

PCT

REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For receiving Office use only

PCT/US17/51269

International Application No.

13 SEP 2017 13.09.2017

International Filing Date

PCT INTERNATIONAL

APPLICATION RO/US

Name of receiving Office and "PCT International Application"

Applicant's or agent's file reference
(if desired) (12 characters maximum)

16-1471

Box No. I TITLE OF INVENTION	
FACE SEAL WITH ENERGIZED LIP AND COUNTERFACE	
Box No. II APPLICANT <input type="checkbox"/> This person is also inventor	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.) CATERPILLAR INC. 100 N.E. Adams Street Peoria, Illinois 61629-9510 United States of America	Telephone No. (309) 675-6341
	Facsimile No. (309) 675-1236
	Applicant's registration No. with the Office
E-mail authorization: Marking one of the check-boxes below authorizes the receiving Office, the International Searching Authority, the International Bureau and the International Preliminary Examining Authority to use the e-mail address indicated in this Box to send notifications issued in respect of this international application to that e-mail address if those offices are willing to do so. <input type="checkbox"/> as advance copies followed by paper notifications; or <input type="checkbox"/> exclusively in electronic form (no paper notifications will be sent). E-mail address:	
State (that is, country) of nationality: US	State (that is, country) of residence: US
This person is applicant for the purposes of: <input checked="" type="checkbox"/> all designated States <input type="checkbox"/> the States indicated in the Supplemental Box	
Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)	
<input checked="" type="checkbox"/> Further applicants and/or (further) inventors are indicated on a continuation sheet.	
Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE	
The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as: <input checked="" type="checkbox"/> agent <input type="checkbox"/> common representative	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.) FISHER, Bart A.; MONTEITH, Jr., J. Derel; and all others on the attached Supplemental Sheet, all of: Caterpillar Inc. 100 NE Adams Street - AH9510 Peoria, Illinois 61629-9510 United States of America	Telephone No. (309) 675-6341
	Facsimile No. (309) 675-1236
	Agent's registration No. with the Office 55,181; 45,464
E-mail authorization: Marking one of the check-boxes below authorizes the receiving Office, the International Searching Authority, the International Bureau and the International Preliminary Examining Authority to use the e-mail address indicated in this Box to send notifications issued in respect of this international application to that e-mail address if those offices are willing to do so. <input type="checkbox"/> as advance copies followed by paper notifications; or <input checked="" type="checkbox"/> exclusively in electronic form (no paper notifications will be sent). E-mail address: PCT_Docket@cat.com	
<input type="checkbox"/> Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.	

Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)

If none of the following sub-boxes is used, this sheet should not be included in the request.

<p>Name and address: <i>(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)</i></p> <p>KUPPER, David G. 530 E. Lake Shore Drive Edelstein, Illinois 61526 UNITED STATES OF AMERICA</p>	<p>This person is:</p> <p><input type="checkbox"/> applicant only</p> <p><input type="checkbox"/> applicant and inventor</p> <p><input checked="" type="checkbox"/> inventor only <i>(If this check-box is marked, do not fill in below.)</i></p>
<p>Applicant's registration No. with the Office</p>	

State <i>(that is, country)</i> of nationality:	State <i>(that is, country)</i> of residence:
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This person is applicant for the purposes of: all designated States the States indicated in the Supplemental Box

<p>Name and address: <i>(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)</i></p>	<p>This person is:</p> <p><input type="checkbox"/> applicant only</p> <p><input type="checkbox"/> applicant and inventor</p> <p><input type="checkbox"/> inventor only <i>(If this check-box is marked, do not fill in below.)</i></p>
<p>Applicant's registration No. with the Office</p>	

State <i>(that is, country)</i> of nationality:	State <i>(that is, country)</i> of residence:
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This person is applicant for the purposes of: all designated States the States indicated in the Supplemental Box

