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(71) Applicant: **FSL Limited**
County Tyrone BT80 9AR (GB)

(72) Inventor: **Meenan, John**
County Tyrone
BT80 8ED (GB)

(74) Representative: **Wallace, Alan Hutchinson et al**
F. R. Kelly & Co.
4 Mount Charles
Belfast BT7 1NZ,
Northern Ireland (GB)

(54) Substitution display board system

(57) A substitution display board system comprises a substitution display board dimensioned for displaying substitution information to a crowd. The substitution display board includes means for wirelessly communicating said substitution information a display unit system. The system further includes means for translating the substitution information into an alternative form, for example translating player numbers into player names. The alternative form of the substitution information is displayed on the display unit system.

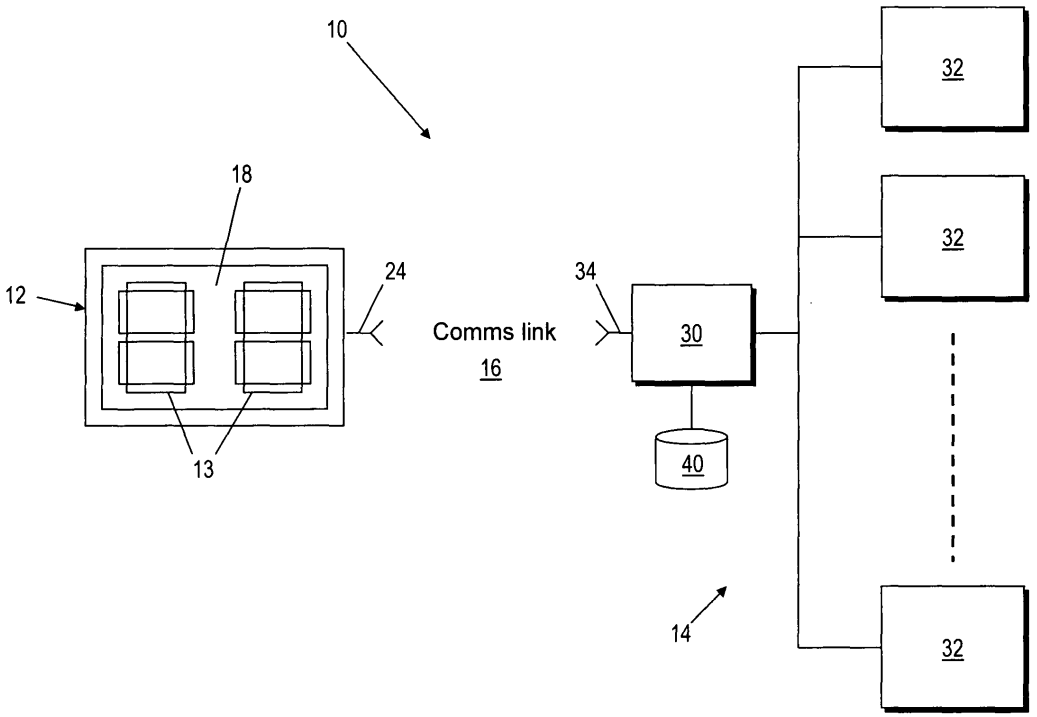

FIG. 1

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Description

Field of the Invention

[0001] The present invention relates to display boards, especially boards for displaying substitution information during sporting events.

Background to the Invention

[0002] Substitution display boards are normally held up at the touchline of, say, a football pitch, or other sporting arena, to indicate which player is coming off the playing field and which player is going onto the field. Usually, the board identifies each relevant player by displaying his respective player or shirt number.

[0003] Some individuals who are observing the event, e.g. commentators or reporters, are usually located remotely from the playing field and can have difficulty in seeing or reading the display board. In addition, such individuals have to correlate the displayed number(s) with the player name(s), typically using a team sheet, and this can be awkward.

[0004] It would be desirable to provide a system that mitigates the problems outlined above.

Summary of the Invention

[0005] A first aspect of the invention provides a substitution display board system comprising at least one substitution display board dimensioned for displaying substitution information to a crowd; a display unit system comprising at least one display unit; means for wirelessly communicating said substitution information, or information derived therefrom, to said display unit system; and means for translating said substitution information into an alternative form, the system being arranged to display said alternative form of said substitution information on said at least one display unit.

