



US006359647B1

(12) **United States Patent**
Sengupta et al.

(10) **Patent No.:** **US 6,359,647 B1**
(45) **Date of Patent:** **Mar. 19, 2002**

(54) **AUTOMATED CAMERA HANDOFF SYSTEM FOR FIGURE TRACKING IN A MULTIPLE CAMERA SYSTEM**

5,699,444 A * 12/1997 Palm 382/106
5,729,471 A * 3/1998 Jain et al. 348/13
5,745,126 A * 4/1998 Jain et al. 348/42
6,002,995 A * 12/1999 Suzuki et al. 702/188

(75) Inventors: **Soumitra Sengupta**, Stamford, CT (US); **Damian Lyons**, Putnam Valley, NY (US); **Thomas Murphy**, Manchester, NH (US); **Daniel Reese**, Landisville, PA (US)

FOREIGN PATENT DOCUMENTS

EP 0529317 A1 * 3/1993 H04N/7/18
EP 0714081 A1 5/1996 G08B/13/196
JP 08011071 A * 1/1996 B25J/3/00
WO WO97/04428 2/1997 G08B/13/196

(73) Assignee: **Philips Electronics North America Corporation**, New York, NY (US)

* cited by examiner

Primary Examiner—Vu Le

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(57) **ABSTRACT**

The invention provides for the automation of a multiple camera system based upon the location of a target object in a displayed camera image. The preferred system provides a nearly continuous display of a figure as the figure moves about throughout multiple cameras' potential fields of view. When the figure approaches the bounds of a selected camera's field of view, the system determines which other camera's potential field of view contains the figure, and adjusts that other camera's actual field of view to contain the figure. When the figure is at the bounds of the selected camera's field of view, the system automatically selects the other camera. The system also contains predictive location determination algorithms. By assessing the movement of the figure, the system selects and adjusts the next camera based upon the predicted subsequent location of the figure.

(21) Appl. No.: **09/131,243**

(22) Filed: **Aug. 7, 1998**

(51) Int. Cl.⁷ **H04N 7/18**

(52) U.S. Cl. **348/154; 348/143; 348/153; 348/159; 348/169**

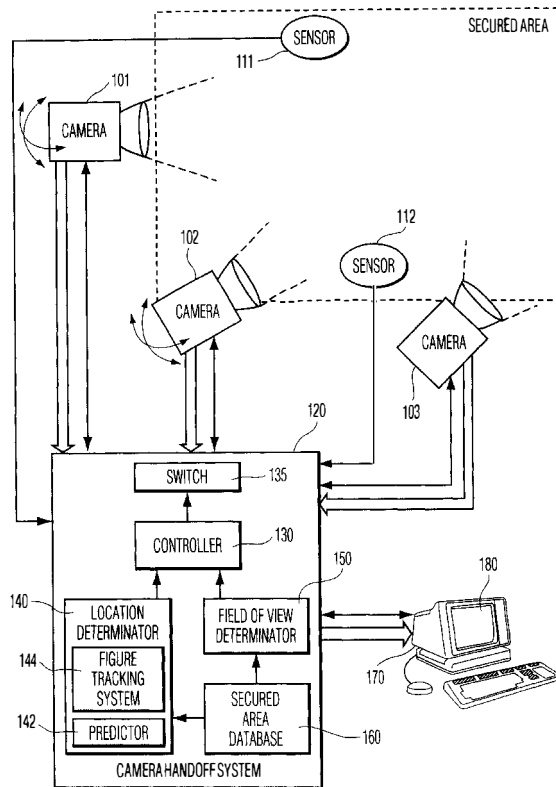
(58) Field of Search **348/143, 152, 348/153, 154, 159, 169; 382/103**

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,511,886 A * 4/1985 Rodriguez 340/534
5,164,827 A * 11/1992 Paff 348/143

