US005686957A

United States Patent [19]

Baker

[11] Patent Number: 5,686,957

[45] Date of Patent: Nov. 11, 1997

[54] **TELECONFERENCING IMAGING SYSTEM WITH AUTOMATIC CAMERA STEERING**

[75] Inventor: **Robert G. Baker**, Delray Beach, Fla.

[73] Assignee: **International Business Machines Corporation**, Armonk, N.Y.

[21] Appl. No.: **496,742**

[22] Filed: **Jun. 30, 1995**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 281,331, Jul. 27, 1994, Pat. No. 5,508,734.

[51] **Int. Cl.**[6] **H04N 7/18**

[52] **U.S. Cl.** **348/36**; 348/15; 348/53; 348/214; 348/580

[58] **Field of Search** 348/15, 214, 36, 348/53, 580; H04N 7/18

[56] **References Cited**

U.S. PATENT DOCUMENTS

4,264,928	4/1981	Schober	348/15
4,980,761	12/1990	Natori	348/15
5,508,734	4/1996	Baker	348/36

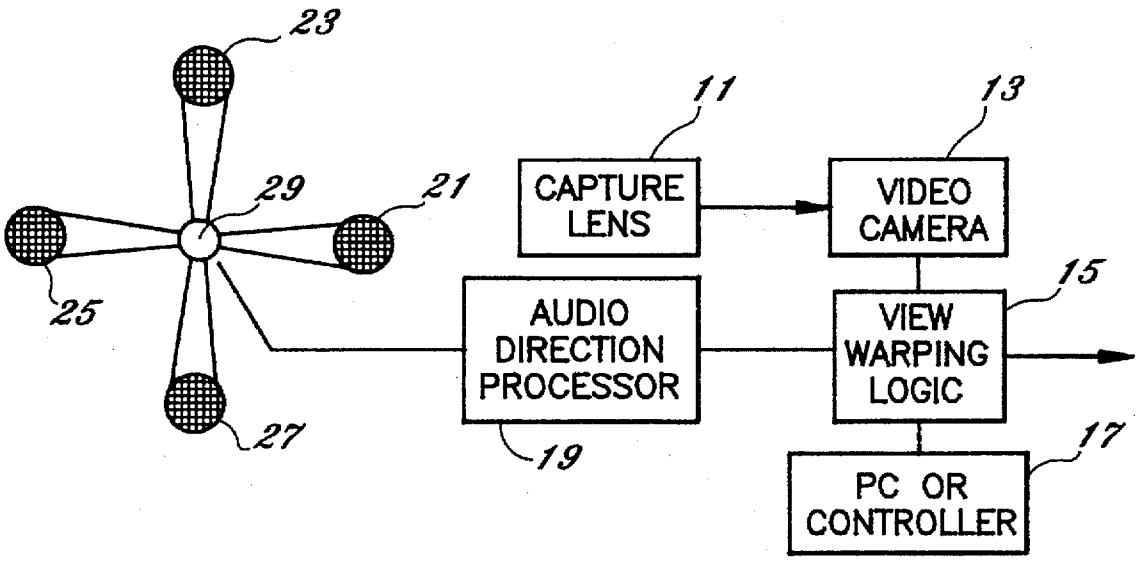
Primary Examiner—Howard W. Britton

Attorney, Agent, or Firm—Richard A. Tomlin; John C. Black; Malin, Haley, DiMaggio & Crosby, P.A.

[57] **ABSTRACT**

An automatic, voice-directional video camera image steering system specifically for use for teleconferencing that electronically selects segmented images from a selected panoramic video scene typically around a conference table so that the participant in the conference currently speaking will be the selected segmented image in the proper viewing aspect ratio, eliminating the need for manual camera movement or automated mechanical camera movement. The system includes an audio detection circuit from an array of microphones that can instantaneously determine the direction of a particular speaker and provide directional signals to a video camera and lens system that provides a panoramic display that can electronically select portions of that image and, through warping techniques, remove any distortion from the most significant portions of the image which lie from the horizon up to approximately 30 degrees in a hemispheric viewing area.

