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- (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, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, 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,

(54) Title: FIRE APPARATUS LEVEL INDICATION SYSTEM

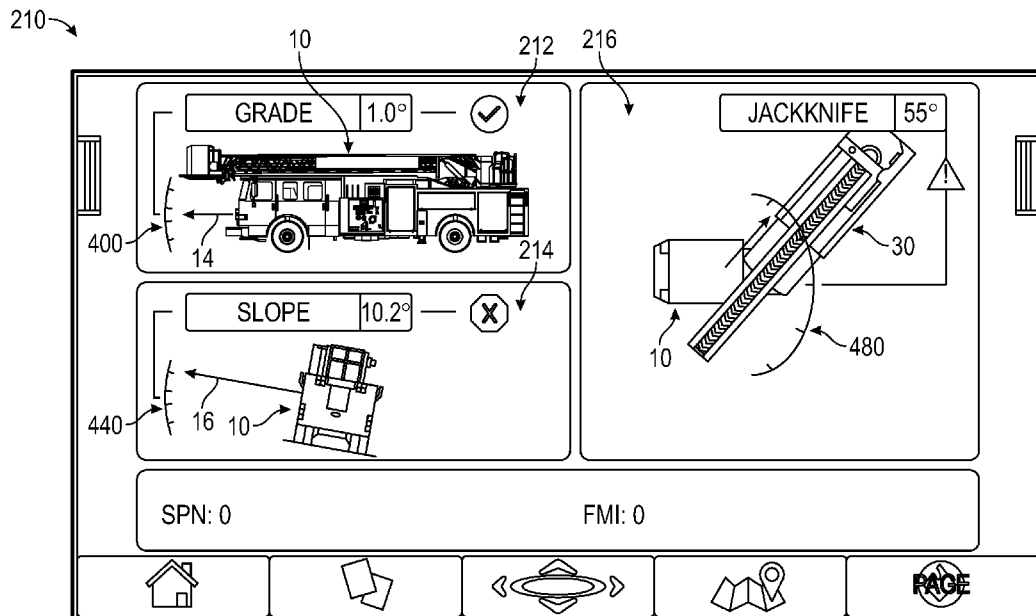


FIG. 11

(57) Abstract: A vehicle (10) includes a chassis, a body including a cab (20) and a rear assembly (30), the body coupled to the chassis, a sensor system (130), and a control system (110). The sensor system is positioned to acquire stability data regarding a stability characteristic of the vehicle at a current location. The stability characteristic includes at least one of a slope (θ), a grade (β), and a jackknife angle (γ) of the vehicle. The control system is configured to determine whether the stability characteristic is within an operational range or a nonoperational range and provide (i) an indication that the vehicle is reconfigurable at the current location into a state whereby the vehicle is operable at the current location in response to determining that the stability characteristic is within the operational range or (ii) an indication that the vehicle is not operable at the current location in response to determining that the stability characteristic is within the nonoperational range.



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.

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Published:

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- *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))*

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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2018/015272

A. CLASSIFICATION OF SUBJECT MATTER
INV. B66F17/00 E06C5/04 E06C5/38
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)
B66F E06C

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 Y	US 2007/158920 A1 (DELANEY PATRICK M [US]) 12 July 2007 (2007-07-12) abstract paragraph [0013] - paragraph [0022] figures	1,2,11, 12,14-16 3,13
X	US 5 580 095 A (FUKUMOTO TAKEFUMI [JP]) 3 December 1996 (1996-12-03) abstract column 2, line 59 - column 5, line 56 figures	1,2,4, 11,12
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Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents :

<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"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)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"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</p> <p>"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</p> <p>"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</p> <p>"&" document member of the same patent family</p>
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Date of the actual completion of the international search 6 August 2018	Date of mailing of the international search report 13/08/2018
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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 Sheppard, Bruce
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2018/015272

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.:

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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

1. claims: 1-3, 11-16

Vehicle and method comprising sensing of jackknife angle.

2. claims: 4-10

Vehicle comprising outriggers, downriggers or a stability foot.

3. claims: 11-20

Vehicle and level indication system with a topography scanner.

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2018/015272

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 2014/138801 A1 (TEREX AUSTRALIA PTY LTD [AU]) 18 September 2014 (2014-09-18) abstract page 1 - page 2 page 11 - page 18 page 31 figures	3,13
A	----- EP 1 536 098 A1 (MARTE FEUERWEHRFAHRZEUGE FEUER [AT]; PARTEL GEORG [AT]) 1 June 2005 (2005-06-01) abstract paragraph [0039] - paragraph [0070] figures	1,11
A	----- EP 0 921 092 A2 (GROVE US LLC [US]) 9 June 1999 (1999-06-09) abstract paragraph [0002] - paragraph [0009] figures	9,17,19
A	----- US 2007/294014 A1 (GREEN JON M [US] ET AL) 20 December 2007 (2007-12-20) abstract paragraph [0004] paragraph [0009] paragraph [0020] - paragraph [0038] claims 1-4 figures	9,17,19
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/US2018/015272

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