18 Claims, 9 Drawing Sheets



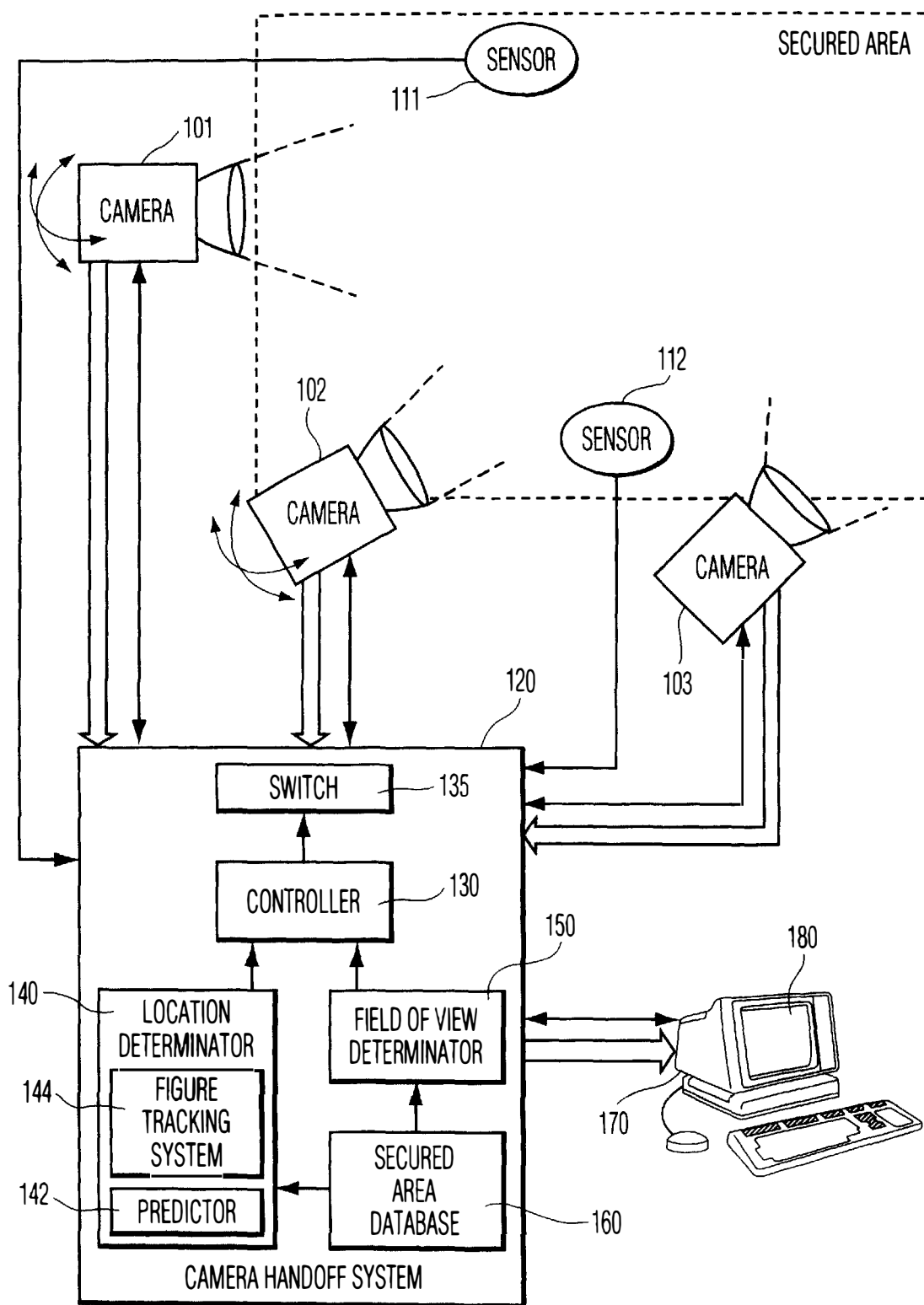