[0006] Typically, the substitution information actually displayed by the at least one display board, or information derived therefrom, is the information that is transmitted wirelessly to the display unit system, although it is alternatively possible to transmit substitution information, or a derivative thereof, before it has actually been displayed by the display board(s).

[0007] Preferably, said substitution information comprises at least one alphanumeric string denoting a respective player identifier, e.g. a player number, and said alternative form of said substitution information comprises a respective other alphanumeric string denoting the respective player's name.

[0008] Typically, said wireless communication means is provided on said at least one substitution board.

[0009] The system may include at least one storage device, preferably a programmable storage device, containing a set of substitution information for display on said at least one substitution board, e.g. a list of player numbers or other identifiers, and a corresponding set of translated substitution information, e.g. a list of corresponding player names, for display on said at least one display unit.

[0010] The display units may include a scoreboard dimensioned and arranged to display said translated substitution information to a crowd.

[0011] A second aspect of the invention provides a method of communicating substitution information in a substitution display board system comprising at least one substitution display board dimensioned for displaying substitution information to a crowd, and a display unit system comprising at least one display unit, the method comprising communicating said substitution information, or information derived therefrom, to said display unit system; translating said substitution information into an alternative form; and displaying said alternative form of said substitution information on said at least one display unit.

[0012] A third aspect of the invention provides a substitution display board dimensioned for displaying substitution information to a crowd, the display board comprising means for wirelessly communicating said substitution information, or information derived therefrom, to a display unit system.

[0013] The display board may include means for translating said substitution information into an alternative form, and may be arranged to transmit said translated substitution information to said display unit system.

[0014] The display board is typically a portable, hand held unit, but may alternatively be static in use, e.g. mounted on a table or other support.

[0015] The display board typically includes a programming device for setting the substitution information to be displayed, the programming device being integrated into, or connectable to the display board, and wherein said wireless communication means is provided on said programming device.

[0016] Advantageously, said at least one display board and said display unit system are adapted to communicate with one another by means of a wireless communication link, e.g. an RF link.

[0017] Further advantageous aspects of the invention will become apparent to those ordinarily skilled in the art upon review of the following description of a specific embodiment and with reference to the accompanying drawings in which:

Brief Description of the Drawings

[0018]

Figure 1 is a schematic view of a substitution display board system embodying the invention;

Figure 2 is a perspective view of an example of a substitution display board suitable for use in the system of Figure 1; and

Figure 3 is a schematic view of a possible obverse and/or reverse display face of the display board.

Detailed Description of the Drawings

[0019] Referring now to the drawings, there is shown, generally indicated as 10, a display board system embodying the invention. The system 10 comprises a display board 12 and a remote display unit system 14, the board 12 and the display unit system 14 being capable of communicating with each other via a communications link 16, especially a wireless link, e.g. an RF (radio frequency) link. In alternative embodiments, the system may include a plurality of display boards 12.

[0020] In preferred embodiments, the system 10 us a substitution display board system and the board 12 is a substitution display board of the type suitable for use at sporting events such as football matches. To this end, the board 12, or more particularly its display area(s), is dimensioned to be able to display substitution information to a crowd, i.e. a plurality of remotely located people including, for example, spectators, match officials and/or players at a sporting event. The board 12 is usually substantially rectangular in shape and comprises at least one display area which includes means for displaying information, typically one or more numerals. The board 12 may have a respective display area on one of or both of an obverse face and a reverse face 18, 20. In preferred embodiments, the display means are electronic in nature, typically comprising an LED display 13, especially a two-digit display. In the illustrated embodiment, each display face 18, 20 comprises a two-digit LED display, which is particularly suited to displaying player numbers. Alternatively, the display(s) could each comprise one or more digits.

[0021] The information displayed by the board 12 is intended to be readable at relatively large distances, typically from up to at least 20 metres, or preferably up to at least 50 metres. The or each display face 18, 20 (or more particularly the display area on the or each face 18, 20) is usually dimensioned to occupy substantially all of the area of the respective face of the display 12. The board 12 is usually portable and preferably amenable to being carried a single person. Accordingly, the board 12 may for example be dimensioned such that its face area is between approximately 0.25 to 1.5 square metres.

