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(54) Title: AUGMENTED DOCUMENTATION THROUGH COMPUTER VISION DETECTION, ALIGNMENT, AND APPLICATION OF PAPER MARKUP TO DIGITAL MAPS AND FORMS

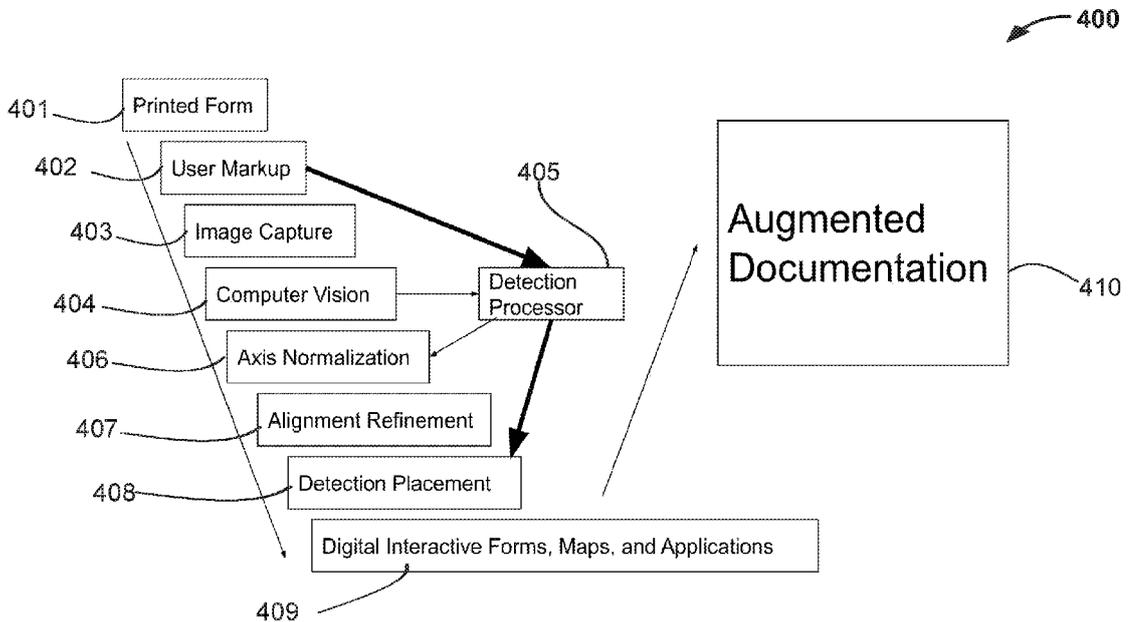


FIG. 1

(57) Abstract: The present invention includes a method that applies computer vision to detect annotation, coloring, and markup performed on paper forms that may include diagrams, typed language, fields, codes such as QR codes, orientation markers, images, workflow initiators (such as checkboxes), form information such as a version number, and language indicators, all of which are also detected. The invention automatically detects, categorizes, aligns, and converts the detections to digital annotation, coloring, markup, and coordinates. The detected annotation, coloring (including intensity, shades, and patterns), and markup includes labels, pins, areas, regions, characters, symbols, shapes, drawings, text, handwriting, codes such as QR codes. The detections are all digitized and refined in alignment with coordinate normalization. Workflow initiators like checkboxes, when checked, may trigger a digital event like a refill



RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ,  
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## INTERNATIONAL SEARCH REPORT

International application No.

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## A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - INV. - G16H 10/60; G16H 15/00; G06F 40/20; G16H 30/20 (2023.01)

ADD. - G06V 30/30 (2023.01)

CPC - INV. - G16H 10/60; G16H 15/00; G16H 30/20; G06F 40/20 (2023.08)

ADD. - G06V 30/30 (2023.08)

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)

See Search History document

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

See Search History document

Electronic database consulted during the international search (name of database and, where practicable, search terms used)

See Search History document

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2021/046536 A1 (F. HOFFMANN-LA ROCHE AG) 11 March 2021 (11.03.2021) entire document	1-10
A	US 2015/0261919 A1 (FUJI XEROX CO. LTD.) 17 September 2015 (17.09.2015) entire document	1-10
A	US 2015/0207948 A1 (FUJI XEROX CO. LTD) 23 July 2015 (23.07.2015) entire document	1-10
A	US 2005/0027201 A1 (BADILINI et al.) 03 February 2005 (03.02.2005) entire document	1-10
A	US 2021/0326808 A1 (MOLEND) 21 October 2021 (21.10.2021) entire document	1-10
A	US 2021/0004960 A1 (KONINKLIJKE PHILIPS N.V.) 07 January 2021 (07.01.2021) entire document	1-10
A	SARCEVIC et al., "Design Challenges in Converting a Paper Checklist to Digital Format for Dynamic Medical Settings"; Int Conf Pervasive Comput Technol Healthc. 2016 May; 2016: 33-40; Published online 2016 Jun 16; PMID: 28480116; PMCID: PMC5415085; retrieved on [31.07.2023]; retrieved from the internet <URL: <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5415085/pdf/nihms796418.pdf">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5415085/pdf/nihms796418.pdf</a> > entire document	1-10
A	US 2011/0082710 A1 (SUBASH et al.) 07 April 2011 (07.04.2011) entire document	1-10

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