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[Continued on next page]

(54) Title: NAVIGATION APPLICATION

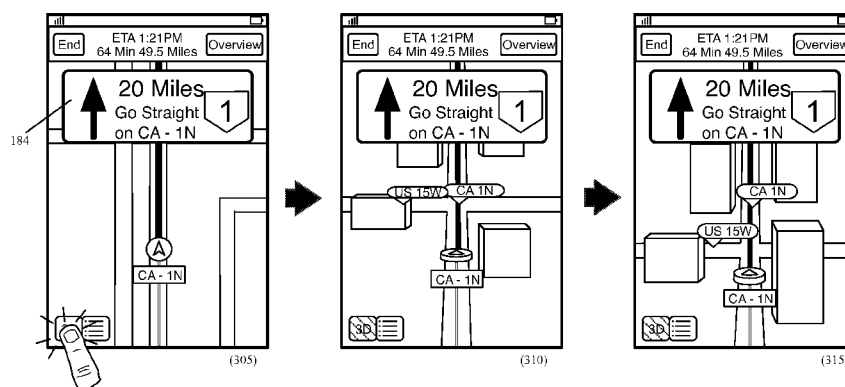


Figure 3

(57) Abstract: Some embodiments provide a navigation application that presents a novel navigation presentation on a device. The application identifies a location of the device, and identifies a style of road signs associated with the identified location of the device. The application then generates navigation instructions in form of road signs that match the identified style. To generate the road sign, the application in some embodiments identifies a road sign template image for the identified style, and generates the road sign by compositing the identified road sign template with at least one of text instruction and graphical instruction. In some embodiments, the road sign is generated as a composite textured image that has a texture and a look associated with the road signs at the identified location.

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- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US13/42029

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - G01C 21/26 (2014.01)

USPC - 701/409

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(8) Classification(s): G01C 21/26, 21/34; G08G 1/0967 (2014.01)

USPC Classification(s): 701/409; 340/905, 382/104

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 practicable, search terms used)

MicroPatent (US-G, US-A, EP-A, EP-B, WO, JP-bib, DE-C,B, DE-A, DE-T, DE-U, GB-A, FR-A); ProQuest; IEEE/IEEExplore; Google/Google Scholar; IP.com; Search Terms Used: road sign, traffic sign, map, navigation, route, guidance, glow, light, illuminate, gps, gnss, identification, location, modify, adjust, appearance, return, image, juncture, beyond, pass, virtual camera, replace, remove, size

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X ----- Y	US 2006/0184323 A1 (PARK, I) August 17, 2006, Figure 5b, abstract, paragraphs [0003], [0012], [0013], [0034]	1, 10-13, 15 ----- 2-9, 16-20
X ----- Y	US 2011/0285717 A1 (SCHMIDT, T) November 24, 2011, Figures 4A-4C, 9, paragraphs [0003], [0004], [0014], [0015], [0032], [0033], [0034], [0043], [0045]	60-62, 66, 67 ----- 46-59, 63-65, 68
Y	US 2009/0074249 A1 (MOED, MC et al.) March 19, 2009, Figure 13, paragraph [0008]	2-9, 16-20
Y	US 2010/0328316 A1 (STROILA, M et al.) December 30, 2010, paragraphs [0034]-[0036]	7-9, 20
Y	US 2008/0167801 A1 (GEELEN, P et al.) July 10, 2008, abstract, paragraphs [0029], [0078], [0099], [0100],	21-45
Y	WO 2011/151501 A1 (DOLENC, A et al.) December 8, 2011, column 7, lines 1-10	21-45
Y	US 8,190,326 B2 (NEZU, Y et al.) May 29, 2012, column 15, lines 26-31	28, 29
Y	US 2010/0100310 A1 (EICH, RW et al.) April 22, 2010, paragraph [0052]	31
Y	US 7,933,395 B1 (BAILLY, F et al.) April 26, 2011, column 9, lines 18-38.	34

☒ Further documents are listed in the continuation of Box C.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international 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)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"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 invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to 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 documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US13/42029

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2009/0171577 A1 (ROUMELIOTIS, T et al.) July 2, 2009, paragraph [0003]	36, 37
Y	US 6,693,564 B2 (NIITSUMA, E) February 17, 2004, column 1, lines 7-15	38, 39
Y	US 2011/0106595 A1 (VANDE VELDE, L) May 5, 2011, paragraph [0004]	46-53
Y -- A	US 2007/0192020 A1 (BRULLE-DREWS, C et al.) August 16, 2007, Figures 6-8, paragraphs [0007], [0028], [0038], [0046], [0049]	49-51, 63-65 ----- 14
Y	US 2004/0024524 A1 (MIYAZAWA, HJ) February 5, 2004, Figures 2 and 3A-3D, abstract, paragraph [0037]	54-59
Y	US 5,629,854 (SCHULTE, HH) May 13, 1997, column 4, lines 1-24, column 4, lines 56-63	58, 59
Y	US 7,698,063 B2 (KIM, HJ) April 13, 2010, column 6, lines 1-10, column 6, lines 50-59 Claim 59	59
Y	US 7,149,625 B2 (MATHEWS, MB et al.) December 12, 2006, Figure 6, column 10, lines 27-31, column 10, lines 43-67, column 11, lines 1-16 Claim 68	68
E, X	US 2012/0150428 A1 (NIEM, W et al.) June 14, 2012, entire document	1-9, 15-20

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US13/42029

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

Group I: Claims 1-9 and 15-20; Group II: Claims 10-14; Group III: Claims 21-45; Group IV: Claims 46-68

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US13/42029

****-Continued from Box No. III - Observations where unity of invention is lacking-****

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fee must be paid.

Group I: Claims 1-9 and 15-20 are directed toward a navigation program.

Group II: Claims 10-14 are directed toward a navigation program.

Group III: Claims 21-45 are directed toward a navigation program.

Group IV: Claims 46-68 are directed toward a navigation application.

The inventions listed as Groups I-IV do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The special technical features of Group I include identifying a style of road signs; and generating navigation instructions in the form of road signs that match the identified style, which are not present in Groups II-IV. The special technical features of Group II include identifying two successive maneuvers that are close to each other along a navigated route; and presenting concurrently two road signs to describe the two maneuvers, which are not present in Groups I, III, and IV. The special technical features of Group III include displaying a 3D control for transitioning from a 2D navigation presentation to a 3D presentation, which are not present in Groups I, II, and IV. The special technical features of Group IV include an interface for describing junctions comprising a set of angles at which roads leave the junction; a junction simplifier; an arrow generator; and an arrow selector, which are not present in Groups I-III.

The common technical feature shared by Groups I-IV is a navigation program comprising: displaying navigation information describing a maneuver to perform. However, this common feature is previously disclosed by US 2006/0184323 A1 (Park). Park discloses a navigation program (providing route guidance; Abstract) comprising: displaying navigation information describing a maneuver to perform (providing main direction guidance information displayed on a screen configured with road signs; Abstract and Figure 5b).

Since the common technical feature is previously disclosed by the Park reference, this common feature is not special and so Groups I-IV lack unity.