



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
19.11.2003 Bulletin 2003/47

(51) Int Cl.7: **G08B 25/01**, G08B 21/00

(21) Application number: **03076462.5**

(22) Date of filing: **15.05.2003**

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IT LI LU MC NL PT RO SE SI SK TR**
Designated Extension States:
AL LT LV MK

(72) Inventor: **Kuipers, Robertus Johannes Maria
7496 BB Hengevelde (NL)**

(74) Representative: **'t Jong, Bastiaan Jacobus et al
Arnold & Siedsma,
Sweelinckplein 1
2517 GK The Hague (NL)**

(30) Priority: **15.05.2002 NL 1020606**

(71) Applicant: **R.J.M. Kuipers Holding B.V.
7496 BB Hengevelde (NL)**

(54) **Emergency aid system**

(57) The invention relates to an emergency aid system for calling for emergency aid, such as an ambulance, police or verification service such as security personnel, at the request of a user, which system comprises:

- at least one transmitter to be carried on his/her person by a user for transmitting a request signal,
- at least one central receiver for receiving the request signal and calling in the emergency assistance, wherein the system comprises position-determining means for determining the position of the at least one transmitter.

The invention further relates to a transmitter for a system according to the invention, comprising a transmitter module, a power supply and activating means for activating the transmitter module.

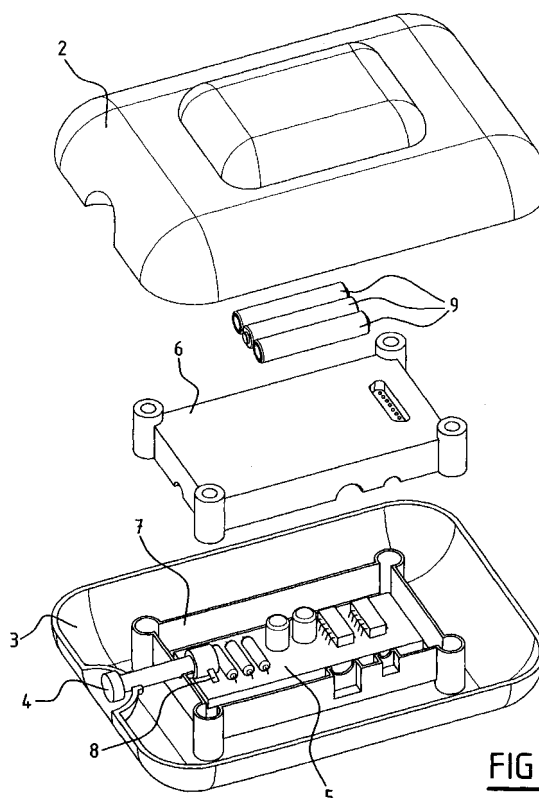


FIG 3

Description

[0001] The invention relates to an emergency aid system for calling for emergency aid, such as an ambulance, police or verification service such as security personnel, at the request of a user.

[0002] There is a growing sense of insecurity among people. Although a mobile phone makes it possible to call for emergency assistance, such as an ambulance or police as well as an acquaintance, the operation of a mobile phone is too time-consuming in cases of emergency. If a person is attacked, it then takes too much time to select an emergency number and then transmit the location. Transmitting a location can already represent a problem per se, since the street name or the like is not always known.

[0003] It is therefore an object of the invention to provide a system which alleviates or even prevents the above stated drawbacks.

[0004] This objective is achieved with an emergency aid system according to the invention, which system comprises:

- at least one transmitter to be carried on his/her person by a user for transmitting a request signal,
- at least one central receiver for receiving the request signal and calling in the emergency assistance, wherein the system comprises position-determining means for determining the position of the at least one transmitter.

[0005] As soon as the transmitter is activated, the request signal is transmitted automatically to the central receiver which can then call in emergency assistance. The location of the transmitter, and thus of the user, can moreover be determined by means of the position-determining means, so that the emergency assistance knows the precise location immediately.

