(12) UK Patent Application (19) GB (11) 2 285 530 (13) A

(43) Date of A Publication 12.07.1995

(21) Application No 9400136.9

(22) Date of Filing 06.01.1994

(71) Applicant(s)
Robert John Leighton
16 Mason Road, Headless Cross, REDDITCH,
Worcestershire, B97 5DA, United Kingdom

(72) Inventor(s)
Robert John Leighton

(74) Agent and/or Address for Service
Derek Jackson Associates
The Haven, Plough Road, Tibberton, DROITWICH,
Worcs, WR9 7NQ, United Kingdom

(51) INT CL[6]
H04M 11/02 , G08B 3/10 , G11B 31/00

(52) UK CL (Edition N)
G5R RAC RB788
U1S S2207

(56) Documents Cited
GB 2265248 A GB 2256112 A GB 2092862 A
WO 92/03820 A1 BE 000894410 A CH 000586982 A
DE 003400157 A FR 002633120 A US 5148468 A
US 4715060 A

(58) Field of Search
UK CL (Edition N) G5R RAC RGA , H4K KOX
INT CL[6] G08B 3/10 , G11B 31/00 , H04M 11/02
Online: WPI

(54) A doorbell answering machine

(57) A door answering system comprising a unit 1 to be positioned externally of a building and a unit 5 to be positioned internally of a building for communication between an occupant and a visitor. The door answering system incorporates means to play at least one recorded message and/or to record at least one message for subsequent replay.

The external unit 1 comprises a waterproof housing (Fig. 2, 9) provided with a microphone/speaker (Fig. 2, 11), a bell push (Fig. 2, 13), a movement detector (Fig. 2, 15) and a key pad (Fig. 2, 17).

The internal unit 5 comprises a housing (Fig. 4, 27), microphone/speaker (Fig. 4, 29) and keys (31, 33) for controlling the recording and playback of messages, intercom and call screening.

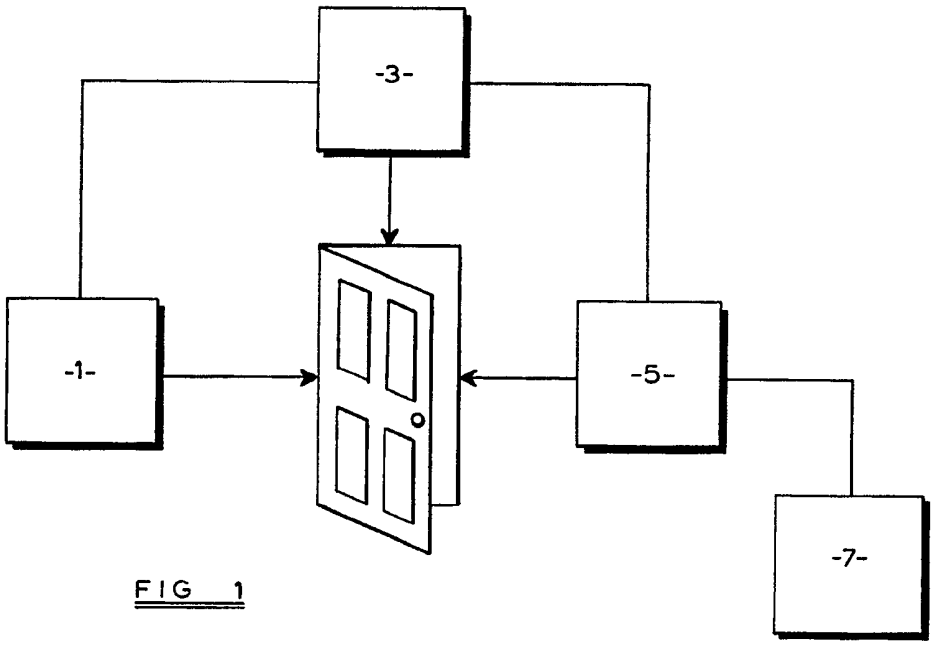

FIG 1

GB 2 285 530 A

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1990.

