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(54) **Mnemonic device**

(57) A mnemonic device provides a user with a container (2) in which is a tablet tray (4) to store tablets that they need to take during the day and timing means for setting alarms that can trigger audio (49), visual (48) and/or vibratory alarm alerts to remind the user to take their tablets at the correct times during the day. A rechargeable battery (17) provides the power for the timing means and alarms (49, 48). Controls (28, 26) set the

volume and tone of the audio alarm (49). A key switch (64) seals the container (2) and senses when it is opened. Opening the container (2) deactivates any activated alarm (49, 48) and resets the alarms (49, 48). To preserve power of the battery (17), the alarms (49, 48) are also deactivated if the container (2) is not opened within a set time period of activation of an alarm alert (49, 48).

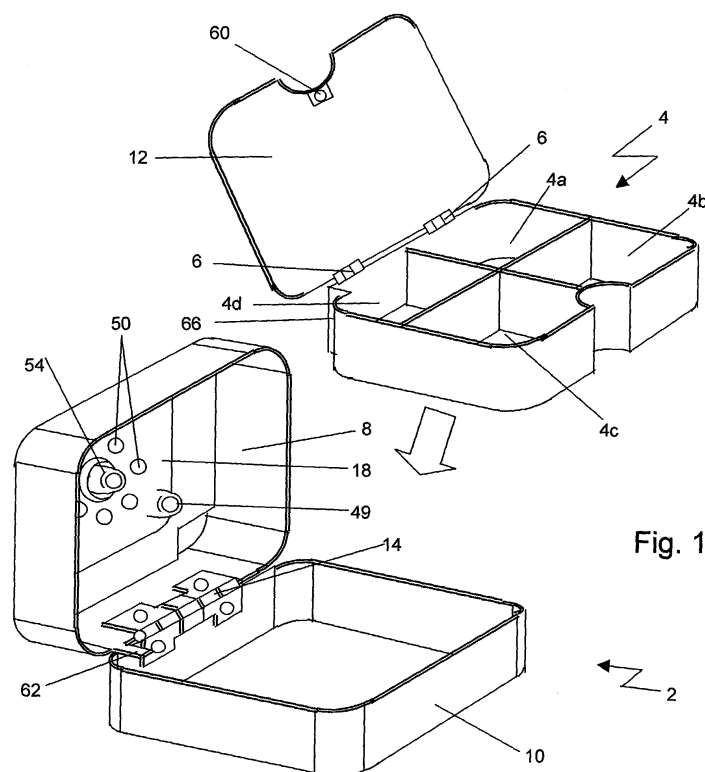


Fig. 1

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Description

[0001] This invention relates to mnemonic devices, and in particular to a mnemonic device adapted to store small items such as tablets.

[0002] Many diseases or medical conditions can be overcome or controlled by taking regular medication. In some cases, the particular treatment may involve the taking of a variety of tablets at various times of the day. Often if one of these tablets is not taken at the correct time, the effectiveness of the whole treatment is reduced. If a person needs to take a number of tablets during the course of a day, it is easy for them to forget to take one or more of the tablets at the correct time. Another problem for those required to take more than one variety of tablet on a daily basis, is that they may find it inconvenient to carry each of the containers of the differing tablets required.

[0003] It is an object of the present invention to provide a device that will provide both a reminder when a person needs to take medication and also provide space to carry a daily supply of that medication.

[0004] The invention provides a mnemonic device comprising a container, timing means associated with the container and alarm means for alerting the user of the device at predetermined times under the control of the timing means.

[0005] Preferably, the device comprises a power source, which may be a battery and which may be rechargeable.

[0006] The alarm means may comprise an audio alert, a visual alert and/or a vibratory alert system. The device may comprise selection means whereby a user of the device may select any or all of the audio alert, visual alert and/or vibratory alert systems to be activated to produce a signal when the alarm is triggered. The selection means may be a switch, which may be a sliding selection switch.