[0006] In a preferred embodiment the request signal comprises a spoken message which preferably includes the position of the user.

[0007] In one embodiment of a system of the invention, the system comprises a databank with data for determining the type of emergency assistance in response to receiving a request signal. This enables a user to register in advance what type of emergency assistance is required. Older people can for instance use the system to obtain emergency assistance from an ambulance, while young people are more likely to require emergency assistance from for instance the police.

[0008] According to a preferred embodiment of the system according to the invention, the central receiver comprises a number of geographically spread receiver masts, and the position-determining means are adapted to determine the position of a transmitter on the basis of a number of signal intensities measured by receiver masts.

[0009] By means of a so-called triangulation it is possible to determine where the transmitter is located in relation to the transmitter masts. If the location of the transmitter masts is known, it is thus possible to determine the exact location of the transmitter.

sible to determine where the transmitter is located in relation to the transmitter masts. If the location of the transmitter masts is known, it is thus possible to determine the exact location of the transmitter.

[0010] The position-determining means preferably comprise a GPS receiver arranged in the transmitter. With such a Global Positioning System (GPS) receiver a very precise position can be determined by means of satellites. The thus determined position can be co-transmitted with the request signal so that the central receiver receives the position as well as the request signal.

[0011] The request signal preferably comprises an identification code unique to the transmitter. On the basis of this identification code relevant data of the carrier of the transmitter can be retrieved so that the emergency assistance has relevant data of the person in advance.

[0012] In one embodiment of the system according to the invention the transmitter and receiver operate in accordance with the GSM protocol. This GSM protocol is everywhere the most used protocol for mobile phones, whereby full coverage is already available at this moment. This provides great advantages when bringing the system according to the invention into use, since the infrastructure of receiver masts is already available. The GSM protocol further has an SOS function. It is hereby possible to gain access to the GSM network irrespective of the provider used. The user is not therefore limited by the quality of reception of the provider used, and the best provider can always be chosen.

[0013] The invention further comprises a transmitter for a system according to the invention, which transmitter comprises a transmitter module, a power supply and activating means for activating the transmitter module.

[0014] In a preferred embodiment of the transmitter according to the invention the activating means comprise a pull-out part. The transmitter module is activated by pulling out this part, and the request signal is thus transmitted. Pulling-out takes hardly any time, so that emergency assistance can be called on very easily, even in emergency situations. Activation can also take place by means of two buttons, which must be pressed in simultaneously. False alarms are thus prevented.

[0015] It is further also possible to incorporate bluetooth technology in the transmitter. Another device can hereby activate the transmitter.

[0016] In another preferred embodiment according to the invention the activating means comprise voice recognition means. The transmitter can hereby be activated by means of a spoken command. This can have advantages in the case of for instance disabled people.

[0017] The transmitter preferably comprises position-determining means which can comprise a GPS receiver. In addition, the transmitter module preferably operates in accordance with the GSM protocol.

[0018] In the case the transmitter is activated and has already transmitted a position, it is possible to monitor whether the position changes. If this is the case, the new position can then be passed on so that the transmitter,

and therefore also the user, can also be monitored when on the move, for instance as a result of being kidnapped.

[0019] In a further embodiment of the transmitter according to the invention the transmitted signal comprises a Short Message Service (SMS) message. With such an SMS message the relevant data can be transmitted in simple manner to the central receiver of a system according to the invention.

[0020] In yet another embodiment of the transmitter according to the invention a spoken message having therein the position of the transmitter is transmitted to the central receiver. The transmitter can herein further comprise a microphone with which ambient sound can be transmitted after the spoken message has been sent. The central receiver can herein monitor what is happening.

[0021] The transmitter according to the invention can further comprise detection means for detecting that a connection to the exchange has been effected. It is hereby possible to check whether the spoken message is received in full and whether the sound from the optionally present microphone is transmitted for a sufficiently long time. If the preset time is not achieved, a new connection can be established and the spoken message can be transmitted again.

[0022] With an SMS message there is no guarantee that the message will always actually reach the receiver within a short time.