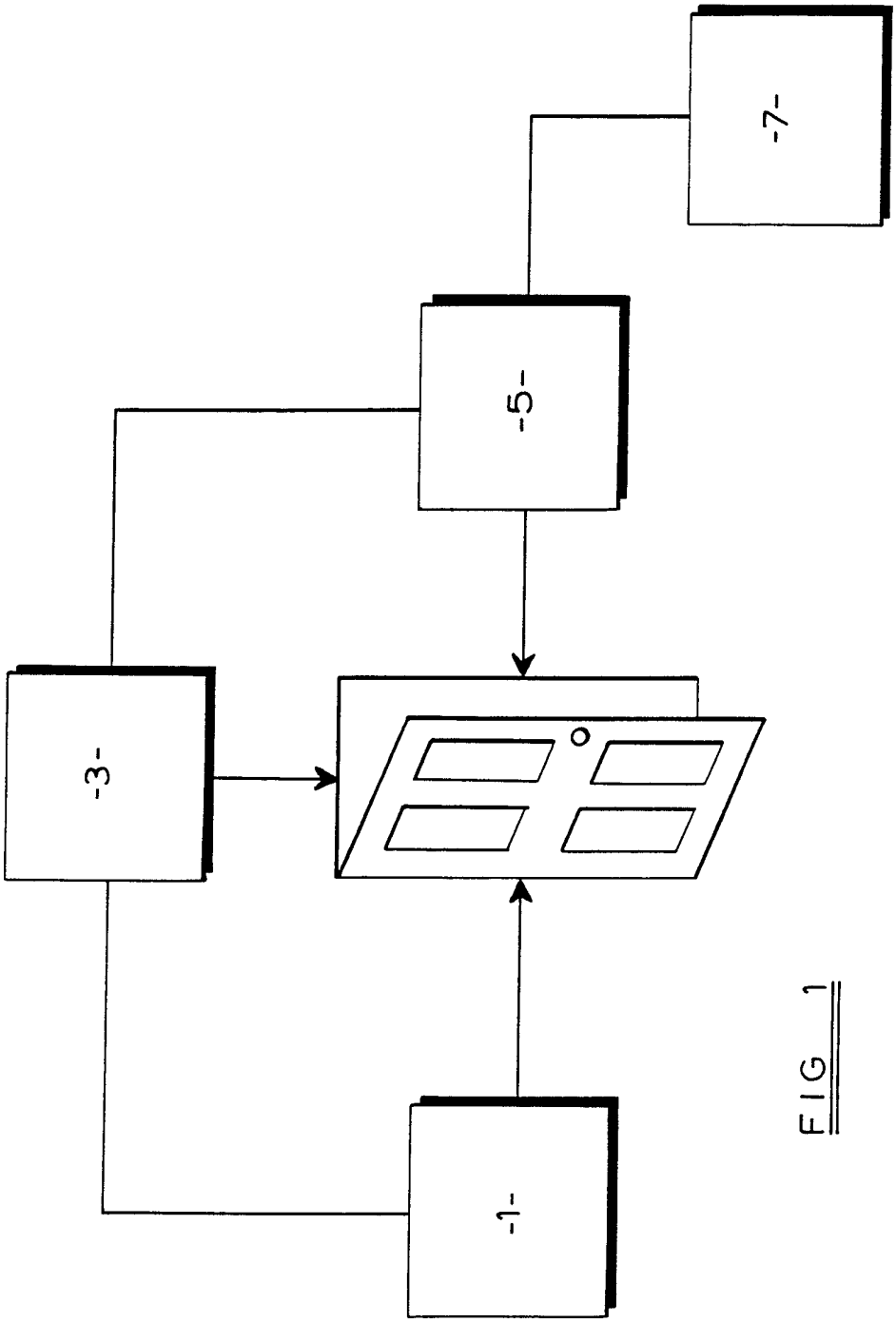

FIG 1

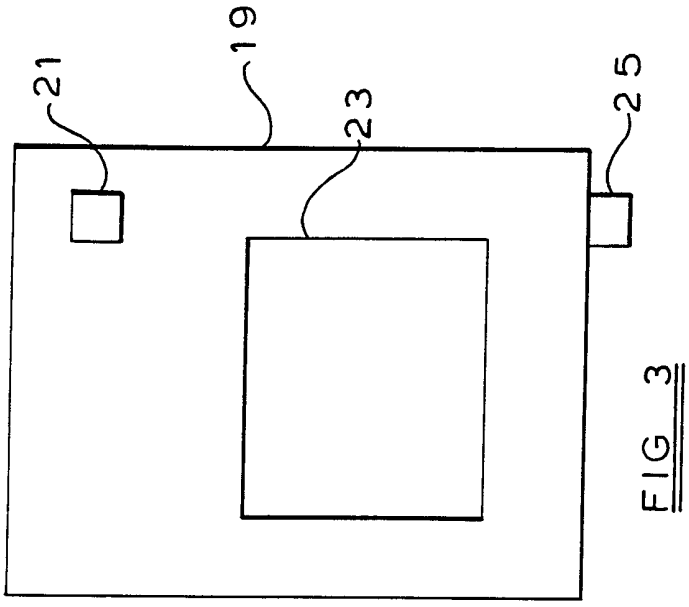

FIG 3

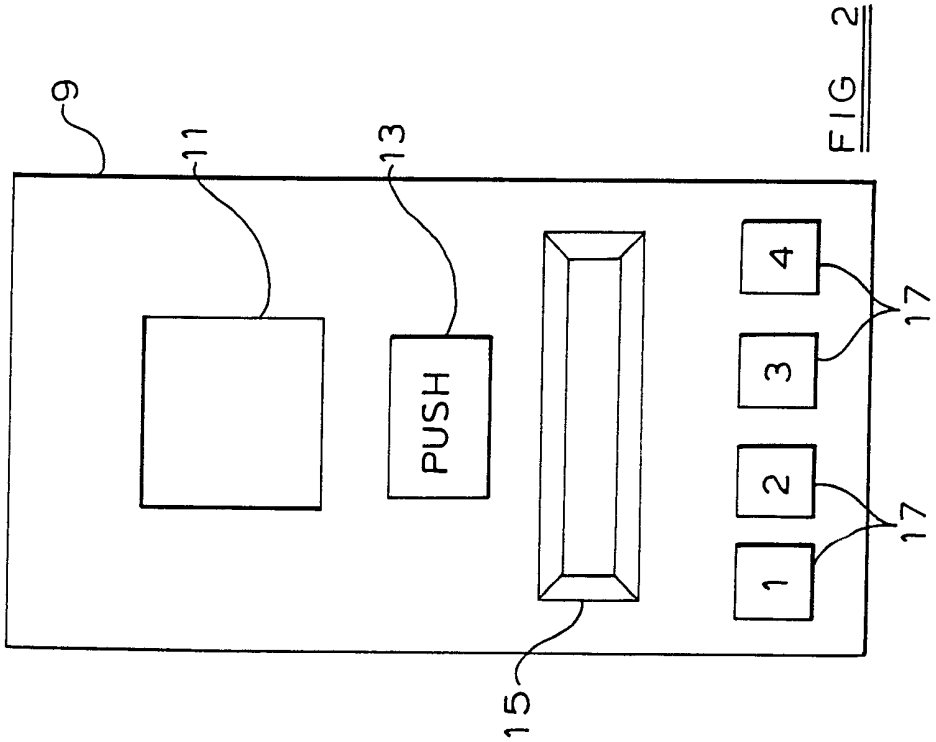

FIG 2

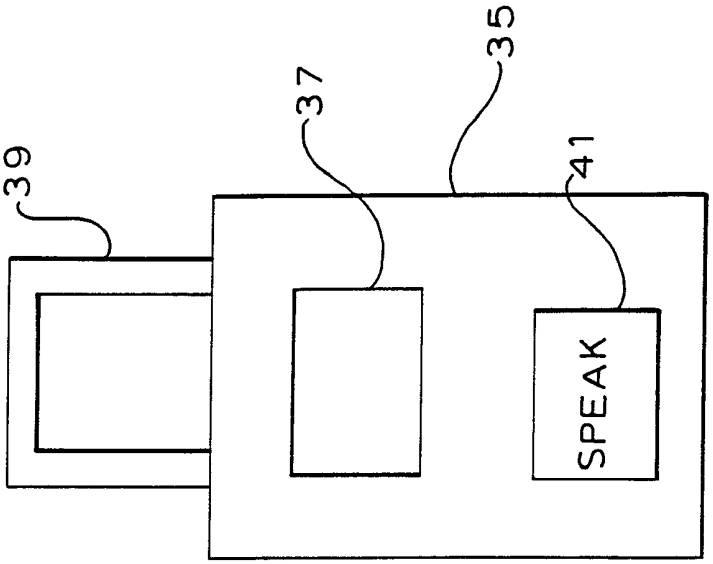

FIG 5

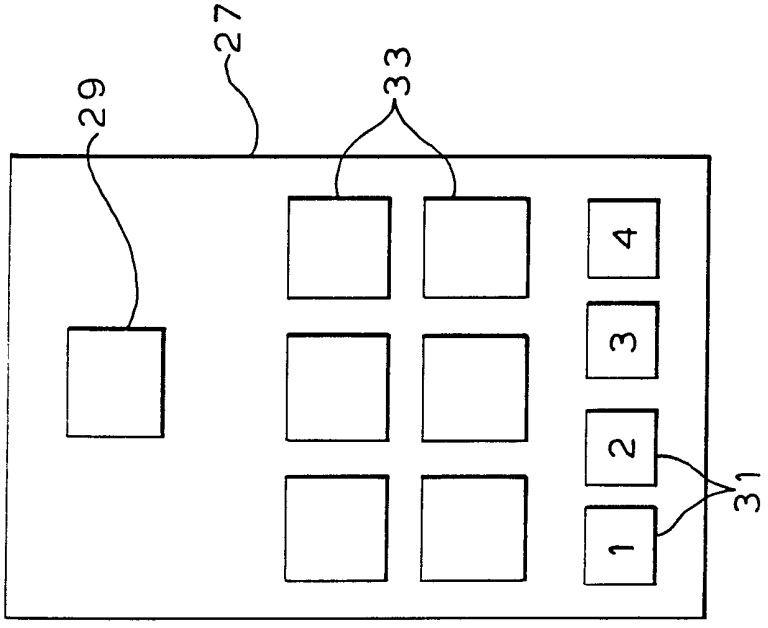

FIG 4

DOOR ANSWERING SYSTEM

The present invention is concerned with a door answering system which is able to play a recorded message and/or to record a message for subsequent replay.

Traditional door bells are widely used in commercial and industrial premises in addition to residential premises, as are telephone answering machines, intercom systems and intruder alarms. However, each of these items of equipment is used to carry out its individual task rather than to enhance the functionality of the traditional equipment.

It is therefore an object of the present invention to provide a door answering system which is able to play a recorded message and/or to record a message for subsequent replay.

According to the present invention there is provided a door answering system including means to be positioned externally of a building and means to be positioned internally of a building for communication between an occupant and a visitor, the door answering system incorporating means to play at least one recorded message and/or to record at least one message for subsequent replay.