[0007] Preferably, the volume and/or the tone of the audio alert system may be adjusted by suitable control means, which may be sliding selection switches. A particularly preferred embodiment comprises a choice of three different volume levels and three distinct alert tones. The volume selection switch may also be operable to switch off the audio alert system. The visual alert system may comprise a light emitting diode (LED), which may flash on and off when the visual alert system is triggered.

[0008] The container may be sealable, and preferably the device comprises a sensor adapted to sense when the container is opened. The container may comprise reset means whereby opening the container resets a triggered alarm alert system. The container may be sealable by means of a key, and the reset means may be a key switch.

[0009] Preferably, after the alarm has been triggered and the selected alarm alert system activated, that alarm alert system is deactivated when the sealable

container is opened. To conserve battery power, the timing means may be operable, if the container is not opened within a set time period of activation of an alarm alert system, whereby that alarm alert system is deactivated. The timing means may be operable whereby the alarm alert system may be reactivated after a further set time period.

[0010] The device may comprise a display unit. Preferably, the display unit is a liquid crystal display (LCD), which may be backlit. The LCD may be configured such that it can display current battery power level, current time, number of alarms currently set and the particular times for which the current alarms are set. The current battery power level display may comprise three bars, the number of bars displayed at any particular time being an indication of the current battery power level. The LCD may also be configured such that it can display the current time digitally in 12-hour format, including an am/pm indicator. The current alarm set times may be displayed in the same format. The timing means may be adjustable, whereby the current time and the alarm set times are adjustable. The timing means may be adjustable by means of push buttons. The push buttons may be recessed to prevent inadvertent operation. The timing means may accommodate eight alarm set times. The LCD may display only the number of currently set alarm set times. The push buttons may be operable to check the individual alarm set times currently set. The device may have a memory facility whereby the current time and alarm set times information is retained whilst the battery is replaced.

[0011] The container may comprise a tablet tray, and may be sub-divided. The tablet tray may be sub-divided into four compartments, each compartment being a medical quality tablet tray and each compartment being fully isolated from the other compartments when the container is closed. The compartments may have a soft lining to prevent damage to any tablets therein. The compartments may be formed as a tray placed within the tablet box, and the compartments may be isolated from each other by closing a hinged lid attached to the tablet tray.

[0012] The invention will now be described with reference to the accompanying drawings in which:

Fig. 1 is a perspective view of a mnemonic device comprising a box in the open configuration and a tray that fits within the box,

Fig. 2 shows a control panel fitted in the lid of the box of Fig. 1, to an enlarged scale,

Fig. 3a is a plan view of the mnemonic device of Fig. 1,

Fig. 3b is a side view of the device of Fig. 3a,

Fig. 3c is a front view of the device of Fig. 3a, and

Fig. 4 is a cross-section through a part of the device of Figs. 1 to 3

[0013] Referring now to Fig. 1, there is shown a mne-

monic device comprising a portable tablet box 2, incorporating audio, visual and vibratory alarm alert systems. The tablet box 2 comprises a box lid 8 and a body 10, joined by a box hinge 14. The body 10 has affixed within it a medical quality tablet tray 4 comprising a base divided into four compartments 4a, 4b, 4c and 4d, and an integral tray lid 12. The tray lid 12 is attached to the base by tray hinges 6, and when closed lies substantially flush with the upper edges of the compartments 4a, 4b, 4c, 4d. The tray lid 12 can be releasably secured to the base by means of a clip 60. This prevents tablets from one compartment of the tray 4 from being intermingled with those from another compartment when the box 2 is closed.

[0014] Power for the device 2 is provided by a battery 17 (shown dotted in fig. 2) or if desired by more than one battery. The battery 17 is positioned between the top surface 46 of the box lid 8 and an integral control panel 18. The battery 17 may be accessed, for example if it needs to be replaced, by removing a battery access panel 16 provided in the control panel 18. The battery 17 may be rechargeable.

