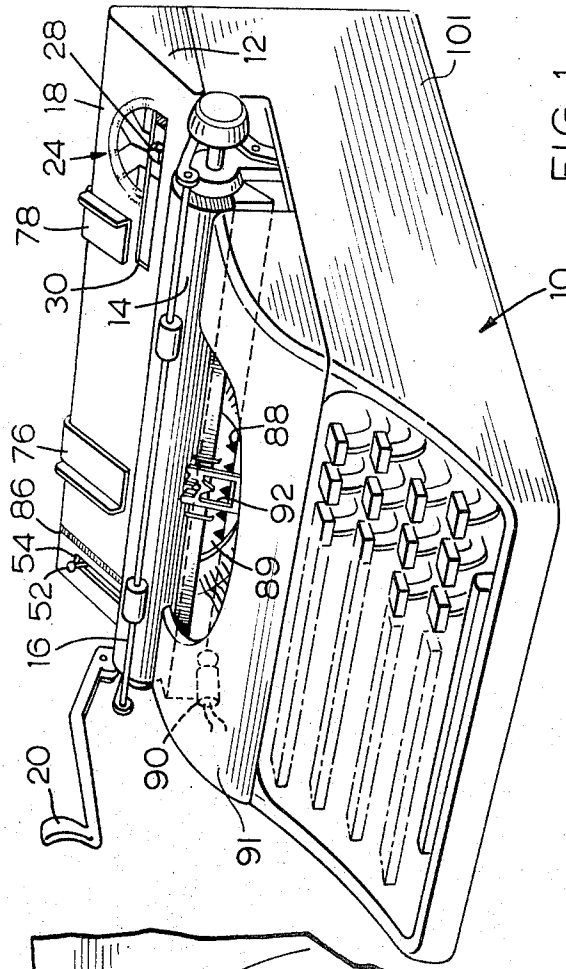



FIG. 1

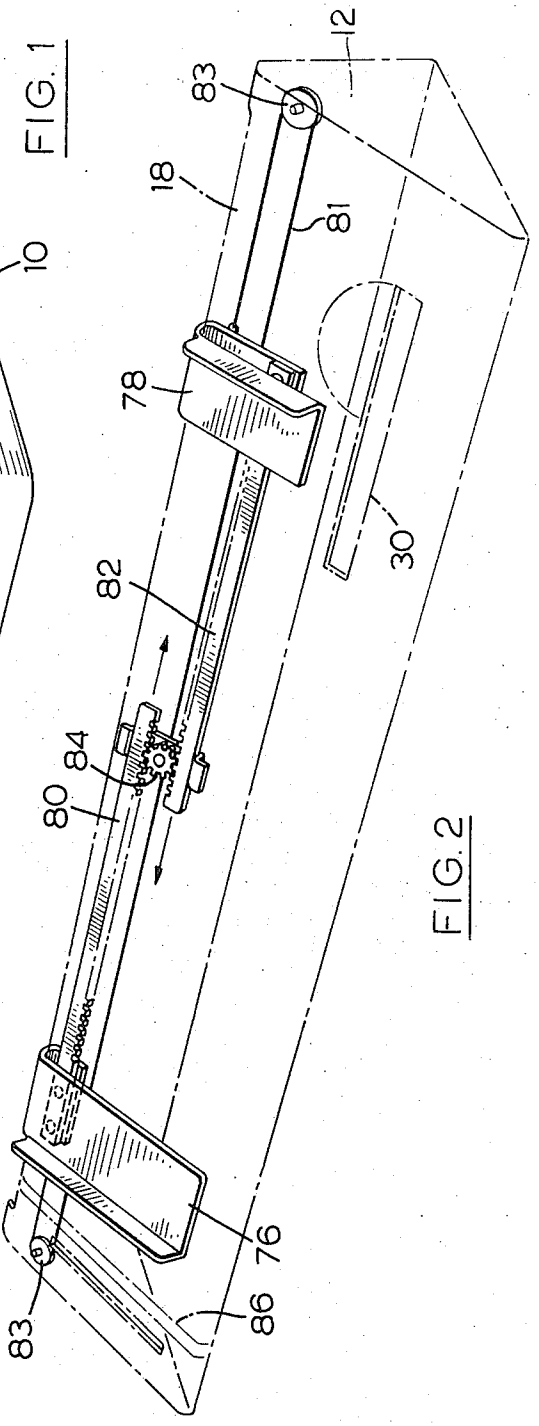



FIG. 2

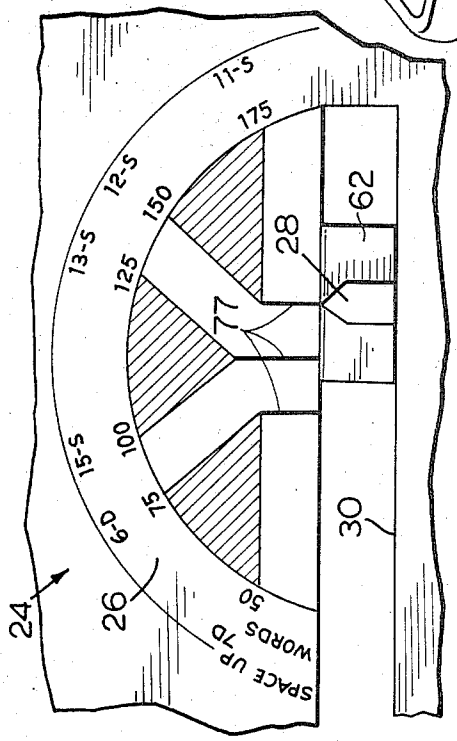