[0023] These and other features of the invention are further elucidated with reference to the annexed drawings.

[0024] Figure 1 shows a user carrying a transmitter according to the invention.

[0025] Figure 2 shows a perspective view of the transmitter of figure 1 in more detail.

[0026] Figure 3 shows the transmitter of figure 2 in perspective view and with exploded parts.

[0027] Shown in figure 1 is a user G who has in his hand a transmitter 1 according to the invention. In the case the user wishes emergency assistance, he need only activate transmitter 1, whereby the emergency assistance comes into action.

[0028] As shown in more detail in figure 2, the housing 1 has an upper housing shell 2 and a lower housing shell 3. Further arranged is an activating part 4 which can be for instance a push-button or a pull-out pin.

[0029] Figure 3 shows the transmitter 1 of figure 2 with exploded parts. Shown once again are upper shell 2 and lower shell 3 and pull-out pin 4. In transmitter 1 is arranged an electronics part 5 which forms a transmitter. A GPS receiver can furthermore be provided hereon. The electronics 5 are arranged in a second housing 6,7. The activating part 4 is embodied here as a pull-out pin and is connected to electronics 5 via a contact 8. Further provided in housing 2,3 of transmitter 1 are batteries which, after activation of the transmitter, provide the electronics with power.

[0030] After activation of the transmitter by user G a

request signal is transmitted to a central receiver. This central receiver then calls in the emergency assistance, which is also given the position of transmitter 1 by the central receiver. The emergency assistance can thus easily localize the user by means of its own position-determining system or navigation system.

[0031] It is further possible to provide a selector switch on the transmitter which makes it possible to transmit a selection with the request signal. This selection is then translated by the central receiver into the desired emergency assistance.

[0032] For activation of the transmitter it is further possible to envisage a shock-recording system which activates the transmitter at shocks above 1G, a pulse-rate system which activates the transmitter in the case of increased or, conversely, very slow pulse rate, or a number of buttons which must be pressed in simultaneously.

[0033] Finally, it is possible for an SMS message to be sent to a 112 or 911 exchange with additional data such as street name, postal code and place. An intervening exchange is not necessary in such a case.

[0034] It is also possible to send to a 112 or 911 exchange a preprogrammed spoken message instead of an SMS message.

[0035] In order to obtain the longest possible period of use, a movement sensor can further be arranged in the transmitter. If the transmitter is not moved for some time, it can switch itself into an electricity-saving mode.

