

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 320612A-5	FOR FURTHER ACTION	See item 4 below
International application No. PCT/US2018/046410	International filing date (<i>day/month/year</i>) 13 August 2018 (13.08.2018)	Priority date (<i>day/month/year</i>) 18 August 2017 (18.08.2017)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant LUFKIN INDUSTRIES, LLC		

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 8 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.	This report contains indications relating to the following items: <table style="width: 100%;"> <tr> <td style="width: 5%; text-align: center;">☒</td> <td style="width: 25%;">Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td style="text-align: center;">☐</td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td style="text-align: center;">☐</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;">☐</td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td style="text-align: center;">☒</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;">☐</td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td style="text-align: center;">☐</td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td style="text-align: center;">☐</td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>	☒	Box No. I	Basis of the report	☐	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 Article 35(2) 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
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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 Facsimile No. +41 22 338 82 70	Date of issuance of this report 18 February 2020 (18.02.2020) Authorized officer Xin Wang e-mail: pct.team2@wipo.int
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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:
POLLANDER, Laura L.

General Electric Company Global Patent Operation 901 Main
Avenue, 3rd Floor Norwalk, CT 06851 USA

Date of mailing
(day/month/year) **29 November 2018 (29.11.2018)**

Applicant's or agent's file reference 320612A-5		FOR FURTHER ACTION See paragraph 2 below	
International application No. PCT/US2018/046410	International filing date (day/month/year) 13 August 2018 (13.08.2018)	Priority date(day/month/year) 18 August 2017 (18.08.2017)	
International Patent Classification (IPC) or both national classification and IPC E21B 43/12(2006.01)i, E21B 41/00(2006.01)i			
Applicant LUFKIN INDUSTRIES, LLC			

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. I(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/KR International Application Division Korean Intellectual Property Office 189 Cheongsa-ro, Seo-gu, Daejeon, 35208, Republic of Korea Facsimile No. +82-42-481-8578	Date of completion of this opinion 28 November 2018 (28.11.2018)	Authorized officer PARK, Tae Wook Telephone No. +82-42-481-3405
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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US2018/046410

Box No. 1 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*. I(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*. I(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*. I(a)).
☐ on paper or in the form of an image file (Rule 13*ter*. I(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/US2018/046410

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	1-20	YES
	Claims	NONE	NO
Inventive step (IS)	Claims	NONE	YES
	Claims	1-20	NO
Industrial applicability (IA)	Claims	1-20	YES
	Claims	NONE	NO

2. Citations and explanations :

Reference is made to the following documents:

D1: WO 2017-136601 A1 (LUFKIN INDUSTRIES, LLC) 10 August 2017

D2: WO 91-09249 A1 (APT, INC.) 27 June 1991

D3: JP 07-173873 A (MAEKAWA, SHUICHI) 11 July 1995

D4: JP 10-205100 A (SUMITOMO METAL MINING CO., LTD.) 04 August 1998

1. Novelty and Inventive Step

1.1 Independent Claim 1

D1, which is considered to be the closest prior art to the subject matter of claim 1, discloses a beam pump jack(100) comprising: a gearbox pedestal(114) mounted atop a base(116); a Samson post(118) supported by the base(116); and a gearbox(106) sitting atop the pedestal(114) (see paragraph [0021] and figure 1). Claim 1 differs from D1 in that it comprises an integrated base assembly, wherein the integrated base assembly comprises a unitary pedestal. However, the difference would be easily conceived from a machine foundation comprising a concrete slab(40); and a form(10) sitting on the slab(40) and filled with polymer concrete(50) in D2 (see page 5, line 12 - page 14, line 12 and figures 1-4). Although D2, which is related to a machine foundation, is not exactly in the same field as D1, there is no reason to restrict its usefulness in one narrow, specific industry. Accordingly, claim 1 would have been obvious over D1 in view of D2. Therefore, claim 1 does not involve an inventive step under PCT Article 33(3).