<p>Name and address: <i>(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)</i></p>	<p>This person is:</p> <p><input type="checkbox"/> applicant only</p> <p><input type="checkbox"/> applicant and inventor</p> <p><input type="checkbox"/> inventor only <i>(If this check-box is marked, do not fill in below.)</i></p>
<p>Applicant's registration No. with the Office</p>	

State <i>(that is, country)</i> of nationality:	State <i>(that is, country)</i> of residence:
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This person is applicant for the purposes of: all designated States the States indicated in the Supplemental Box

<p>Name and address: <i>(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)</i></p>	<p>This person is:</p> <p><input type="checkbox"/> applicant only</p> <p><input type="checkbox"/> applicant and inventor</p> <p><input type="checkbox"/> inventor only <i>(If this check-box is marked, do not fill in below.)</i></p>
<p>Applicant's registration No. with the Office</p>	

State <i>(that is, country)</i> of nationality:	State <i>(that is, country)</i> of residence:
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This person is applicant for the purposes of: all designated States the States indicated in the Supplemental Box

Further applicants and/or (further) inventors are indicated on another continuation sheet.

Supplemental Box

If the Supplemental Box is not used, this sheet should not be included in the request.

1. If, in any of the Boxes, except Boxes Nos. VIII(i) to (v) for which a special continuation box is provided, **the space is insufficient** to furnish all the information: in such case, write "Continuation of Box No." (indicate the number of the Box) and furnish the information in the same manner as required according to the captions of the Box in which the space was insufficient, in particular:

(i) **if more than one person is to be indicated as applicant and/or inventor** and no "continuation sheet" is available: in such case, write "Continuation of Box No. III" and indicate for each additional person the same type of information as required in Box No. III. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below;

(ii) if, in Box No. II or in any of the sub-boxes of Box No. III, the indication "**the States indicated in the Supplemental Box**" is checked: in such case, write "Continuation of Box No. II" or "Continuation of Box No. III" or "Continuation of Boxes No. II and No. III" (as the case may be), indicate the name of the applicant(s) involved and, next to (each) such name, the State(s) (and/or, where applicable, ARIPO, Eurasian, European or OAPI patent) for the purposes of which the named person is applicant;

(iii) if, in Box No. II or in any of the sub-boxes of Box No. III, **the inventor or the inventor/applicant is not inventor for the purposes of all designated States**: in such case, write "Continuation of Box No. II" or "Continuation of Box No. III" or "Continuation of Boxes No. II and No. III" (as the case may be), indicate the name of the inventor(s) and, next to (each) such name, the State(s) (and/or, where applicable, ARIPO, Eurasian, European or OAPI patent) for the purposes of which the named person is inventor;

(iv) if, in addition to the agent(s) indicated in Box No. IV, there are **further agents**: in such case, write "Continuation of Box No. IV" and indicate for each further agent the same type of information as required in Box No. IV;

(v) if, in Box No. VI, there are **more than three earlier applications whose priority is claimed**: in such case, write "Continuation of Box No. VI" and indicate for each additional earlier application the same type of information as required in Box No. VI.

2. If the applicant intends to make an indication of the wish that the international application be treated, in certain designated States, as an application for a patent of addition, certificate of addition, inventor's certificate of addition or utility certificate of addition: in such case, write the name or two-letter code of each designated State concerned and the indication "**patent of addition**," "**certificate of addition**," "**inventor's certificate of addition**" or "**utility certificate of addition**," the number of the parent application or parent patent or other parent grant and the date of grant of the parent patent or other parent grant or the date of filing of the parent application (Rules 4.11(a)(i) and 49bis.1(a) or (b)).

3. If the applicant intends to make an indication of the wish that the international application be treated, in the United States of America, as a continuation or continuation-in-part of an earlier application: in such case, write "United States of America" or "US" and the indication "**continuation**" or "**continuation-in-part**" and the number and the filing date of the parent application (Rules 4.11(a)(ii) and 49bis.1(d)).

