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(54) DISPENSING MACHINES

(57) The disclosed dispensing machine has means for selling products and first means (13) indicating the selling of a product, second means (14) representing at least one side, third means (15) for varying the displayed sign, fourth means (16) for fixing the sign, fifth means (17) for recognizing at least one fixed sign and sixth means (18) for dispensing a prize. The first (13), second (14), third (15), fourth (16), fifth (17) and sixth (18) means are related so that, when the first means (13) signal the sale of a product, the second (14), third (15), fourth (16) and fifth (17) means are actuated so that the second means (14) represent at least one fixed sign and, when displaying a predetermined sign, the fifth means (17) act on the sixth means (18) so that a price is given.

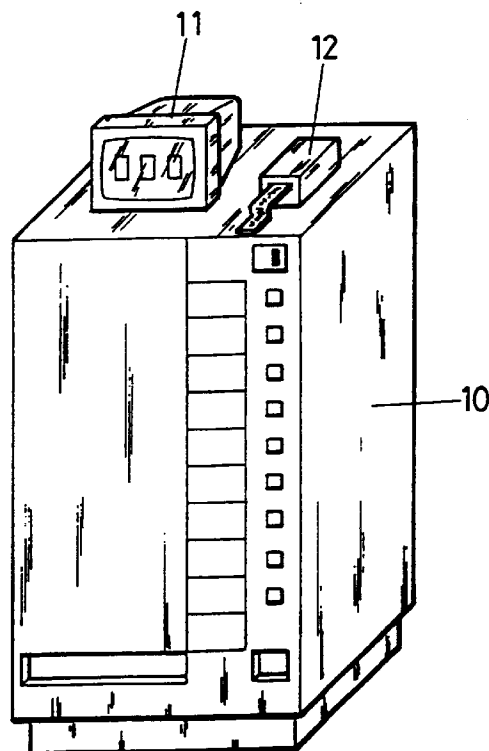


FIG. 3

EP 0 764 925 A1

Description

OBJECT OF THE INVENTION

As expressed in the title of this specification, the present invention consists of a vending machine with image or symbol display means and means to dispense prizes in the form of, for example, product gift tickets or coupons, in such a way that when a product is sold, different changing symbols which after a given time remain immobilized are shown, for example on a monitor screen, and if the symbols coincide or correspond to a certain combination, a prize is dispensed. Advertising elements may appear in the symbol display means when the machine is not dispensing a sold product.

BACKGROUND OF THE INVENTION

The use of vending machines, which are provided with a slot to insert coins and with a series of button or push buttons by means of which the desired product is chosen is conventionally and extensively known. The product is dispensed on a tray made for this purpose and then the change is returned in the event that the coins inserted do not correspond to the exact price.

Now then, this type of machine operates controlled by a microprocessor which generates the corresponding signals to activate the dispensing of the chosen product.

These machines operate autonomously and do not allow their connection to other elements, to carry out other functions that can be combined with the dispensing of a product, which constitutes an inconvenience.

On the other hand, vending machines have a limited capacity to stimulate the selling of the goods they contain, since they only allow for "static" advertising.

DESCRIPTION OF THE INVENTION

In order to overcome the above cited inconveniences and to achieve the aims commented on in the corresponding section, the invention consists of a vending machine that has some first product sale indicating means, that are related to some second display means of images or of at least one symbol, in such a way that when a sale takes place, a changing or, preferably, several changing symbols are shown, thanks to some third means to vary said symbols.

The second image display means are related to some fourth means that stop and immobilize the symbol or changing symbols that act at a specific instant.

Besides, it has some fifth means to recognize said symbol or said fixed symbols that generate a signal, in the event that they are identical or correspond to a specific symbol or a specific combination of symbols. This signal activates some sixth means to dispense a prize, that may be a product gift coupon.

Basically, the second, third, fourth, fifth and sixth means can be made and interrelated in known ways,

such as for example in "slot machines". However, while in a "slot machine" the symbol display means, the means to vary the displayed symbols, the symbol immobilization means, the fixed symbol recognition means and the prize dispensing means are activated by inserting a coin and optionally by means of a lever and/or buttons, in the machine according to the present inventions the corresponding means (that is to say, the second, third, fourth, fifth and sixth means) are activated by means of the sale and/or previous dispensing of a product, thanks to the inclusion of the first product sale indicating means. Said product sale indicating means can include means that emit a signal when said sale begins, for example, when the button or push button corresponding to the desired product is pushed. The signal that these means emit can activate the second, third, fourth, fifth and sixth means by the means known in said "slot machines".