FIG. 6

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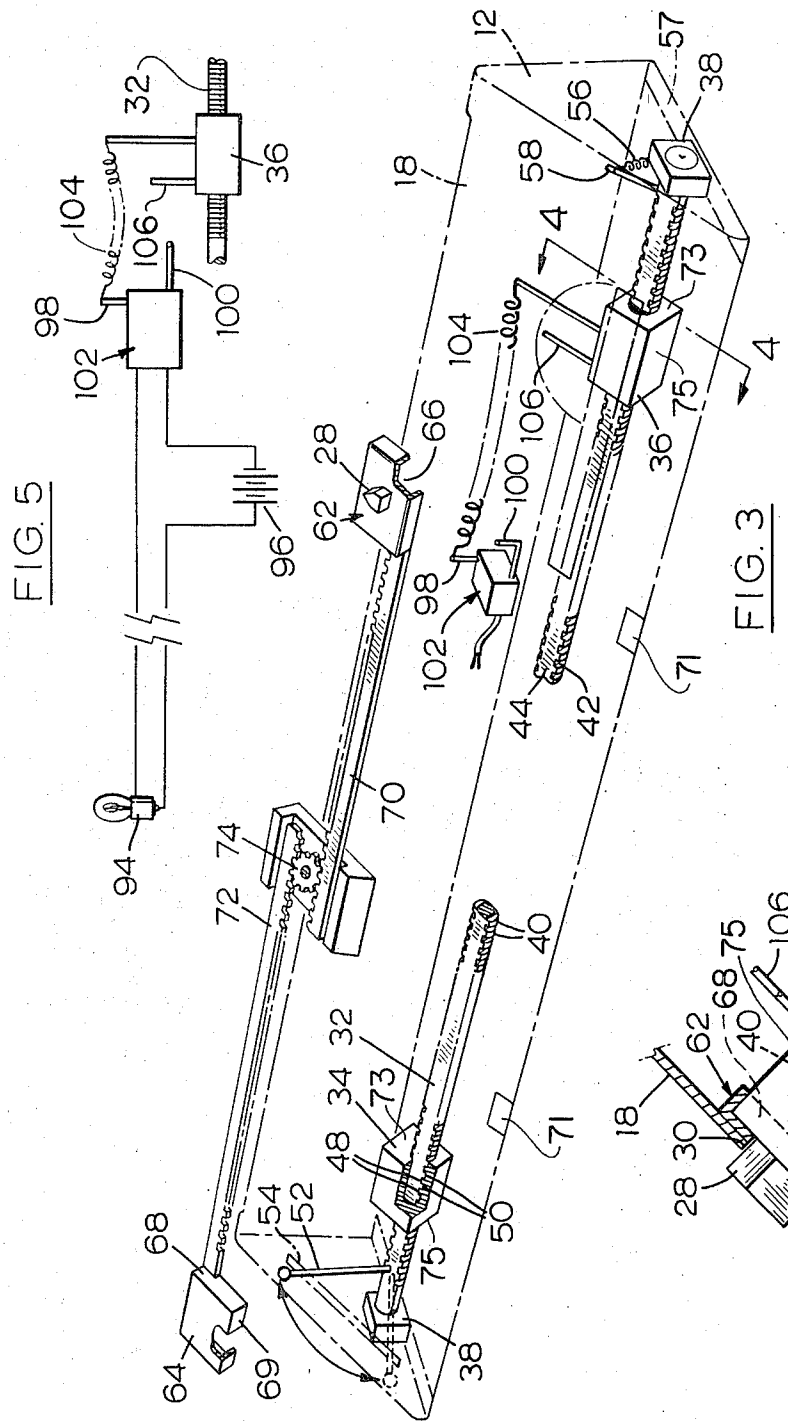