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Supplemental Box

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1.2 Dependent Claims 2-7

The additional features of claims 2 and 3 are characterized in that the integrated base assembly further comprises: a front connection plate and a pedestal connection plate (claim 2); and a rear connection plate (claim 3). These features would be easily conceived from an anchor plate(11) embedded in foundation concrete(8) in D3 (see paragraphs [0007]-[0015] and figures 1, 2). Although D3, which is related to a foundation bolt, is not exactly in the same field as D1 and D2, there is no reason to restrict its usefulness in one narrow, specific industry. Accordingly, claims 2 and 3 would have been obvious over D1 in view of D2, further in view of D3. Therefore, claims 2 and 3 do not involve an inventive step under PCT Article 33(3).

The additional features of claims 4 and 6 are characterized in that the integrated base assembly further comprises a plurality of embedded tubular anchors and the front connection plate and the pedestal connection plate are each secured to a separate one of the plurality of embedded tubular anchors (claim 4); and each of the embedded tubular anchors includes a slot that is configured to receive a bolt lock (claim 6). These features would be easily conceived from embedded tubular anchors(15) and bolts(14) in D4 (see paragraph [0002] and figure 15). Although D4, which is related to a mounting fitment, is not exactly in the same field as D1, D2 and D3, there is no reason to restrict its usefulness in one narrow, specific industry. Accordingly, claims 4 and 6 would have been obvious over D1 in view of D2, D3 and D4. Therefore, claims 4 and 6 do not involve an inventive step under PCT Article 33(3).

The additional feature of claim 5, characterized in that the integrated base assembly further includes one or more access windows to facilitate a bolted connection to one or more of the front connection plate and the pedestal connection plate, is merely a matter of design option when the general knowledge in the relevant field of the art is used. Accordingly, claim 5 would have been obvious over D1 in view of D2, D3 and D4. Therefore, claim 5 does not involve an inventive step under PCT Article 33(3).

The additional feature of claim 7 is characterized in that the integrated base assembly further comprises a unitary front riser. This feature would be easily conceived from a machine foundation comprising a concrete slab(40); and a form(10) sitting on the slab(40) and filled with polymer concrete(50) in D2 (see page 5, line 12 - page 14, line 12 and figures 1-4).

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Accordingly, claim 7 would have been obvious over D1 in view of D2. Therefore, claim 7 does not involve an inventive step under PCT Article 33(3).

1.3 Independent Claim 8

D1, which is considered to be the closest prior art to the subject matter of claim 8, discloses a beam pump jack(100) comprising: a gearbox pedestal(114) mounted atop a base(116); a Samson post(118) supported by the base(116); and a gearbox(106) sitting atop the pedestal(114) (see paragraph [0021] and figure 1). Claim 8 differs from D1 in that it comprises an integrated base assembly, wherein the integrated base assembly comprises: a unitary pedestal; and a unitary front riser. However, the difference would be easily conceived from a machine foundation comprising a concrete slab(40); and a form(10) sitting on the slab(40) and filled with polymer concrete(50) in D2 (see page 5, line 12 - page 14, line 12 and figures 1-4). Although D2, which is related to a machine foundation, is not exactly in the same field as D1, there is no reason to restrict its usefulness in one narrow, specific industry. Accordingly, claim 8 would have been obvious over D1 in view of D2. Therefore, claim 8 does not involve an inventive step under PCT Article 33(3).

1.4 Dependent Claims 9-13

The additional features of claims 9 and 10 are characterized in that the integrated base assembly further comprises: a front connection plate connected to the front riser; and a pedestal connection plate connected to the pedestal (claim 9); and a rear connection plate (claim 10). These features would be easily conceived from an anchor plate(11) embedded in foundation concrete(8) in D3 (see paragraphs [0007]-[0015] and figures 1, 2). Although D3, which is related to a foundation bolt, is not exactly in the same field as D1 and D2, there is no reason to restrict its usefulness in one narrow, specific industry. Accordingly, claims 9 and 10 would have been obvious over D1 in view of D2, further in view of D3. Therefore, claims 9 and 10 do not involve an inventive step under PCT Article 33(3).