14 Claims, 7 Drawing Sheets



DOCKET ALARM

Panasonic Exhibit 1002 Page 1 of 18

Find authenticated court documents without watermarks at docketalarm.com.

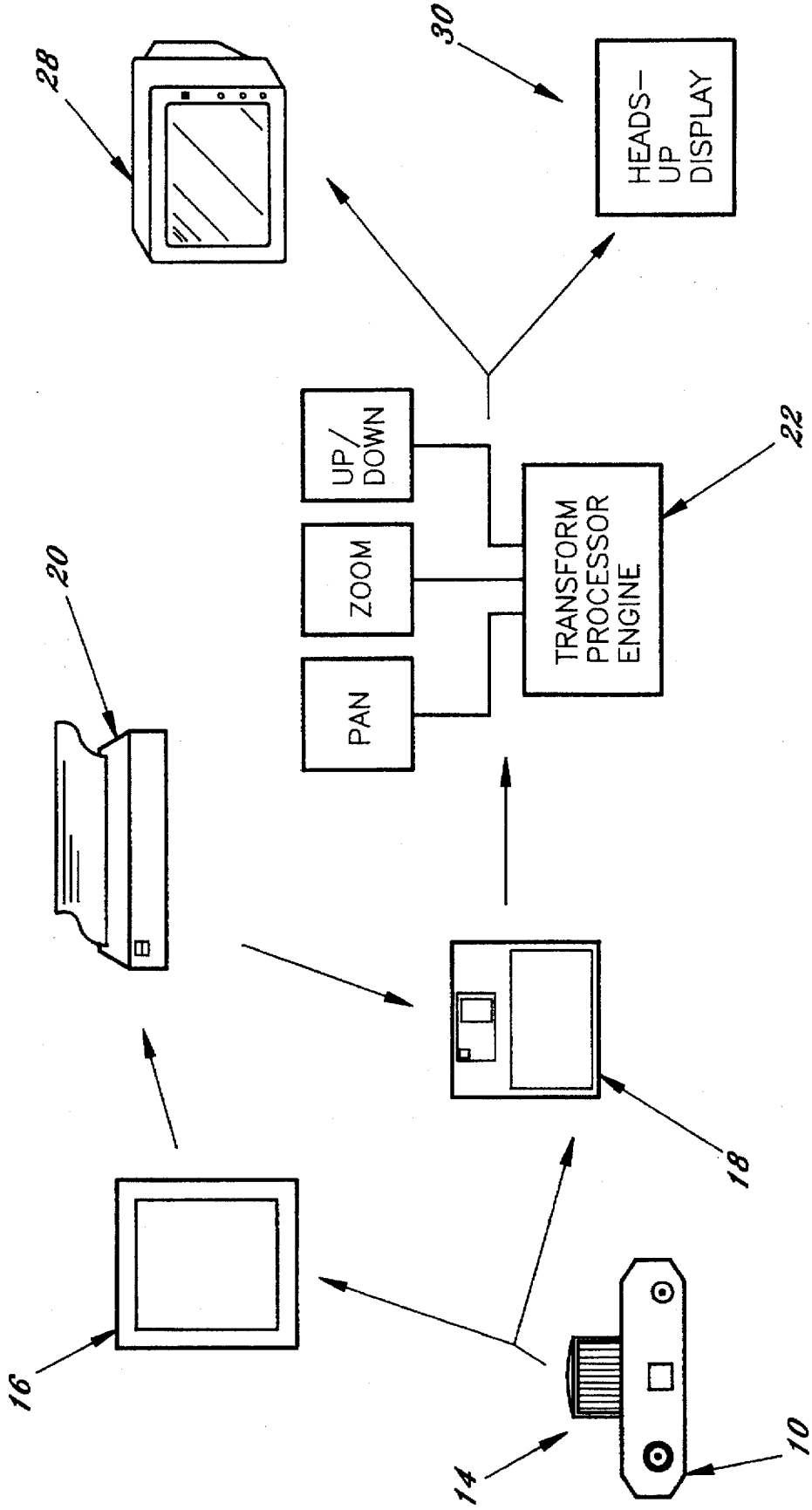


Fig. 1

DOCKET ALARM
Panasonic Exhibit 1002 Page 2 of 18
Find authenticated court documents without watermarks at docketalarm.com.

