(19) World Intellectual Property Organization International Bureau





(43) International Publication Date 21 February 2002 (21.02.2002)

PCT

(10) International Publication Number WO 02/014966 A3

(51) International Patent Classification⁷: G05B 19/4097

(21) International Application Number: PCT/US01/25432

(22) International Filing Date: 13 August 2001 (13.08.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data: 09/639,425 15 August 2000 (15.08.2000) US

- (71) Applicant: VOUGHT AIRCRAFT INDUSTRIES, INC. [US/US]; 9314 West Jefferson Boulevard, Dallas, TX 75265-5807 (US).
- (72) Inventor: TURNER, Greg, A.; 4118 Willow Springs Drive, Arlington, TX 76001-5111 (US).
- (74) Agent: CHIAVIELLO, Robert, M., Jr.; Baker Botts L.L.P., 2001 Ross Avenue, Dallas, TX 75201 (US).

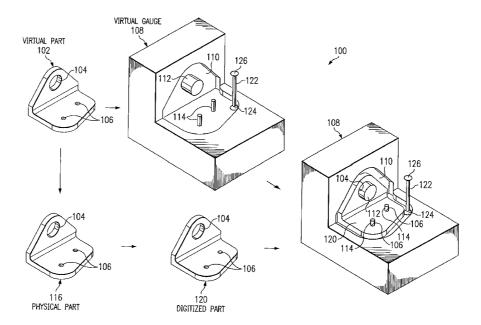
- (81) Designated States (national): AE, AG, AL, AM, AT (utility model), AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ (utility model), CZ, DE (utility model), DE, DK (utility model), DK, DM, DZ, EC, EE (utility model), EE, ES, FI (utility model), FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK (utility model), SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for all designations
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations

[Continued on next page]

(54) Title: METHOD AND SYSTEM FOR DEFINING AND VERIFYING A PART



(57) Abstract: A system for verifying a part disclosed. The system comprises a virtual part and a virtual gage associated with the virtual part. A physical part corresponds to the virtual part. A digitized part is generated from the physical part, and the virtual gage evaluates the digitized part. A method for verifying a part is disclosed. A virtual part is provided. A virtual gage associated with the virtual part is generated. A physical part corresponding to the virtual part is produced. A digitized part is generated from the physical part. The digitized part is evaluated with the virtual gage.



WO 02/014966 A3



Published:

with international search report

(88) Date of publication of the international search report: 13 March 2003

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

tional Application No

PCI/US 01/25432 A. CLASSIFICATION OF SUBJECT MATTER IPC 7 GOERIO/4007 According to International Patent Classification (IPC) or to both national classification and IPC B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) IPC 7 GO5B Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal C. DOCUMENTS CONSIDERED TO BE RELEVANT Citation of document, with indication, where appropriate, of the relevant passages Relevant to claim No. χ EP 0 574 098 A (AMERICAN MED ELECTRONICS) 17-19, 15 December 1993 (1993-12-15) 24 - 26figures 2-4,6,7B Υ column 3, line 30 -column 5, line 40 1-16, 20 - 23. 27-30 1-3,9-11Υ US 5 452 219 A (DEHOFF BARRY D ET AL) 19 September 1995 (1995-09-19) figure 1 column 5, line 39 -column 6, line 15 column 8, line 1 - line 55 Patent family members are listed in annex. Further documents are listed in the continuation of box C. ° Special categories of cited documents: "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the "A" document defining the general state of the art which is not considered to be of particular relevance invention "E" earlier document but published on or after the international "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such docu-"O" document referring to an oral disclosure, use, exhibition or ments, such combination being obvious to a person skilled in the art. other means document published prior to the international filling date but later than the priority date claimed "&" document member of the same patent family Date of the actual completion of the international search Date of mailing of the international search report 30 August 2002 06/09/2002 Name and mailing address of the ISA Authorized officer European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,

Fax: (+31-70) 340-3016

Cîrîc, G

INTERNATIONAL SEARCH REPORT

int tional Application No
PCI/US 01/25432

C.(Continua	ation) DOCUMENTS CONSIDERED TO BE RELEVANT	101/03 01/23432		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
Υ	US 4 754 417 A (BEESON DON E ET AL) 28 June 1988 (1988-06-28)	4-7, 12-15, 20-23, 27-30		
	figures 1-4 column 3, line 3 - line 30 column 5, line 7 -column 7, line 17			
Y	ALLEN G: "TOLERANCES AND ASSEMBLIES IN CAD/CAM SYSTEMS" MANUFACTURING REVIEW, AMERICAN SOCIETY OF MECHANICAL ENGINEERS, NEW YORK, US, vol. 6, no. 4,	8,16		
	1 December 1993 (1993-12-01), pages 320-328, XP000423693 ISSN: 0896-1611 page 324, paragraph DATUMS			
A	page 325 -page 327	4-6, 12-14, 20-22, 27-29		
A	US 5 351 196 A (SOWAR RICHARD M ET AL) 27 September 1994 (1994-09-27) figures 1-8 column 3, line 54 - line 62 column 11, line 19 - line 43	1-30		
Α	DUAN W ET AL: "FSMT: A FEATURE SOLID-MODELLING TOOL FOR FEATURE-BASED DESIGN AND MANUFACTURE" COMPUTER AIDED DESIGN, ELSEVIER PUBLISHERS BV., BARKING, GB, vol. 25, no. 1, 1993, pages 29-38, XP000330561 ISSN: 0010-4485 the whole document	1-30		

INTERNATIONAL SEARCH REPORT

Ir pitional Application No PCI/US 01/25432

Patent document cited in search report		Publication date	n Patent family member(s)		Publication date
EP 0574098	A	15-12-1993	US CA EP JP	5365996 A 2087515 A1 0574098 A1 6149950 A	22-11-1994 11-12-1993 15-12-1993 31-05-1994
US 5452219	Α	19-09-1995	US	5691905 A	25-11-1997
US 4754417	Α	28-06-1988	NONE		
US 5351196	A	27-09-1994	US DE DE EP HK JP	5257205 A 69220263 D1 69220263 T2 0503642 A2 1008101 A1 5197412 A	26-10-1993 17-07-1997 27-11-1997 16-09-1992 30-04-1999 06-08-1993