

SEARCH REPORT

Application Number

LH 37
LT 2023014

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	SU 1 080 779 A1 (NIKOLAEVSKOE OTDEL G PK I RYBO [SU]) 23 March 1984 (1984-03-23) * the whole document * -----	1-10	INV. A01D44/00
A, D	KR 2019 0053543 A (DIGITAL ELECTRIC GENERATION OF IND INC [KR]) 20 May 2019 (2019-05-20) * figures 1, 2 * * paragraphs [0008], [0051] - [0075] * -----	1-10	
A	SE 538 483 C2 (EKOION AB [SE]) 26 July 2016 (2016-07-26) * figures 1-3 * * page 5, line 6 - page 6, line 27 * -----	1-10	
A	US 10 694 690 B2 (SEA6 ENERGY PRIVATE LTD [IN]) 30 June 2020 (2020-06-30) * figures 1-13 * -----	1-10	
A	US 2022/071092 A1 (GOUL CHRISTOPHER [US] ET AL) 10 March 2022 (2022-03-10) * figures 1, 2 * -----	1-10	TECHNICAL FIELDS SEARCHED (IPC)
			A01D
The present search report has been drawn up for all claims			

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The present search report has been drawn up for all claims

Date of completion of the search

Examiner

Munich

23 February 2024

Holtermann, Timm

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention

E : earlier patent document, but published on, or after the filing date

D : document cited in the application

L : document cited for other reasons

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& : member of the same patent family, corresponding document

**ANNEX TO THE SEARCH REPORT
ON LITHUANIAN PATENT APPLICATION NO.**

**LH 37
LT 2023014**

This annex lists the patent family members relating to the patent documents cited in the above-mentioned search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

23-02-2024

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
SU 1080779	A1	23-03-1984	NONE	
KR 20190053543	A	20-05-2019	NONE	
SE 538483	C2	26-07-2016	NONE	
US 10694690	B2	30-06-2020	AU 2014320036 A1 BR 112016005496 B1 CN 105722385 A MY 175475 A PH 12016500484 A1 PH 12019501508 A1 US 2016219811 A1 US 2020137969 A1 WO 2015036842 A1	21-04-2016 09-06-2020 29-06-2016 30-06-2020 23-05-2016 08-06-2020 04-08-2016 07-05-2020 19-03-2015
US 2022071092	A1	10-03-2022	NONE	



WRITTEN OPINION

File No. LH37	Filing date (day/month/year) 07.08.2023	Priority date (day/month/year)	Application No. LT2023014
International Patent Classification (IPC) INV. A01D44/00			
Applicant Metal Production, UAB			

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 the opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement 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 application
- Box No. VIII Certain observations on the application

	Examiner Holtermann, Timm
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WRITTEN OPINION

Application number
LT2023014

Box No. I Basis of this opinion

1. This opinion has been established on the basis of the latest set of claims filed before the start of the search.
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the application, this opinion has been established on the basis of a sequence listing:
 - a. forming part of the application as filed.
 - b. furnished subsequent to the filing date for the purposes of search,
 accompanied by a statement to the effect that the sequence listing does not go beyond the disclosure in the application as filed.
3. With regard to any nucleotide and/or amino acid sequence disclosed in the application, this opinion has been established to the extent that a meaningful opinion could be formed without a WIPO Standard ST.26 compliant sequence listing.
4. Additional comments:

Box No. V Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-10
	No: Claims	
Inventive step (IS)	Yes: Claims	1-10
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-10
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VII Certain defects in the application

see separate sheet

Box No. VIII Certain observations on the application

see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1 Reference is made to the following documents:

D1 SU 1 080 779 A1 (NIKOLAEVSKOE OTDEL G PK I RYBO [SU]) 23 March 1984 (1984-03-23)

D2 KR 2019 0053543 A (DIGITAL ELECTRIC GENERATION OF IND INC [KR]) 20 May 2019 (2019-05-20)

D3 SE 538 483 C2 (EKOION AB [SE]) 26 July 2016 (2016-07-26)

D4 US 10 694 690 B2 (SEA6 ENERGY PRIVATE LTD [IN]) 30 June 2020 (2020-06-30)

D5 US 2022/071092 A1 (GOUL CHRISTOPHER [US] ET AL) 10 March 2022 (2022-03-10)

2 **D1** may be regarded as being the prior art closest to the subject-matter of claim 1. The WPI abstract of D1 in English has been attached to this written opinion.

