

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

To:
CLARKE, GORDON S.
51 BREITHAUPT ST UNIT 100
KITCHENER, Ontario
Canada, N2H 5G5

Date of mailing <i>(day/month/year)</i>	23 February 2018 (23-02-2018)
--	-------------------------------

Applicant's or agent's file reference
630-76PC

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/CA2017/051434

International filing date *(day/month/year)*
29 November 2017 (29-11-2017)

Priority date *(day/month/year)*
29 November 2016 (29-11-2016)

International Patent Classification (IPC) or both national classification and IPC
IPC: **F16K 31/68** (2006.01), **F01M 1/16** (2006.01), **F01P 7/16** (2006.01), **F16K 1/52** (2006.01),
F16K 11/04 (2006.01)

Applicant
BEND ALL AUTOMOTIVE ULC

1. This opinion contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/CA
Canadian Intellectual Property Office
Place du Portage I, C114 - 1st Floor, Box PCT
50 Victoria Street
Gatineau, Quebec K1A 0C9
Facsimile No.: 001-819-953-2476

Date of completion of this opinion

01 February 2018 (01-02-2018)

Authorized officer

Hoan Huynh
(819) 639-7857

Box No I

Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:

- the international application in the language in which it was filed.
- a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing:

a. forming part of the international application as filed:

- in the form of an Annex C/ST.25 text file.
- on paper or in the form of an image file.

b. furnished together with the international application under PCT Rule 13*ter*.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.

c. furnished subsequent to the international filing date for the purposes of international search only:

- in the form of an Annex C/ST.25 text file (Rule 13*ter*.1(a)).
- on paper or in the form of an image file (Rule 13*ter*.1(b) and Administrative Instructions, Section 713).

4. In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims 24-31	YES
	Claims 1-23, 32	NO
Inventive step (IS)	Claims 24-31	YES
	Claims 1-23, 32	NO
Industrial applicability (IA)	Claims 1-32	YES
	Claims None	NO

2. Citations and explanations:

References are made to the following document:

D1: DE102005035532 (KOCH) 01-February-2007 (01.02.2007)

D1 teaches a thermostat valve assembly (2, Figure 1) for controlling fluid flow in an internal combustion engine (Abstract) including:

- (a) a relatively movable valve (5) and valve seat (6) providing an unobstructed valve passageway between a valve-open and a valve-closed position corresponding to a minimum operating temperature and a maximum operating temperature,
- (b) a valve drive motor assembly (4) centrally located within the valve seat structured to reversibly move the valve seat in relation to the valve between the valve-open and the valve-closed positions responsive to a range of engine operating temperatures including:
 - i. a linear drive motor (4) with a reversible valve drive stroke operable over said range of operating temperatures (description), and,
 - ii. a drive stroke extension (8, Figure 1) structured to maintain:
 - A. the unobstructed valve passageway between the valve-open and the valve-closed positions (stem mounted, unobstructed), and,
 - B. a temporary extension of the drive stroke during only the first cycle of engine operating temperature (Made from wax, description).

NOVELTY (N)

Claims 1-23, 32 are not novel and therefore do not comply with PCT Article 33(2). Document D1 discloses the same thermostat valve assembly having a temporary drive stroke extension in the form of a meltable locking collar located on the valve stem of the thermostat. The collar locks the stem in an "extended" position until after the first operating cycle. The commonality between D1 and the applicant's claims would thereby preclude the patentability of these claims.

Claims 24-31 are novel and therefore comply with PCT Article 33(2). Document D1 is considered to represent the closest prior art. Document D1 discloses a fluid flow control apparatus having a solid first-fill spacer. However, D1 fails to disclose a solid spacer container for housing the spacer within. Claims 24-31 are therefore novel.

INVENTIVE STEP (IS)

Claims 1-23, 32 do not involve an inventive step and therefore do not comply with PCT Article 33(3). Given the above novelty objection, these claims do not involve an inventive step.

Claims 24-31 involve an inventive step and therefore comply with PCT Article 33(3). The features in these claims are not obvious to a person skilled in the art and thus involve an inventive step.

....continue on Supplemental page

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

1. The drawings do not comply with PCT Rule 11.11. The drawings shall not contain text matter, correction lines, and circled markings.
2. The drawings and/or the description do not comply with PCT Rule 11.13(1). Reference signs not mentioned in the description shall not appear in the drawings and vice versa.
3. The description does not comply with PCT Rule 10.2. The terminology and the signs used in the description shall be consistent throughout the entire application.

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claim 11 does not comply with PCT Article 6. This claim is unclear. The following term lacks a proper antecedent basis: “cessation”.

Claims 24-31 do not comply with PCT Article 6. The claims shall be clear and concise. The use of abbreviations such as S, F, D, T, F causes ambiguity.

Claim 24 does not comply with PCT Article 6. This claim is unclear. A claim containing a negative expression, such as “where the spacer is not located” (part q), is objectionable in that claims should generally set forth what the alleged invention is or does, and not what it isn’t or does not do.

Claim 30 does not comply with PCT Article 6. The claim shall be clear and concise. The term “mwhen” is indefinite.

Claim 31 does not comply with PCT Article 6. The claim shall be clear and concise. The expression “equal to ...” is indefinite.

Claim 32 does not comply with PCT Article 6. This claim is unclear. The following expression lacks a proper antecedent basis: “full flow circuit, heat source, heat dissipator”. Furthermore, the expression “embodies every word of” is unclear.

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: BOX V

INDUSTRIAL APPLICABILITY (IA)

The subject matter of claims 1-32 is considered to be industrially applicable and thus complies with the requirements of PCT Article 33(4).