

**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 KLI0010372WO	<b>FOR FURTHER ACTION</b>		See item 4 below
International application No. PCT/US2016/024031	International filing date ( <i>day/month/year</i> ) 24 March 2016 (24.03.2016)	Priority date ( <i>day/month/year</i> ) 25 March 2015 (25.03.2015)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant K-LINE INDUSTRIES, INC.			

<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 5 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 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 type="checkbox"/>	Box No. VIII	Certain observations on the international application
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<input type="checkbox"/>	Box No. VIII	Certain observations on the international application																						

<p align="center">The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland</p> <p>Facsimile No. +41 22 338 82 70</p>	<p>Date of issuance of this report 26 September 2017 (26.09.2017)</p>
	<p>Authorized officer</p> <p align="center"><b>Agnès Wittmann-Regis</b></p> <p>e-mail: pct.team6@wipo.int</p>

# PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

## PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

To: CALLAGHAN Terry S. Price Heneveld LLP 695 Kenmoor, S. E. P.O. Box 2567 Grand Rapids, Michigan 49501-2567 United States of America
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Date of mailing ( <i>day/month/year</i> ) 23 June 2016 (23.06.2016)	
Applicant's or agent's file reference KLI0010372WO	<b>FOR FURTHER ACTION</b> See paragraph 2 below
International application No. PCT/US 2016/024031	International filing date ( <i>day/month/year</i> ) 24 March 2016 (24.03.2016)
Priority date ( <i>day/month/year</i> ) 25 March 2015 (25.03.2015)	
International Patent Classification (IPC) or both national classification and IPC <b>B66F 3/08 (2006.01)</b> <b>B60S 9/00 (2006.01)</b>	
Applicant K-LINE INDUSTRIES, INC.	

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 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 66.1*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/RU: Federal Institute of Industrial Property, Berezhkovskaya nab., 30-1, Moscow, G-59, GSP-3, Russia, 125993 Facsimile No: (8-495) 531-63-18, (8-499) 243-33-37	Date of completion of this opinion  27 May 2016 (27.05.2016)	Authorized officer  A. Boryakina  Telephone No. 499-240-25-91
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WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US 2016/024031

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 filed or furnished:
  - 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:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US 2016/024031

**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	1-15	YES
	Claims		NO
Inventive step (IS)	Claims	1-15	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-15	YES
	Claims		NO

2. Citations and explanations:

D1 – SU 679515 A;  
D2 – US 4330105 A;  
D3 – US 2163959 A;  
D4 – SU 389 A;

D1 discloses a jack apparatus for heavy duty lifting according to claims 1, 7 and 10, a jack system for heavy duty lifting according to claims 6, 9, 11 and 13 comprising a base, a pair of screw jacks on the base, and a method for heavy duty lifting according to claim 15 comprising a plurality of jacks, each including a base with screw jack on the base.

Claimed invention differs from known technical solution in that the apparatus and the system comprise:

- according to claim 1 "a yoke supported for lifting by the screw jacks", "a lifting tube supported on the yoke", "a shaft coupler for simultaneously operating the screw jacks", "a power unit driving the shaft coupler",

- according to claims 7 "a yoke having ends supported by the screw jacks and a lower center section", "a power unit for simultaneously driving the screw jacks to lift the yoke and lifting tube",

- according to claim 10 "a base including a base plate, a cylindrical tube section, and angled braces supporting the tube section on the base plate", "a plurality of releasable lifting tubes supported on the yoke so that the jack apparatus has different lowest and highest lift points";

- according to claims 6 and 9 "a jack system comprises simultaneous operation of the plurality of jack apparatus",

- according to claim 11 "threaded lifting shafts and rotatable driving members", "a yoke having ends supported by the lifting shafts of the screw jacks and a lower center section", "a lifting tube supported on the center section of the yoke", "a power unit for simultaneously driving the screw jacks to lift the yoke and lifting tube",

Supplemental Box

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

- according to claims 13 and 15 "a lifting tube supported by the at least one screw jack", "a shaft coupler for operating the at least one screw jack", "an electric drive unit coupled to and configured to drive the shaft coupler", "a control system operably connected to the electric drive unit of each jack for operating each of the jacks individually or simultaneously, and including circuit breakers associated with each of the jacks", "the control system being configured to shut down selected ones of jacks if the circuit breaker of a particular one of the jacks indicates a problem".

Therefore, the invention according to claims 1, 7, 10, 6, 9, 11, 13 and 15 meets the criterion of novelty.

The technical solution, wherein disclosing the features of claim 1 "the yoke supported for lifting by the screw jacks", claim 11 "threaded lifting shafts and rotatable driving members", is known from D2 to increase the load-carrying capacity.

The technical solution, wherein disclosing the features of claims 1, 13 and 15 "the shaft coupler for simultaneously operating the screw jacks", "the power unit driving the shaft coupler", is known from D3 to increase the load-carrying capacity.

The technical solution, wherein disclosing significant features of claim 1 "a lifting tube supported on the yoke", claim 7 "a yoke having ends supported by the screw jacks and a lower center section", "a power unit for simultaneously driving the screw jacks to lift the yoke and lifting tube", claim 10 "a base including a base plate, a cylindrical tube section, and angled braces supporting the tube section on the base plate", "a plurality of releasable lifting tubes supported on the yoke so that the jack apparatus has different lowest and highest lift points", claims 6 and 9 "a jack system comprises simultaneous operation of the plurality of jack apparatus", claim 11 "a yoke having ends supported by the lifting shafts of the screw jacks and a lower center section", "a lifting tube supported on the center section of the yoke", "a power unit for simultaneously driving the lift the yoke and lifting tube", claims 13 and 15 "a lifting tube supported by the at least one screw jack", "an electric drive unit coupled to and configured to drive the shaft coupler", "a control system operably connected to the electric drive unit of each jack for operating each of the jacks individually or simultaneously, and including circuit breakers associated with each of the jacks", "the control system being configured to shut down selected ones of jacks if the circuit breaker of a particular one of the jacks indicates a problem", is not known from the prior art and is not obvious to obtain the technical effect, i.e. increasing the load-carrying capacity.

Therefore, the invention according to claims 1-15 meets the criterion of inventive step.

The invention according to claims 1-15 meets the criterion of industrial applicability.