



- (51) International Patent Classification:
B62D 13/06 (2006.01) *B62D 15/02* (2006.01)
B60T 8/17 (2006.01)
- (21) International Application Number:
PCT/EP2014/064270
- (22) International Filing Date:
3 July 2014 (03.07.2014)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
1312040.7 4 July 2013 (04.07.2013) GB
- (71) Applicant: **JAGUAR LAND ROVER LIMITED**
[GB/GB]; Abbey Road, Whitley, Coventry Warwickshire CV3 4LF (GB).
- (72) Inventors: **SINGH, Harpreet**; c/o Jaguar Land Rover, Patents Department W/1/073, Abbey Road, Whitley, Coventry Warwickshire CV3 4LF (GB). **BRADLEY, Andrew**; c/o Jaguar Land Rover, Patents Department W/1/073, Ab-

bey Road, Whitley, Coventry Warwickshire CV3 4LF (GB).

(74) Agent: **HOLMES, Matthew**; c/o Jaguar Land Rover, Patents Department W/1/073, Abbey Road, Whitley, Coventry Warwickshire CV3 4LF (GB).

(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, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, 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, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ,

[Continued on next page]

(54) Title: VEHICLE CONTROL SYSTEM

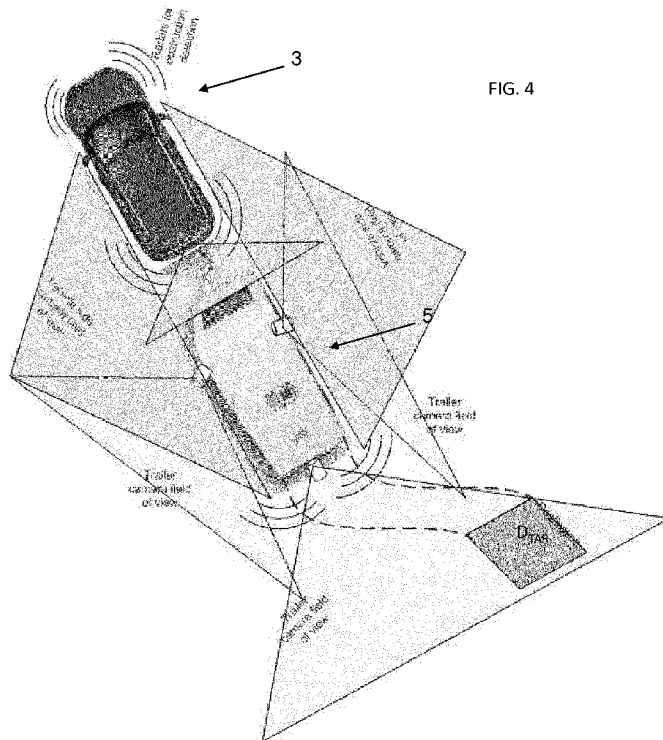


FIG. 4

(57) Abstract: The present invention relates to a vehicle control system (1) for controlling a vehicle (3) to facilitate reversing a trailer (5) coupled to the vehicle (3). The vehicle control system includes a processor (33) configured to receive a target trailer destination (D_{TAR}). The current position of the trailer (5) is determined by the processor (33). A target route (R) is then modelled to guide the trailer (5) from its current position to the target trailer destination (D_{TAR}). The processor (33) is configured to output a vehicle control signal to control the vehicle (3) to guide the trailer (5) along the target route (R). The invention also relates to a method of controlling a vehicle (3) to facilitate reversing a trailer (5).





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, 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).

— *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))*

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

23 April 2015

Published:

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

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2014/064270

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:

see additional sheet

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 an 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.:

1-12, 17, 19

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/EP2014/064270

A. CLASSIFICATION OF SUBJECT MATTER
 INV. B62D13/06 B60T8/17 B62D15/02
 ADD.
 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)
 B62D B60T

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)
 EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 10 2006 035021 A1 (UNIV KOBLENZ LANDAU [DE]) 31 January 2008 (2008-01-31)	1-5, 7-12, 19
Y	paragraphs [0041], [0045], [0046], [0057] - [0062], [0103], [0109], [0150]; claims; figures	6
Y	EP 2 011 701 A1 (TOYOTA MOTOR CO LTD [JP]) 7 January 2009 (2009-01-07)	6
	paragraphs [0019], [0028], [0032]; claims; figures	
A	US 2007/027581 A1 (BAUER WOLF-DIETRICH [DE] ET AL) 1 February 2007 (2007-02-01)	1-12, 17, 19
	paragraphs [0019] - [0023], [0029], [0043]; claims; figures	
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Further documents are listed in the continuation of Box C.

See patent family annex.

* 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 3 November 2014	Date of mailing of the international search report 03/03/2015
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Ducher, Alban
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INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2014/064270

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2006/111820 A1 (GOETTING HANS H [DE] ET AL GOETTING HANS HEINRICH [DE] ET AL) 25 May 2006 (2006-05-25) paragraphs [0034] - [0036]; claims; figures -----	1-12,17, 19

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/EP2014/064270

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 102006035021 A1	31-01-2008	DE 102006035021 A1 WO 2008012109 A1	31-01-2008 31-01-2008

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FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-12, 17, 19

Improving the reversing assistance reliability

2. claims: 13-16, 18

Improving the target path strategy
