

(12) **United States Patent**  
Pryor

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(54) **CAMERA BASED SENSING IN HANDHELD, MOBILE, GAMING OR OTHER DEVICES**  
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(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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**Related U.S. Application Data**  
(63) Continuation of application No. 12/834,281, filed on Jul. 12, 2010, now Pat. No. 7,933,431, which is a continuation of application No. 11/980,710, filed on Oct. 31, 2007, now Pat. No. 7,756,297, which is a continuation of application No. 10/893,534, filed on Jul. 19, 2004, now Pat. No. 7,401,783, which is a continuation of application No. 09/612,225, filed on Jul. 7, 2000, now Pat. No. 6,766,036.

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(51) **Int. Cl.**  
**G06K 9/00** (2006.01)  
(52) **U.S. Cl.** ..... 382/103; 382/154; 382/312  
(58) **Field of Classification Search** ..... 382/103, 382/154, 312  
See application file for complete search history.

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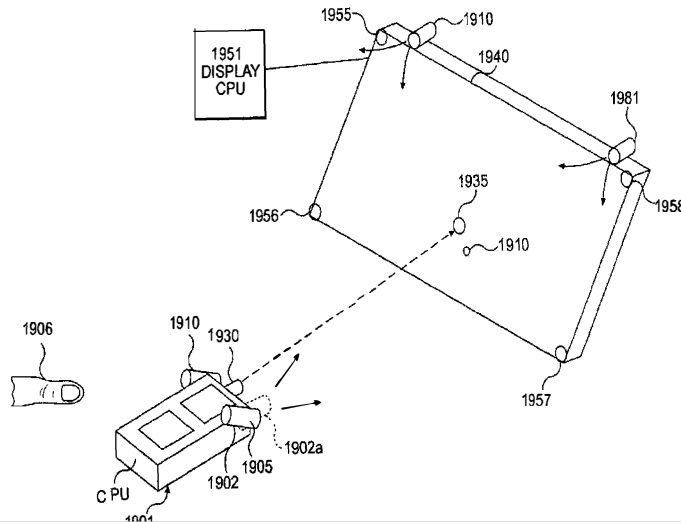
Primary Examiner — Tom Y Lu

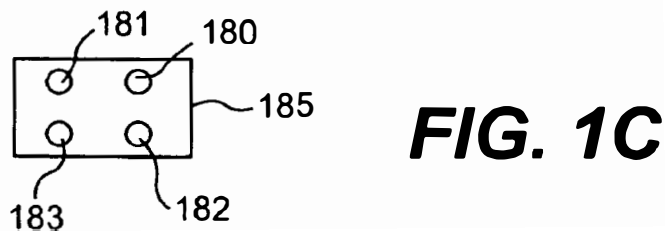
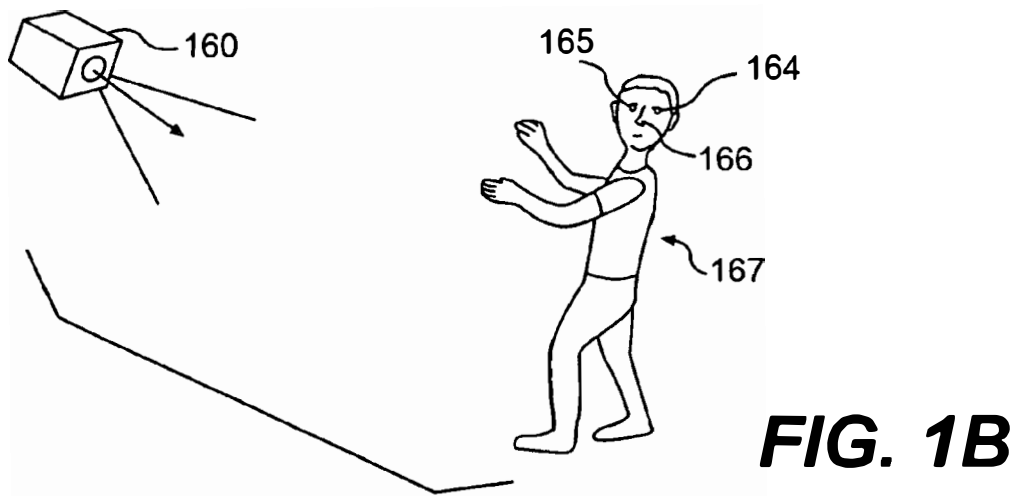
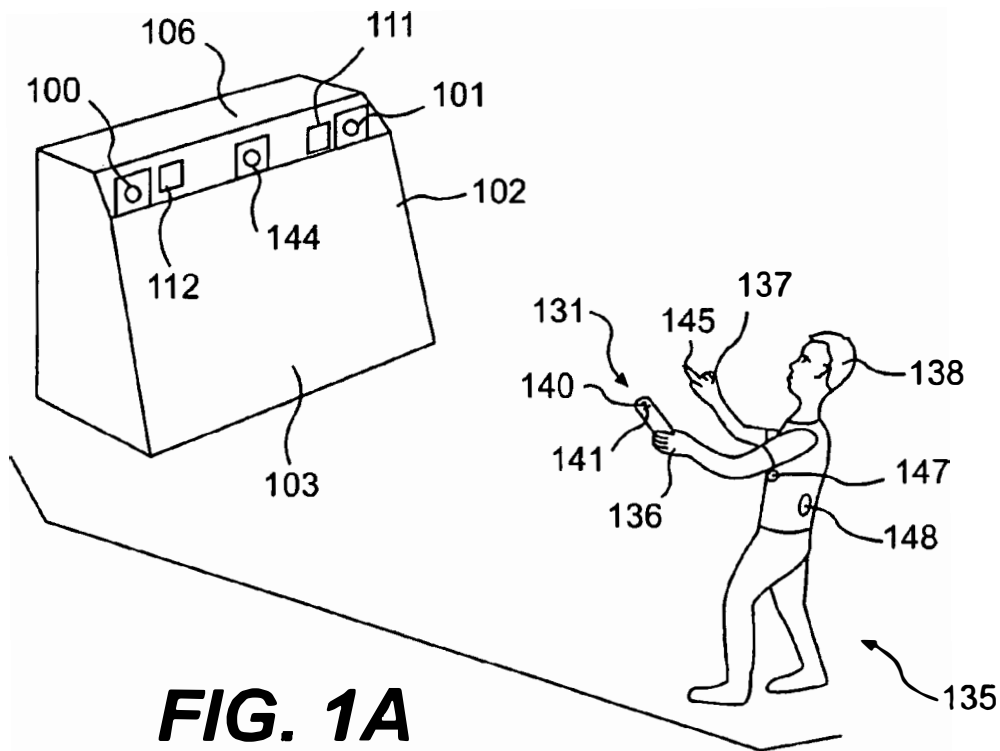
(74) *Attorney, Agent, or Firm* — Warner Norcross & Judd LLP