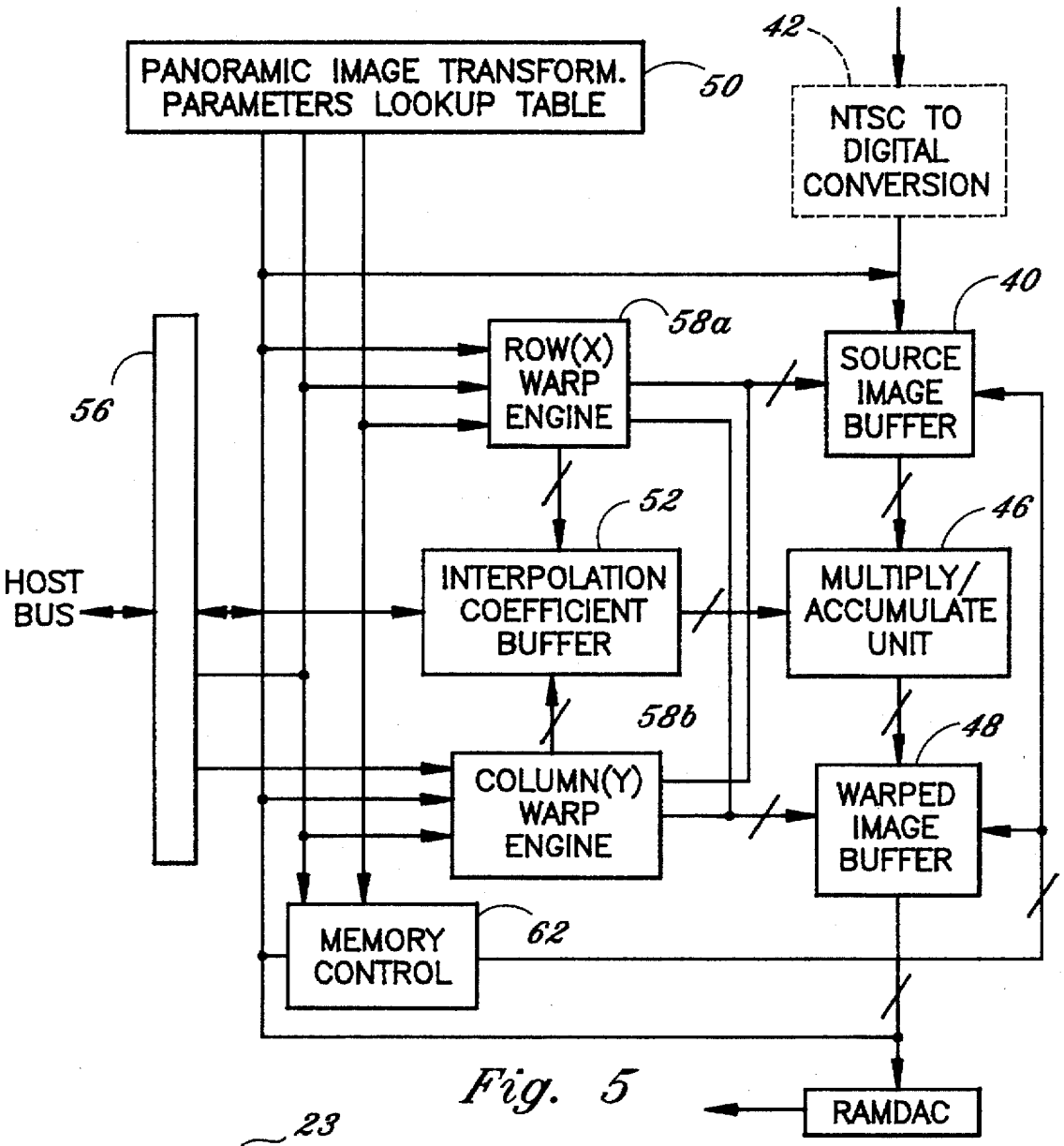


Fig. 5

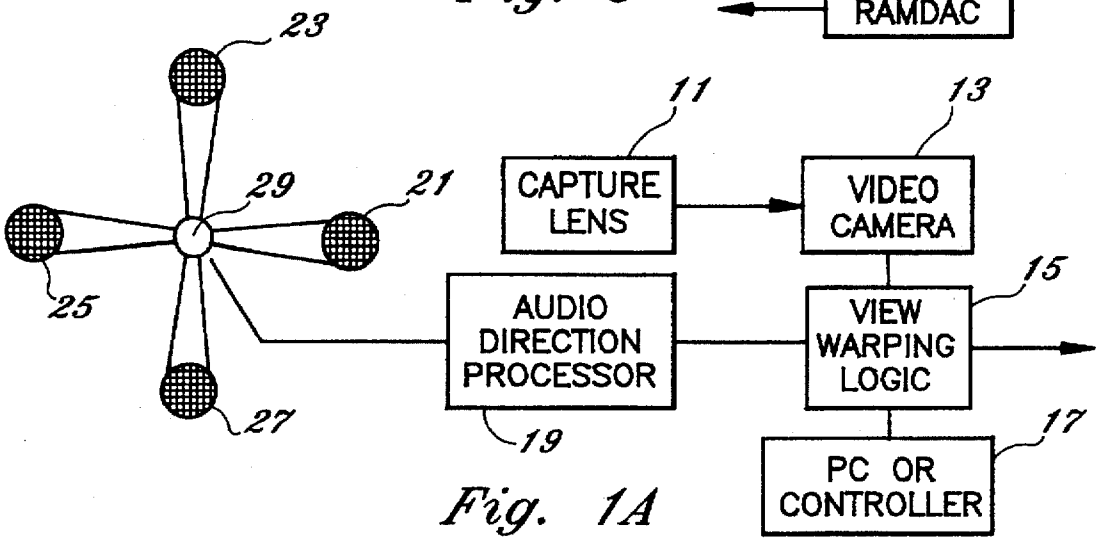


Fig. 1A

DOCKET ALARM
Panasonic Exhibit 1002 Page 3 of 18
Find authenticated court documents without watermarks at docketalarm.com.