Continuation of Box No. IV:

ANYASO, Uchendu O., Reg. No. 51,411
 BECKMAN, William A., Reg. No. 57,589
 CARTER, Janda M., Reg. No. 58,033
 EARLE, Kevin C., Reg. No. 56,146
 GREENE, Jeff A., Reg. No. 45,756
 HANLEY, Steven M., Reg. No. 46,756
 KIBBY, Steven G., Reg. No. 35,215
 LUNDQUIST, Steve D., Reg. No. 42,816
 MILMAN, Kelsey L., Reg. No. 42,895
 MISFELDT, Eric D., Reg. No. 59,527
 PARKER, Timothy A., Reg. No. 58,606
 ROBERSON, Keith P., Reg. No. 43,885
 RUFENER, A. Bryce, Reg. No. 62,087
 SHAH, Shital, Reg. No. 47,073
 STEWART, Leonard, Reg. No. 66,440
 TINKER, William R., Reg. No. 61,369
 WAPPEL, John P., Reg. No. 56,055
 WATERFIELD, L. Glenn, Reg. No. 61,729

all of 100 N.E. Adams Street, Peoria, IL 61629-9510,
 United States of America

Box No. V DESIGNATIONS				
<p>The filing of this request constitutes under Rule 4.9(a) the designation of all Contracting States bound by the PCT on the international filing date, for the grant of every kind of protection available and, where applicable, for the grant of both regional and national patents.</p> <p>However,</p> <p><input type="checkbox"/> DE Germany is not designated for any kind of national protection</p> <p><input type="checkbox"/> JP Japan is not designated for any kind of national protection</p> <p><input type="checkbox"/> KR Republic of Korea is not designated for any kind of national protection</p> <p><i>(The check-boxes above may only be used to exclude (irrevocably) the designations concerned if, at the time of filing or subsequently under Rule 26bis.1, the international application contains in Box No. VI a priority claim to an earlier national application filed in the particular State concerned, in order to avoid the ceasing of the effect, under the national law, of this earlier national application.)</i></p>				
Box No. VI PRIORITY CLAIM AND DOCUMENT				
The priority of the following earlier application(s) is hereby claimed:				
Filing date of earlier application (day/month/year)	Number of earlier application	Where earlier application is:		
		national application: country or Member of WTO	regional application: regional Office	international application: receiving Office
item (1) 26 September 2016 (26.09.16)	15/276,499	US		
item (2)				
item (3)				
<input type="checkbox"/> Further priority claims are indicated in the Supplemental Box.				
Furnishing the priority document(s): <input checked="" type="checkbox"/> The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) (only if the earlier application(s) was filed with the receiving Office which, for the purposes of this international application, is the receiving Office) identified above as: <input type="checkbox"/> all items <input checked="" type="checkbox"/> item (1) <input type="checkbox"/> item (2) <input type="checkbox"/> item (3) <input type="checkbox"/> other, see Supplemental Box <input type="checkbox"/> The International Bureau is requested to obtain from a digital library a certified copy of the earlier application(s) identified above, using, where applicable, the access code(s) indicated below (if the earlier application(s) is available to it from a digital library): <input type="checkbox"/> item (1) <input type="checkbox"/> item (2) <input type="checkbox"/> item (3) <input type="checkbox"/> other, see Supplemental Box access code _____ access code _____ access code _____				
Restore the right of priority: the receiving Office is requested to restore the right of priority for the earlier application(s) identified above or in the Supplemental Box as item(s) (_____). (See also the Notes to Box No. VI; further information <i>must</i> be provided to support a request to restore the right of priority.)				
Incorporation by reference: where an element of the international application referred to in Article 11(1)(iii)(d) or (e) or a part of the description, claims or drawings referred to in Rule 20.5(a) is not otherwise contained in this international application but is completely contained in an earlier application whose priority is claimed on the date on which one or more elements referred to in Article 11(1)(iii) were first received by the receiving Office, that element or part is, subject to confirmation under Rule 20.6, incorporated by reference in this international application for the purposes of Rule 20.6.				
Box No. VII INTERNATIONAL SEARCHING AUTHORITY				
Choice of International Searching Authority (ISA) (if more than one International Searching Authority is competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used): ISA/ <u>EP</u>				