According to a preferred embodiment of the present invention, the machine includes some seventh sold product recognition means, the seventh means being related to the second, third, fourth, fifth and sixth means in such a way that the operation of the latter depends on the article sold. The seventh means can be related to the second, third, fourth, fifth and sixth means in such a way that the prize is only dispensed if the seventh means indicate the sale of a specific product or of some specific products. Alternately, the seventh means can be related to the second, third, fourth, fifth and sixth means in such a way that the variation of the symbols displayed only starts when a specific product is sold. According to another alternate embodiment, the symbol variation - immobilization process and the subsequent dispensing of the prize, that the second, third, fourth, fifth and sixth means carry out, is modified depending on the product sold; for example, the sale of a specific product could give rise to the symbol variation-immobilization process repeating itself once or several times, which implies that certain products offer greater possibilities of winning a prize.

The second symbol display means can be determined by a monitor in which the changing symbols are framed in square divisions. The monitor may show advertising elements when the vending machine is not dispensing any sold product.

The monitor can form part of a computer, that is connected to the microprocessor of the vending machine by means of a communication channel, preferably a serial communication channel.

The first product sale indicating means as well as the seventh product recognition means can be materialized in the microprocessor of the vending machine, which generates, with each sale, a code corresponding to the sold product, that may be received by a central processing unit of the communication channel, which in terms of the captured code, actuates the corresponding process in accordance with the described functioning.

Alternately, for example, in order to implement the present invention in conventional vending machines

without having to modify the microprocessors thereof, the first product sale indicating means as well as, if the case may be, the seventh sold product recognition means may be made in the central processing unit of the communication channel.

The second, third, fourth and fifth means may be materialized in a computer that includes a monitor.

Likewise, the second display means may be defined by a series of rollers similar to those in "slot machines" that have the different symbols that are to be displayed printed on them.

Therefore, the operating sequence of the different means in view of a purchase operation by a customer could be the following:

- A customer inserts the amount in the vending machine and chooses the desired product by way of, for example, pushing a corresponding button.
- The vending machine dispenses the chosen product. In turn, the first sale indicating means detect said sale and send a signal to the third means that vary the represented symbols, whereby a display of changing symbols begins on the second symbol display means, for example, on a monitor.
- This variation of symbols is maintained for a specific amount of time until the fourth symbol immobilization means, which for example receive a signal from the third means when they start to vary the displayed symbols, stop said variation and leave the resulting combination of symbols of said temporary variation fixed on the monitor.
- The resulting fixed combination is recognized by the fifth recognition means, that receive information from, for example, the second display means or the fourth immobilization means and, based on this information, they evaluate if the fixed symbols correspond to a predetermined combination of symbols, in which case the fifth recognition means send a signal to the sixth prize dispensing means that act either directly on the vending machine giving the machine a prize, for example a gift product, or else on a prize coupon or ticket dispensing means.

Hereinafter to provide a better understanding of this specification and forming an integral part of the same, a series of figures in which the object of the invention is represented in an illustrative and non-restrictive manner, is attached hereto.

BRIEF DESCRIPTION OF THE FIGURES

Figure 1 shows a functional block diagram of the different elements that comprise the vending machine object of the invention.

Figure 2 shows a functional block diagram of the communications card or channel that provide the connection of the vending machine to the image display means, which in a preferred embodiment, are defined by a computer.

Figure 3 shows a perspective view of the outside appearance of the vending machine in a preferred embodiment.

Figure 4 shows in a block diagram a possible inter-relationship between the first, second, third, fourth, fifth and sixth means.

Figure 5 shows in a block diagram a possible inter-relationship between the first, second, third, fourth, fifth, sixth and seventh means.

DESCRIPTION OF AN EMBODIMENT OF THE INVENTION

Hereinafter a description of the invention based on the above cited figures is made.

In a preferred embodiment of the invention, a vending machine (1) (10) is provided with a connection to a computer (3), so that a communication channel (2), preferably a serial communication channel is inserted between them.