FIG. 5

FIG. 3

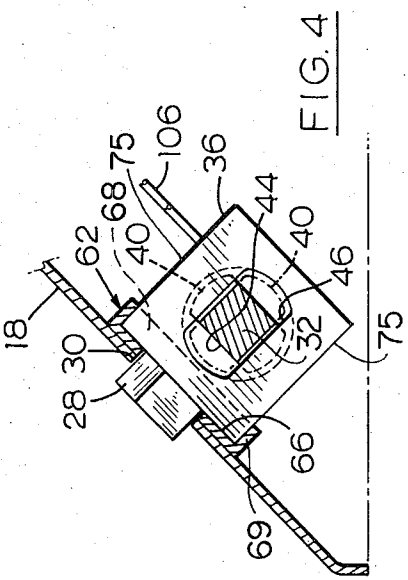



FIG. 4

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# LETTER PLACEMENT INDICATOR FOR TYPEWRITERS AND MEANS RESPONSIVE TO THE INDICATOR FOR SIMULTANEOUS SETTING OF MARGIN STOPS

This invention relates to typewriters.

This invention in one embodiment is an improvement on the letter placement indicator described in my U.S. Pat. No. 2,996,164. In that patent there is described a letter placement indicator which indicates a plurality of information to a typist to assist the typist in more readily centering the text of a letter between the sides of the page and additionally between the top and bottom of a page.

Prior to the invention of my aforementioned patent, the typist had had difficulty in correctly centering a letter on a page when the letter must be transcribed from either longhand or shorthand notes, because the typist had no means other than judgment and experience on which to base the calculation of the number of lines down from the top of the page to the first line where typing should begin so as to correctly center the letter between the top and bottom of the page.

The positioning of the text between the sides of the paper is determined by the position of the margin stops. In accordance with my earlier invention, the positioning of the margin stops is determined by the setting of the pointer of the letter placement indicator. The mechanism utilized was quite complex and in one embodiment of the present invention, I have considerably modified, simplified and improved on my previous mechanism.

The invention is illustrated by the accompanying drawing, in which:

FIG. 1 is a general schematic representation of a typewriter including a number of embodiments of the invention,

FIG. 2 is a detail of part of the typewriter of FIG. 1, with parts removed for clarity,

FIG. 3 is a detail of part of the typewriter of FIG. 1, with parts removed, and partially exploded, for clarity,

FIG. 4 is a section on line 4—4 of FIG. 3,

FIG. 5 is a circuit diagram; and

FIG. 6 is a detail of the letter placement indicator.

In the drawing, a typewriter 10 includes a carriage 12 having a conventional platen 14 and paper bail 16. A cover 18 is hingedly mounted on the carriage 12 and locks in place by any convenient means. A conventional carriage return mechanism operating arm 20 is included.

On the cover 18 a letter placement indicator 24 is provided which includes a pair of scales 26 and a pointer 28. The pointer 28 is fixed in sliding relation with reference to a slot 30 formed in the cover 18.

The scale 26, as more clearly shown in FIG. 6, comprises an upper and lower scale each composed of a plurality of indicia. The number of each indicia in the upper scale indicates the number of spaces which must be spaced up from the top of a page on which a letter is to be typed on the page, which is the date line of the letter. The letter associated with each indicia in the upper scale indicates whether it is necessary to space up double line spaces or single line spaces, and indicates the required spacing between adjacent lines in the body of the letter. Thus the indicia 7-D means that the typist should space up seven double line spaces from the top of the page to the date line, and that the spacing between the lines in the body of the letter should be double. 15-S, on the other hand, means that the typist should space up fifteen single line spaces, and that the spacing of the lines in the body of the letter should be single.



