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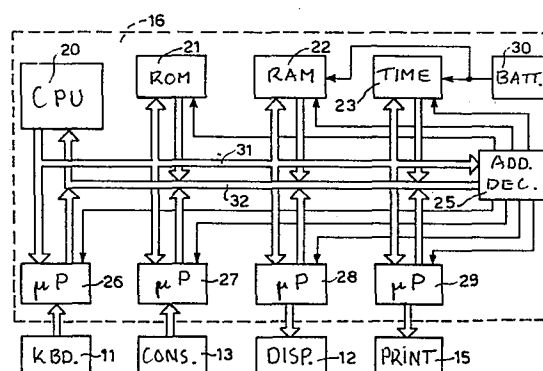
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Electronic typewriter.

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The typewriter has a keyboard (11), a printing device (15) and a control unit (16) which includes a real time integrated circuit (23) adapted to provide the functions of clock and calendar. The date can be inserted as a variable component in constant sentences, which are stored in a non-volatile memory (22) for being printed afterwards at the operator's command. The typewriter includes a display (12) where, at the operator's request and/or automatically, the time and the date generated by the real time circuit (23) are displayed.



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ELECTRONIC TYPEWRITER

This invention relates to an electronic typewriter comprising a keyboard, a printing device, a control unit with a non-volatile memory, wherein constant sentences can be stored for being printed afterwards by the printing device at the
5 operator's command.

Such an electronic typewriter is known and, besides working as a normal typewriter, it can memorize texts, constant sentences and page formats, for printing them at later times with special editings, such as title centering, automatic
10 underlining and right justification or tabulating.

The object of the present invention is to provide an electronic typewriter which can print and/or display automatically the date and the time.

The electronic typewriter according to the invention
15 is characterised by a real time electronic circuit adapted to generate continuously data indicative of the time and/or the date, and in that these data are transferred into the non-volatile memory as variable components of the constant sentences.

The invention will be described in more detail, by way
20 of example, with reference to the accompanying drawings, in which:

Figure 1 is a top view of an electronic typewriter embodying the invention.

Figure 2 is a block scheme of the control unit of the
25 machine in Figure 1.

Referring to figure 1, a typewriter 10 includes a keyboard 11, display device 12, a command console 13, a platen 14, a serial printing device 15 and a control unit 16 for controlling the functions of the typewriter.

30 Moreover the keyboard 11 includes a number of alpha-numerical keys 17 and control keys 18 for justification, tabulations, editing functions on the text which is going to be printed, movements of the printing device 15 or of the platen 14,

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moving the text through the display 12, cancelling, selection of sentences prerecorded in the machine, and of searching through texts, held in memory, for example as is described in the present applicants British applications numbered GB2031626 and GB 2046966.

5 The control unit 16 (figure 2) includes a central processing unit (CPU) 20, an read only memory (ROM) 21 for machine microinstructions, a random access memory (RAM) 22, made non volatile by a back up battery 30, for storing temporary data, 10 a real time integrated circuit 23, of known type and adapted to generate data showing the hour, the minutes, and the date, an address decoder 25 and a series of microprocessors 26, 27, 28 and 29, which control the keyboard 11, the console 13, the display 12, and the printing device 15, respectively. The central 15 unit 20 is connected by buses 31 and 32 with the ROM 21, the RAM 22, the real time circuit 23, the address decoder 25 and the microprocessors 26, 27, 28 and 29. The decoder 25 is also connected to the ROM 21, the RAM 22, the real time circuit 23 and the microprocessors 26, 27, 28 and 29. Furthermore the 20 back up battery 30 is permanently connected also to the real time circuit 23.

 The RAM 22 is divided into different areas, one of which is dedicated to storing the data generated by the real time circuit 23.

25 According to a distinctive feature of the invention, the typewriter 10 can show on the display 12, at any moment, the data continuously generated by the real time circuit 23. In particular this can be effected at operator's request, by pressing a predetermined code key 40 (figure 1) of the keyboard 11, 30 together with the key of character O, which causes the substitution of any existing contents of the display 12 with the hour, minutes and date, as is known in Figure 1, with automatic restoring of the previous display conditions after a predetermined number of seconds.

35 As far as the date is concerned, the month can be specified by the corresponding ordinal number and the format of

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the display (sequence of parameters day, month, year) can be chosen by the operator in a way which will be explained below.

The format selection and setting the time and/or date can be carried out by the operator in the following way:

5 The machine is put into a memory mode by operating a predetermined switch 41 of the console 13. Then the code key 40 is pressed together with the key of character O, to show on the display 12, in the way already noted, the hour, minutes and date, which are provided at that moment by the circuit 23. The hour can
10 be displayed in the 24 hours or AM - PM form. For changing from one form to another, it suffices to press the code key 40 together with the key of the character H of the keyboard 11, after having pressed the key 40 together with the key of the character O.