[0015] Referring to Figs. 2 and 3, also provided with control panel 18 are a LCD screen 22 and control switches 24 - 36. The electronic circuitry to link the screen 22 and the switches 24 - 36 is provided on the internal face of the control panel 18. The control panel 18 is attached to the box lid 8 by screws extending through four screw fixture holes 20. The control panel 18 is additionally provided with a key switch 64, which is a spring loaded press switch used to determine whether box 2 is open or closed. The switch 64 is operated by an extension plate 62 of box hinge 14, which is in contact with and thereby depresses the key switch 64 when the box 2 is closed. When box 2 is opened, extension plate 62 no longer depresses key switch 64. To facilitate this operation, tray 4 includes a recess 66.

[0016] The LCD screen 22 displays status information for the device 2. Different parts of the screen 22 are set aside for displaying different bits of information. Figure 2 shows how the status information is laid out on screen 22 in this embodiment. The items displayed are battery power level 38, current time display 40, am/pm indication 42 and number of alarms currently set 44. The am/pm indication 42 is required since the time is displayed in 12-hour format. The current time 40 may be reset by using the time set push button 30 and the hour set and minute set push buttons 34, 36. The alarm times may be viewed and adjusted by using the alarm set push button 32 and the hour set and minute set push buttons 34, 36.

[0017] The user of the device 2 may chose whether they wish to be alerted audibly or visually or both by adjusting sliding selector switch 24. The switch 24 may be slid between three positions. When the switch 24 is in the first position, an audio alert only will be activated when an alarm is triggered. When the switch 24 is in the second position, both audio and visual alerts will be ac-

tivated when an alarm is triggered. When the switch 24 is in the third position, a visual alert only will be activated when an alarm is triggered. The tone and volume of the audio alert may be varied. Sliding selection switch 26 may be slid between 3 different positions, each corresponding with a different audio alert tone that will be activated when an alarm is triggered. The sliding selection switch 28 controls the volume of the audio alert, it has four positions corresponding with loud, medium and soft volume and audio alert off. The audio and visual alert means 49, 48 are contained within lid 8 on the control panel 18 adjacent the top surface 46. Visual alerts are provided by an LED 48, located such that when activated shines through a lamp hole 52 provided in the top surface 46. A mushroom shaped cover 54 is provided to protect the LED 48. The audio alert is generated by a buzzer 49, or if desired more than one buzzer, mounted on the control panel 18 adjacent top surface 46. A number of audio outlet holes 50 are provided in the top surface 46 to enable the noise generated by the buzzer 49 to be heard more easily.

[0018] A cross-section of the cover 54 is shown in Fig. 4. The protective cap 56 rests on the outer surface of the top surface 46. The stem portion 58 extends through the top surface 48 and is able to engage with the inner side of the top surface 46 around lamp hole 52. The cover 54 is thereby held securely in position.

[0019] In a typical embodiment, if an alarm is triggered when both the audio and visual alerts are selected, by having switch 24 in the second position, the particular audio tone selected will play for, for example 10 seconds, and the LED 48 will flash on and off for, for example 20 seconds. If the tablet box 2 is opened before the expiry of the time period for which either the audio or the visual alert is activated, then both are deactivated. Opening of the tablet box 2 is detected by a key switch 64, but alternatively may be detected by any other suitable sensor. If the tablet box 2 is not opened before the alerts are deactivated, to save battery power the alerts may remain deactivated until the next alarm is triggered. Alternatively, if desired, the device 2 may be configured such that if the box 2 is not opened during the time that the alerts are activated, the alerts may be reactivated at, for example 1 minute intervals, until the box 2 is opened.

[0020] A vibrating alert device may be provided in addition to, or as an alternative to the audio or visual alert devices 49, 48.

[0021] The device provides a user with a place to store tablets that they need to take during the day and a means of setting alarms that can trigger audio, visual and/or vibratory alerts to remind the user to take their tablets at the correct times during the day. For those persons with complicated medication schedules, the device can store up to 8 separate alarms to be triggered in any single 12-hour period. The alarm alerts system is once more deactivated if the container is not opened during the set time period.