FIG. 1

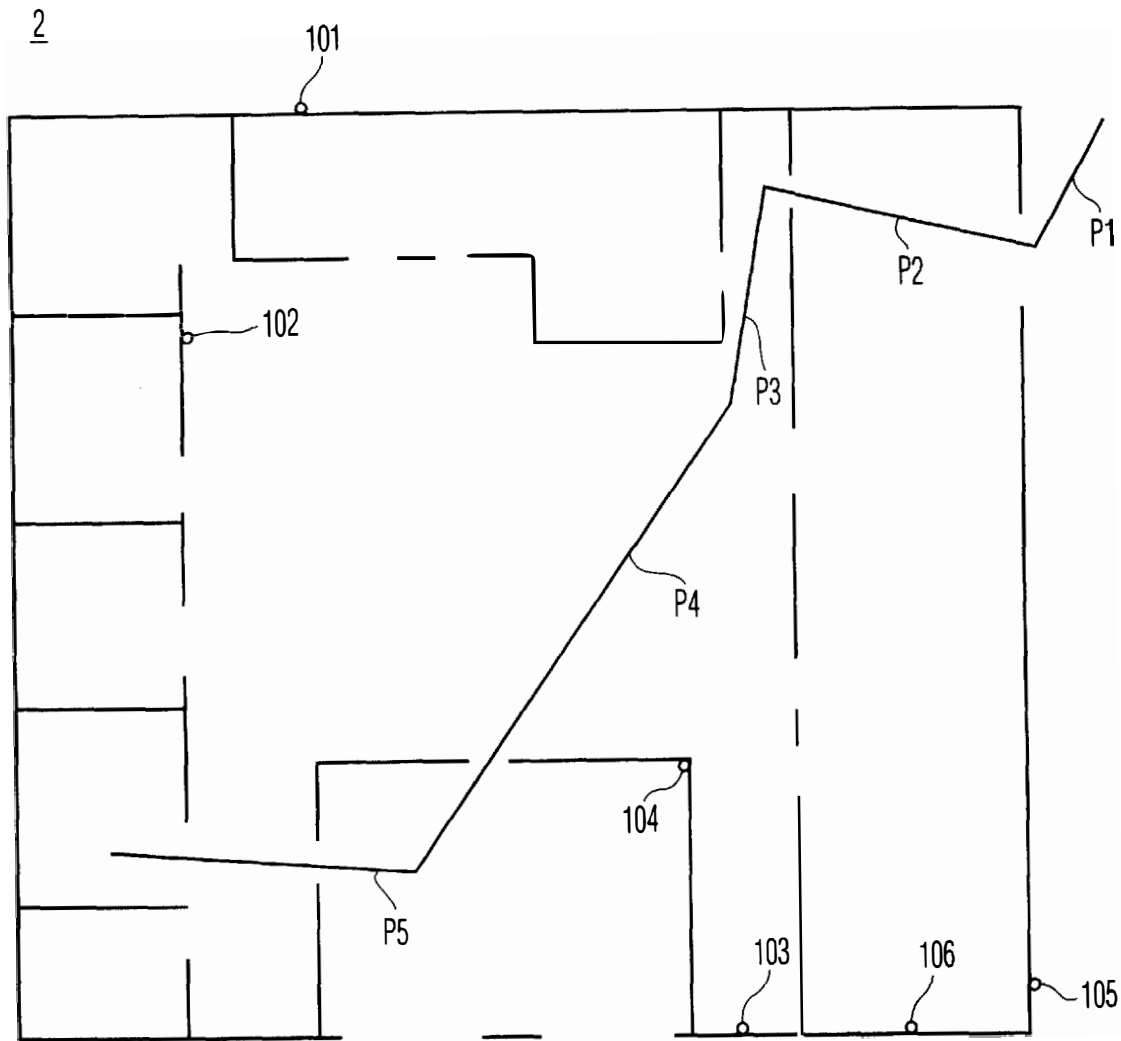


FIG. 2