Continuation of Box No. VII USE OF RESULTS OF EARLIER SEARCH, REFERENCE TO THAT SEARCH		
<input type="checkbox"/> The ISA indicated in Box No. VII is requested to take into account the results of the earlier search(es) indicated below (<i>see also Notes to Box VII; use of results of more than one earlier search</i>).		
Filing date (<i>day/month/year</i>)	Application Number	Country (<i>or regional Office</i>)
<input type="checkbox"/> Statement (Rule 4.12(ii)): this international application is the same, or substantially the same, as the application in respect of which the earlier search was carried out except, where applicable, that it is filed in a different language.		
<input type="checkbox"/> Availability of documents: the following documents are available to the ISA in a form and manner acceptable to it and therefore do not need to be submitted by the applicant to the ISA (Rule 12bis.1(f)):		
<input type="checkbox"/> a copy of the results of the earlier search,*		
<input type="checkbox"/> a copy of the earlier application,		
<input type="checkbox"/> a translation of the earlier application into a language which is accepted by the ISA,		
<input type="checkbox"/> a translation of the results of the earlier search into a language which is accepted by the ISA,		
<input type="checkbox"/> a copy of any document cited in the results of the earlier search. (<i>If known, please indicate below the document(s) available to the ISA</i>):		
<input type="checkbox"/> Transmit copy of results of earlier search and other documents (<i>where the earlier search was not carried out by the ISA indicated above but by the same Office as that which is acting as the receiving Office</i>): the receiving Office is requested to prepare and transmit to the ISA (Rule 12bis.1(c)):		
<input type="checkbox"/> a copy of the results of the earlier search,*		
<input type="checkbox"/> a copy of the earlier application,		
<input type="checkbox"/> a copy of any document cited in the results of the earlier search.		
* Where the results of the earlier search are neither available from a digital library nor transmitted by the receiving Office, the applicant is required to submit them to the receiving Office (Rule 12bis.1(a)) (<i>See item 11. in the check-list and also Notes to Box No. VII</i>).		
Filing date (<i>day/month/year</i>)	Application Number	Country (<i>or regional Office</i>)
<input type="checkbox"/> Statement (Rule 4.12(ii)): this international application is the same, or substantially the same, as the application in respect of which the earlier search was carried out except, where applicable, that it is filed in a different language.		
<input type="checkbox"/> Availability of documents: the following documents are available to the ISA in a form and manner acceptable to it and therefore do not need to be submitted by the applicant to the ISA (Rule 12bis.1(f)):		
<input type="checkbox"/> a copy of the results of the earlier search,*		
<input type="checkbox"/> a copy of the earlier application,		
<input type="checkbox"/> a translation of the earlier application into a language which is accepted by the ISA,		
<input type="checkbox"/> a translation of the results of the earlier search into a language which is accepted by the ISA,		
<input type="checkbox"/> a copy of any document cited in the results of the earlier search. (<i>If known, please indicate below the document(s) available to the ISA</i>):		
<input type="checkbox"/> Transmit copy of results of earlier search and other documents (<i>where the earlier search was not carried out by the ISA indicated above but by the same Office as that which is acting as the receiving Office</i>): the receiving Office is requested to prepare and transmit to the ISA (Rule 12bis.1(c)):		
<input type="checkbox"/> a copy of the results of the earlier search,*		
<input type="checkbox"/> a copy of the earlier application,		
<input type="checkbox"/> a copy of any document cited in the results of the earlier search.		
* Where the results of the earlier search are neither available from a digital library nor transmitted by the receiving Office, the applicant is required to submit them to the receiving Office (Rule 12bis.1(a)) (<i>See item 11. in the check-list and also Notes to Box No. VII</i>).		
<input type="checkbox"/> Further earlier searches are indicated on a continuation sheet.		