[0022] Preferably, the board 12 is electronically programmable to display the desired information. To this end, the board 12 includes means for enabling the, or each, display means 13 to be programmed, or set, to display the desired information. In the illustrated embodiment, the board 12 includes one or more input sockets 22 for receiving electrical cables. This allows a separate electronic programming device (not shown) to be connected to the board 12, by which device a user (not shown) can set the information to be displayed and cause it to be communicated to the board 12. Alternatively, or in addition, the separate electronic programming device may communicate with the board via a wireless link. Alternatively, or in addition, the board 12 may include a built-in interface, such as a keypad or other information inputting means, for allowing the user to set the information to be displayed directly at the board 12 itself. The electronic programming device, whether it is integrated into, or removably connectable to, the board 12 may be considered to form part of the board 12.

[0023] In preferred embodiments, the board 12 also includes wireless communication means for communicating with the display unit system 14 via the communications link 16. The communication means typically comprises a wireless transmitter, and is indicated schematically in Figure 1 by antenna 24. The communication means is arranged to transmit the information displayed by the board 12, typically in any convenient encoded form, via the transmitter. The wireless communication means may take any suitable conventional form. For example, in typical embodiments, the transmitter is an RF transmitter and so includes all of the conventional components (not illustrated) required to encapsulate and transmit information via an RF signal. The communication means 24 includes means for receiving an input signal containing the information to be transmitted. The board 12 may be configured to provide said input signal to the transmitter 24 directly or indirectly from the display means 13 (so that the input signal represents what is being displayed by the board 12 at any given time), or the input signal may be sent to the transmitter 24 from said separate electronic programming device, or from another suitable electronic device (not shown) within or associated with the board 12. In alternative embodiments, the wireless communication means may be included in the programming device.

[0024] The transmitter 24 may be configured to transmit the information-carrying signal in any convenient manner, e.g. continuously or intermittently or only once while information is being displayed. Transmission may commence automatically once the display information is displayed, or communicated to the board 12, or may occur when a transmitter activation switch (not shown) is activated.

[0025] In the preferred embodiment, the information carried by the signal includes at least some of, and preferably all of, the information displayed by the board, or more typically, an encoded version of same. The transmitted information may include one or more player numbers and optionally an indication of whether the, or each, player is coming onto or going off the pitch.

[0026] The display unit system 14 comprises at least one receiver unit 30 (only one present in the illustrated embodiment) and at least one, but typically a plurality of, visual display units 32. The receiver unit 30 includes a wireless receiver (indicated schematically by antenna 34), e.g. an RF receiver, or other suitable means for receiving the signals transmitted by the transmitter 24. The receiver unit 30 also includes suitable conventional circuitry (not shown) for extracting the display information

from the received signal.

[0027] The display units 32 may take any convenient form, e.g. computer monitors, television monitors, or other screen unit, or electronic scoreboard. The receiver unit 30 is capable of communication with the display units 32 in order to send the extracted display information to the display units 32 for display thereon. The drawings show a hardwired communication link 36 between the receiver unit 30 and the display units 32, although the link could alternatively comprise a wireless link, e.g. a Bluetooth or infra-red link.

[0028] In the case where the display unit 32 comprises a scoreboard, the board 12 may communicate with the scoreboard's controller (not shown) in substantially the same manner as described above in relation to the receiver unit 30. The scoreboard is typically of the type that is dimensioned and arranged to display a match score, and/or the translated substitution information to a crowd, especially a crowd of spectators in a stadium or arena.

[0029] In the illustrated embodiment, the receiver unit 30 is shown as a separate unit and may, for example, form part of, or be connectable to, a computer, e.g. a laptop computer. Alternatively, the receiver unit 30 may be integrated into one of the display units 32. Alternatively still, each display unit 32 may be provided with its own respective receiver unit. In this case, each display unit 32 may conveniently comprise part of a computer, e.g. a laptop computer, including an integrated or plug-in receiver unit.

