Case 1:12-cv-00398-GMS Document 27-1 Filed 02/21/13 Page 1 of 25 PageID #: 320

EXHIBIT A

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U.S. PATENT: 6,665,003 ISSUE DATE: December 16, 2003

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(12) United States Patent Peleg et al.

(54) SYSTEM AND METHOD FOR GENERATING AND DISPLAYING PANORAMIC IMAGES AND MOVIES

- (75) Inventors: Shmuel Peleg, Mevaseret Zion (IL); Moshe Benezra, Jerusalem (IL); Robert S. Rosenschein, Jerusalem (IL)
- (73) Assignce: Issum Research Development Company of the Hebrew University of Jerusalem, Jerusalem (IL)
- (*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.
- (21) Appl. No.: 09/396,248
- (22) Filed: Sep. 16, 1999

Related U.S. Application Data

- Provisional application No. 60/100,721, filed on Sep. 17, 1998, provisional application No. 60/102,720, filed on Sep. 29, 1998, provisional application No. 60/113,962, filed on Dec. 28, 1998, provisional application No. 60/116,138, filed on Jan. 12, 1999, provisional application No. 60/116,139, filed on Jan. 12, 1999, provisional application No. 60/123, 080, filed on Mar. 4, 1999, and provisional application No. 60/129,987, filed on Apr. 18, 1999. (60)
- (51) Int. Cl.⁷ H04N 7/00
- (52)
- (58) Field of Search 348/42, 47, 51, 348/53, 64, 39; 382/154, 284, 285, 294; 349/15, 62, 74, 194

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US006665003B1

(10) Patent No.: US 6,665,003 B1 (45) Date of Patent: Dec. 16, 2003

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Primary Examiner-Vu Le

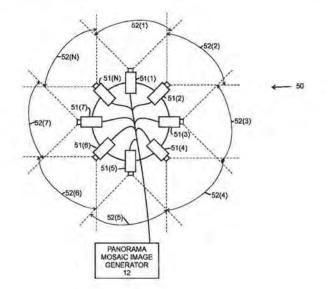
Assistant Examiner-Behrooz Senfi

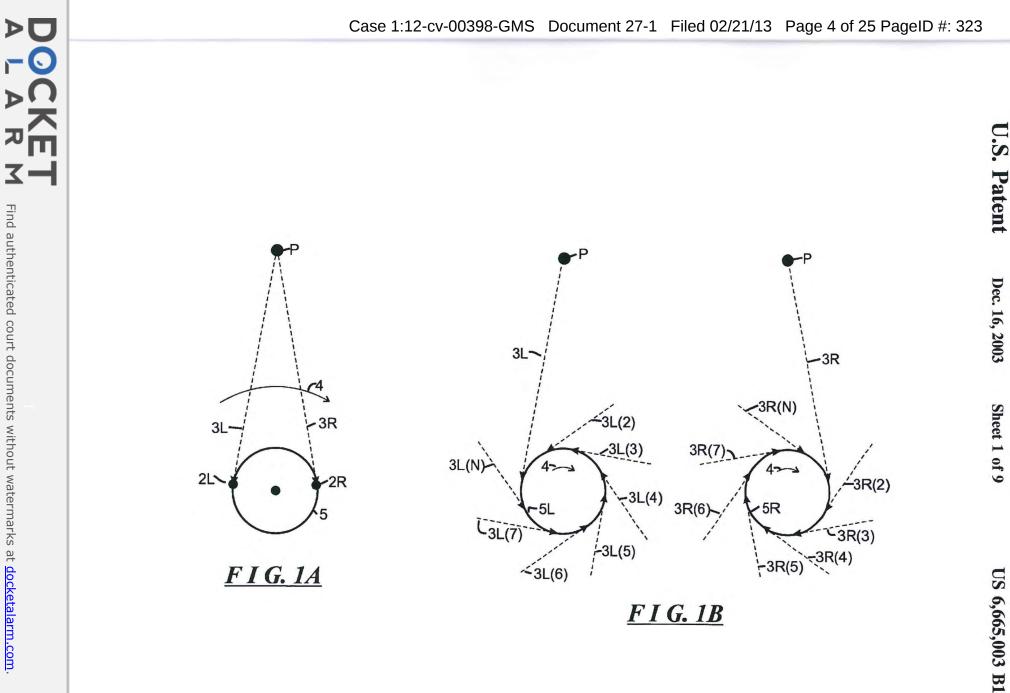
(74) Attorney, Agent, or Firm-Fenster & Company

ABSTRACT (57)

Systems are disclosed for generating left and right panoramic mosaic images for use in facilitating panoramic stereoscopic viewing of a scene, and for displaying stereoscopic panoramic images to a viewer. The left and right panoramic image generators generate the left and right panoramic mosaic images from a series of images recorded or otherwise generated corresponding to respective angular or other positions, each image having a respective left and right image portion, and mosaics portions of those images together to form the respective left and right panoramic images. The display system displays a stereoscopic panoramic image to a viewer by displaying left and right panoramic images such that each is viewed by a respective one of the viewer's eyes.

100 Claims, 9 Drawing Sheets





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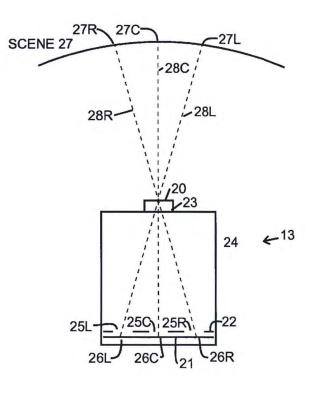
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CAMERA 13 15 -14 T ←11 MOTOR 16 <10 MOTOR CONTROL 17 PANORAMA MOSAIC IMAGE GENERATOR 12

<u>FIG.2</u>





U.S. Patent

Dec. 16, 2003

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