The vending machine (1) (10) is a conventional type one and operates automatically controlled by a microprocessor that carries out the instructions stored in a memory, for example an EPROM, so that each time a sale is made, it is detected and a code corresponding to the sold product is generated.

On its part, the communication card or channel (2) has a central processing unit (9), which includes an EPROM (4) wherein the operating program is stored, and which also includes a temporary data storage memory (5).

The connection of the communication channel (2) to the microprocessor of the vending machine (1) is done by means of a connector (6).

On the other hand, the central processing unit (9) is connected to an interface (8) which through a connector (7) materializes the connection to the computer (3).

The interface converts the signals generated by the central processing unit to the RS-232 protocol.

The computer (3) has a monitor (11) on which images are shown, which in the event the vending machine (1) (10) does not make any sale, these images represent advertizing elements.

When the purchase of a product is made, just as it has already been commented on, the code corresponding to said product is generated and is received by the central processing unit (9), which recognizes said code and in terms thereof a program stored in the EPROM (4) that sends the corresponding signals to the computer (3) is run so that a series of square divisions in which the different changing symbols are included are displayed on the screen.

Said symbols may be brands of products or any other type of element.

The symbols, after a purchase is made, change until when in a specific instant, governed by the program, they become immobilized, and the symbols obtained in each one of the square divisions are recognized; in such a way that if said symbols coincide in all

the square divisions, a signal is generated by the computer (3) so that it dispenses a prize, for example a ticket that represents a gift product coupon.

Thus for example, if the coinciding symbols correspond to a specific brand, the gift may refer to said brand.

Obviously, the computer (3) may have a ticket dispenser of the types conventionally used on the market.

The recognition of the symbols can, likewise, be done by a program as is conventionally done in other uses.

If the symbols obtained after their immobilization does not coincide in the different square divisions, or once the coupon has been dispensed; then, in a preferred embodiment of the invention, the central processing unit (9) determines if the product sold by the vending machine (1) (10) is or is not being promoted, a circumstance in which the same process of placing changing symbols on the square divisions takes place again. At a certain moment the symbols stop and if they are the same in all of the square divisions, a new ticket corresponding to a gift coupon, which may, for example, be related to the old product, is dispensed.

If the product that has been sold by the vending machine (1) (10) is not being promoted, then the selling process is considered as completed, and different advertising elements that may, likewise, change from time to time, appear again on the screen.

The computer (3) has stored the program that manages the different images to be shown on the screen, and the program operating the symbols and identifying the symbols that remain fixed in each one of the square divisions.

From what has been said, it is clearly deduced, that information can be transferred between the computer (3) and the central processing unit (9), which can manage all the data and carry out statistics or any other type of remote control through the described serial connection.

In the event that the vending machine (1) (10) does not have a ticket printer (12), it should be included to complete the described functioning.

Likewise, by means of the communication card or channel (2), remote control of the sales carried out by the vending machine (1) (10) may be done, aside from knowing the statistics and state of the computer (3), commented on above.

In figure 3, one sees a perspective view of the outside appearance of a possible preferred embodiment wherein the monitor (11) remains located in the top part of the vending machine (10), just like the ticket printer (12).

Referring to figures 4 and 5, the present invention can operate in the following manner:

A customer inserts the amount in the vending machine (1) (10) and chooses the desired product by way, for example, of pushing a corresponding button. Then, the vending machine (1) (10) dispenses the chosen product. In turn, the first sale indicating means (13)

detect said sale and activate, by means of a signal, the third means (157) to vary the displayed symbols, whereby a display of changing symbols on the second symbol display means (14) begins, for example on a monitor (11).

This variation of symbols takes place for a specific amount of time until the fourth means (16) that immobilize the symbols, that for example receive a signal from the third means (15), stop said variation and leave the combination of symbols resulting from said temporary variation fixed on the monitor (11).

The resulting fixed combination, is recognized by the fifth recognition means that receive information from, for example, the second display means (14) or the fourth immobilization means (16) and, based on this information, they evaluate if the fixed symbols correspond to a predetermined combination of symbols, in which case the fifth recognition means (17) send a signal to the sixth prize dispensing means (18) that act either directly on the vending machine (1) (10) giving it a gift product, or else on a prize ticket dispensing means.