The means to be positioned externally of the building may include a microphone and/or a loudspeaker. The means to be positioned externally of the building may include a bell push. Additionally or alternatively, the means to be positioned externally of the building may include a movement detector. The means to be positioned externally of the building may include a plurality of keys for entering information and/or instructions to the system.

The means to be positioned internally of the building may include means for providing visual and/or audible information to the occupant. The means to be positioned internally of the building may include means for recording and replaying incoming and/or outgoing messages. The time and date of incoming messages may be stored. The communication means may permit the occupant to listen to a message from a visitor being recorded.

The door answering system may include means for detecting whether or not one or more doors is open or closed. The system may include programmable delay means for delaying means for playing a recorded message. The delay means may be reset by opening of at least one of the one or more doors. The delay means may additionally or alternatively be reset by communication between the occupant and the visitor by way of the system.

The door answering system may include an additional control unit to be positioned internally of the building. The additional control unit and/or the means to be positioned internally of the building may include a plurality of keys for entering information and/or instructions to the system.

The door answering system may include an additional remote control unit adapted to be portable within the building. The remote control unit may be provided with a microphone and/or a loudspeaker and may be provided with means for transmitting a message to the means to be positioned externally of the building.

For a better understanding of the present invention and to show more clearly how it may be carried into effect reference will now be made, by way of example, to the accompanying drawings in which:

Figure 1 is a schematic illustration of a door answering system according to the present invention;

Figure 2 is a diagrammatic representation of an external receiver unit of the door answering system according to the present invention;

Figure 3 is a diagrammatic representation of a main processing unit of the door answering system according to the present invention;

Figure 4 is a diagrammatic representation of an internal control unit of the door answering system according to the present invention; and

Figure 5 is a diagrammatic representation of a remote internal communication unit of the door answering system according to the present invention.

The figures show an external receiver unit 1 which is used for communication between the occupant of a building or the like, such as a residential house or a commercial or industrial building, and a visitor. A main processing unit 3 which provides visible and/or audible confirmation to the occupant that the door answering system is, or certain functions thereof are, selected. An internal control unit 5 may either be a separate unit as illustrated, or may be combined with the main processor unit, and functions to control the functions of the main processor unit and the remainder of the system. A remote internal control unit 7 may positioned at any suitable position within the building and is linked to the internal control unit 5 as shown or to the main processor unit 3.

The external receiver unit 1 is shown in more detail in Figure 2 and comprises a waterproof housing 9 provided with a microphone/speaker 11, a bell push 13, a movement detector 15 and a number of keys 17.

The microphone/speaker 11 is used for communication between the occupant and a visitor, for announcing a message prepared by the occupant for visitors in general or for a specific visitor, or for recording one or more messages from a visitor for the occupant.

The bell push 13 acts as a traditional door bell (or buzzer or other means of drawing attention to the presence of a visitor), but has an additional capability, when activated by the occupant, of initiating a message on behalf of the occupant and/or of initiating recording of a message from the visitor as will be explained in more detail hereinafter. However, the facility to issue and/or record a message may alternatively be provided by way of the movement detector 15 and in such an embodiment the bell push 13 may be omitted.

The movement detector 15 provides an alternative or additional way of greeting or detecting a visitor and permits a message to be played through the speaker 11 when the movement of a visitor is detected. Any suitable message may be played such as "please leave one extra pint of milk", "these premises are alarmed" or "beware of the dog".

The keys 17, four keys being illustrated in Figure 2, permit individual messages to be recorded for certain visitors when linked to the message playing facility, such

as "would the milkman please press button one", or permit specific private messages to be left for visitors which can only be heard when a specific sequence of numbers (a personal identification number or PIN number) is keyed in.

The main processor unit 3 is shown in more detail in Figure 3 and comprises a housing 19 provided with an ON/OFF indicator 21 which provides visual and/or audible confirmation to the occupant that all, or selected components such as the movement detector 15, of the door answering system is or are activated. The main processor unit contains means (not shown) for recording one or more messages, for example digital storage directly onto a microchip and/or analogue tape cassette such as a standard microcassette. The main processor unit includes means for recording the time and day of the or each incoming message.