The lower scale contains the numbers 50, 75, 100, 125, 150 and 175 which indicate the number of words in the body of the letter to be typed. It will be seen from FIG. 6 that individual indicia on one scale are associated with individual indicia on the other scale to form a plurality of pairs of indicia which visibly associate the number of words in the body of a letter to be typed on a page with the number of spaces between the top of the page and the first line to be typed on the page and the required spacing between adjacent lines in the body of the letter. Thus, 7-D and 50 are associated, 6-D and 75 are associated, 15-S and 100 are associated, 13-S and 125 are associated, 12-S and 150 are associated and 11-S and 175 are associated.

The carriage 12 has a rotor 32 mounted thereon and carrying margin stops 34 and 36. The manner of operation of typewriter margin stops is well known and requires no further description. The rotor 32 is journalled for rotation in bearing housings 38, or may be mounted in any other convenient manner for rotation.

The rotor 32 is formed with a plurality of teeth 40 which project diametrically opposite to one another and are separated by valleys 42 therebetween. The rotor 32 also is formed with opposed flats 44.

Each of the margin stops 34 and 36 is formed with an elongated slot opening 46 of the same cross-sectional shape as the rotor 32. Interiorally of each of the margin stops 34 and 36, there are formed a plurality of teeth 48 with intervening valleys 50 of complimentary shape to the teeth 40 with intervening valleys 42 on the rotor 32, so that the respective teeth 40 and 48 and valleys 42 and 50 may intermesh.

The rotor 32 is rotatable between two positions. As seen in FIG. 3 and in full outline in FIG. 4, in one of the positions the valleys 42 and teeth 40 on the rotor 32 and the valleys 50 and teeth 48 of the stops 34 and 36 intermesh, thereby effectively locking the stops 34 and 36 to the rotor 32. In the other position, shown in dotted outline in FIG. 4, the teeth 40 and 48 and valleys 42 and 50 are out of intermeshing relationship and the stops 34 and 36 may be slid along the rotor 32.

The rotation between the two positions may be achieved in any convenient manner. For example, an actuating lever 52 may be provided attached to the rotor 32. The lever 52 projects through a slot 54 in the cover 18, so that the lever 52 may be actuated from externally of the typewriter carriage cover 18. The lever 52 is shown in full outline to represent the first position, with the stops 34 and 36 locked, and in broken outline, to represent the second position with the stops 34 and 36 freed. Linear displacement of the lever 52 in the slot 54 causes rotation of the rotor 32. The slot 54 may be constructed so that its longitudinal extremities constitute stops so that the extreme positions of displacement of the lever 52 correspond to the two positions of the rotor 32 outlined above.

Normally the margin stops 34 and 36 are in the locked position shown in FIG. 3 and in full outline in FIG. 4 and it is preferable therefore to associate with the rotor 32 means to urge the rotor 32 to the locked position of FIG. 3, so that if the lever 52 is moved in the slot 54 to the position in which the rotor 32 assumes the

unlocked position shown in broken outline in FIG. 4, upon release of the lever 52, the lever 52 is restored to its original locked position and the position shown in FIG. 3 is resumed.

The means to urge the rotor 32 to the locked position may comprise a spring 56 attached between a projection 58 on the rotor 32 and a base 57 on the carriage 12. Clearly this arrangement represents only one way in which this effect may be achieved and other mechanisms and devices to achieve this end are within the scope of the invention.

On the underside of the cover 18 are located two shallow tray-like margin stop engaging members 62 and 64. Each of these margin stop engaging members 62 and 64 includes a flat surface 66 and side walls 68 upstanding from the flat surface 66. Each margin stop engaging member 62 and 64 receives one of the margin stops 36 and 34 when the cover 18 is in its locked position with the walls 68 of the respective member 62 and 64 engaging the side walls 73 of the respective margin stop 34 and 36, as may be seen more clearly from the exploded view in FIG. 3 and the sectional view in FIG. 4. Front and rear walls 69 of the margin stop engaging members 62 and 64 may engage the respective walls 75 of the margin stops 34 and 36 but this arrangement is not essential.

