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Europäisches Patentamt
European Patent Office
Office européen des brevets



(11) Publication number:

0 606 470 A1

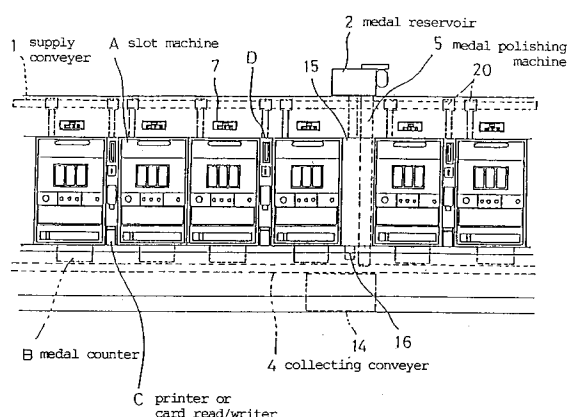
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EUROPEAN PATENT APPLICATION
published in accordance with Art.
158(3) EPC

(21) Application number: **91917338.5**(51) Int. Cl.⁵: **A63F 7/02**(22) Date of filing: **04.10.91**(86) International application number:
PCT/JP91/01355(87) International publication number:
WO 93/06902 (15.04.93 93/10)(43) Date of publication of application:
20.07.94 Bulletin 94/29(84) Designated Contracting States:
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F-75116 Paris (FR)(54) **PLAY MEDIUM FLOW CONTROL SYSTEM.**

(57) In each unit of an island constructed by parallelly providing a multiplicity of game machines, a game system comprises: a play medium tank disposed overhead, capable of feeding play media to each of game machines through a feeding conveyor; a play medium counter having a count display portion; and a play medium polishing machine capable of delivering play media from the play medium counter through a recovery conveyor and communicating with the play medium tank.

FIG. 1



EP 0 606 470 A1

This invention relates to a game medium circulation control system, and more particularly to a slot-machine game apparatus which enables an automatic and effective control of medal circulation in units of islands each consisting of a number of parallel arranged slot machines.

In this type of conventional slot-machine game apparatus, it is common practice for individual customers to bring medals gained from slot machines for prizes to an adjustment corner for adjustment and for these collected medals to be returned to the individual slot machines after being polished by a medal polishing machine.

However, it is inconvenient to individual customers to bring a lot of medals, which are heavy, to the adjustment corner. If it is crowded at the adjustment corner, the customers will have a long wait for adjustments. Further, it is laborious and time-consuming to return the adjusted and collected medals to the individual slot machines after polishing.

With the foregoing problems in view, it is an object of this invention to provide a game apparatus which enables an automatic and effective game medium or medal circulation control in units of islands. According to this invention, there is provided a game apparatus to be installed in units of islands each consisting of a number of parallel arranged game machines, the apparatus comprising: an upper game medium reservoir for supplying game mediums to the individual game machines via a supply conveyer; a game medium counter having a counting display; and a game medium polishing machine for collecting the game mediums from the game medium counter, the game medium polishing machine communicating with the game medium reservoir.

The game medium counter may be unitized with a printer or a card read/writer or may be equipped with a disburse button to be used in dispensing the game mediums after they are counted.

Therefore the medals gained from the individual game machines such as slot machines can be counted by the medal counter in units of islands and the value resulting from this counting can be indicated on the counting display. In the case where a printer or a card read/writer is connected to the medal counter, a premium coupon or a gift card is dispensed so that a customer can exchange it for a prize. To return the counted medals for reuse in a game, the disburse button is depressed so that the medals counted by the medal counter are conveyed, together with the spent medals discharged from the slot machines, to the medal polishing machine where the medals are polished and then successively conveyed to the upper medal reservoir. From the medal reservoir, the medals

can be supplied to the individual slot machines by the supply conveyer. Thus it is possible to circulate game medals within a closed system, substantially without letting them out of the island.

5 FIG. 1 is a fragmentary front view showing an island of slot machines in which a game apparatus according to one embodiment of this invention is incorporated;

FIG. 2 is a perspective view showing a medal counter to be used in this invention;

10 FIG. 3 is a perspective view showing a printer or a card read/writer to be used in this invention;

FIG. 4 is a fragmentary front view showing an island of slot machines in which a game apparatus according to another embodiment of this invention is incorporated;

15 FIG. 5 is an enlarged view of a portion of FIG. 4; and

20 FIG. 6 is a modified medal counter to be used in this invention.

One embodiment of this invention will now be described with reference to FIGS. 1 through 3.

FIG. 1 shows a portion of an island consisting of a number of parallel arranged slot machines, there being a medal dispenser D equipped between each pair of adjacent slot machines A, A so that an amount of game medals corresponding to the value of paper currency inserted can be dispensed. A supply conveyer 1, extending from an upper medal reservoir 2 disposed at an upper central portion of the island communicates with the individual slot machines A and the individual medal dispensers D via respective medal distributors 20. Above each slot machine A, a button switch 7 is disposed. Under each slot machine A, a medal counter B, which is equipped with a hopper 8, a counting display 3, an adjustment button 9, a counting start button 10 and a disburse button 6, is disposed. Under each medal dispenser D, a printer or a card read/writer C, which is equipped with a status display 11, a premium coupon outlet or a gift card outlet 12 and a card-reading-direction selecting switch 13, is disposed, communicating with the lower portion of the individual slot machine A via a conveyer. Under each medal counter B, a lower medal reservoir 14 is provided communicating with the medal counter B via a collecting conveyer 4. A medal polishing machine 5 is disposed between the upper and lower medal reservoirs 2, 14 for raising medals from the lower medal reservoir 14 to the upper medal reservoir 2 while polishing. Also between the upper and lower medal reservoirs 2, 14, a main reservoir 15 is disposed which is equipped at its lower portion with a quantitative disburse device 16.

In the case where it is unnecessary to issue a premium coupon for the adjustment of medals, the printer for issuing premium coupons may be omit-

ted.

FIGS. 4 and 5 shows another embodiment which is identical with the previous embodiment except for the following. In this embodiment, above each medal dispenser D there are disposed a medal counter B, which is equipped with two counting displays 3, two adjustment buttons 9, two disburse buttons 6, two card-reading-direction selecting switches 13 and two premium coupon or a gift card outlets 12, and a printer or a card read/writer C, which is unitized with the medal counter B.

FIG. 6 shows a modified medal counter B which is equipped with, in addition to a counting display 3, an adjustment button 9 and two disburse buttons 6, a game machine number 19, a switch 17 and a call lamp 18.

Alternatively, a single medal counter B may be installed at one end of the island, or two medal counters may be installed at a central portion of the island, namely, at front and rear sides of the medal polishing machine.

When the medals gained from a slot machine A are put into the hopper 8, they are counted by the medal counter B and the result of this counting is indicated on the counting display 3. At that time, when the adjustment button 9 is depressed, a premium coupon or a gift card is dispensed from the outlet 12 of the printer or card read/writer C so that the customer may bring it to the adjustment corner for exchange with a premium or prize. To return the counted medals for reuse in the game, the disburse button 6 is simply depressed. The medals counted by the medal counter B are conveyed by the collecting conveyer 4 and are then polished and raised to the upper medal reservoir 2 by the medal polishing machine 5. Upon issuance of a supply request signal from the individual slot machine A or the medal dispenser D, the medals stored in the medal reservoir 2 are supplied to the slot machine A or the medal dispenser D by the supply conveyer 1, and keep being supplied until the signal is canceled. When the medal reservoir 2 is filled up with medals, the overflowing medals are conveyed to the main reservoir 15 from an overflow circuit. When the level in the medal reservoir 2 is lowered to activate a level sensor, the quantitative disburse device 16 acts to supply medals into the lower part of the medal polishing machine 5. The medals used by a customer are supplied to the hopper in the slot machine A. When the hopper is filled with the medals, the overflowing medals are conveyed to the collecting conveyer 4. On the contrary, when the level of the medals in the hopper is lowered to activate a level sensor, a medal supplier and the supply conveyer 1 are activated to continue the supply of medals until the signal is canceled. Also upon issuance of a supply request

signal from the hopper of the medal dispenser D, the medal supplier and the supply conveyer 1 are activated to continue the supply of medals until the signal is canceled.

Thus the circulation of medals can be controlled in such a manner that medals are circulated within the island, and the need to remove them from the island is substantially obviated.

This invention can also applied to pachinko game machines. In such a case, it is possible to circulate pachinko balls as game mediums within a closed system, substantially without letting them be removed from the island.

According to this invention, game mediums such as medals gained from individual game machines such as slot machines are counted in units of islands by the medal counter, and the medals counted by the medal counter are circulated, together with the spent medals discharged from the slot machines, while being polished by the medal polishing machine. Thus it is possible to circulate medals in the island efficiently, substantially free of letting them be removed from the island, so that the medals can be conveniently used by customers, thus realizing a game machine system such as a slot machine game apparatus having a good operativity. In the case where a premium coupon or a gift card corresponding to the number of gained medals is to be dispensed after counting, the customer may bring only it to the adjustment corner for exchange with a premium or prize. To return the counted medals for reuse in game, the disburse button is simply depressed.

Claims

1. A game apparatus to be installed in an island unit consisting of a number of parallel arranged game machines, said apparatus comprising: an upper game medium reservoir for supplying game mediums to the individual game machines via a supply conveyer; a game medium counter having a counting display; and a game medium polishing machine for collecting the game mediums from said game medium counter, said game medium polishing machine communicating with said game medium reservoir.
2. A game apparatus according to claim 1, further including a premium coupon printer or a gift card read/writer connected to said game medium counter.
3. A game apparatus according to claim 1, wherein said game medium counter has a disburse button for dispensing counted game mediums.

4. A game apparatus according to claim 2, wherein said printer or card read/writer is unitized with said game medium counter.

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FIG. 1

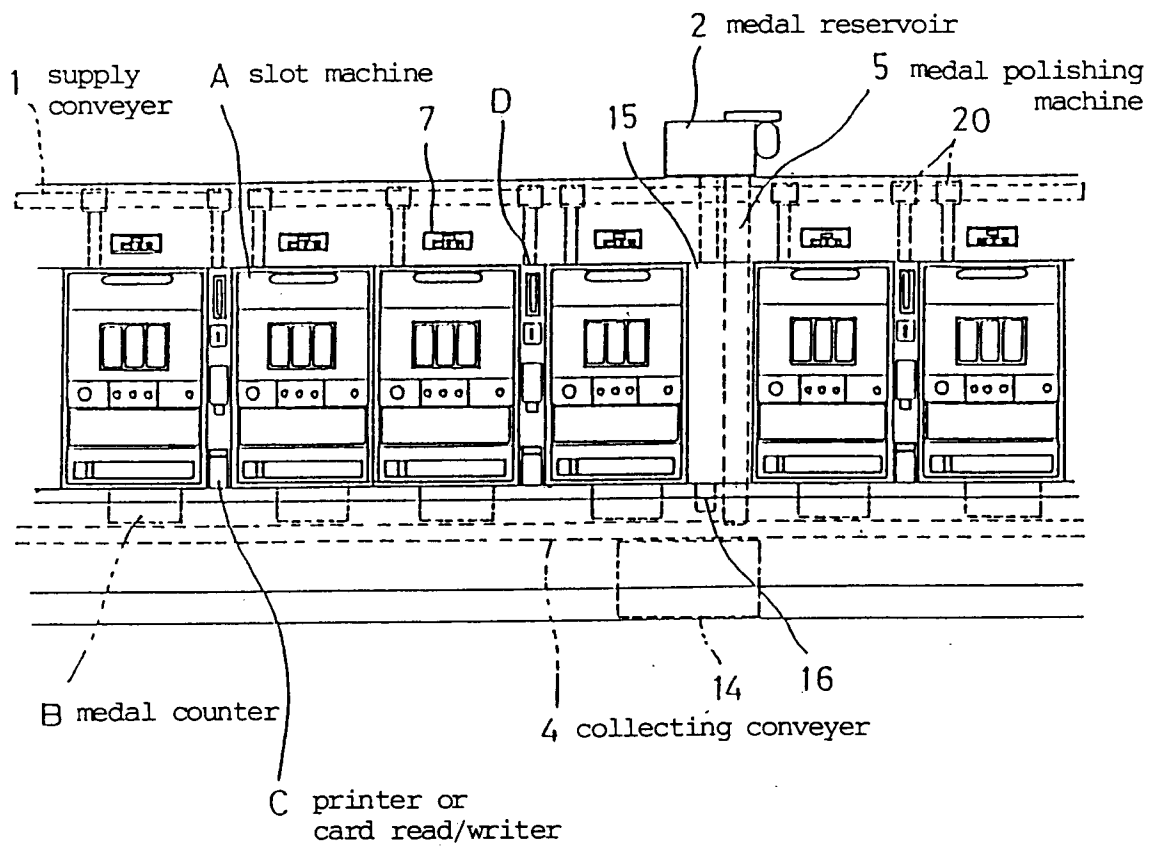


FIG. 2

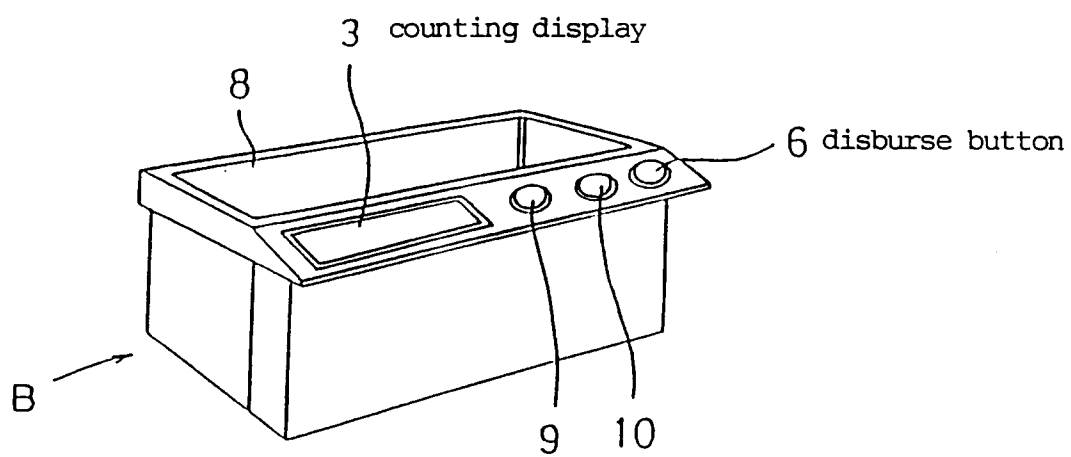
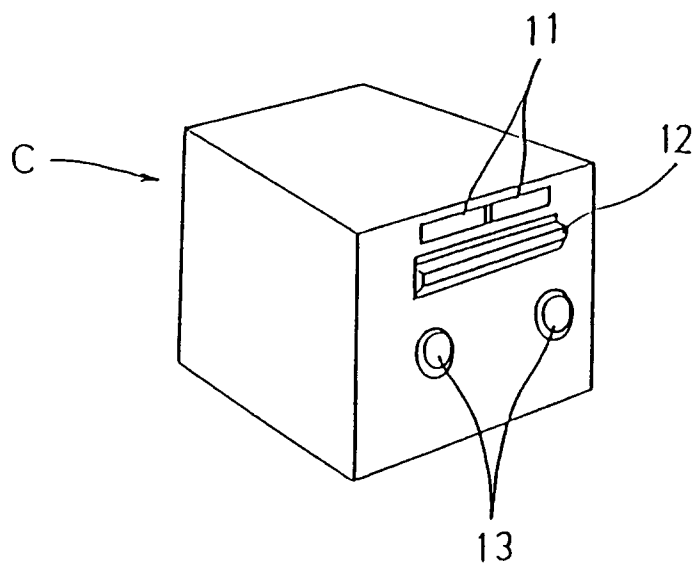
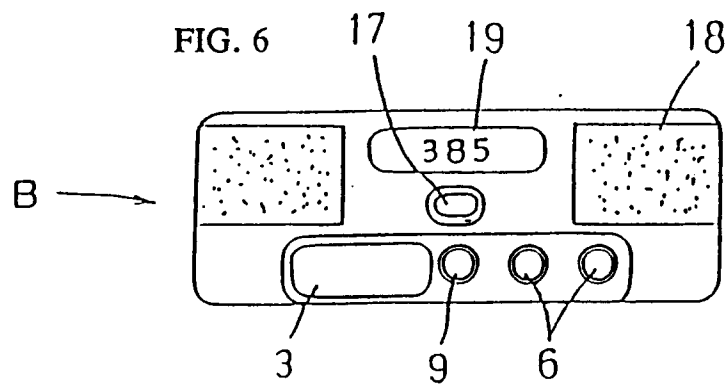
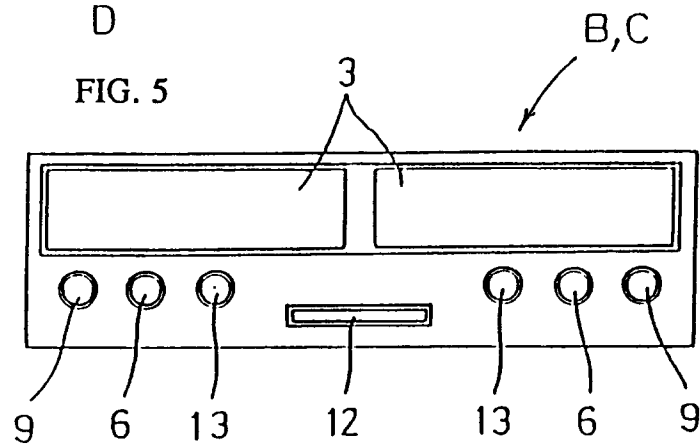
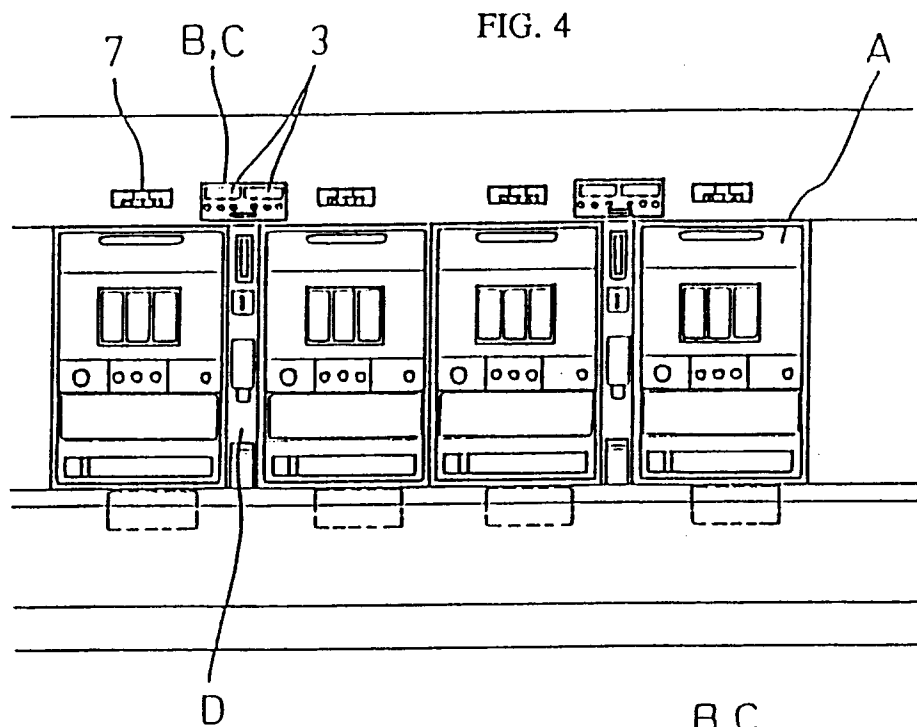


FIG. 3





INTERNATIONAL SEARCH REPORT

International Application No PCT/JP91/01355

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) ⁶		
According to International Patent Classification (IPC) or to both National Classification and IPC		
Int. Cl ⁵ A63F7/02		
II. FIELDS SEARCHED		
Minimum Documentation Searched ⁷		
Classification System	Classification Symbols	
IPC	A63F7/02, A63F5/04	
Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched ⁸		
Jitsuyo Shinan Koho 1920 - 1990 Kokai Jitsuyo Shinan Koho 1971 - 1990		
III. DOCUMENTS CONSIDERED TO BE RELEVANT ⁹		
Category ¹⁰	Citation of Document, ¹¹ with Indication, where appropriate, of the relevant passages ¹²	Relevant to Claim No. ¹³
Y	JP, B2, 62-24110 (Soichi Takemoto), May 27, 1987 (27. 05. 87), Full descriptions, Figs. 1 to 15 (Family: none)	1, 2, 3, 4
Y	JP, A, 60-259288 (Tsugetaka Etsuchi), December 21, 1985 (21. 12. 85), Full descriptions, Figs. 1 to 2 (Family: none)	1, 2, 3, 4
Y	JP, A, 56-70780 (Toshikazu Yokota), June 12, 1981 (12. 06. 81), Full descriptions, Fig. 1 (Family: none)	1
¹⁰ 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 but 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 citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand 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 "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
IV. CERTIFICATION		
Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report	
December 25, 1991 (25. 12. 91)	January 28, 1992 (28. 01. 92)	
International Searching Authority	Signature of Authorized Officer	
Japanese Patent Office		