Title: MANIPULATION OF OBJECTS

Abstract: A system for manipulation of objects (12). The system includes N objects (12), where N is greater than or equal to 2 and is an integer; and a mechanism for controlling and 2D locating of the N objects (12). A method for manipulating objects (12). The method includes the steps of receiving information from N objects (12), where N is greater than or equal to 2 and is an integer, at a centrally controlling and 2D locating controller (14); determining 2D locations by the controller (14) of the N objects (12); 0n4 transmitting from the controller (14) directions to the N objects (12) for the N objects (12) to move. An apparatus for tracking. The apparatus includes N objects (12), where N is greater than or equal to 2 and is an integer, each object (12) having an emitter (18) which emits light; 0n4 a mechanism for 2D sensing of the N objects (12) over time from the light emitted by each emitter. The present invention pertains to a method for cracking. The method includes the steps of emitting light from N objects (12), where N is greater than or equal to 2 and is an integer; and sensing 2D (20) locations of the N objects (12) over time from the emitted light from the N objects (12).
before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

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.

(88) Date of publication of the international search report:
15 September 2005
### INTERNATIONAL SEARCH REPORT

**A. CLASSIFICATION OF SUBJECT MATTER**

**IPC(7)**: G06F 19/00  
**US CL.** 700/245, 246, 258; 318/568.11, 568.1; 901/1  
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)  
U.S.: 700/245, 246, 250, 258

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

Internet

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

West

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
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<tbody>
<tr>
<td>A</td>
<td>US 6,292,713 (JOUPPI et al.) 18 September 2001 (18.09.2001), see entire document</td>
<td>1-15</td>
</tr>
<tr>
<td>A</td>
<td>US 6,104,158 (JACOBUS et al.) 15 August 2000 (15.08.2000), see entire document</td>
<td>1-15</td>
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<tr>
<td>A</td>
<td>US 5,880,714 (ROSENBERG et al.) 09 March 1999 (03.03.1999), see entire document</td>
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* Further documents are listed in the continuation of Box C.  
* See patent family annex.

- **“A”** document defining the general state of the art which is not considered to be of particular relevance
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- **“I”** 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
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- **“V”** 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
- **“S”** document member of the same patent family

**Date of the actual completion of the international search**  
11 January 2005 (11.01.2005)

**Date of mailing of the international search report**  
07 JUL 2005

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