The main processor unit also includes a microphone/speaker 23 to permit the occupant to listen to a visitor recording a message and to choose whether or not to respond either by opening the door or by using the microphone/speaker 23 which is linked to the microphone/speaker 11 of the external receiver unit 1. If the occupant chooses to respond by opening the door, the system resets and the message is not stored, but if the intercom is used the conversation may be recorded if desired.

The main processor unit 3 is linked to a door open sensor (not shown) and is provided with an indicator 25 to show whether or not the door is open. A programmable delay is provided from the time of activation either by the sensor to indicate the door has been opened or by the bell push to the time of playing a prerecorded message or to the time of recording a message from a visitor. The delay enables, for example, the occupant to respond to the call by way of the intercom, or to get to the door, prior to the message commencing. The time delay is terminated and reset by the door opening. The door open sensor can be of any conventional type, for example infra red, tumbler switch, door contact, pressure switch or the like.

If desired, the main processor unit 3 may additionally be provided with means, such as a digital voice synthesizer and/or an LCD display, for giving an audible operating instructions, notification of the number of callers and the number of messages or the like and/or for displaying various details of the system such as the number of callers and/or the number of waiting messages, for example for use by occupants with hearing difficulties: in this respect, the main processor unit may be provided with amplification and volume control facilities.

The internal control unit 5 is shown in more detail in Figure 4 and comprises a housing 27 provided with a microphone/speaker 29, a plurality of numbered keys 31, and

with a plurality of keys 33 for controlling various functions of the system such as the recording of messages by the occupant, playback of messages, intercom, call screening and the like.

It should be noted the internal control unit 5 can be combined with the main processor unit 3 if desired. However, it is generally believed that a separate arrangement is more convenient for the user and more aesthetically pleasing.

The remote internal control unit 7 is shown in more detail in Figure 5 and comprises a portable housing 35 provided with a microphone/speaker 37, a radio aerial 39 for receiving and transmitting messages and data, and with a SPEAK button 41 for transmitting a message. As an alternative to being fully portable, the remote internal control unit 7 may be linked to the main processor unit 3 by dedicated wiring or by the mains wiring of the building, for example.

The remote internal control unit 7 is illustrated in Figure 1 as being connected to the internal control unit 5, but alternatively the remote internal control unit 7 may be connected to the main processor unit 3.

The main processor unit 3, the external receiver unit 1, the internal control unit 5 and the remote internal control

unit 7 may each be powered by any suitable power supply (not shown) such as one or more batteries or by mains power suitably reduced in voltage, for example by means of a transformer.

The door answering system according to the present invention may be made in modular form. That is to say, a purchaser may, instead of purchasing the entire system, initially purchase a basic door answering system in accordance with the present invention and may subsequently readily upgrade the system to incorporate additional functionality such as the movement detector, the keys on the external receiver unit and/or the remote internal control unit.

CLAIMS

1. A door answering system including means to be positioned externally of a building and means to be positioned internally of a building for communication between an occupant and a visitor, the door answering system incorporating means to play at least one recorded message and/or to record at least one message for subsequent replay.

2. A door answering system as claimed in claim 1, wherein the means to be positioned externally of the building includes a microphone and/or a loudspeaker.

3. A door answering system as claimed in claim 2, wherein the means to be positioned externally of the building includes a bell push.

4. A door answering system as claimed in any preceding claim, wherein the means to be positioned externally of the building includes a movement detector.

5. A door answering system as claimed in any preceding claim, wherein the means to be positioned externally of the building includes a plurality of keys for entering information and/or instructions to the system.

6. A door answering system as claimed in any preceding claim, wherein the means to be positioned internally of the building includes means for providing visual and/or audible information to the occupant.

7. A door answering system as claimed in any preceding claim, wherein the means to be positioned internally of the building includes means for recording and replaying incoming and/or outgoing messages.

8. A door answering system as claimed in any preceding claim, wherein the time and date of incoming messages is stored.

9. A door answering system as claimed in any preceding claim, wherein the communication means permits the occupant to listen to a message from a visitor being recorded.

10. A door answering system as claimed in any preceding claim and including programmable delay means for delaying means for playing a recorded message.

11. A door answering means as claimed in any preceding claim and including means for detecting whether or not one or more doors is open or closed.

12. A door answering system as claimed in claim 11 when dependent on claim 10, wherein the delay means is reset by opening of at least one of the one or more doors.

13. A door answering system as claimed in any one of claims 10 to 12, wherein the delay means is reset by communication between the occupant and the visitor by way of the system.

14. A door answering system as claimed in any preceding claim and including an additional control unit positioned internally of the building.

15. A door answering system as claimed in any preceding claim, wherein the additional control unit and/or the means to be positioned internally of the building includes a plurality of keys for entering information and/or instructions to the system.

16. A door answering system according to any one of the preceding claims and including an additional remote control unit adapted to be portable within the building.

17. A door answering system as claimed in claim 16, wherein the remote control unit is provided with a microphone and/or a loudspeaker and is provided with means for transmitting a message to the means to be positioned externally of the building.

18. A door answering system substantially as hereinbefore described with reference to, and as shown in, the accompanying drawings.

Patents Act 1977 Examiner's report to the Comptroller under Section 17 (The Search report)	Application number GB 9400136.9
Relevant Technical Fields (i) UK Cl (Ed.N) G5R (RAC, RGA); H4K (KOX) (ii) Int Cl (Ed.6) G11B 31/00; H04M 11/02 G08B 3/10	Search Examiner PETER SLATER Date of completion of Search 23 MARCH 1995
Databases (see below) (i) UK Patent Office collections of GB, EP, WO and US patent specifications. (ii) ONLINE DATABASES: WPI	Documents considered relevant following a search in respect of Claims :- 1-18

Categories of documents

X: Document indicating lack of novelty or of inventive step.

Y: Document indicating lack of inventive step if combined with one or more other documents of the same category.

A: Document indicating technological background and/or state of the art.

P: Document published on or after the declared priority date but before the filing date of the present application.

E: Patent document published on or after, but with priority date earlier than, the filing date of the present application.

&: Member of the same patent family; corresponding document.

Category	Identity of document and relevant passages		Relevant to claim(s)
X	GB 2265248 A	(MARCUS CARRE) see whole document	1-3, 6, 7 at least
X	GB 2256112 A	(A M SOLOMONS) see whole document	1-3, 6, 7 at least
X	GB 2092862 A	(GEARY) see whole document	1-3, 5-7 at least
X	WO 92/03820 A1	(NEW-TRONICS INC) see whole document	1-3, 5-7 at least
X	US 5148468 A	(MARRICK) see whole document	1-3, 5-7, 9 at least
X	US 4715060 A	(LIPSCHER) see whole document	1-3, 6, 7 at least
X	DE 003400157 A	(SZPERKOWSKI) see whole document, and also WPI Abstract Accession No. 85-172483/29	1-3, 6, 7, at least
X	FR 002633120 A	(TERRAL) see whole document, and also WPI Abstract Accession No. 90-046747/07	1-3, 6, 7 at least
X	BE 000894410 A	(VERHEYDEN) see whole document, and also WPI Abstract Accession No. 83-B0212K/04	1-3, 6, 7 at least
X	CH 000586982 A	(PADALINO) see whole document, and also WPI Abstract Accession No. 77-E4534Y/22	1-3, 6, 7 at least

Databases: The UK Patent Office database comprises classified collections of GB, EP, WO and US patent specifications as outlined periodically in the Official Journal (Patents). The on-line databases considered for search are also listed periodically in the Official Journal (Patents).