

**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<br>PCT-2017-001  | <b>FOR FURTHER ACTION</b>   |   | See item 4 below |
| International application No.<br>PCT/KR2017/000325   | International filing date ( <i>day/month/year</i> )<br>10 January 2017 (10.01.2017) | Priority date ( <i>day/month/year</i> )<br>28 March 2016 (28.03.2016) |                  |
| International Patent Classification (8th edition unless older edition indicated)<br>See relevant information in Form PCT/ISA/237 |   |   |                  |
| Applicant<br>HPNRT CO., LTD  |   |   |                  |

|  |                                     |   |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                                     |              |   |
|--|-------------------------------------|---|---------------------|--------------------------|------------|----------|--------------------------|-------------|--|--------------------------|------------|----------------------------|-------------------------------------|-----------|---|--------------------------|------------|-------------------------|--------------------------|-------------|--|-------------------------------------|--------------|---|
| <p>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).</p> <p>2. This REPORT consists of a total of 7 sheets, including this cover sheet.</p> <p>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.</p>  |                                     |   |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                                     |              |   |
| <p>3. This report contains indications relating to the following items:</p> <table> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td><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><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><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><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table> <p>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).</p> | <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 |
| <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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| <p align="center">The International Bureau of WIPO<br/>34, chemin des Colombettes<br/>1211 Geneva 20, Switzerland</p> <p>Facsimile No. +41 22 338 82 70</p> | <p>Date of issuance of this report<br/>02 October 2018 (02.10.2018)</p>                              |
|   | <p>Authorized officer</p> <p align="center"><b>Kihwan Moon</b></p> <p>e-mail: pct.team1@wipo.int</p> |

**PATENT COOPERATION TREATY**

**TRANSLATION**

From the  
INTERNATIONAL SEARCHING AUTHORITY

**PCT**

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

|                                     |                   |
|-------------------------------------|-------------------|
| Date of mailing<br>(day/month/year) | <b>20.03.2017</b> |
|-------------------------------------|-------------------|

|  |  |
|--|--|
| Applicant's or agent's file reference<br><b>PCT-2017-001</b> | <b>FOR FURTHER ACTION</b><br>See paragraph 2 below |
|--|--|

|   |   |   |
|---|---|---|
| International application No.<br><b>PCT/KR2017/000325</b> | International filing date (day/month/year)<br><b>10.01.2017</b> | Priority date (day/month/year)<br><b>28.03.2016</b> |
|---|---|---|

International Patent Classification (IPC) or both national classification and IPC  
**B66B29/00 (2006.01) i, B66B23/02 (2006.01) i, B66B23/12 (2006.01) i**

Applicant  
**HPNRT CO., LTD**

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 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 66.1bis(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/KR | Date of completion of this opinion | Authorized officer |
| Facsimile No.                          |                                    | Telephone No.      |

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/KR2017/000325

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

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|--|
| International application No.<br>PCT/KR2017/000325 |
|--|

| 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 <u>1-3</u>  | YES |
|              |  | Claims <u>None</u> | NO  |
|              | Inventive step (IS)  | Claims <u>None</u> | YES |
|              |  | Claims <u>1-3</u>  | NO  |
|              | Industrial applicability (IA)  | Claims <u>1-3</u>  | YES |
|              |  | Claims <u>None</u> | NO  |

2. Citations and explanations:

Reference is made to the following documents:

D1: KR 10-1503707 B1 (MIJUHITEC CO., LTD.) 19 March 2015  
D2: US 2012-0073933 A1 (SENGER, Alois) 29 March 2012

1. Novelty and Inventive Step

Document D1, which is the most relevant prior art to the invention as set forth in **independent claim 1**, discloses an escalator reverse movement prevention device in an escalator in which a wheel fixed to a driving shaft is rotated by external power such that steps are moved, wherein a latchet wheel (220) is fixed to the driving shaft so as to rotate therewith and in the case of reverse rotation of the latchet wheel (220), a reverse movement prevention device operates and stops the reverse rotation of the latchet wheel (220) so as to stop rotation of the driving shaft and prevent reverse movement, wherein the reverse movement prevention device comprises a reverse blocking gear (200) adjacently provided to the latchet wheel (220), a latch (300)

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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

rotatably provided on one surface of the reverse blocking gear (200), a solenoid (700) provided on one surface of the latch (300) so as to control the rotation of the latch (300), and a hydraulic cylinder (620) transmitting power for preventing reverse movement, wherein in the case of reverse movement of the steps, the solenoid (700) rotates the latch (300) so as to make the same be caught in the latchet wheel (220) and stop the rotation of the latchet wheel (220) such that the rotation of the latchet wheel (220) is stopped and the rotation of the wheel of the driving shaft is stopped, thereby stopping the reverse movement of the steps (see D1, paragraphs [0021]-[0028] and figures 2 and 6).

Claim 1 differs from document D1 in that the former includes technical features of a latchet pole provided in a state in which elasticity is applied by a spring, and the solenoid moving, in the case of reverse movement of the steps, a control rod backward. However, the features correspond to the technical features, in document D2, of a lever (24) moved by a spring, and a solenoid (26) moving a stroke (34) by an electromagnetic force (see D2, paragraphs [0020]-[0023] and figures 3 and 4). In addition, since document D2 discloses an escalator brake system belonging to the same technical field as document D1, a person skilled in the art could combine documents D1 and D2 without any technical difficulties. Therefore, claim 1 would be obvious from a combination of the features disclosed in document D2 and document D1, and thus claim 1 lacks an inventive step (PCT Article 33(3)).

The additional feature in **claim 2** corresponds to the technical features in document D1, wherein the reverse

**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

blocking gear (200) formed of a sprocket is connected to a step chain (100) and the hydraulic cylinder (620) is connected to a tightening part (500) (see D1, paragraphs [0026]-[0028] and figures 4-6).

The additional feature in **claim 3** could be readily implemented by a person skilled in the art from the technical feature, in document D1, of the hydraulic cylinder (620) transmitting power for stopping reverse movement through a simple design change (see D1, paragraphs [0026] and [0027] and figures 4-6).

Therefore, claims 2 to 3 would be obvious to a person skilled in the art in view of documents D1 and D2, and thus claims 2 to 3 lack an inventive step (PCT Article 33(3)).

## 2. Industrial Applicability

Claims 1 to 3 are industrially applicable (PCT Article 33(4)).

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/KR2017/000325

**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 1 includes the wording "latchet pole (240)" and the wording "latchet pole (242)" and it is unclear whether the phrases indicate the same feature due to the reference signs thereof, thereby rendering the definition of the invention of claim 1 unclear. Therefore, claim 1 does not meet the requirements of PCT Article 6.

(Note: Referring to the description, "latchet pole (240)" is considered to be a typographical error for "latchet pole (242)".)