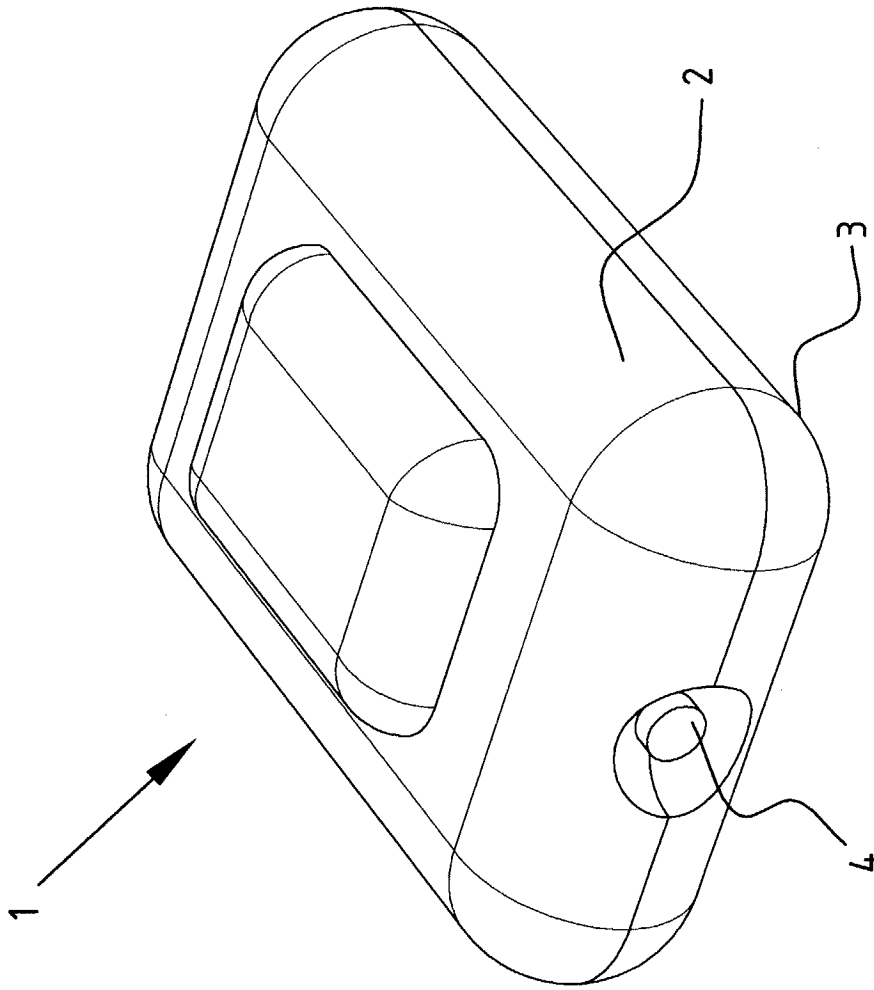
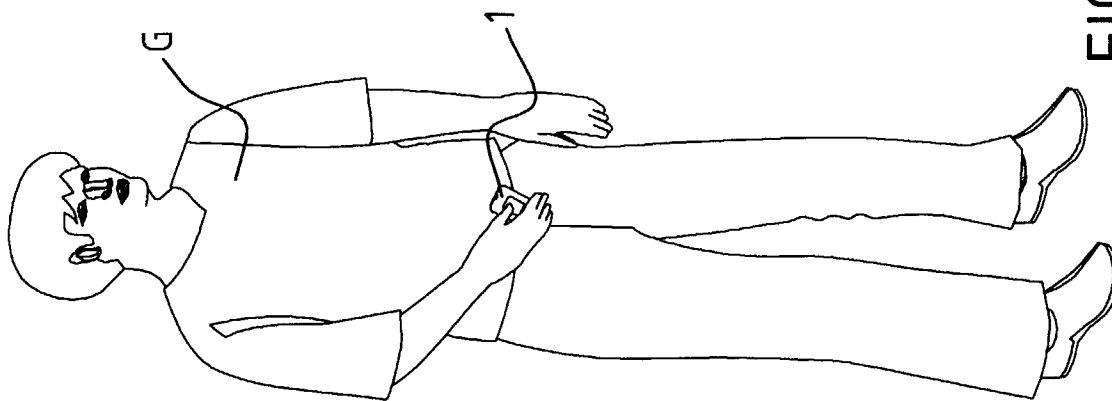
[0036] When the voltage of the power source becomes too low, the transmitter can switch itself off. These functions are set such that in emergencies the transmitter can still be activated and can still send at least a number of messages.

