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(54) Title: CAB DOOR

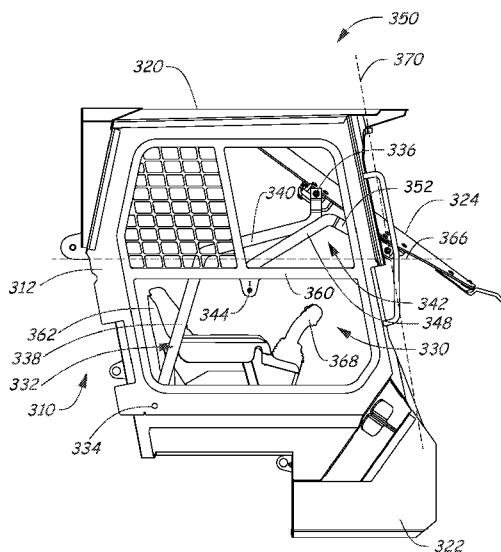


FIG. 5

(57) Abstract: Disclosed are front entry cabs (250; 350; 550; 650), and power machines with front entry cabs, having a door (324; 524; 624) that is moveable between opened and closed positions. In the opened position, the door is positioned within an operator compartment of the cab above the operator seat (364; 564; 664) and below a top of the cab. A linkage system (330; 540; 640) defines the travel path of the door between closed and opened positions. The linkage system is configured to minimize interference with operator visibility.



Published:

- *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))*

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20 June 2019 (20.06.2019)

INTERNATIONAL SEARCH REPORT

International application No
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A. CLASSIFICATION OF SUBJECT MATTER
INV. E02F9/16 B60J5/02
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)
E02F B60J B62D

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 A	US 2011/233963 A1 (YAMASHITA YUJI [JP] ET AL) 29 September 2011 (2011-09-29) abstract; figures 1-6	1-4 20-26 5-14, 27-29
X A	----- US 8 016 345 B1 (GODDARD AARON [US] ET AL) 13 September 2011 (2011-09-13) abstract; figures 1-8 column 5, line 63 - column 6, line 3; figures 6-7 column 4, lines 15-17	1-3 4-14, 33-37
Y A	----- DE 44 04 415 A1 (CATERPILLAR INC [US]) 17 August 1995 (1995-08-17) abstract; figures 1-2 column 5, lines 47-51 ----- -/--	20-26 1-14

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 29 March 2019	Date of mailing of the international search report 06/05/2019
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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 Ferrien, Yann
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INTERNATIONAL SEARCH REPORT

 International application No
 PCT/US2018/059630

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y A	US 5 362 118 A (HOURIEZ GERARD P A J [BF]) 8 November 1994 (1994-11-08) abstract; figures 1-4 -----	20-23, 25,26 1-14,27
A	US 4 260 320 A (STEIGER BRUCE W) 7 April 1981 (1981-04-07) abstract; figures 1-3 column 3, line 13 - line 54 -----	15-19
X A	US 2009/192682 A1 (CIARLA BIAGIO [US] ET AL) 30 July 2009 (2009-07-30) paragraphs [0032], [0034] abstract; figure 5 -----	27,28 29-32
A	JP H10 219743 A (CATERPILLAR MITSUBISHI LTD) 18 August 1998 (1998-08-18) abstract; figures 1-2 paragraphs [0013] - [0014] -----	20,27,33

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2018/059630

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: 1-14

Cab for a power machine, the cab comprising a cab frame forming an operator compartment and a cab door configured to be moved between closed and open positions and to cover an opening in the front of the cab frame when in a closed position characterised by a four-bar linkage coupled to the cab frame and the cab door and configured to define a path of movement for and support the cab door as the cab door moves between the closed position and an open position, wherein in the open position the cab door is positioned overhead of an operator seat beneath the cab top.

2. claims: 15-19

Cab for a power machine, the cab comprising a cab frame forming an operator compartment and a cab door configured to be moved between closed and open positions and to cover an opening in the front of the cab frame when in a closed position characterised by a door mounting structure configured to couple the cab door to the cab frame and to define a path of movement for the cab door between the closed position and an open position, wherein in the open position the cab door is positioned inside of the operator compartment between an operator seat and one of the first and second side walls of the cab frame.

3. claims: 20-26

Cab for a power machine, the cab comprising a cab frame forming an operator compartment and a cab door configured to be moved between closed and open positions and to cover an opening in the front of the cab frame when in a closed position characterised by a door mounting structure configured to couple the cab door to the cab frame and to define a path of movement for the cab door between the closed position and an open position, wherein in the open position the cab door is positioned inside of the operator compartment overhead of an operator seat, the door mounting structure comprising a linkage pivotally mounted to the cab door and to the cab frame and a pair of supports mounted to the cab frame along a top of the operator compartment, wherein the linkage urges the cab door into a horizontal position as the cab door slides with respect to the pair of supports to move the cab door from the closed position to the open position.

4. claims: 27-32

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Cab for a power machine, the cab comprising a cab frame forming an operator compartment and a cab door configured to be moved between closed and open positions and to cover an opening in the front of the cab frame when in a closed position characterised by a first latch positioned on the cab door, a first complementary mechanism coupled to the cab frame and configured to engage the first latch when the cab door is in the closed position and a second complementary mechanism coupled to the cab frame and configured to engage the first latch when the cab door is in the open position.

5. claims: 33-37

Cab for a power machine, the cab comprising a cab frame forming an operator compartment and a cab door configured to be moved between closed and open positions and to cover an opening in the front of the cab frame when in a closed position characterised by a first seal on a first portion of the cab door configured to engage a first portion of the cab frame when the door is in the closed position and by a second seal on a second portion of the cab door configured to engage a second portion of the cab frame when the door is in the closed position.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2018/059630

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2011233963	A1	29-09-2011	JP 5275281 B2 28-08-2013
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