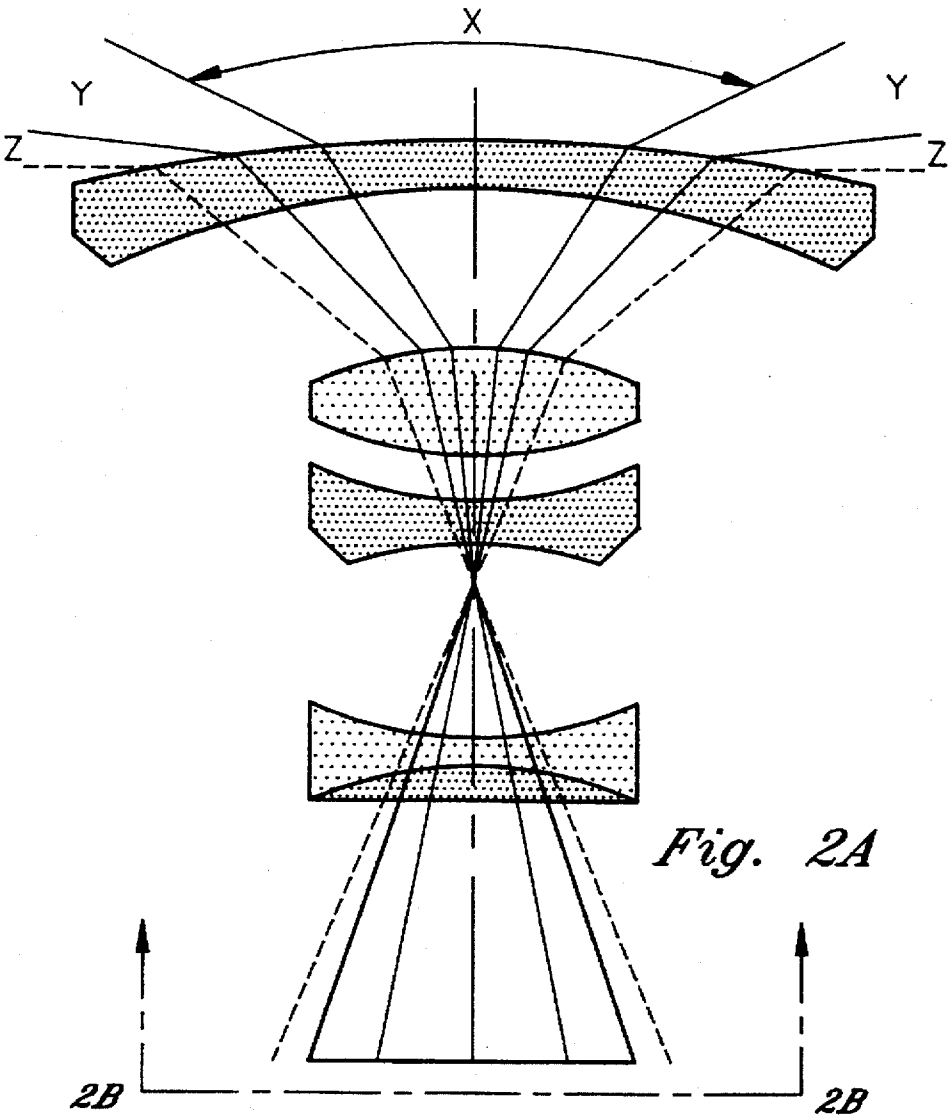


Fig. 2A

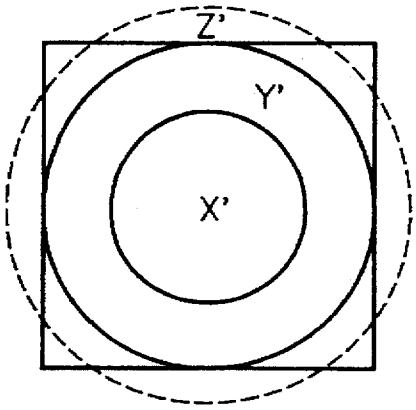


Fig. 2B

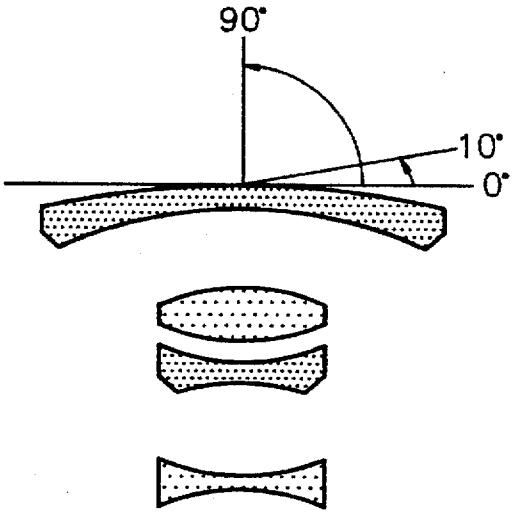


Fig. 2C

DOCKET ALARM
Panasonic Exhibit 1002 Page 4 of 18
Find authenticated court documents without watermarks at docketalarm.com.