Claims

1. A mnemonic device comprising a container (2), **characterised by** timing means associated with the container (2) and alarm means (49, 48) for alerting the user of the device at predetermined times under the control of the timing means. 5
2. A mnemonic device according to claim 1, **characterised by** a power source in the form of a battery (17). 10
3. A mnemonic device according to claim 1 or claim 2, **characterised in that** the alarm means comprises an audio alert (49). 15
4. A mnemonic device according to claim 3, **characterised by** selection means whereby a user of the device may select an audio alert (49), a visual alert (48) and/or vibratory alert systems to be activated to produce a signal when the alarm is triggered. 20
5. A mnemonic device according to claim 3 or claim 4, **characterised in that** the volume and/or the tone of the audio alert system (49) may be adjusted by suitable control means (28, 26). 25
6. A mnemonic device according to any one of claims 3 to 5, **characterised by** a visual alert system (48). 30
7. A mnemonic device according to any one of claims 1 to 6, **characterised in that** the container (2) is sealable.
8. A mnemonic device according to claim 7, **characterised by** a sensor (64) adapted to sense when the container (2) is opened and reset means whereby opening the container (2) resets a triggered alarm alert system (49, 48). 35
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9. A mnemonic device according to claim 8, **characterised in that** after the alarm has been triggered and the selected alarm alert system activated, that alarm alert system (49, 48) is deactivated when the container (2) is opened. 45
10. A mnemonic device according to claim 9, **characterised in that** the timing means is operable, if the container (2) is not opened within a set time period of activation of an alarm alert system (49, 48), to deactivate that alarm alert system (49, 48). 50
11. A mnemonic device according to claim 10, **characterised in that** the timing means is operable to reactivate the alarm alert system (49, 48) after a further set time period. 55
12. A mnemonic device according to any one of claims 1 to 11, **characterised by** a display unit (22) configured to display current time (40, 42) and the particular times for which the current alarms are set (44).
13. A mnemonic device according to any one of claims 1 to 12, **characterised by** a battery (17) and a memory facility whereby the current time (40, 42) and alarm set times (44) information is retained whilst the battery (17) is replaced.
14. A mnemonic device according to any one of claims 1 to 13, **characterised in that** the container (2) comprises a tablet tray (4).
15. A mnemonic device according to claim 14, **characterised in that** the tablet tray (4) is sub-divided into a plurality of compartments (4a, 4b, 4c, 4d), each compartment being fully isolated from the other compartments when the container (2) is closed.

