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(54) Time registration system for the care sector

(57) A method and a system for the registration by means of a data logger of working times of ambulant nursing staff in the home care sector. With the data logger, which is provided with a date and time clock, a contactless radio-frequent identification label is read at the home of the attended person to record the times of coming and going, to transmit them at a later time by telephone via a modem to an information processing system. If this transmission has proceeded well, the stored information can be removed from the data logger, so that it can be used again.

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Description

[0001] The invention relates to a method and a system for the registration of working times in the home care sector. Because the attending staff in the home care sector or comparable sectors is rather ambulant and is not every day in contact with the management of this form of service, the need arises for a time registration system with which the working times can be recorded to enable optimum planning of and accounting for these activities.

[0002] The object of the present invention is to provide a solution for this. To this end, the nursing staff is provided according to the invention with a so-called data logger, for instance in the form of a key ring, with which to record the date and the times of coming and going per attended person. To make it easier to record these times and to enable this act only at the home of the attended person, the data logger is provided according to the invention with a receiver circuit with which a contactless radio-frequent identification label can be read which, for instance, is undetachably connected with the logbook, available at the attended person, and in which the findings and acts are recorded by the nursing staff. Furthermore, the data logger for recording the above times should also be provided with a date and time clock and with a memory element to store this information at the attended person, together with the identity of the contactless radio-frequent identification label.

[0003] The information collected in the data logger can, for instance at the end of the working day, be transmitted to a central information processing system, where this information is collected and used to record working times and the related work plans, and to generate management information.

[0004] In order that a distinction can be made between the times of coming and going, the data logger can be provided with two buttons. A button "coming", with which the receiver circuit available in the data logger is activated to read out the contactless radio-frequent identification label and to connect the identification number of this label with the time of coming and a button "going" to also activate the receiver circuit and to connect the identification number of the label with the time of going.

[0005] In order not to need additional buttons on the data logger, the date and time clock is not set at the real date and time, but in the data logger a relative date and time is used. The real times of coming and going are calculated on the basis of the relative dates and times as recorded in the data logger and the real date and time at the moment of the transmission of information to the central information processing system.

[0006] It is of course also possible to provide the data logger with only one button, with which both the time of coming and the time of going are recorded.

[0007] The nature of the activities carried out by the nursing staff at the home of the attended person can be derived on the basis of the identity of the attended person, because this attended person has a predetermined need of attendance. Furthermore, the nature of the activities to be carried out can sometimes be derived from the identity of the nursing person, because the nursing persons have individual specialties, or also from a combination of both. By also giving the data logger itself a unique identification number and coupling it to the identity of the nursing person, it can be derived to some extent via the central information processing system which activities have been carried out for the attended person.

[0008] To enable a better recording of these activities, and also to pass instructions, if any, to colleagues, the data logger may optionally be provided with a microphone, a digitizing circuit and a larger memory element to record per attended person not only the date and times of coming and going, but also a limited amount of spoken text. This spoken information can likewise be transmitted to the central information processing system.

[0009] The transmission of all the information collected in the data logger can, for instance every day, be transmitted by telephone to the central information processing system by means of a modem function built into the data logger.

[0010] To limit the transmission time, this transmission takes place via the telephone connection with the central information processing system, preferably analogously, instead of digitally, and the information is digitized here again for storage in the memory of the central information processing system. Thus, no additional equipment is required for the transmission of the information.

[0011] If all the information has been correctly transmitted to the central information processing system, then the information can be removed from the data logger, so that it is ready again for storage of new information.

Claims

1. A method for the registration of working times of ambulant nursing staff working in the home care sector or comparable sectors, characterized in that each nursing person carries a handy data logger on him/her, with which at each attended person, on coming and going, a contactless radio-frequent identification label is read, thus recording the time of coming and the time of going in the data logger, which is provided for this purpose with a date and time clock and with a memory element to record this information and optionally to transmit it by telephone at a later time, for instance at the end of a working day, to a central information processing system, where this information is collected and, for instance, used to record working times and the related planning of and accounting for these activities, and to generate

management information.