15 Moreover the date can be displayed in the form day, month, year, as shown in the examples in the figure 1, or in the form month, day, year. Also in this case it is possible to change from one form to another, by pressing simultaneously the code key 40 and the key of the character D. After the key 40
20 together with the key of the character O have been pressed it is possible to press, or not, the key 40 together with the key of the character H and/or with the key of the character D separately, or in the desired sequence.

In the memory mode, pressing of the space bar 45 of the
25 keyboard 11, which is normally used for spacing, causes the indication of the hours to flash, that is of the number 14 in the example in figure 1. Now it is possible to enter from the keyboard 11 the new hour or to pass directly to the minute indication, by pressing again the space bar 45, if the hour
30 shown on the display 12 is already correct.

This new pressing of space bar 45 causes the minute indication to flash, i.e. number 21 in the example in Figure 1. This indication can be replaced by entering a new number of two digits from keyboard 11, and confirmed by pressing again the
35 space bar 45.

This new pressing of the space bar 45 causes the first element of the date to flash, that is in the example in Figure 1 the 25th. The change or the confirmation of the day and the

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passing on the following data to change or to confirm them will occur in the way we have already described for the changes or the confirmation of hour and minutes.

5 According to another feature of the invention the date can be inserted as a variable element in constant sentences and can be printed automatically together with them by the printing device 15, at the operator's request.

10 In order to enter in the non volatile memory 22 the parameters relevant to the date and the printing format therefor, the operator proceeds as follows.

15 First of all, the names of the months are stored. In order to do this, press the code key 40, together with the key of the character M, after having operated the switch 41 in the console 13 to put the machine in the memory mode. Afterwards enter the names of the months on the keyboard 11, in sequence from January to December, in the desired language, and with the desired possible abbreviations. Press again key 40, together with the character key M, to stop the storage of the names of months in the non volatile memory 22.

20 This operation is required once only unless the operator wants to change the language and/or form in which the months are stored. In this case is sufficient to operate in the same way as provided for the similar storage operations of constant sentences, as described in detail in the above-mentioned British Patent Application number GB 2031626 and which will not be here repeated for the sake of brevity.

 The date heading can be set up in the following way.

30 While the typewriter is in the memory mode, press the code key 40, together with the key of number O. Enter then the name of the place, if necessary, in the desired position in the printing line, and the following codes: key 40 and key of the character X for the day; key 40 and the key of the character M for the month in words; key 40 and the key of the character N for the month in numbers; and key 40, together with the key of the character Y for the year.

35 The entering of parameters which are considered necessary can take place in whatever sequence the operator desires. Moreover

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he chooses, entering them directly from the keyboard 11, any
dividers between one parameter and another, for example a space,
a dash, a comma or a slash. Once the heading has been set up
in this way, the date parameters are automatically updated by the
5 real time circuit 23.

The recall and/or the printing of the date take place in
a way similar to that of the constant sentences stored in the
non-volatile memory 22, as described in the above mentioned
British Patent application number GB 2031626.

10 According to a third feature of this invention, the
typewriter 10 is able to show automatically on the display 12
the indication of hour, minutes and date, after a certain
predetermined time, from the pressing of any key 17 of the
keyboard 11, without having any influence on the procedure which
15 the operator is carrying out.

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CLAIMS

1. An electronic typewriter comprising a keyboard (11), a printing device (15), a control unit (16) with a non-volatile memory (22) wherein constant sentences can be stored for being printed afterwards by the printing device at the operator's command, characterised by a real time electronic circuit (23) adapted to generate continuously data indicative of the time and/or the date, and in that these data are transferred into the non-volatile memory (22) as variable components of the constant sentences.
2. A typewriter according to claim 1, characterised in that the display (12) is adapted to display in a selective way the data generated by the real time electronic circuit (23).
3. A typewriter according to claim 1 or 2, wherein a back-up battery (30) is permanently connected to the non-volatile memory (22), characterised in that the back-up battery (30) is permanently connected also to the real time electronic circuit (23).
4. A typewriter according to claim 1, 2 or 3, characterised in that the keyboard (11) includes a code key (40) which, when pressed together with predetermined alphanumerical keys (17) of the keyboard, modifies the sequence in which the date parameters are printed by the printing device (15).
5. A typewriter according to any of claims 1 to 4, characterised in that the parameter which shows the month of the date, can be entered in the memory (22) to enable that parameter to be printed in a selective way in characters or as the ordinal number of the month.