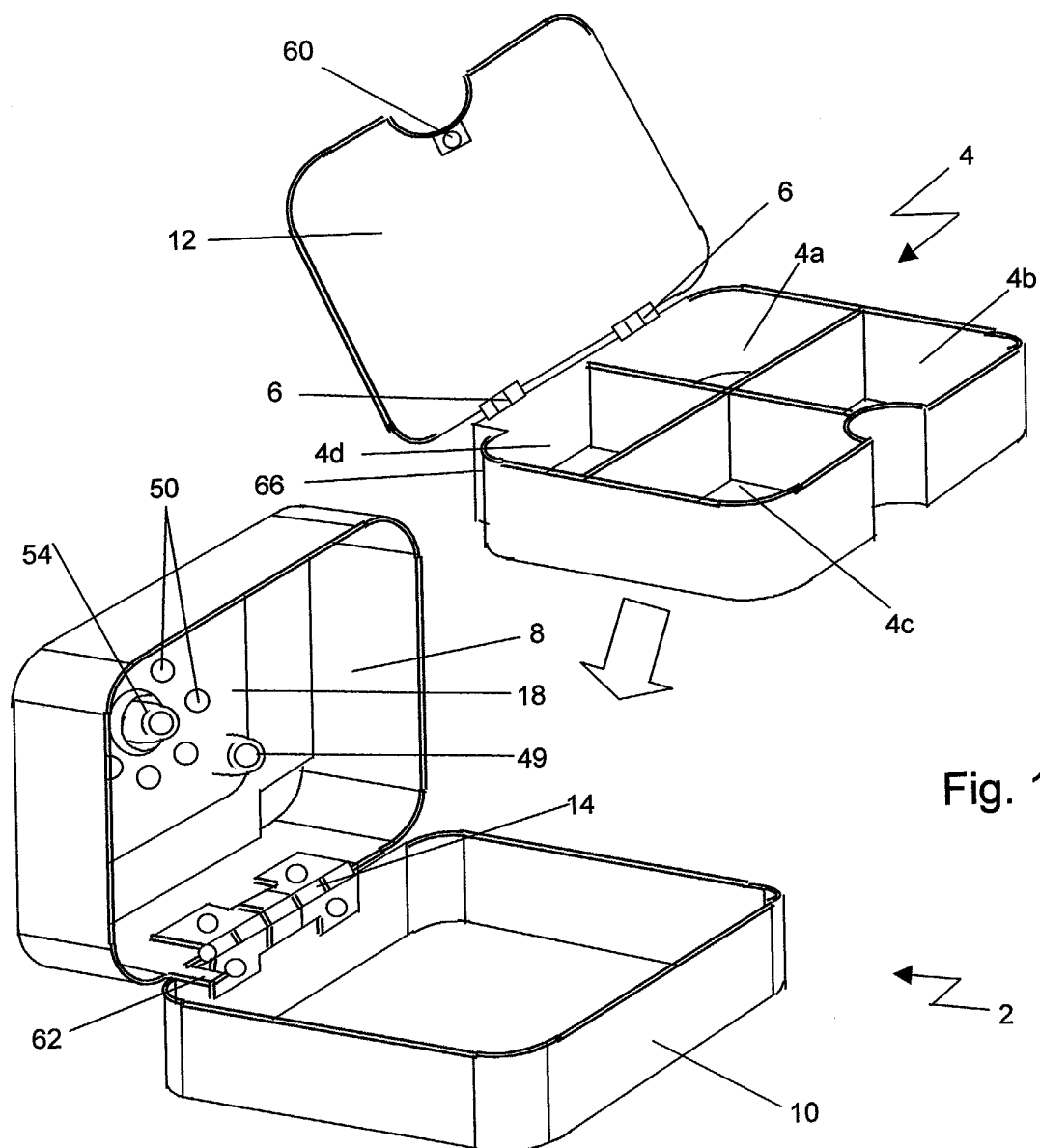


Fig. 1

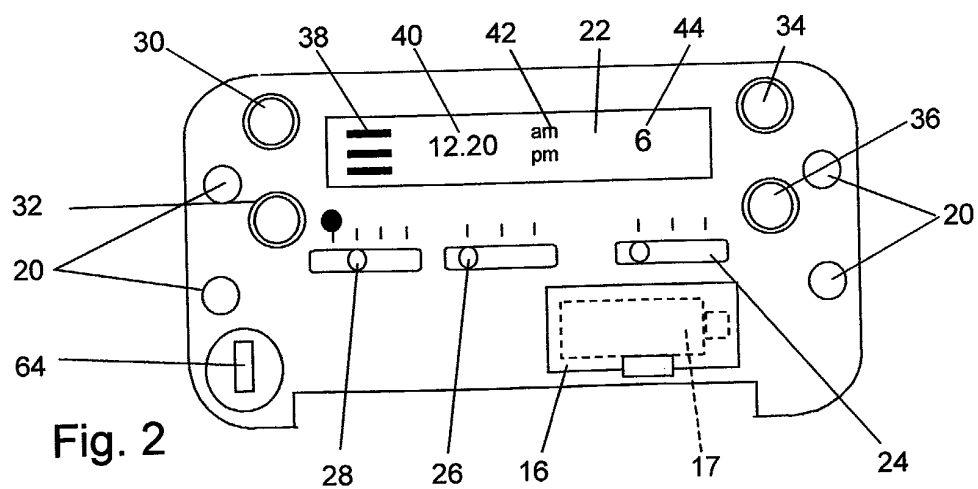


Fig. 2

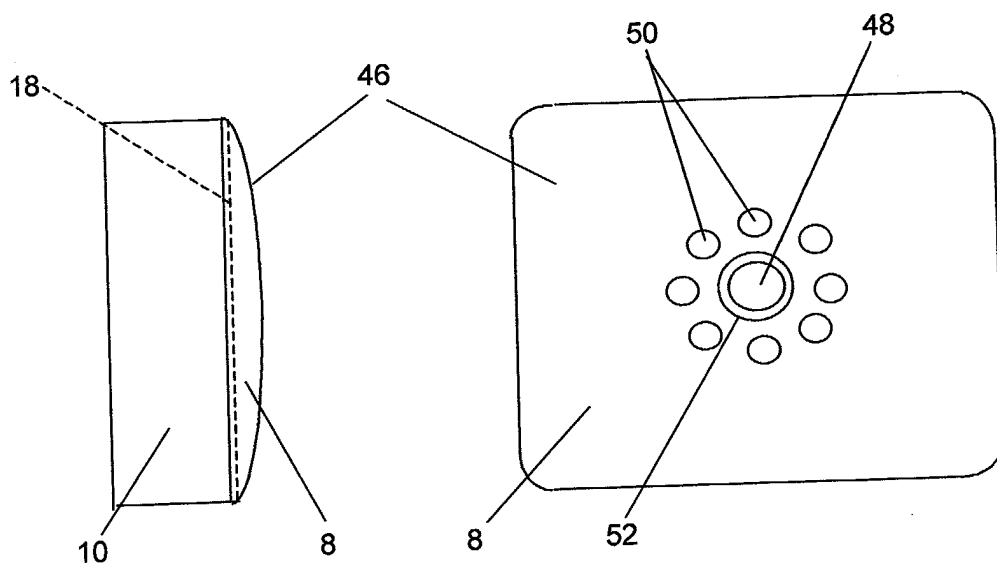


Fig. 3c

Fig. 3a

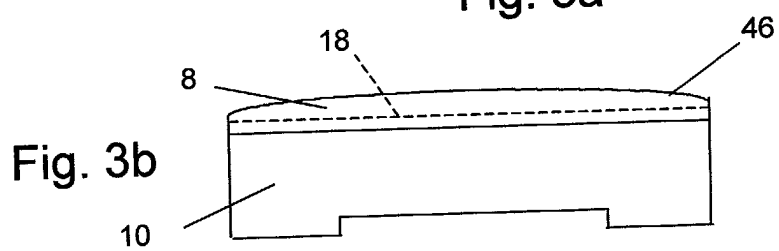


Fig. 3b

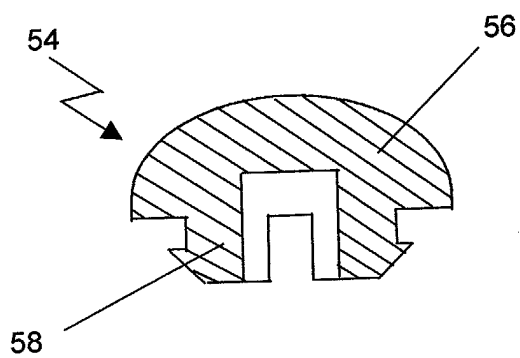


Fig. 4



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EUROPEAN SEARCH REPORT

Application Number
EP 03 25 1083

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	US 5 915 558 A (GIRVETZ NINA) 29 June 1999 (1999-06-29) * column 2, line 1 - column 5, line 4; figures 1,2 *	1-4,6-9, 12-15	A61J7/04
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X	EP 0 998 896 A (SPIELMANN THORSTEN) 10 May 2000 (2000-05-10) * paragraph [0034] - paragraph [0044]; figures 1-4 *	1-4,6-9, 12,14,15	
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The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			A61J
Place of search		Date of completion of the search	Examiner
MUNICH		9 April 2003	Fischer, E
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

EPO FORM 1503 03 82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 03 25 1083

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09-04-2003

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