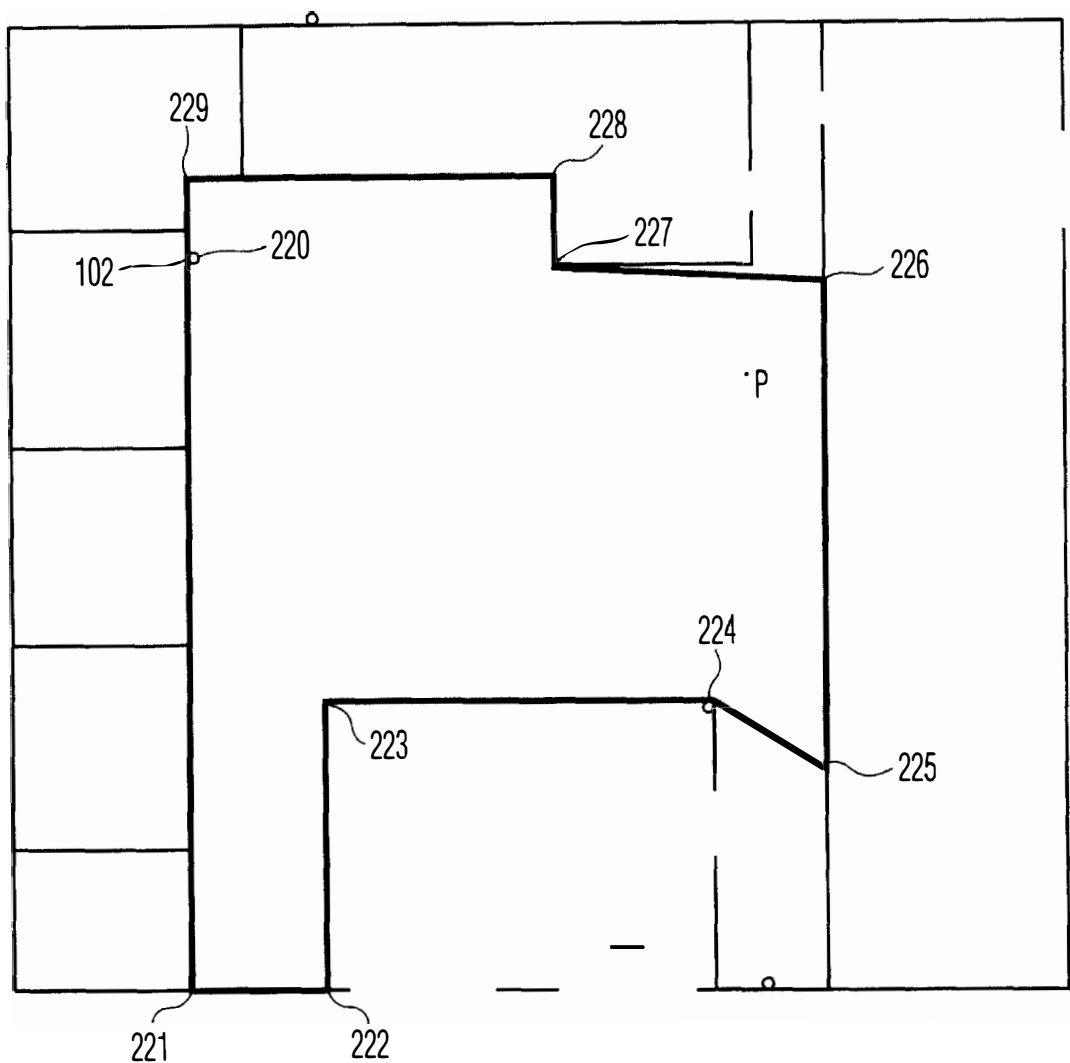


FIG. 3a

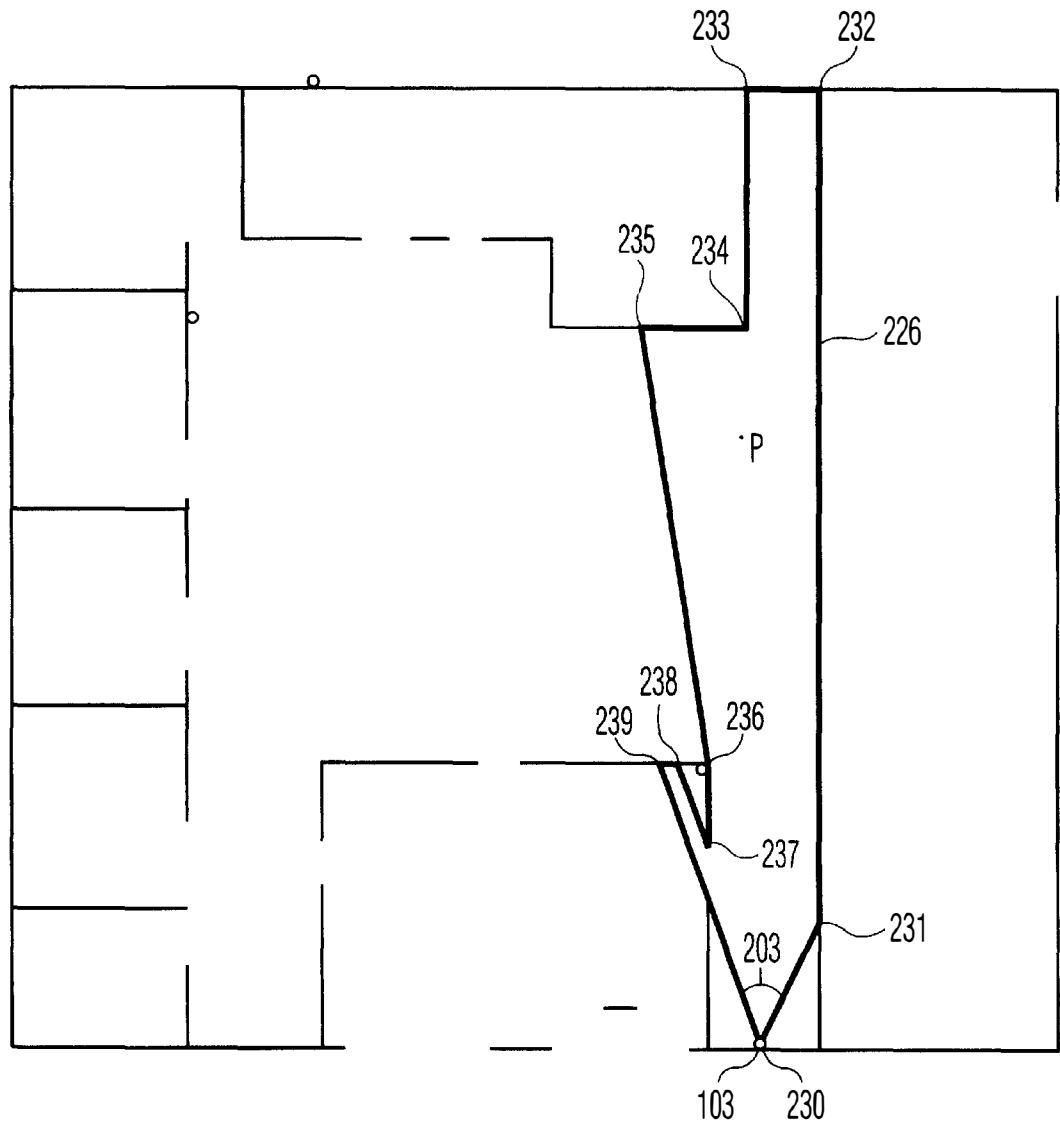


FIG. 3b

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.