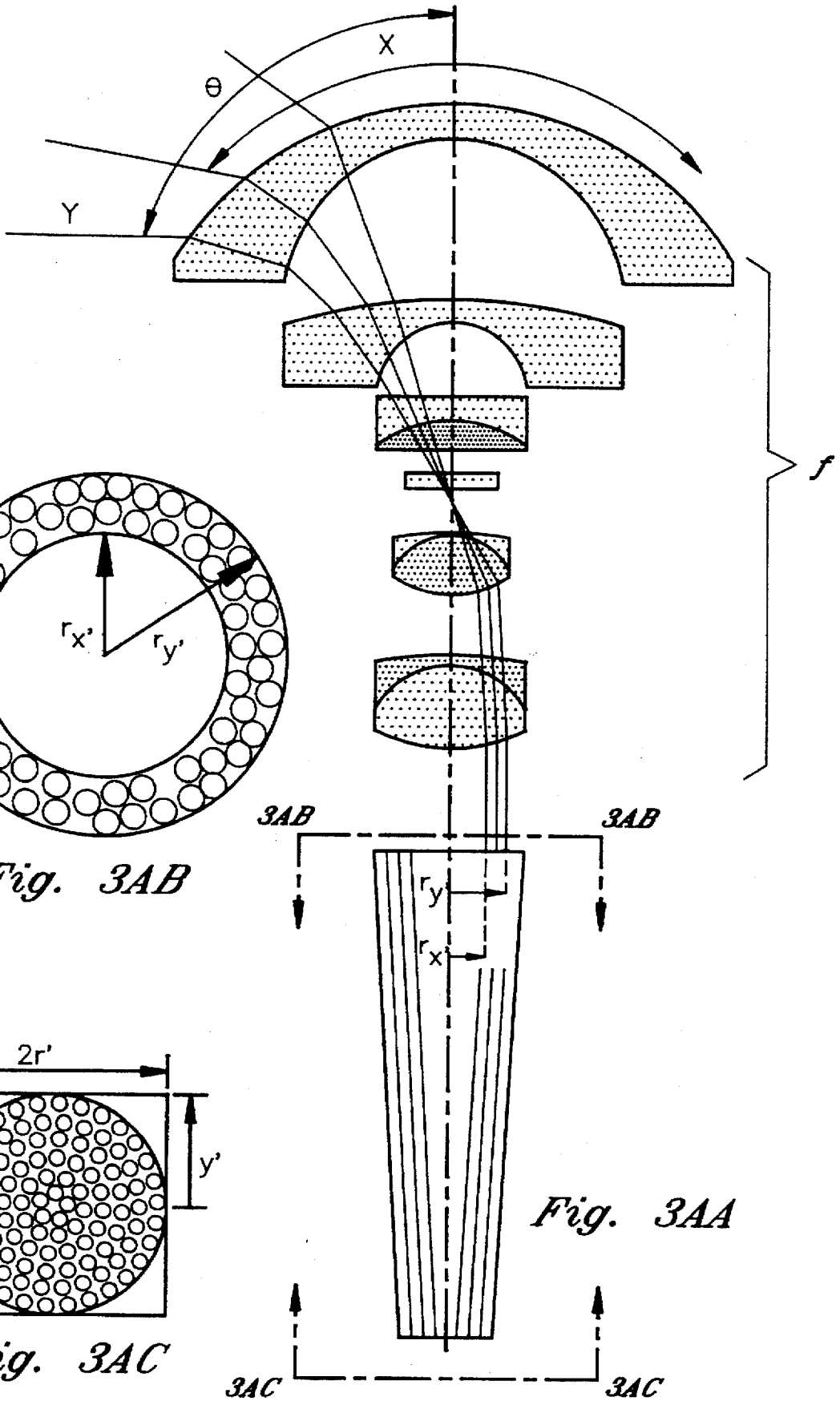


Fig. 3AA

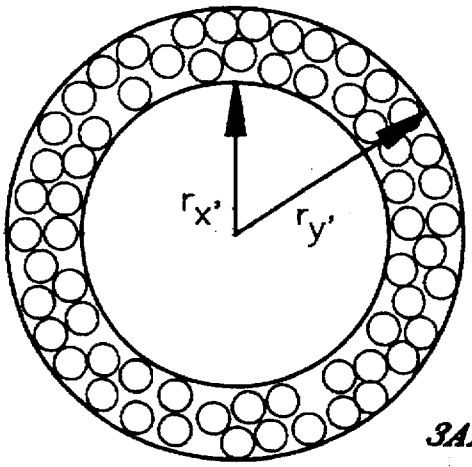


Fig. 3AB

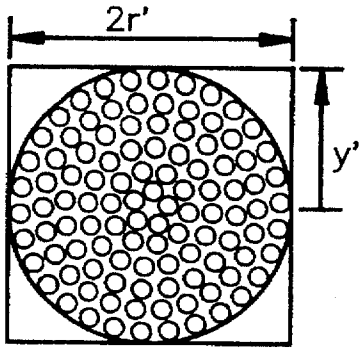


Fig. 3AC

DOCKET ALARM
Panasonic Exhibit 1002 Page 5 of 18
Find authenticated court documents without watermarks at docketalarm.com.

DOCKET ALARM

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.