[0030] In the preferred embodiment, the information displayed by the board 12 comprises a number (or other alphanumeric string) which corresponds with a respective player. In order to translate displayed numbers into the corresponding names, the system 10 further includes, or is communicable with, a storage device 40 for storing numbers in association with respective names. The storage device 40 is preferably programmable and may take any suitable form, e.g. RAM, programmable ROM or other electronic memory. The system 10 typically further includes a user input device such as a keypad (not shown) to allow the user to input the relevant names and numbers, or other information, for storage in the device 40. The input device is conveniently provided at the receiver unit 30, but may be located at any other suitable location in the system 10.

[0031] In the illustrated embodiment, the storage device 40 is included in, or at least accessible by, the receiver unit 30. Upon receipt of a signal from the board 12, the receiver unit 30 extracts the display information from the signal. Where said information contains a player number(s), the receiver unit 30 refers to the storage device 40 to determine the corresponding player name(s). The receiver unit 30 then communicates the player name (s) to the display units 32, together with any other received or relevant information, for display threreon.

[0032] In the illustrated embodiment, the receiver unit 30 requires a processing capacity and may therefore include, or have access to, a microprocessor (not shown). In a simple embodiment, the receiver unit 30 takes the form of a computer, e.g. a PC or a laptop, with integrated or added wireless capacity.

[0033] In an alternative embodiment, the board, or its electronic programming device, may be adapted to translate the displayed information into an alternative form (e.g. player numbers to player names) before transmission to the receiver unit. In this case, the board or programming device, rather than the receiving unit, may include, or at least have access to, the storage device and a suitably programmed processor.

[0034] During use of the preferred embodiment, when a player number is displayed on the board 12, the number is relayed wirelessly to the receiver unit 30 whereupon the receiver unit 30 determines the corresponding player name and relays the name to the display units 32 for display thereon. Other information displayed on the board, or related to what is displayed on the board, may be also communicated to, and displayed on, the display units 32, e.g. the player number(s) itself and an indication of whether the player is coming on or going off. The display units 32 are typically located remotely from the pitch, e.g. in a commentary box, director's box, hospitality enclosure, dressing room etc, or, in the case of a scoreboard, are located adjacent the pitch in a prominent location. Hence, commentators, reporters and other observers, who are located close to a display unit 34, or in the case of a scoreboard, within sight of the scoreboard, can see not only that a substitution has been made, but also the name(s) of the player(s) coming on or off the pitch without having to refer to a team sheet.

[0035] It is known for referees, or other match officials, to carry a wireless alert device (not shown), e.g. a wireless vibrating unit, by which they can be contacted by, say, a linesman in the event that, for example, a substitution is desired to be made. Advantageously, the system 10 may be adapted to communicate with such wireless alert devices. For example, the board 12 (or its programming device) may be adapted to send an alert signal to the alert device whenever the board 12 is set or activated to display a desired substitution. Alternatively, the signal may be sent in advance of this event, in which case the board 12/programming device may include a separate control for independently activating the alert signal when desired. The alert signal need not necessarily include the player information. Hence, the referee can be notified of a desired substitution without relying on involvement from other match officials.

[0036] The invention is not limited to the embodiments described herein which may be modified or varied without departing from the scope of the invention.

Claims

1. A substitution display board system comprising at least one substitution display board dimensioned for displaying substitution information to a crowd; a dis-

play unit system comprising at least one display unit; means for wirelessly communicating said substitution information, or information derived therefrom, to said display unit system; and means for translating said substitution information into an alternative form, the system being arranged to display said alternative form of said substitution information on said at least one display unit.

2. A system as claimed in claim 1, wherein said substitution information comprises at least one alphanumeric string denoting a respective player identifier, and said alternative form of said substitution information comprises a respective other alphanumeric string denoting the respective player's name.

3. A system as claimed in claim 1 or 2, wherein said wireless communication means is provided on said at least one substitution board.

4. A system as claimed in any preceding claim, further including at least one storage device, preferably a programmable storage device, containing a set of substitution information for display on said at least one substitution board and a corresponding set of translated substitution information for display on said at least one display unit.

5. A system as claimed in any preceding claim, wherein said at least one display unit includes a scoreboard dimensioned and arranged to display said translated substitution information to a crowd.