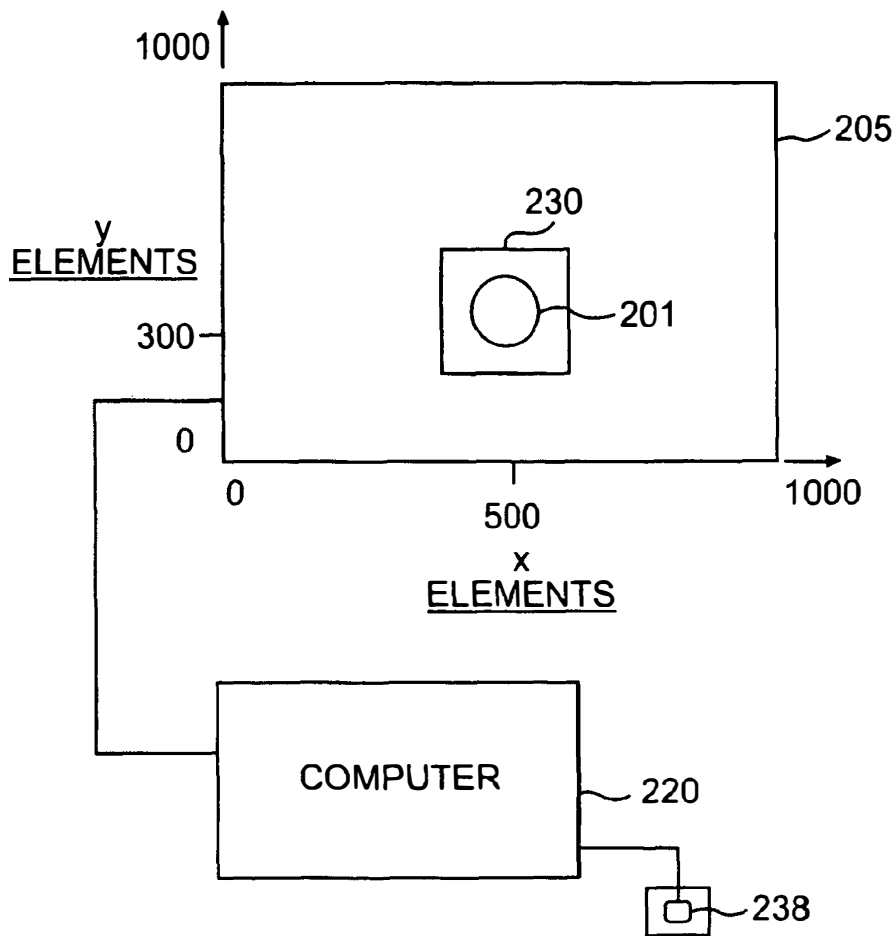
(57) **ABSTRACT**

Method and apparatus are disclosed to enable rapid TV camera and computer based sensing in many practical applications, including, but not limited to, handheld devices, cars, and video games. Several unique forms of social video games are disclosed.