In figure 5, one can see how the seventh sold product recognition means (19), which for example receive their information from the first sold product indicating means (13) or from another suitable source, are to act on the different means for the purpose of the process depending on the sold product.

The first sold product indicating means (13) (and, optionally, the seventh sold product recognition means) can be materialized in the microprocessor of the vending machine (1) (10) or in the central processing unit (9) of the communication channel (2), while the second means (14), third means (15), fourth means (16) and fifth means (17) can be materialized in the computer (3), for example based on suitable programs.

Claims

1. Vending machine that has means to effect the sale of products; characterized in that it includes first product sale indicating means (13); second means (14) to display at least one symbol; third means (15) to vary the displayed symbol; fourth symbol immobilization means (16); fifth means (17) to recognize at least one fixed symbol; and sixth prize dispensing means (18), the first (13), second (14), third (15), fourth (16), fifth (17) and sixth (18) means being related in such a way that, upon the first means (13) indicating the sale of a product, the second (14), third (15), fourth (16) and fifth (17) means are activated in such a way that the second means (14) display at least one fixed symbol and, upon displaying a determined symbol, the fifth means (17) act on the sixth means (18) so that a prize is dispensed.
2. Vending machine according to claim 1, characterized in that the second means (14) are means to

display more than one symbol and because the first (13), second (14), third (15), fourth (16), fifth (17) and sixth (18) means are related in such a way that, upon the first means (13) indicating the sale of a product, the second (14), third (15), fourth (16) and fifth (17) means are activated in such a way that the second means (14) display a combination of fixed symbols and, upon displaying a specific combination, the fifth (17) means act on the sixth means (18) in such a way that a prize is dispensed.

3. Vending machine according to any of the above claims, characterized in that the first (13), second (14), third (15) and fourth (16) means are related in such a way that, upon the first means (13) indicating the sale of a product, the third (15) and fourth (16) means act on the second means (14) in such a way that the third means (15) start the variation of at least one symbol, the second means (14) showing said variation and, at a specific moment, the fourth means (16) immobilize said symbol so that the second means (14) display said fixed symbol.

4. Vending machine according to claim 3, characterized in that the first (13), second (14), third (15) and fourth (16) means are related in such a way that, upon the first means (13) indicating the sale of a product, the third (15) and fourth (16) means act on the second means (14) in such a way that the third means (15) start the display of a plurality of changing symbols and, at a specific moment, the fourth means (16) immobilize said plurality of changing symbols so that the second means (14) display a combination of fixed symbols.

5. Vending machine according to any of the above claims, characterized in that it includes seventh sold product recognition means (19), the seventh means (19) being related to the second (14), third (15), fourth (16), fifth (17) and sixth (18) means in such a way that the operation thereof depends on the sold article.

6. Vending machine according to claim 5, characterized in that the seventh means (19) are related to the second (14), third (15), fourth (16), fifth (17) and sixth (18) means so that the prize is only dispensed if the seventh means (19) indicate the sale of a specific product or of one of several specific products.

7. Vending machine according to any of the above claims, characterized in that the symbols includes symbols related to the goods that are sold, the different means being related in such a way that the prize is only dispensed in the event that the fixed symbol or combination of fixed symbols corresponds to the symbols related to the sold product.

8. Vending machine according to any of the above

claims, characterized in that the second display means (14) of at least one symbol include a monitor wherein the symbols remain framed in square divisions, the vending machine (1) (10) including eighth means to show advertizing elements on said monitor (11) when the vending machine (1) (10) is not selling any product.

9. Vending machine according to any of the above claims, characterized in that the second display means (14) of at least one symbol include a monitor (11) that forms part of a computer (3) that is connected to a microprocessor of the vending machine (1) (10) by means of a communication channel (2).

10. Vending machine according to claim 9, characterized in that the first product sale indicating means (13) are comprised in a central processing unit (9) of the communication channel (2) that includes means to receive a code corresponding to a sold product, while the second (14), third (15), fourth (16) and fifth (17) means are comprised in the computer (3) that includes the monitor (11).

11. Vending machine according to claim 9 and claim 5, characterized in that the first product sale indicating means (13) and the seventh sold product recognition means (19) are comprised in a central processing unit (9) of the communication channel (2).

