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Pryor

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(54) **MULTIPOINT, VIRTUAL CONTROL, AND FORCE BASED TOUCH SCREEN APPLICATIONS**

(76) Inventor: **Timothy R. Pryor**, Tecumseh (CA)

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Related U.S. Application Data

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(51) **Int. Cl.**
G09G 5/00 (2006.01)

(52) **U.S. Cl.** **345/173**; 178/18.01

(58) **Field of Classification Search** 345/173, 345/204, 156, 157; 178/18.01; 348/746, 348/747; 341/31, 32, 33, 34; 340/407.1, 340/407.2; 463/30

See application file for complete search history.

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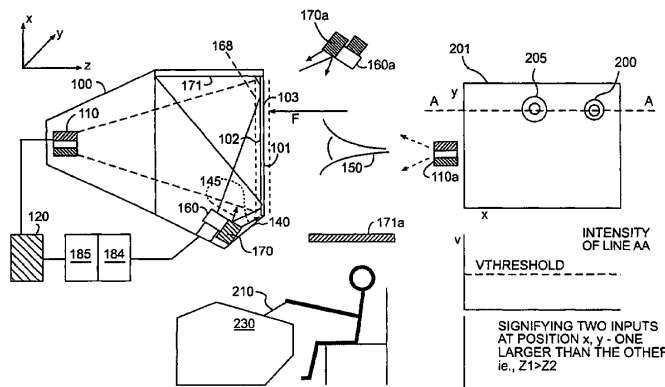
Primary Examiner — Abbas Abdulselam

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

(57) **ABSTRACT**

A method and apparatus are provided providing a touch screen having multipoint sensing and/or force based sensing and feedback capability useful in many applications which extend beyond traditional computer applications. The touch screen can be located in many non-traditional locations as well, such as desks, tables, walls, vehicles, and the like. The apparatus may be used by a single user, or multiple users, employing fingers, hands, feet and other body portions, if desired or practical. Related applications for virtual image or physical control applications are also disclosed.