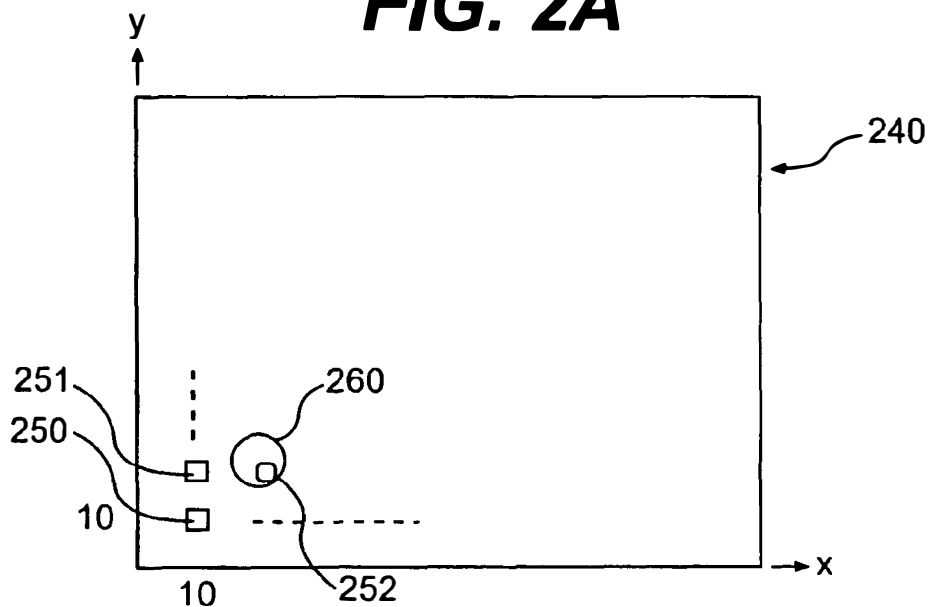
14 Claims, 23 Drawing Sheets



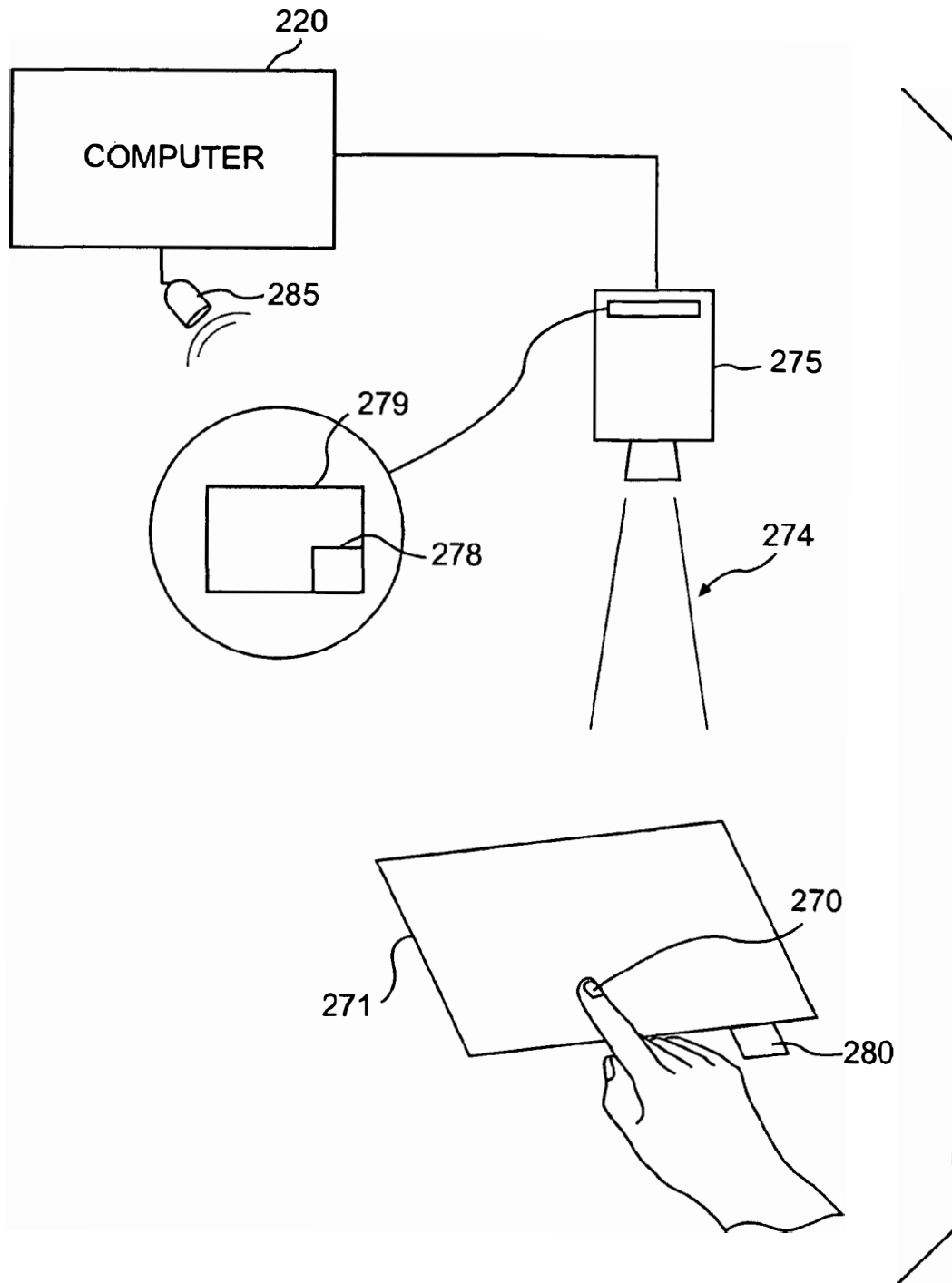




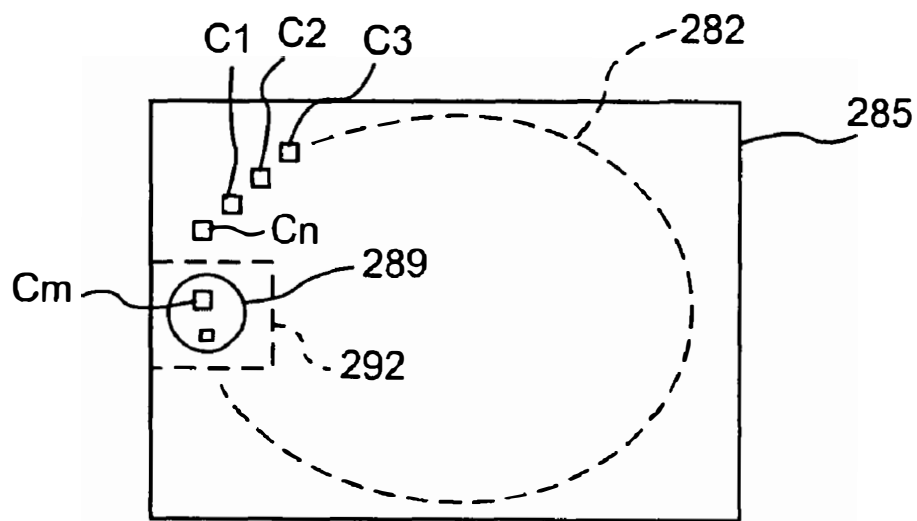