12. Vending machine according to any of the above claims, characterized in that the first product indicating means (13) include means to send a signal to the third means (14) to vary the displayed symbol.

13. Vending machine according to any of the above claims, characterized in that the sixth prize dispensing means (18) include means to dispense a product gift ticket or coupon.

14. Vending machine according to any of the above claims, characterized in that it includes a microprocessor connected to a computer (3) through a communication channel (2), the communication channel (2) having a central processing unit (9) including a memory (4) that stores an operating program; a temporary data storage memory (5); a connector (6) for connection thereof to the microprocessor of the vending machine (1) (10); and an interface (8) for connection thereof to the computer (3) by means of a connector (7).

15. Vending machine according to any of the claims 9, 10, 11 and 14, characterized in that the communication channel (2) is a serial communication channel.

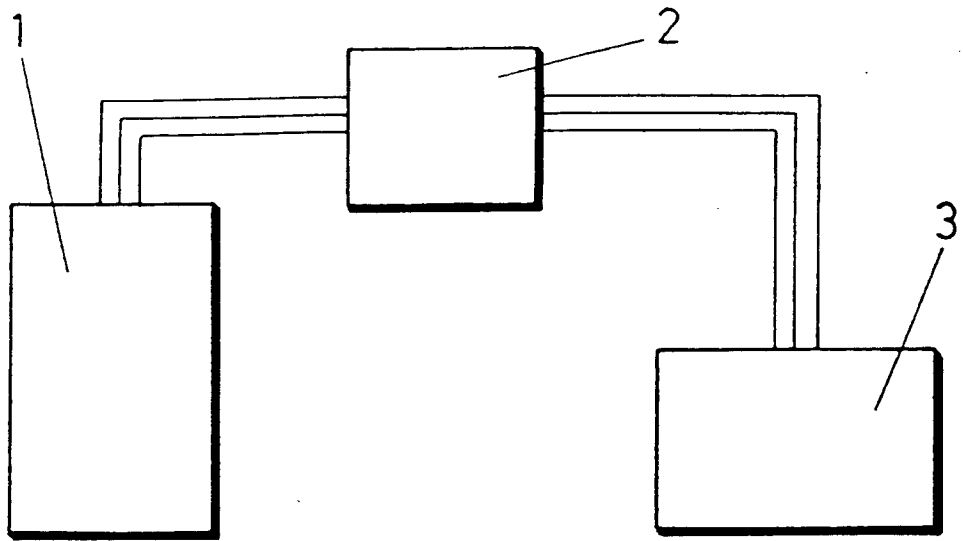


FIG. 1

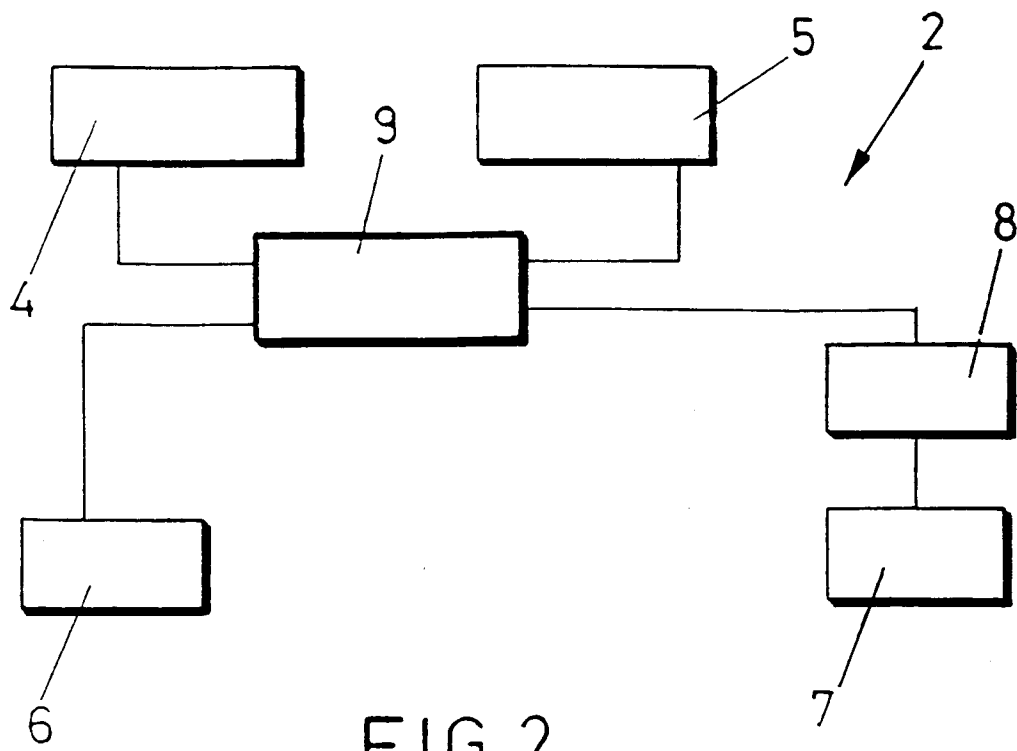


FIG. 2

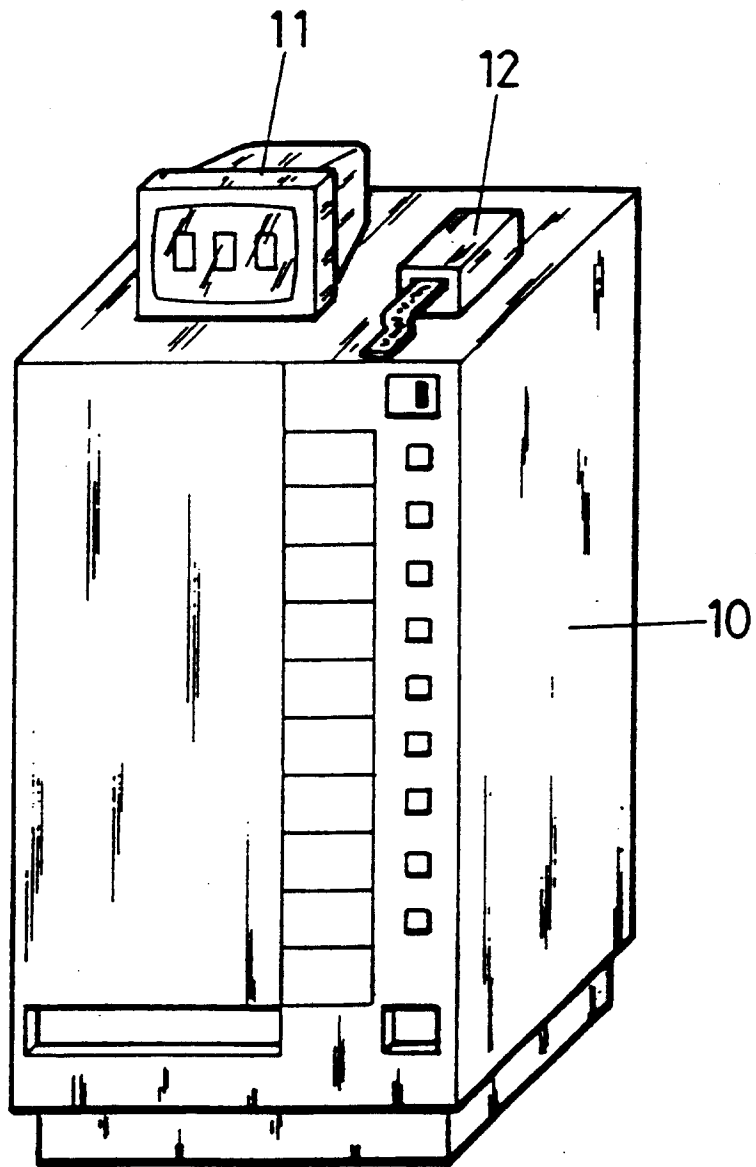


FIG. 3

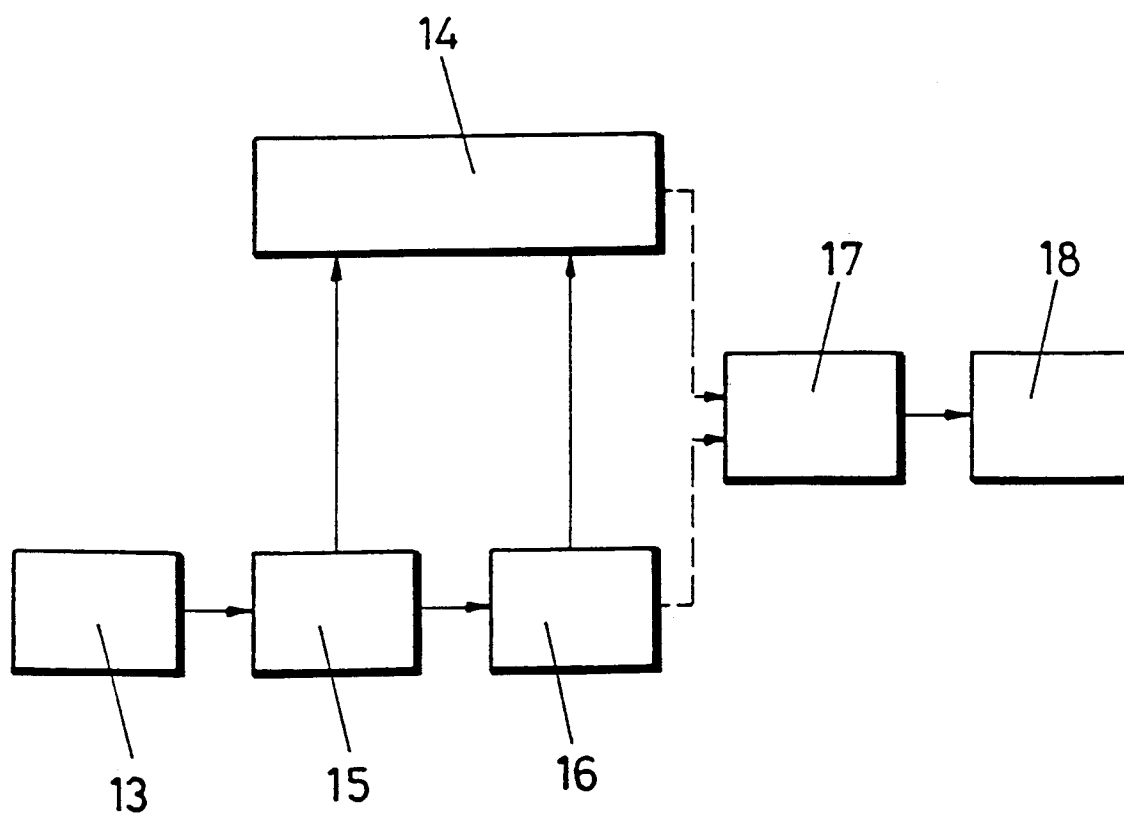


FIG. 4

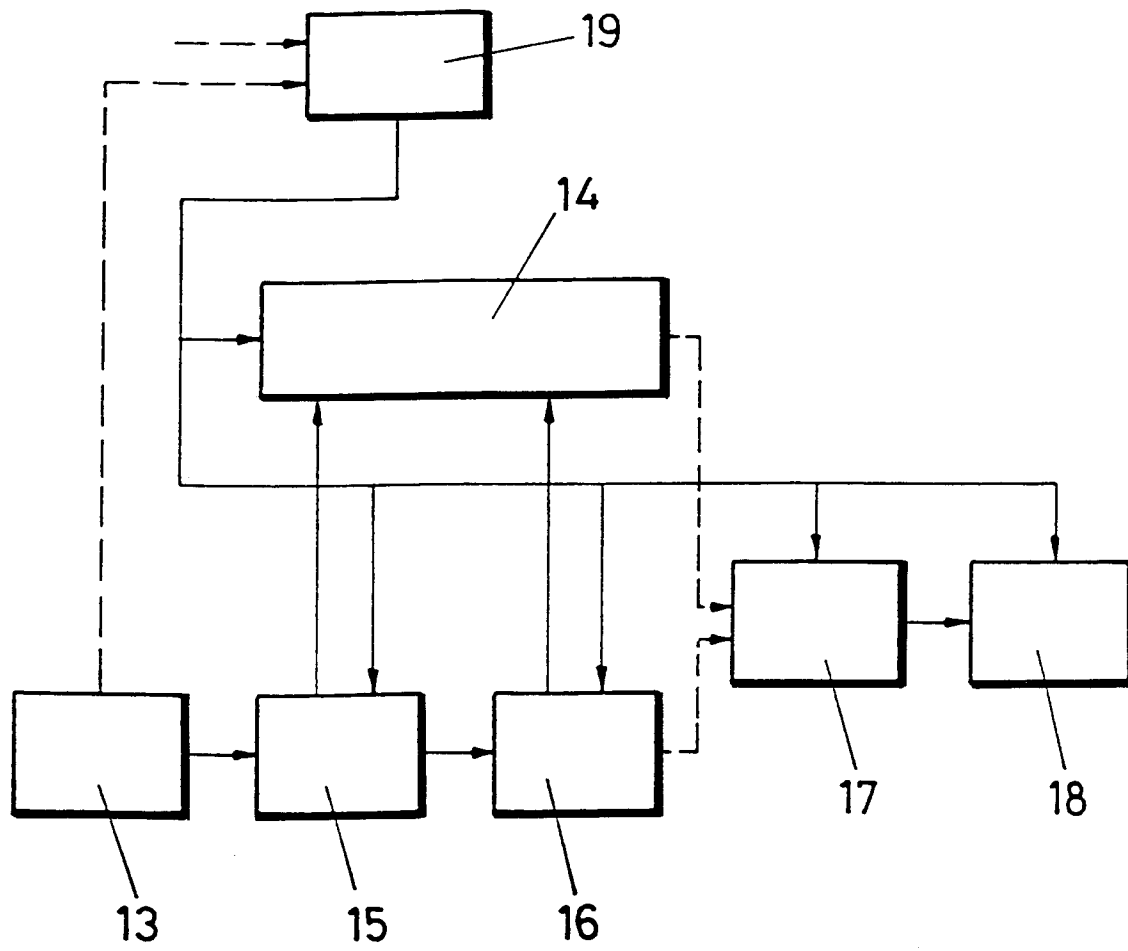


FIG.5

INTERNATIONAL SEARCH REPORT

International application No.

PCT/ES95/00107

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl.⁶ G07F 11/00, G07F 17/34
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int. Cl.⁶ G07F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CIBEPAT, WPIL, EPODOC PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	ES 1027011 U (SANCHEZ-CONTADOR GARCIA), 01.07.94.	1-4, 13
Y	Page 2, line 29 - page 3, line 5; page 3, line 29 - page 4, line 2; claims 1,2; figure 1.	8
Y	GB 2086115 A (ACE COIN EQUIP), 06.05.82. the whole document.	8
X	US 4213524 A (FUJI YOSMAZO ET AL), 22.07.80.	1,3
A	Abstract; claims 1,8-15; figures 4-6,9,11; column 6, line 11 - column 7, line 30.	9
X	US 3750829 A (H.G.A. JENNINGS), 07.08.73. the whole document	1-4
A	GB 2098778 A (QUESTENCO LTD), 24.11.82. the whole document	8,14

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document (not published on or after the international filing date)

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another claim(s) or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"T" document published prior to the international filing date but later than the priority date claimed

"I" later document published after the international filing date or priority date and not in conflict with the applicant's not claim to maintain the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is considered with one or more other such documents, such combinations being obvious to a person skilled in the art

"Z" document member of the same patent family

Date of the actual completion of the international search

19 December 1995 (19.12.95)

Date of mailing of the international search report

26 December 1995 (26.12.95)

Name and mailing address of the ISA/

EUROPEAN PATENT OFFICE

Facsimile No.

Authorized officer

Telephone No.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/ES95/00107

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	BE 422537 A (A. MONTIGNY), 08.07.37. Page 1, line 1 - page 2, line 10; figure 1	5
A	GB 2258164 A (SOUTHWELL TERRY HASTINGS), 03.02.93. Abstract; claims 1-7; figures 1,2; page 5, lines 3-12.	1-4,13
A	ES 1019125 U (TOURVISION), 01.03.92.	

Form PCT/ISA/210 (continuation of second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/ES 95/00107

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 7
because they relate to subject matter not required to be searched by this Authority, namely:
Claim 7 is considered as a mere presentation of information concerning the method of playing the game and contains no technical characteristics; and this subject matter is not liable to Search under Art. 17 (2) (i) and Rule 39 (iii) and (v) for the International Searching Authority.
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.