D1 discloses:

[A] ... method of separating seaweed (see abstract) from the cultivation rope (see fig. 1: rope 3) ..., which includes the stages of receiving seaweed, separating their vegetative part, and transporting the substrate, [wherein] ... the seaweed that has settled in the substrate (1) are separated ... by solid water flows (see abstract, last sentence) during transportation.

3 The subject-matter of claim 1 therefore differs from this known method in that [the water flows act] ... in [a] ... chamber, [are] received from [a] ... station [that] pumps supplying water volume in the range of 5 to 7.5 m³/h, maintaining high pressure in the range of 160 to 200 bar, to nozzles of [a] unit, forming vertical cutting streams, on different sides, closer or further from the substrate, to separate the seaweed established in the lateral parts of its perimeter and for cutting nozzles in two horizontal planes, on the upper and lower sides of the

substrate, forming solid water streams, closer to or farther from the substrate to distinguish between seaweed established on the upper and lower perimeter of the substrate.

The subject-matter of claim 1 is therefore new.

4 An effect related to these features, in particular to the claimed arrangement of the nozzles, can be seen in that the seaweed is effectively removed from the rope.

The problem to be solved by the present invention may therefore be regarded as how to effectively harvest the seaweed from the substrate rope.

5 The solution proposed in claim 1 of the present application is considered as involving an inventive step for the following reasons:

D1 is the only document disclosing the combination of a substrate rope and a water jet cutter to remove the seaweed from such a rope. However, D1 provides no details as to the arrangement of the nozzle(s). Hence, taking D1 alone, the skilled person would not be prompted to arrive at solution with vertical cutting streams and two horizontal cutting planes.

D2 (see figs. 1, 2 and paras. 8, 51-75: cutting nozzles 181, 183) and **D3** (see figs. 1-3 and p. 5, l. 6 - p. 6, l. 27: cutting nozzles 204) each disclose the cutting of seaweed by means of water jets. However, these documents do not address the aspect of removing seaweed from a substrate rope.

D4 (see figs. 1-13) and **D5** (see figs. 1, 2) each disclose seaweed removal from a substrate rope. However, these documents disclose mechanical cutter and are silent about water jet cutters.

Hence, even when combining the available teachings, the skilled person would not be prompted to arrive at the claimed solution.

6 Claim 7 is directed to an apparatus having the technical features to implement the method as defined in claim 1. For essentially the same reasons, the subject-matter of claim 7 is new and involves an inventive step.

7 Claims 2-6 and 8-10 are dependent on claim 1 and 7, respectively, and as such also meet the requirements of inventive step.

Re Item VII

Certain defects in the application

- 1 The relevant background art disclosed in D1 is not mentioned in the description, nor is this document identified therein.
- 2 The two-part forms of independent claims 1 and 7 has not been properly drafted. Instead of the formulation "is different in that", the expression "characterised in that" or "characterised by" should have been used.
The same applies, mutatis mutandis, to the dependent claims.
- 3 Dependent claims 2-6 and 8-10 should have contained a reference to the claim on which they depend. The wording of type "in another embodiment of the invention according to point 1" as it is applied in the present application does not meet this requirement.
Moreover, dependent apparatus claim 9 should not have been drafted as being dependent on "claim points 1-8", which also includes method claims 1-7.

Re Item VIII

Certain observations on the application

- 1 The present set of claims is not clear.
- 1.1 Several features are provided in parentheses (e.g. the term "substrate" in claim 1), thereby leaving the reader in doubt as to whether said features form part of the claimed subject-matter or not. Moreover, parentheses are reserved for reference signs and should not have been used for the definition of features.
- 1.2 The claims make reference to features (e.g. by using the definite article "the") without providing any antecedent definition (e.g. in claim 1, this applies to the features "method", "chamber" and "station"; similar considerations apply to the features "substrate", which is only defined in parentheses, and "unit (5)"). The skilled reader is left in doubt as to the intended limitations imposed by these definitions.

1.3 The wordings "closer to or farther from the substrate"/"closer or further" as applied in claims 1 and 7 are vague and unclear and leaves the reader in doubt as to the meaning of the technical feature to which it refers, thereby rendering the definition of the subject-matter of said claim unclear.