**FIG. 2A**



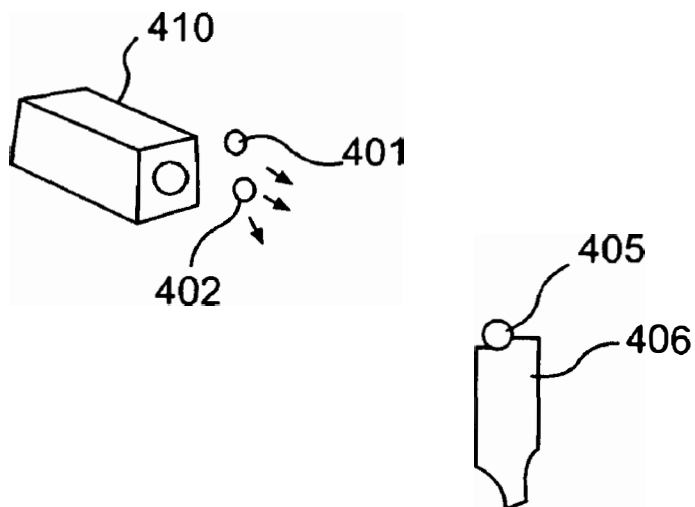
**FIG. 2B**



**FIG. 2C**



**FIG. 2D**



**FIG. 4A**

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