42 Claims, 17 Drawing Sheets

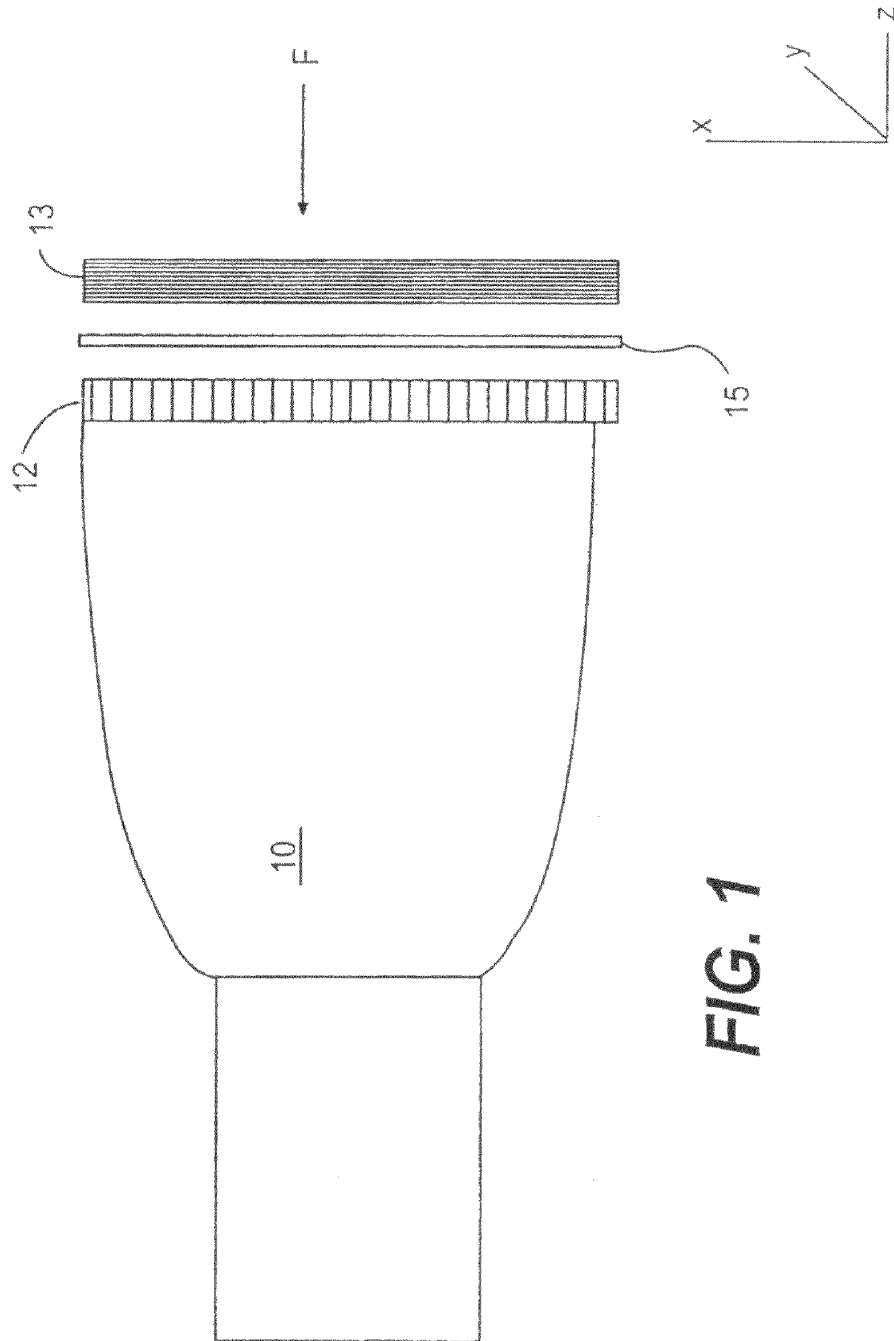


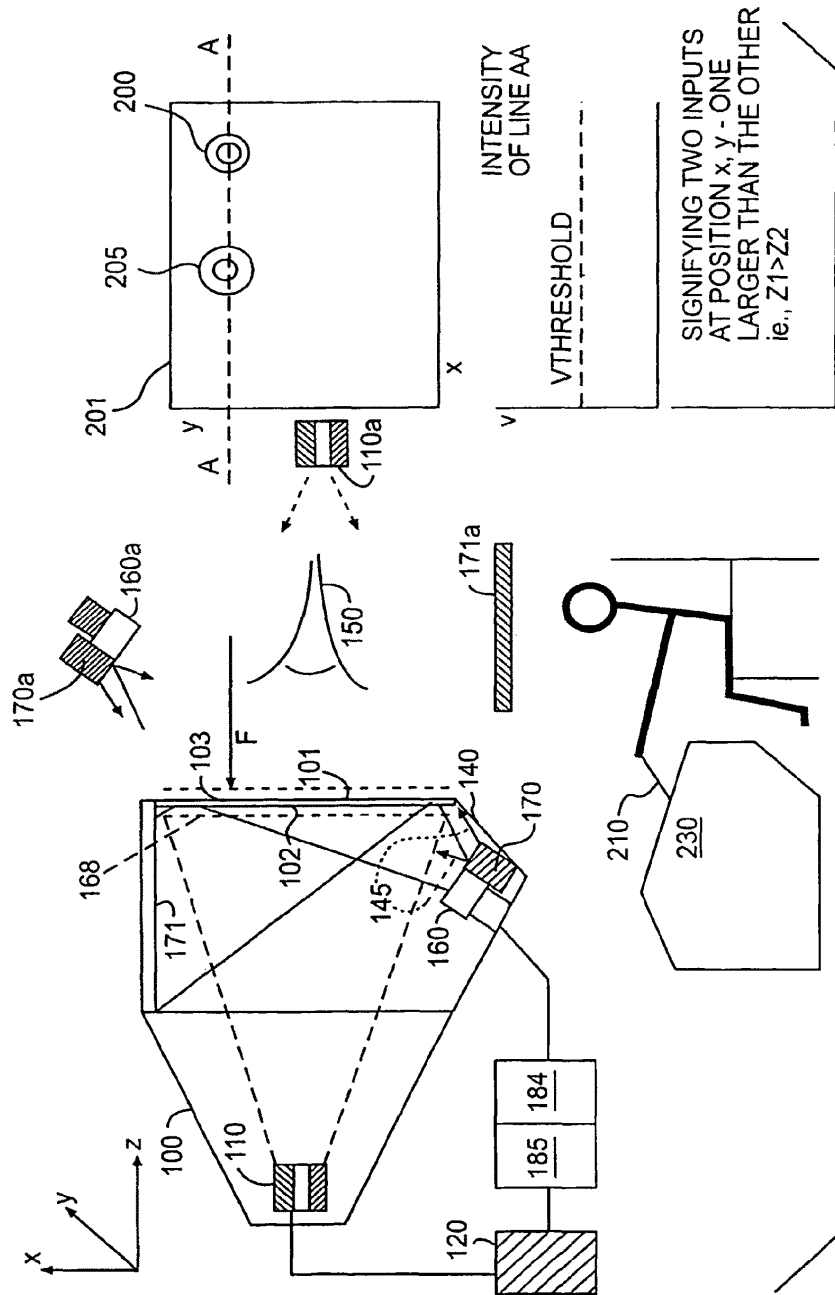
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SIGNIFYING TWO INPUTS
AT POSITION x, y - ONE
LARGER THAN THE OTHER
ie., $Z1 > Z2$