It will be seen that it is not necessary to attach the margin stops 34 and 36 to the respective member 64 and 62, engagement between the walls 68 and the margin stops 34 and 36 being sufficient, although attachment may be utilized, if desired. By the absence of physical attachment, the construction allows the cover 18 to be dropped forward on its hinges 71 to make any necessary adjustments, and the construction readily may tolerate inaccurate machinings, etc. The cover 18 may be removed and the mechanism disassembled and adjustments made if required without the prior necessity of releasing attachments between the margin stops 34 and 36 and the stop engaging members 64 and 62.

Each of the margin stop engaging members 62 and 64 is attached to a rack, respectively 70 and 72, which racks 70 and 72 are mounted slidably on the underside of the cover 18 and extend longitudinally of the cover 18. A pinion 74, attached to the cover 18, is positioned in intermeshing engagement with the racks 70 and 72. It is apparent that upon movement of one or other of the margin stop engaging members 62 and 64 longitudinally of the cover 18, the other of the members 62 and 64 will correspondingly move in the opposite direction to the direction of movement of the one margin stop engaging member 62 and 64. Therefore, if the cover 18 is in its closed position, so that the margin stops 34 and 36 are engaged by the walls 68 of the members 64 and 62, then, provided that the margin stops 34 and 36 are free to move longitudinally of the rotor 32, i. e., with the rotor 32 positioned as shown in dotted outline in FIG. 4, upon movement of one of the stop engaging members 62 and 64, the margin stops 36 and 34 are correspondingly moved.

The pointer 28 is attached to member 62 and protrudes through slot 30, creating a groove top and bottom so that the pointer 28 can be slidably moved to any desired position on the indicator 24, provided the rotor 32 is in the unlocked position to displace the margin stops 34 and 36 of the typewriter 10 to positions corresponding to the position of the pointer 28.

The pointer 28 may be located in any of a plurality of positions, corresponding to the arrowed positions 77 of the scale 26. The margin stops 34 and 36 are positioned by the movement of the pointer 28 to correspond to the margins required for the particular letter size, so that the text of the letter is automatically centered between the edges of the paper. Additionally, the pointer 28 may be located at the extreme left hand end of the slot 30 so that the margin stops 34 and 36 are moved to a position in which a paragraph may be inserted within a paragraph on the body of a letter.

Further, the pointer 28 may be moved to the extreme right hand end of the slot 30 to permit the typist to do tabulating work or the like. In order to allow the pointer 28 to be moved and thereby set the margin stops 34 and 36, the margin stops 34 and 36 first must be released from their intermeshing relationship with respect to rotor 32 and this is achieved by moving the lever 52 in the slot 54 to rotate the rotor 32 so that the rotor 32 and the margin stops 34 and 36 are out of intermeshing relationship. Upon setting the pointer 28 to the desired position, the lever 52 may be released and due to the action of the retraction spring 56, the rotor 32 resumes its original locked position so that the margin stops 34 and 36 again are locked relative to the rotor 32.

It will be seen that the margin setting and release construction described above is considerably simplified as compared to the structure described in U.S. Pat. No. 2,996,164. The complicated system of a movable face plate which is normally spaced from the margin stop by compression springs, is eliminated.

As in the case of my earlier patent, paper guides 76 and 78 are provided slidable upon the cover 18. The paper guide 78 is shorter than guide 76 so as to avoid obscuring the indicator 24. The paper guides 76 and 78 are connected to racks 80 and 82 respectively, slidably mounted to the underside of the cover 18. A pinion 84 is affixed to the cover 18 in intermeshing engagement with the racks 80 and 82. The outer extremities of the racks 80 and 82 are joined by elastic material 81 passed about pulleys 83 at the remote ends of the cover 18 as shown in dotted outline in FIG. 3, the elastic material 81 serving to retract the paper guides 76 and 78 to the outermost extremities of the carriage 12 after the paper guides 76 and 78 have been utilized to center the paper to be typed on the carriage 12. Other means may be employed to retract the guides 76 and 78 after use, if desired.

The use of the paper guides 76 and 78 allows the paper to be instantly centered on the carriage 12 without the necessity of centering the carriage 12 itself.

On the outer surface of the cover 18 adjacent the left hand end is positioned a line 86, usually white but it may be any desired colour. The left hand paper guide 76 always returns to the white line 86 after paper centering, due to the action of the elastic material 81. The left hand paper guide 76 becomes an envelope guide. Upon insertion of an envelope the guide 76 at the white line 86 ensures perfect centering of the typed address, using the same tab settings as used in typing the letter. On a conventional typewriter the left hand paper guide must be manually moved after each letter is typed and before typing of the envelope.