6. A method of communicating substitution information in a substitution display board system comprising at least one substitution display board dimensioned for displaying substitution information to a crowd, and a display unit system comprising at least one display unit, the method comprising communicating said substitution information, or information derived therefrom, to said display unit system; translating said substitution information into an alternative form; and displaying said alternative form of said substitution information on said at least one display unit.

7. A substitution display board dimensioned for displaying substitution information to a crowd, the display board comprising means for wirelessly communicating said substitution information, or information derived therefrom, to a display unit system.

8. A substitution display board as claimed in claim 7, wherein the display board includes means for translating said substitution information into an alternative form, and is arranged to transmit said translated substitution information to said display unit system.

9. A substitution display board as claimed in claim 7 or 8, wherein said display board is a portable, hand held unit.

10. A substitution display board as claim in any one of claims 7 to 9, wherein said display board includes a programming device for setting the substitution information to be displayed, the programming device being integrated into, or connectable to the display board, and wherein said wireless communication means is provided on said programming device.

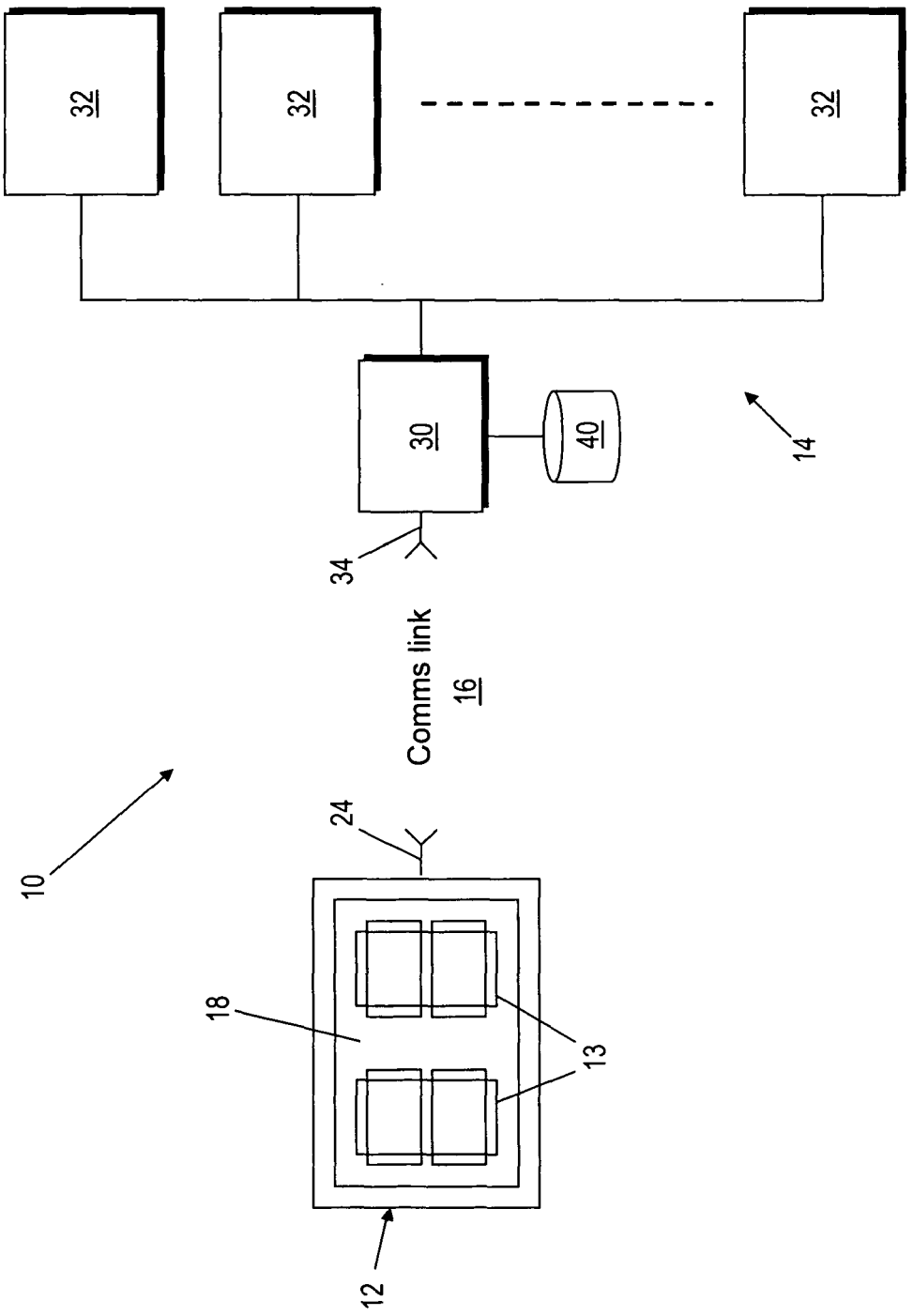

FIG. 1

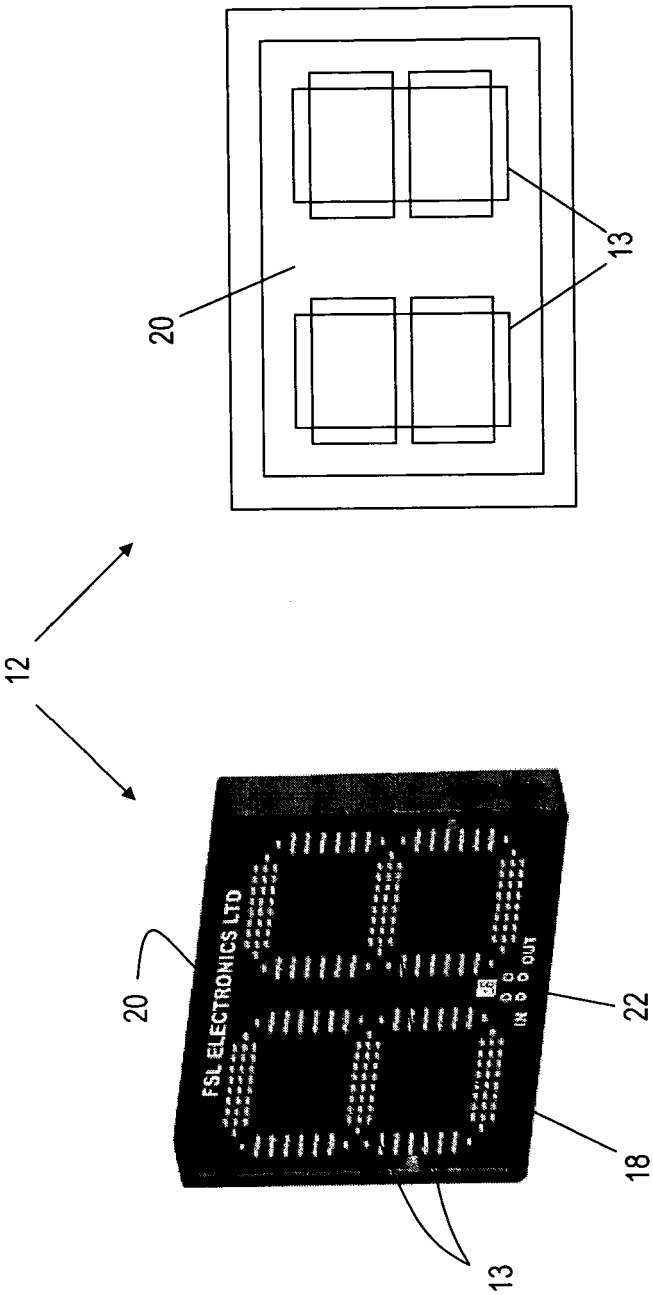

FIG. 3

FIG. 2

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 08 07 5064

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 6 369 697 B1 (POOLE TREVOR [GB]) 9 April 2002 (2002-04-09) * the whole document *	1-10	INV. A63B71/06
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A	US 5 898 587 A (BELL STEPHEN SPENCER [CA] ET AL) 27 April 1999 (1999-04-27) * the whole document *	1-10	
			TECHNICAL FIELDS SEARCHED (IPC) A63B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	19 May 2008	Jekabsons, Armands

CATEGORY OF CITED DOCUMENTS

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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
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