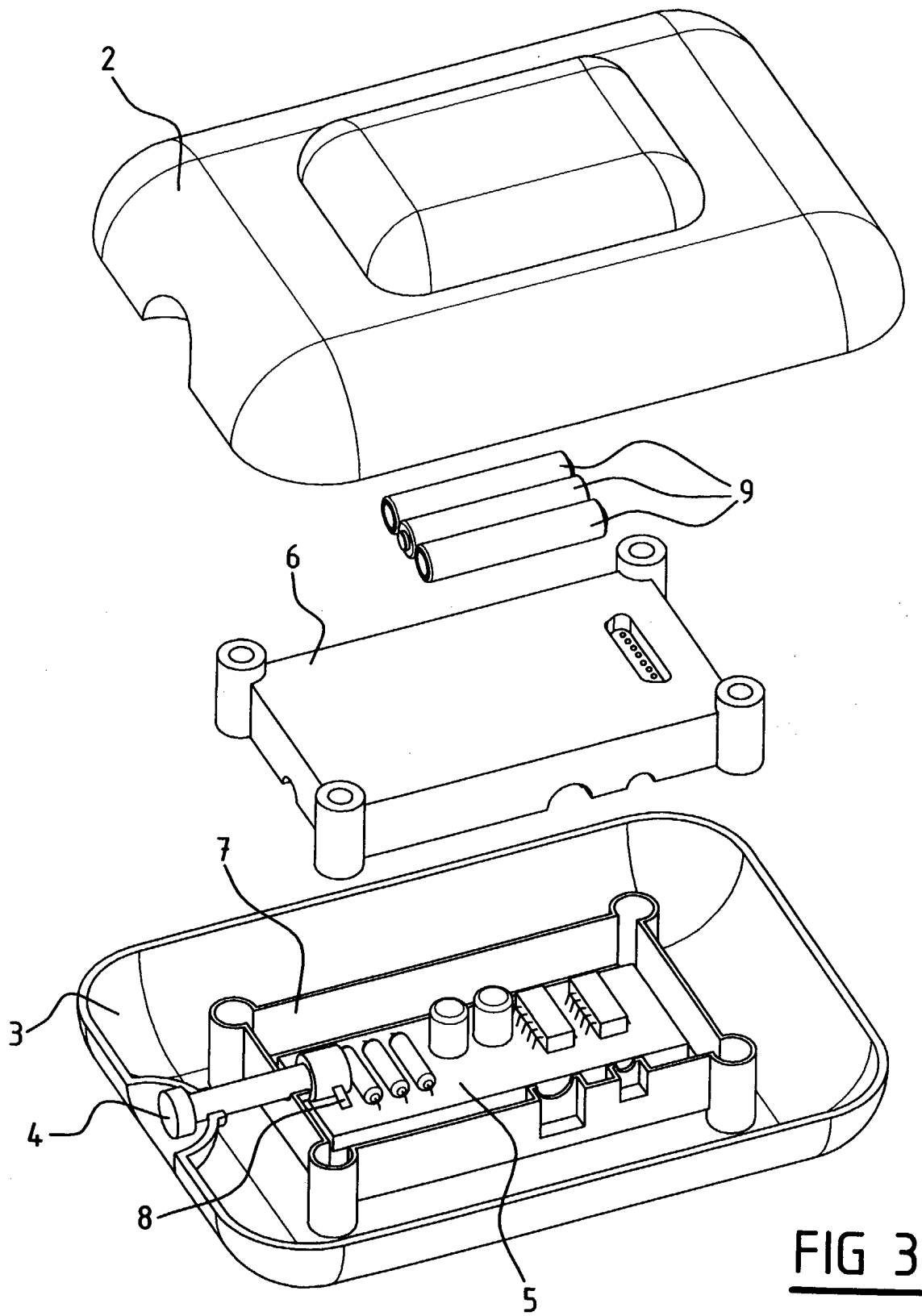
Claims

1. Emergency aid system for calling for emergency aid, such as an ambulance, police or verification service such as security personnel, at the request of a user, which system comprises:
 - at least one transmitter to be carried on his/her person by a user for transmitting a request signal,
 - at least one central receiver for receiving the request signal and calling in the emergency assistance, wherein the system comprises position-determining means for determining the position of the at least one transmitter.
2. System as claimed in claim 1, wherein the request signal comprises a spoken message and wherein the message preferably includes the position of the user.
3. System as claimed in claim 1 or 2, comprising a da-

tabank with data for determining the type of emergency assistance in response to a received request signal.