2. A method according to the preceding claim, characterized in that the contactless radio-frequent identification label is connected with the location of the attended person, by for instance undetachably securing this identification label to the logbook, available at the attended person, in which activities and findings are recorded.

3. A method according to one or both preceding claim (s), characterized in that the data logger is provided with a button "coming" to record the time of coming and with a button "going" to record the time of going.

4. A method according to any or several of the preceding claims, characterized in that the data logger is provided with only one button to record both the time of coming and the time of going.

5. A method according to any or several of the preceding claims, characterized in that the date and time clock is not set at the real date and time, but that the real dates and times of coming and going are calculated on the basis of the relative dates and times as recorded in the data logger and the real date and time at the moment of the transmission of information to the central information processing system.

6. A method according to any or several of the preceding claims, characterized in that the nature of the activities carried out at the attended person is derived by the central information processing system from the identity of the attended person, because this attended person has a predetermined need of attendance.

7. A method according to any or several of the preceding claims, characterized in that the nature of the activities carried out at the attended person is derived by the central information processing system from the specialty of the nursing person, whose identity is coupled to the identification number of the data logger of the relevant nursing person.

8. A method according to any or several of the preceding claims, characterized in that the data logger is provided with a larger memory element in which per attended person not only the date and the time of coming and going, but also a limited amount of spoken text can be recorded by means of a microphone and a digitizing circuit, which spoken text is likewise transmitted to the central information processing system.

9. A method according to any or several of the preceding claims, characterized in that the data logger for effecting the connection with the central information processing system is provided with a modem with which the digital information can be transmitted by telephone, so that no additional equipment is required for this transmission.

10. A method according to any or several of the preceding claims, characterized in that the collected information is removed from the data logger, after the transmission of this information to the central information processing system has taken place, after which the data logger is ready again to store new information.

11. A system for the registration of working times of ambulant nursing staff working in the home care sector or comparable sectors, characterized in that the system is provided with at least one data logger and at least one radio-frequent label, each nursing person carrying one of the handy data loggers on him/her, with which at each attended person, on coming and going, on of the contactless radio-frequent identification labels is read, thus recording the time of coming and the time of going in the data logger, which is provided for this purpose with a date and time clock and with a memory element to record this information.

12. A system according to claim 11, characterized in that the system is further provided with a central information processing system, the information being transmitted at a later time, for instance at the end of a working day, and for instance by telephone, to the central information processing system, where this information is collected and, for instance, used to record working times and the related planning of and accounting for these activities, and to generate management information.

13. A system according to claim 12, characterized in that that the contactless radio-frequent identification label is connected with the location of the attended person, by for instance undetachably securing this identification label to the logbook, available at the attended person, in which activities and findings are recorded.

14. A system according to any of claims 12-13, characterized in that the data logger is provided with a button "coming" to record the time of coming and with a button "going" to record the time of going.

15. A system according to any of claims 12-14, characterized in that the data logger is provided with only one button to record both the time of coming and the time of going.

16. A system according to any of claims 12-15, charac-

terized in that the date and time clock is not set at the real date and time, but that the real dates and times of coming and going are calculated on the basis of the relative dates and times as recorded in the data logger and the real date and time at the moment of the transmission of information to the central information processing system.

17. A system according to any of claims 12-16, characterized in that the nature of the activities carried out at the attended person is derived by the central information processing system from the identity of the attended person, because this attended person has a predetermined need of attendance.

18. A system according to any of claims 12-17, characterized in that the nature of the activities carried out at the attended person is derived by the central information processing system from the specialty of the nursing person, whose identity is coupled to the identification number of the data logger of the relevant nursing person.

19. A system according to any of claims 12-18, characterized in that the data logger is provided with a larger memory element, in which per attended person not only the date and the time of coming and going, but also a limited amount of spoken text can be recorded by means of a microphone and a digitizing circuit, which spoken text is likewise transmitted to the central information processing system.