As seen most readily in FIG. 1, the typewriter 10 of the invention may include a plurality of markings 88 on the platen paper holder 89 corresponding to a number

of fixed positions as hereinafter described. The markings 88 may take any desired form, and in the embodiment illustrated are a series of triangles, usually colored for ease of sight. Additionally, a small light bulb 90 may be positioned on the underside of the typewriter type cover bar 91 to shine on the type guide 92, energized in any desired manner.

The markings 88 are intended to correspond to tab settings normally used by a typist in typing a letter. If it is assumed that a typist clears the normal letter tab settings and sets up tabs for other work, such as tabulating or the like and subsequently wishes to reset the tabs for a normal letter, then it is a simple matter to press a total tab clear lever and then space over to position successively each marking 88, or however many markings 88 desired, in the type guide 92 and reset the tabs at positions corresponding to the markings 88. The typewriter 10 then is set up at the same tab setting as prior to the other work. This is a rapid operation, which saves the typist time in tab setting.

In accordance with another embodiment of the invention shown in FIGS. 3 and 5, the typewriter 10 is provided with a novel end-of-line indication device. In the normal typewriter, the end of a line is indicated by a ring of a bell at which point the typist returns the carriage 12 to the beginning of the next line. In some offices, it is difficult at times for the typist to distinguish the sound of her bell from that of adjoining typewriters so that inadvertently the typist may return the carriage 12 prematurely.

This problem is eliminated in accordance with the additional embodiment of the invention illustrated in FIGS. 3 and 5 by using a extension light bulb 94 which flashes on to indicate the end of a line. In FIG. 5, the extension light bulb 94 is releasably affixed at any convenient position for observation by the typist, such as adjacent a shorthand book holder. The extension light bulb 94 is connected in series through a battery 96, or other source of electricity, to two terminals 98 and 100 fixedly mounted adjacent the margin release 102. The margin release 102 otherwise is of conventional construction and serves to limit movement of the carriage 12. Terminal 98 is connected to the right hand margin stop 36 by a flexible coiled wire 104. The terminal 100 is positioned so that when margin stop 36 engages it, such as through flexible probe 106, the circuit is closed and hence the light bulb 94 is caused to glow. The terminal 100 is positioned so that the circuit is closed at or close to the end of the line of typing, typically about three strokes from the end. Therefore, when the light bulb 94 glows, the typist is signalled to return the carriage 12 for typing on the next line.

It is preferred to include a retracting device (not shown) which will retract a cord connecting the extension light bulb 94 to the typewriter 10 so that when the light bulb is not used, the extension light bulb 94 may be stored adjacent the typewriter 10. Typically, the extension light bulb 94 may be provided with a magnetic device to attach the light bulb 94 to the body of the typewriter 10. Alternatively, a recess may be formed in the side wall 101 of the typewriter 10 to receive the extension cord.

There have been described above, therefore, a number of improvements on existing typewriters which may be used separately or jointly in order to improve the efficiency of typing operations.

Modifications are possible within the scope of the invention.

What I claim is:

1. A typewriter comprising a carriage, an elongated rotor mounted within said carriage in a normal first position, means to rotate said rotor between said first position and a second position, first and second margin stops mounted on said rotor for movement in an axial direction of said rotor when said rotor is in said second position and for locking relative to said rotor when said rotor is in said first position, a letter placement indicator comprising scale means, a movable pointer manually movable to a plurality of positions, indicia on said scale means associated with at least some of said plurality of positions, said indicia providing a visual indication of (a) the number of spaces between the top of a page and a predetermined line to be typed on said page, (b) the number of spaces to be provided between adjacent lines in the body of a letter to be typed on said page, and (c) the number of words in the body of a letter to be typed on said page, first and second margin stop engaging members engaging respectively said first and second margin stops and preventing said first and second margin stops from rotation relative to said rotor, said pointer being mounted directly on one of said margin stop engaging members, first and second racks attached one to each of said first and second stop engaging members and extending parallel to each other, said racks extending parallel to said elongated rotor at a fixed distance therefrom when said first and second margin stop engaging members are in engagement with said first and second margin stops, and a pinion intermeshing with said racks and mounted on said carriage, whereby movement of said pointer to any of said plurality of positions when said rotor is in said second position and said first and second margin stop engaging members are in engagement with said first and second margin stops causes movement of said first and second margin stops towards or away from each other.