4. System as claimed in any of the foregoing claims, wherein the central receiver comprises a number of geographically spread receiver masts, and the position-determining means are adapted to determine the position of a transmitter on the basis of the signal intensities measured by a number of receiver masts. 5 10
5. System as claimed in any of the foregoing claims, wherein the position-determining means comprise a GPS receiver arranged in the transmitter. 15
6. System as claimed in claim 5, wherein the position determined by the GPS receiver is co-transmitted with the request signal. 20
7. System as claimed in any of the foregoing claims, wherein the request signal comprises an identification code unique to the transmitter.
8. System as claimed in any of the foregoing claims, wherein the transmitter and receiver operate in accordance with the GSM protocol. 25
9. Transmitter for a system as claimed in any of the foregoing claims, comprising a transmitter module, a power supply and activating means for activating the transmitter module. 30
10. Transmitter as claimed in claim 9, wherein the activating means comprise a pull-out part. 35
11. Transmitter as claimed in claim 9 or 10, wherein the activating means comprise voice recognition means. 40
12. Transmitter as claimed in any of the claims 9-11, comprising position-determining means.
13. Transmitter as claimed in claim 12, wherein the position-determining means comprise a GPS receiver. 45
14. Transmitter as claimed in any of the claims 9-13, wherein the transmitter module operates in accordance with the GSM protocol. 50
15. Transmitter as claimed in claim 13, wherein the transmitted signal comprises an SMS message.
16. Transmitter as claimed in any of the claims 9-15, comprising detection means for detecting that a connection to the central receiver has been effected. 55
17. Transmitter as claimed in any of the claims 9-16, comprising a microphone for recording ambient sound.







European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 03 07 6462

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 6 181 373 B1 (COLES CHRISTOPHER F) 30 January 2001 (2001-01-30) * abstract *	1-17	G08B25/01 G08B21/00
X	EP 0 404 280 A (SAKUMA SUSUMU) 27 December 1990 (1990-12-27) * abstract *	1-17	
X	WO 01 78032 A (LINLAN RES AND DESIGN COMPANY ; LANCINI BEN (AU); LINNETT MALCOLM R) 18 October 2001 (2001-10-18) * abstract *	1-17	
X	DE 199 20 128 A (FUNK RICHARD) 7 December 2000 (2000-12-07) * abstract *	1-17	
X	DE 197 29 645 A (INTRONIC SICHERHEITSSYSTEME VE) 14 January 1999 (1999-01-14) * abstract *	1-17	
A	US 6 147 611 A (OTERO ARMANDO) 14 November 2000 (2000-11-14) * abstract *	11	G08B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 20 August 2003	Examiner Sgura, S
CATEGORY OF CITED DOCUMENTS 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 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			

EPO FORM 1503 03/02 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 03 07 6462

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

20-08-2003

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6181373 B1	30-01-2001	US 2001001561 A1	24-05-2001
		AU 4826090 A	13-08-1990
		WO 9008371 A1	26-07-1990
		JP 2896930 B2	31-05-1999
		JP 4504016 T	16-07-1992
		US 5712679 A	27-01-1998
EP 0404280 A	27-12-1990	JP 1066581 A	13-03-1989
		JP 1903626 C	08-02-1995
		JP 4080353 B	18-12-1992
		JP 1114127 A	02-05-1989
		AT 91551 T	15-07-1993
		EP 0404280 A1	27-12-1990
		AT 113426 T	15-11-1994
		CA 1314087 C	02-03-1993
		DE 3750697 D1	01-12-1994
		DE 3750697 T2	23-02-1995
		DE 3786553 D1	19-08-1993
		DE 3786553 T2	04-11-1993
		EP 0306577 A2	15-03-1989
		ES 2042581 T3	16-12-1993
		US 4954836 A	04-09-1990
WO 0178032 A	18-10-2001	WO 0178032 A1	18-10-2001
		AU 4625201 A	23-10-2001
		CA 2402443 A1	18-10-2001
		CN 1422416 T	04-06-2003
		EP 1275095 A1	15-01-2003
		US 2003034881 A1	20-02-2003
DE 19920128 A	07-12-2000	DE 19920128 A1	07-12-2000
DE 19729645 A	14-01-1999	DE 19729645 A1	14-01-1999
US 6147611 A	14-11-2000	NONE	