20. A system according to any of claims 12-19, characterized in that the data logger for effecting the connection with the central information processing system is provided with a modem, with which the digital information can be transmitted by telephone, so that no additional equipment is required for this transmission.

21. A system according to any of claims 12-20, characterized in that the collected information is removed from the data logger, after the transmission of this information to the central information processing system has taken place, after which the data logger is ready again to store new information.

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EUROPEAN SEARCH REPORT

Application Number
EP 99 20 4191

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	WO 85 01582 A (BI INC) 11 April 1985 (1985-04-11) * page 6, line 16 - page 7, line 9 * * page 9, line 20 - page 11, line 10 * * page 21, line 24 - page 22, line 7 * * page 23, line 15 - page 24, line 22; figures *	1,6,7, 9-12,17, 18,20,21	G07C1/02 G07C1/10 G07C9/00
Y	FR 2 689 275 A (AUDREN JAMES) 1 October 1993 (1993-10-01) * page 1, line 14 - page 4, line 22; figure *	1,2,6,7, 9-13,17, 18,20,21	
Y	US 4 688 026 A (CARACCIOLO JR ANTHONY ET AL) 18 August 1987 (1987-08-18) * abstract; figures * * column 1, line 66 - column 2, line 37 * * column 3, line 7 - line 32 * * column 8, line 27 - column 9, line 38 *	1,2,6,7, 9-13,17, 18,20,21	
A	US 5 068 787 A (PIPELLA LAWRENCE S ET AL) 26 November 1991 (1991-11-26) * abstract; figures * * column 1, line 62 - column 2, line 46 * * column 3, line 10 - column 4, line 15 *	1,3,4, 9-12,14, 15,20,21	
A	US 5 493 492 A (CRAMER MILTON L ET AL) 20 February 1996 (1996-02-20) * abstract; claims; figures * * column 1, line 36 - column 3, line 23 *	1,3,4, 11,12, 14,15	

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TECHNICAL FIELDS SEARCHED (Int.Cl.7)
G07C G06F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	9 March 2000	Meyl, D

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Application Number
EP 99 20 4191

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)
A	WO 98 03940 A (DARTIGUES GUY ;FERRARIS CLAUDE (FR); GUISTINI GUY (FR); GEMPLUS CA) 29 January 1998 (1998-01-29) * abstract; claims; figures *	1,2, 11-13	
A	US 4 916 441 A (GOMBRICH PETER P) 10 April 1990 (1990-04-10)		
A	US 5 612 869 A (LETZT ALAN M ET AL) 18 March 1997 (1997-03-18)		TECHNICAL FIELDS SEARCHED (Int.Cl.7)

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EPO FORM 1503 03.82 (P04C01)

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09-03-2000

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 8501582 A	11-04-1985	US 4549264 A	22-10-1985
		AU 585488 B	22-06-1989
		AU 3509584 A	23-04-1985
		CA 1214875 A	02-12-1986
		EP 0172833 A	05-03-1986
		JP 61500284 T	20-02-1986
		US 4658357 A	14-04-1987
FR 2689275 A	01-10-1993	NONE	
US 4688026 A	18-08-1987	NONE	
US 5068787 A	26-11-1991	NONE	
US 5493492 A	20-02-1996	WO 9730408 A	21-08-1997
		US 5606497 A	25-02-1997
		AU 4989996 A	02-09-1997
WO 9803940 A	29-01-1998	FR 2751814 A	30-01-1998
		AU 3774297 A	10-02-1998
		EP 0928464 A	14-07-1999
US 4916441 A	10-04-1990	NONE	
US 5612869 A	18-03-1997	AU 679325 B	26-06-1997
		AU 1605395 A	08-08-1995
		CA 2181798 A	27-07-1995
		EP 0740814 A	06-11-1996
		WO 9520199 A	27-07-1995

EPO FORM P0459

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