2. A typewriter comprising a carriage, an elongated rotor mounted within said carriage in a normal first position, means to rotate said rotor between said first position and a second position, first and second margin stops mounted on said rotor for movement in an axial direction of said rotor when said rotor is in said second position and for locking relative to said rotor when said rotor is in said first position, a letter placement indicator comprising a scale means, a movable pointer manually movable to a plurality of positions, indicia on said scale means associated with at least some of said plurality of positions, said indicia providing a visual indication of (a) the number of spaces between the top of a page and a predetermined line to be typed on said page, (b) the number of spaces to be provided between adjacent lines in the body of a letter to be typed on said page, and (c) the number of words in the body of a letter to be typed on said page, and means connecting said pointer to said first and second margin stops, said connecting means including first and second margin stop engaging members, engaging respectively said first and second margin stops, said pointer being connected to one of said margin stop engaging members, first and second racks attached one each to said first and second margin stop engaging members and extending parallel to each other and to said elongated rotor, and a pinion intermeshing with said racks and mounted on said carriage, whereby movement of said pointer to any of said

plurality of positions when said rotor is in said second position causes simultaneous movement of said first and second margin stops towards or away from each other, said margin stop engaging members being in the form of shallow trays having walls which engage the margin stops.

**3.** The typewriter of claim **2** including a stationary margin release engageable by said first and second margin stops, said first margin stop corresponding to the right hand end of a line to be typed, electrical circuit means connected between said first margin stop and said margin release and comprising lamp means, circuit energizing means and circuit closing means to close said circuit means at a predetermined relative position of said first margin stop and said margin release, thereby to cause said lamp means to glow at or near the end of the typing line.

**4.** The typewriter of claim **2** including a stationary typeguide, and a plurality of indicator means comprising colored triangles located at predetermined spaced-apart locations on said carriage and individually visible in said typeguide, said indicator means corresponding to predetermined letter tabulator settings.

**5.** The typewriter of claim **2** including a cover for said carriage and an indicator line on said carriage cover corresponding to the positioning of an envelope for address typing using the same tabulator settings as for a letter.

**6.** The typewriter of claim **3** wherein said predetermined relative position of said first margin stop and said margin release is at or near the point of engagement of said first margin stop and said margin release, whereby said lamp means is caused to glow at or near the end of the typing line.

**7.** A typewriter comprising a carriage, an elongated rotor mounted within said carriage in a normal first position, means to rotate said rotor between said first position and a second position, first and second margin stops mounted on said rotor for movement in an axial direction of said rotor when said rotor is in said second position and for locking relative to said rotor when said rotor is in said first position, a letter placement indicator comprising scale means, a movable pointer manually movable to a plurality of positions, indicia on said scale means associated with at least some of said plurality of positions, said indicia providing a visual indication of (a) the number of spaces between the top of a page and a predetermined line to be typed on said page, (b) the number of spaces to be provided between adjacent lines in the body of a letter to be typed on said page, and (c) the number of words in the body of a letter to be typed on said page, means connecting said pointer to said first and second margin stops, said connecting means including first and second margin stop engaging members, engaging respectively said first and second margin stops, said pointer being connected to one of said margin stop engaging members, first and second racks attached one each to said first and second margin stop engaging members and extending parallel to each other and to said elongated rotor, and a pinion intermeshing with said racks and mounted on said carriage, whereby movement of said pointer to any of said plurality of positions when said rotor is in said second position causes simultaneous movement of said first and second margin stops towards or away from each other, a stationary margin release engageable by said first and second margin stops, said first margin stop corresponding to the right hand end of a line to be typed, electrical circuit means connected between said first margin stop and said margin release and comprising lamp means, circuit energizing means and circuit closing means to close said circuit means at a predetermined relative position of said first margin stop and said margin release, thereby to cause said lamp means to glow at or near the end of a typing line, said circuit closing means comprising a terminal fixedly mounted adjacent said margin release and a probe on said first margin stop engageable with said terminal.

**8.** The typewriter of claim **4** including lamp means illuminating said typeguide, whereby said indicator means may be readily observed during tabulator settings.

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