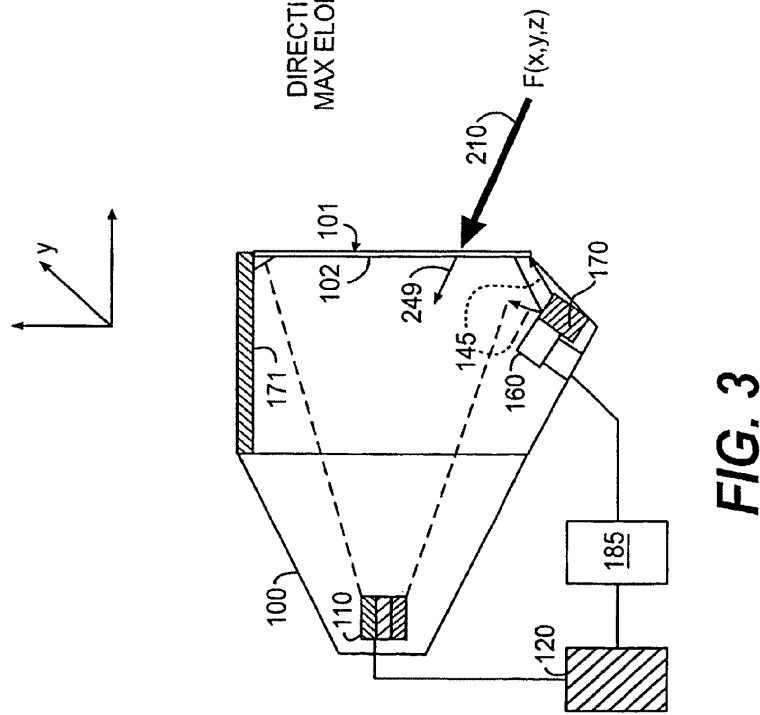
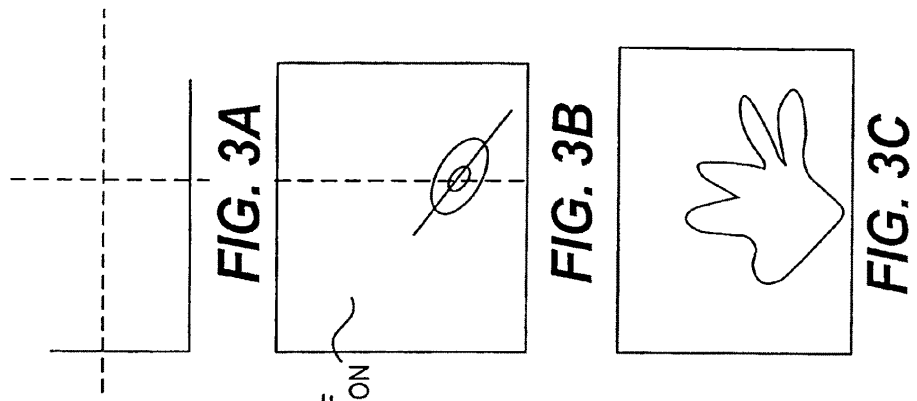


FIG. 3

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