

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference PCT-IN-5163	FOR FURTHER ACTION	See item 4 below
International application No. PCT/IB2018/056699	International filing date (<i>day/month/year</i>) 03 September 2018 (03.09.2018)	Priority date (<i>day/month/year</i>) 30 September 2017 (30.09.2017)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant EARAT SOMANADHAN, Nikhil		

1.	This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).																								
2.	This REPORT consists of a total of 6 sheets, including this cover sheet.																								
In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.																									
3.	<p>This report contains indications relating to the following items:</p> <table style="width: 100%;"> <tr> <td style="width: 5%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 25%;">Box No. I</td> <td style="width: 70%;">Basis of the report</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input checked="" type="checkbox"/>	Box No. VIII	Certain observations on the international application
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4.	The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).																								

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Date of issuance of this report 31 March 2020 (31.03.2020)
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PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To: TARUN KHURANA
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Date of mailing
(day/month/year)

22 JAN 2019

Applicant's or agent's file reference
PCT-IN-5163

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/IB2018/056699

International filing date (day/month/year)

03 September 2018

Priority date (day/month/year)

30 September 2017

International Patent Classification (IPC) or both national classification and IPC

IPC(8) - F16L 27/053; F16L 23/00; F16L 27/02; F16L 27/04; F16L 27/06; F16L 55/18 (2018.01)

CPC - F16L 27/053; F16L 27/04; F16L 27/06; F16L 27/073 (2019.01)

Applicant **EARAT SOMANADHAN, NIKHIL**

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 43bis.1(a)(i) with regard to novelty, inventive step and 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 66.1bis(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/US
Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450, Alexandria, VA 22313-1450
Facsimile No. 571-273-8300

Date of completion of this opinion

29 December 2018

Authorized officer

Blaine R. Copenheaver

PCT Helpdesk: 571-272-4300
PCT OSP: 571-272-7774

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/IB2018/056699

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 forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/IB2018/056699

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

1. Statement

Novelty (N)	Claims	1-20	YES
	Claims	None	NO
Inventive step (IS)	Claims	1-20	YES
	Claims	None	NO
Industrial applicability (IA)	Claims	1-20	YES
	Claims	None	NO

2. Citations and explanations:

Claims 1-20 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest:

Regarding claim 1; [Cl. 1] An underground pipe coupling for emergency repair during pipe breakage provided with a ball and socket coupler joint wherein the ball joint is free to slide inside socket joint fastened by means of ball joint backing ring along with 'O' ring positioned in between them for ensuring the sealing between the ball and socket joint characterized in that the ball and socket coupler joint comprising of:

- a) a pair of grip cam mounting plates, in the form of a circular ring structure having grip cam holding jaw for mounting grip cam as well as bolting eye of the grip cam mounting plate for connecting the ball joint as well as socket joint, out of which one connects one end of the broken pipe part and ball joint and the other one connects the other end of the broken pipe part and socket joint in a watertight manner by means of a resilient sealing ring placed in between each one of them;
- b) grip cam which is capable of rotating on an eccentric axis of the grip cam mounting pin mounted on grip cam holding jaw of the grip cam mounting plate and made to rotate in an anti-clockwise direction for locking the broken pipes to prevent decoupling of the pipe joint; and
- c) a pair of resilient sealing ring which is tapered along the circumference on outer periphery is the mating part with the socket joint / ball joint and is placed in between grip cam mounting plate and socket joint as well as grip cam mounting plate and ball joint to ensure sealing.

Claims 2-20 depend, directly or indirectly, from claim 1, and therefore meet the criteria set out in PCT Article 33(2)-(3) for at least the same reasons as claim 1.

The following is provided to support and further define the reasons that claim 1 meets the criteria set out in PCT Article 33(2)-(3).

Regarding claim 1:

As far as the claim is understood, Aaron, III discloses an underground pipe coupling (fig. 1) for emergency repair during pipe breakage (intended use; inherent) provided with a ball (13) and socket (20) coupler joint (10) wherein the ball joint (13) is free to slide inside socket joint (20) fastened by means of ball joint backing ring (30) along with 'O' ring (36) positioned in between them (fig. 1) for ensuring the sealing between the ball (13) and socket (20) joint (10). However, as best understood, Aaron, III fails to disclose the ball and socket coupler joint comprising of: a) a pair of grip cam mounting plates, in the form of a circular ring structure having grip cam holding jaw for mounting grip cam as well as bolting eye of the grip cam mounting plate for connecting the ball joint as well as socket joint, out of which one connects one end of the broken pipe part and ball joint and the other one connects the other end of the broken pipe part and socket joint in a watertight manner by means of a resilient sealing ring placed in between each one of them, b) grip cam which is capable of rotating on an eccentric axis of the grip cam mounting pin mounted on grip cam holding jaw of the grip cam mounting plate and made to rotate in an anti-clockwise direction for locking the broken pipes to prevent decoupling of the pipe joint, and c) a pair of resilient sealing ring which is tapered along the circumference on outer periphery is the mating part with the socket joint / ball joint and is placed in between grip cam mounting plate and socket joint as well as grip cam mounting plate and ball joint to ensure sealing.

As far as the claim is understood, Krywitsky discloses an underground (intended use) pipe coupling (fig. 4) for emergency repair during pipe breakage (intended use; inherent) provided with a ball (126) and socket (130, 134) coupler joint (110) wherein the ball joint (126) is free to slide inside socket joint (130, 134) fastened by means of ball joint backing ring (116) along with 'O' ring (160) positioned in between them (fig. 4) for ensuring the sealing between the ball (126) and socket (130, 134) joint (110). However, as best understood, Krywitsky fails to disclose the ball and socket coupler joint comprising of: a) a pair of grip cam mounting plates, in the form of a circular ring structure having grip cam holding jaw for mounting grip cam as well as bolting eye of the grip cam mounting plate for connecting the ball joint as well as socket joint, out of which one connects one end of the broken pipe part and ball joint and the other one connects the other end of the broken pipe part and socket joint in a watertight manner by means of a resilient sealing ring placed in between each one of them, b) grip cam which is capable of rotating on an eccentric axis of the grip cam mounting pin mounted on grip cam holding jaw of the grip cam mounting plate and made to rotate in an anti-clockwise direction for locking the broken pipes to prevent decoupling of the pipe joint, and c) a pair of resilient sealing ring which is tapered along the circumference on outer periphery is the mating part with the socket joint / ball joint and is placed in between grip cam mounting plate and socket joint as well as grip cam mounting plate and ball joint to ensure sealing.

None of the cited prior art references taken alone or in combination disclose or suggest the specific underground pipe coupling for emergency repair during pipe breakage as recited above, and none of the cited references cure the deficiencies of Aaron, III and Krywitsky discussed in this written opinion.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/IB2018/056699

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:

In the specification:

The specification is replete with grammatical errors that are far too numerous to mention specifically. It appears to be a literal translation from a foreign document and is not written in grammatically correct or idiomatic english.

In the claims:

Claims 1-20 are objected to under PCT Rule 66.2(a)(v) as lacking clarity under PCT Article 6, because claims 1-20 are indefinite for the following reason(s):

Like the specification, the claims are unclear as they appear to be a literal translation from a foreign document, rendering them confusing and difficult to understand. The claims are not written in grammatically correct or idiomatic english, and are difficult to search. For example, but not as a complete list, there are misspellings, numerous instances where antecedent basis is lacking for recited elements, and many words that begin with a capital letter when they should not, etc. As with the specification, there are far too many errors to mention them each specifically.

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/IB2018/056699

Supplemental Box

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

Continuation of:

Claims 1-20 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.