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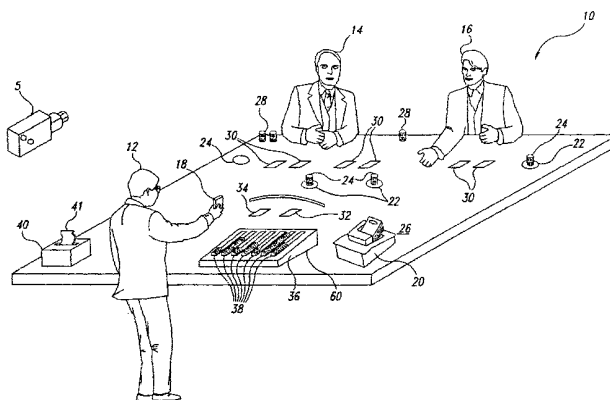
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(54) Title: **METHOD AND APPARATUS FOR MONITORING CASINOS AND GAMING**



(57) Abstract: A system automatically monitors playing and wagering of a game, including the gaming habits of players and the performance of employees. A card deck reader automatically reads a symbol from each card in a deck of cards before a first one of the cards is removed. The symbol identifies a respective rank and suit of the card. A chip tray reader automatically images the contents of a chip tray, to periodically determine the number and value of chips in the chip tray, and to compare the change in contents of the chip tray to the outcome of game play for verifying that the proper amounts have been paid out and collected. A table monitor automatically images the activity occurring at a gaming table. Periodic comparison of the images identify wagering, as well as the appearance, removal and position of cards and other game objects on the gaming table. A drop box automatically verifies an amount and authenticity of a deposit and reconciles the deposit with a change in the contents of the chip tray. The drop box employs a variety of lighting and resolutions to image selected portions of the deposited item. The system detects prohibited playing and wagering patterns, and determines the win/loss percentage of the players and the dealer, as well as a number of other statistically relevant measures. The measurements provide automated security and real-time accounting. The measurements also provide a basis for automatically allocating complimentary player benefits.



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*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 00/10496

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A63F3/00 G07D9/00 G06F3/14 G07F17/32 G06F19/00

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)

IPC 7 A63F G07D G06F 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 practical, search terms used)

EP0-Internal, WPI Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 770 533 A (FRANCHI) 23 June 1998 (1998-06-23) column 1, line 14 - line 21	1,11,21, 60,61
X	column 10, line 42 -column 11, line 6 column 11, line 43 -column 12, line 7 figures 2,3,9,18	28,67-72
A	US 5 801 766 A (ALDEN) 1 September 1998 (1998-09-01) the whole document	1,21
A	US 5 781 647 A (FISHBINE ET AL.) 14 July 1998 (1998-07-14) the whole document	1,11,21, 28,60,61
A	DE 44 39 502 C (ORDER) 14 September 1995 (1995-09-14) claim 1	1,11,21, 28,60,61
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in 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 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)

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"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 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 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

Date of the actual completion of the international search

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# INTERNATIONAL SEARCH REPORT

International Application No

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 755 618 A (MOTHWURF) 26 May 1998 (1998-05-26) the whole document ---	1,11,21, 28,60,61
A	US 5 757 876 A (DAM ET AL.) 26 May 1998 (1998-05-26) the whole document ---	1,11,21, 28,60,61
A	WO 96 36253 A (FRENCH) 21 November 1996 (1996-11-21) the whole document -----	1,11,21, 28,60,61

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US 00/10496

## 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.:  
because they relate to subject matter not required to be searched by this Authority, namely:
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:

see additional sheet

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.:

1-27, 60-62, 67-72

### Remark on Protest

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

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-36, 60-62, 67-72

A gaming table monitoring system, method and monitor comprising: a bank, chip tray, chip reader, table imager, computer. A card deck reader and method comprising: housing, reading head, drive mechanism.

2. Claims: 37-48

Method of monitoring wagering on a gaming table comprising: determining wager amount, game outcome and number of payouts.

3. Claims: 49-56

Method of detecting player playing and wagering patterns comprising: determining playing card identity and wager amount, number of game plays, outcomes and identifying statistical aberration.

4. Claims: 57-59

Method of tracking customer activity in a casino comprising: customer identification, tracing wagering piece path and determining the level of complimentary benefits to be provided to customer based on win or loss.

5. Claims: 63-66

Method of monitoring employees at a gaming table comprising: determining bank value, play outcome, amount of payouts and takes, comparing new bank value and identifying discrepancies.

6. Claim : 73

Method of reusing a deck of cards by trimming the edges of the cards to remove the machine-readable markings.

7. Claim : 74

Method of monitoring a card game for cheating comprising: examining a playing card for a bend, determining bend direction and correlation between bend direction and card value.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

8. Claim : 75

Method of operating a wagering game comprising: monitoring a first game and increasing payout of a second game based on the first game.

9. Claims: 76-78

Method of automatically authenticating an item of value comprising: item imaging, security feature imaging and analysis thereof.

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 00/10496

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