Box No. VIII DECLARATIONS		
The following declarations are contained in Boxes Nos. VIII (i) to (v) (<i>mark the applicable check-boxes below and indicate in the right column the number of each type of declaration</i>):		Number of declarations
<input type="checkbox"/> Box No. VIII (i)	Declaration as to the identity of the inventor	:
<input type="checkbox"/> Box No. VIII (ii)	Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent	:
<input type="checkbox"/> Box No. VIII (iii)	Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application	:
<input type="checkbox"/> Box No. VIII (iv)	Declaration of inventorship (only for the purposes of the designation of the United States of America)	:
<input type="checkbox"/> Box No. VIII (v)	Declaration as to non-prejudicial disclosures or exceptions to lack of novelty	:

Box No. IX CHECKLIST for EFS-Web filings - this sheet is only to be used when filing an international application with RO/US via EFS-Web

This international application contains the following:	Number of sheets	This international application is accompanied by the following item(s) (mark the applicable check-boxes below and indicate in right column the number of each item):	Number of items
(a) request form PCT/RO/101 (including any declarations and supplemental sheets) :	6	1. <input type="checkbox"/> fee calculation sheet :	
(b) description (excluding any sequence listing part of the description, see (f), below) :	14	2. <input type="checkbox"/> original separate power of attorney :	
(c) claims :	3	3. <input type="checkbox"/> original general power of attorney :	
(d) abstract :	1	4. <input type="checkbox"/> copy of general power of attorney; reference number: :	
(e) drawings (if any) :	5	5. <input type="checkbox"/> priority document(s) identified in Box No. VI as item(s) :	
(f) sequence listing part of the description in the form of an image file (e.g. PDF) :	0	6. <input type="checkbox"/> Translation of international application into (language): :	
Total number of sheets (including the sequence listing part of the description if filed as an image file) :	29	7. <input type="checkbox"/> separate indications concerning deposited microorganism or other biological material :	
(g) sequence listing part of the description		8. <input type="checkbox"/> (only where item (f) is marked in the left column) copy of the sequence listing in electronic form (Annex C/ST.25 text file) not forming part of the international application but furnished only for the purposes of international search under Rule 13ter. :	
<input type="checkbox"/> filed in the form of an Annex C/ST.25 text file		9. <input type="checkbox"/> (only where item (f) is marked in the left column) a statement confirming that "the information recorded in electronic form submitted under Rule 13ter is identical to the sequence listing as contained in the international application" as filed via EFS-Web: :	
<input type="checkbox"/> WILL BE filed separately on physical data carrier(s), on the same day and in the form of an Annex C/ST.25 text file		10. <input type="checkbox"/> copy of results of earlier search(es) (Rule 12bis.1(a)) :	
Indicate type and number of physical data carrier(s)		11. <input type="checkbox"/> other (specify): :	

Figure of the drawings which should accompany the abstract: **1** Language of filing of the international application: **English**

Box No. X SIGNATURE OF APPLICANT, AGENT OR COMMON REPRESENTATIVE
 Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).

/Bart A. Fisher/ Reg. No. 55,181
 Bart A. Fisher, Agent for Applicant

For receiving Office use only	
1. Date of actual receipt of the purported international application: 13 SEP 2017 13.09.2017	2. Drawings: <input type="checkbox"/> received: <input type="checkbox"/> not received:
3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application:	
4. Date of timely receipt of the required corrections under PCT Article 11(2):	
5. International Searching Authority (if two or more are competent): ISA / EP	6. <input type="checkbox"/> Transmittal of search copy delayed until search fee is paid

For International Bureau use only

Date of receipt of the record copy by the International Bureau: