



(51) International Patent Classification:

G09B 9/32 (2006.01) G06F 3/14 (2006.01)
G03B 21/10 (2006.01)

(21) International Application Number:

PCT/US2024/027757

(22) International Filing Date:

03 May 2024 (03.05.2024)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/464,379 05 May 2023 (05.05.2023) US

(71) Applicant: **FLIGHTSAFETY INTERNATIONAL INC.**
[US/US]; 3100 Easton Square Place, Ste. 100, Columbus,
Ohio 43219 (US).

(72) Inventors; and

(71) Applicants: **LINN, Terry R.** [US/US]; 15 Shadow Lane,
St. Peters, Missouri 63376 (US). **KNAPLUND, Justin K.**
[US/US]; 17 Hightrail Way, The Hills, Texas 78738 (US).

(74) Agent: **REINHARDT, Dean N.**; Sheridan Ross P.C., 1560
Broadway, Suite 1200, Denver, Colorado 80202 (US).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ,
CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM,
DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG,
KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY,
MA, MD, MG, MK, MN, MU, MW, MX, MY, MZ, NA,
NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO,
RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH,

(54) Title: COLLIMATED DISPLAY SYSTEM WITH AN EXTENDED VERTICAL FIELD OF VIEW

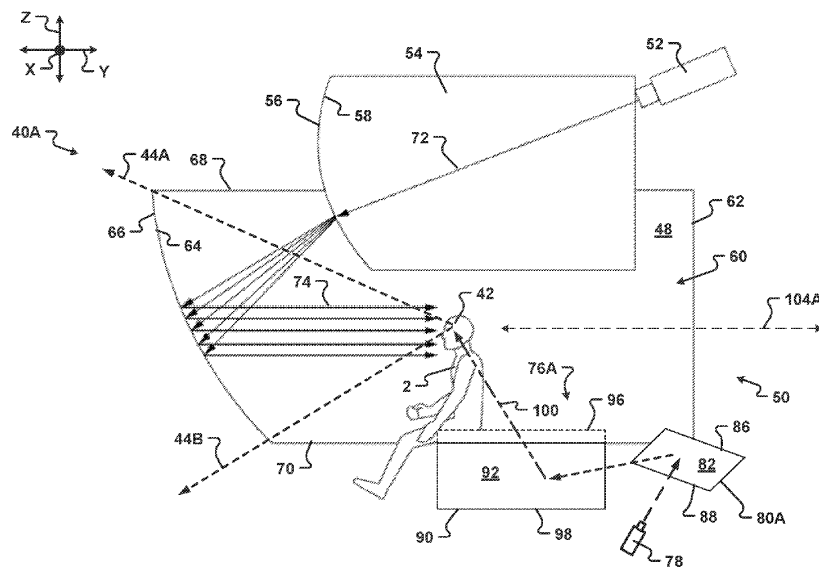


Fig. 4

(57) Abstract: Systems and methods for providing a simulator with an extended vertical field of view are provided. The simulator has a primary collimated display which is operable to generate a primary image at infinity focus. A secondary collimated display of the simulator is operable to generate a secondary image aligned with a primary image, at least a portion of the secondary image being at infinity focus. When viewed at a designated eye point of the simulator, the primary image and the secondary image form a combined image with a vertical field of view that is substantially continuous and which is at least approximately 80° when measured at the designated eye point. The secondary collimated display has a second collimating mirror positioned proximate to a primary collimating mirror of the primary collimated display such that the combined image is substantially continuous without significant breaks or interruptions at the junction of the primary image and the secondary image.

[Continued on next page]

TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS,
ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

(88) Date of publication of the international search report:

16 January 2025 (16.01.2025)