The additional features of claims 11 and 13 are characterized in that the integrated base assembly further comprises a plurality of embedded tubular anchors and the front connection plate and the pedestal connection plate are each secured to a separate one of the plurality of embedded tubular anchors (claim 11); and each of the embedded tubular anchors includes a

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slot that is configured to receive a bolt lock (claim 13). These features would be easily conceived from embedded tubular anchors(15) and bolts(14) in D4 (see paragraph [0002] and figure 15). Although D4, which is related to a mounting fitment, is not exactly in the same field as D1, D2 and D3, there is no reason to restrict its usefulness in one narrow, specific industry. Accordingly, claims 11 and 13 would have been obvious over D1 in view of D2, D3 and D4. Therefore, claims 11 and 13 do not involve an inventive step under PCT Article 33(3).

The additional feature of claim 12, characterized in that the integrated base assembly further includes one or more access windows to facilitate a bolted connection to one or more of the front connection plate and the pedestal connection plate, is merely a matter of design option when the general knowledge in the relevant field of the art is used. Accordingly, claim 12 would have been obvious over D1 in view of D2, D3 and D4. Therefore, claim 12 does not involve an inventive step under PCT Article 33(3).

1.5 Independent Claim 14

D1, which is considered to be the closest prior art to the subject matter of claim 14, discloses a foundation for a beam pump jack(100) comprising: a base(116); and a gearbox pedestal(114) mounted atop the base(116) (see paragraph [0021] and figure 1). Claim 14 differs from D1 in that it comprises a plurality of embedded anchors within the pad. However, the difference would be easily conceived from embedded tubular anchors(15) and bolts(14) in D4 (see paragraph [0002] and figure 15). Although D4, which is related to a mounting fitment, is not exactly in the same field as D1, there is no reason to restrict its usefulness in one narrow, specific industry. Accordingly, claim 14 would have been obvious over D1 in view of D4. Therefore, claim 14 does not involve an inventive step under PCT Article 33(3).

1.6 Dependent Claims 15-20

The additional feature of claim 15, characterized in that the pad is a precast concrete pad, is merely a matter of design option when the general knowledge in the relevant field of the art is used. Accordingly, claim 15 would have been obvious over D1 in view of D4. Therefore, claim 15 does not involve an inventive step under PCT Article 33(3).

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The additional feature of claim 16 is characterized by a modular Samson base connected to the pad through the embedded anchors. This feature would be easily conceived from a gearbox pedestal(114) mounted atop the base(116) in D1 (see paragraph [0021] and figure 1) and embedded tubular anchors(15) and bolts(14) in D4 (see paragraph [0002] and figure 15). Accordingly, claim 16 would have been obvious over D1 in view of D4. Therefore, claim 16 does not involve an inventive step under PCT Article 33(3).

The additional features of claims 17 and 18 are characterized in that the modular sub base includes a plurality of integral fasteners (claim 17); and one or more of the plurality of embedded anchors include a plurality of receivers and each of the plurality of receivers is configured to engage in a locking relationship with a corresponding one of the plurality of integral fasteners (claim 18). These features would be easily conceived from embedded tubular anchors(15) and bolts(14) in D4 (see paragraph [0002] and figure 15). Accordingly, claims 17 and 18 would have been obvious over D1 in view of D4. Therefore, claims 17 and 18 do not involve an inventive step under PCT Article 33(3).

The additional features of claims 19 and 20 are characterized in that the modular Samson base includes an embedded anchor configured to engage a Samson post in a bolted connection (claim 19); and the modular sub base includes an embedded anchor configured to engage a Samson post in a bolted connection (claim 20). These features would be easily conceived from a Samson post(118) supported by the base(116) in D1 (see paragraph [0021] and figure 1) and embedded tubular anchors(15) and bolts(14) in D4 (see paragraph [0002] and figure 15). Accordingly, claims 19 and 20 would have been obvious over D1 in view of D4. Therefore, claims 19 and 20 do not involve an inventive step under PCT Article 33(3).

2. Industrial Applicability

Claims 1-20 are industrially applicable under PCT Article 33(4).