

PATENT COOPERATION TREATY

PCT

From the INTERNATIONAL SEARCHING AUTHORITY

To:
 HYDROBLOX LIMITED
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INVITATION TO PAY ADDITIONAL FEES
 AND, WHERE APPLICABLE, PROTEST FEE
 (PCT Article 17(3)(a) and Rule 40.1 and 40.2(e))

	Date of mailing (day/month/year) 29 January 2019 (29-01-2019)
Applicant's or agent's file reference HBTANKS	PAYMENT DUE within ONE MONTH from the above date of mailing
International application No. PCT/IB2018/056609	International filing date (day/month/year) 29 August 2018 (29-08-2018)
Applicant HYDROBLOX LIMITED	

1. This International Searching Authority

(i) considers that there are 6 (number of) inventions claimed in the international application covered by the claims indicated on an extra sheet:

(ii) therefore considers that **the international application does not comply with the requirements of unity of invention** (Rules 13.1, 13.2 and 13.3) for the reasons indicated on an extra sheet:

(iii) has carried out a partial international search (see Annex) will establish the international search report on those parts of the international application which relate to the invention first mentioned in claims Nos.:
see extra sheet

(iv) will establish the international search report on the other parts of the international application only if, and to the extent to which, additional fees are paid.

2. Consequently, the applicant is hereby **invited to pay**, within the time limit indicated above, the amount indicated below:

<u>EUR 1.775,00</u>	x	<u>5</u>	=	<u>EUR 8.875,00</u>
Fee per additional invention		number of additional inventions		currency/total amount of additional fees

3. The applicant is informed that, according to Rule 40.2(c), **the payment of any additional fee may be made under protest**, i.e., a reasoned statement to the effect that the international application complies with the requirement of unity of invention or that the amount of the required additional fee is excessive, where applicable, subject to the payment of a protest fee.
 Where the applicant pays additional fees under protest, the applicant is hereby invited, within the time limit indicated above, to pay a protest fee (Rule 40.2(e)) in the amount of EUR 875,00 (currency/amount)

Where the applicant has not, within the time limit indicated above, paid the required protest fee, the protest will be considered not to have been made and the International Searching Authority will so declare.

4. Claim(s) Nos. _____ have been found to be unsearchable under Article 17(2)(b) because of defects under Article 17(2)(a) and therefore have not been included with any invention.

Name and mailing address of the International Searching Authority European Patent Office, P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk Tel. (+31-70) 340-2040 Fax: (+31-70) 340-3016	Authorized officer BENINCA CORDES, Carmelita Tel: +49 (0)89 2399-2806
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This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-8, 11-13, 16, 18, 21, 22

A method for retaining solids in a tank system by means of a permeable copolymer nodule sheet.

2. claims: 9, 15

A portable tank systems.

3. claim: 10

A tank system comprising non-leaching absorbent material.

4. claim: 14

A tank system comprising vibration means.

5. claim: 17

Method for sealing a permeable copolymer nodule sheet in a tank.

6. claims: 19, 20

Method for fabricating a permeable copolymer nodule sheet

This Authority considers that the application does not meet the requirements of unity of invention and that there are 6 inventions covered by the claims as follows.

Group I: claim 1 (as far as related) and dependent claims 2-8, 11-13, 16, 18, 21 and 22 are directed to a method for retaining solids in a tank system by means of a permeable copolymer nodule sheet; it serves the purpose of retaining solids in a tank system and solves the problem of filtering a liquid;

Group II: claim 1 (as far as related) and dependent claims 9 and 15 are directed to portable tank systems comprising a permeable copolymer nodule sheet; it serves the purpose facilitating transportation of the tank system of operational readiness;

Group III: claim 1 (as far as related) and dependent claim 10 are directed to tank systems further comprising a non-leaching absorbent material; it serves the purpose of absorbing heavy metals/hydrocarbons/bacteria/pathogens from the solid suspension and solves the problem of further treating the solids for eliminating heavy metals/hydrocarbons/bacteria/pathogens;

Group IV: claim 1 (as far as related) and dependent claim 14 are directed

to tank systems further comprising vibration means; it serves the purpose of shaking the partition for solid recovery and solves the problem of cleaning the permeable copolymer nodule sheet;

Group V: claim 1 (as far as related) and dependent claim 17 are directed to tank systems further comprising a method for sealing a permeable copolymer nodule sheet to the tank; it serves the purpose of sealedly placing the permeable copolymer nodule sheet in the tank and solves the problem of flow by-pass; and

Group VI: claim 1 (as far as related) and dependent claims 19 and 20 and directed to tank systems further comprising a method for fabricating a copolymer plastic nodule sheet; it serves the purpose of obtaining a sheet from a copolymer and serves the purpose of obtaining a permeable sheet.

The reasons, for which the inventions are not so linked as to form a single general inventive concept, as required by Rule 13.1 PCT, is that the common matter linking together the dependent claims is already known from D1 as follows:

D1 describes a permeable copolymer nodule sheet [0076] as a partition for retaining solids in a tank system [0028] wherein any of its sides makes contact with the surface of the tank system (figs. 1-3).

Also, examining the possible correspondence by objective problem, one finds that the objective of each of the mentioned claim-groups I to VI are different. Consequently, neither the objective problem underlying the subjects of the claimed inventions, nor their solutions defined by the special technical features allow for a relationship to be established between the said inventions, which involves a single general inventive concept as required by Rule 13.1 PCT.

**Annex to Form PCT/ISA/206
COMMUNICATION RELATING TO THE RESULTS
OF THE PARTIAL INTERNATIONAL SEARCH**

International Application No
PCT/IB2018/056609

1. The present communication is an Annex to the invitation to pay additional fees (Form PCT/ISA/206). It shows the results of the international search established on the parts of the international application which relate to the invention first mentioned in claims Nos.:
- see 'Invitation to pay additional fees'
2. This communication is not the international search report which will be established according to Article 18 and Rule 43.
3. If the applicant does not pay any additional search fees, the information appearing in this communication will be considered as the result of the international search and will be included as such in the international search report.
4. If the applicant pays additional fees, the international search report will contain both the information appearing in this communication and the results of the international search on other parts of the international application for which such fees will have been paid.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2017/233275 A1 (SEGroves THOMAS KYLE [US] ET AL) 17 August 2017 (2017-08-17) paragraphs [0018], [0028], [0076]; claims 1, 21; figures 1-5 -----	1-8, 11-13, 16,18, 21,22
X	WO 2004/076023 A1 (MADISON FILTER 981 LTD [GB]; ALLEN RICHARD FRAZER [GB]; JOHNSON JOSEPH) 10 September 2004 (2004-09-10) page 8, line 12 - page 9, line 2; figures 1-6 -----	21,22

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

° Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Patent Family Annex

Information on patent family members

International Application No

PCT/IB2018/056609

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2017233275	A1	NONE	

WO 2004076023	A1	NONE	

Application no:
Demande n°: PCT/IB2018/056609
Anmelde-Nr:

DISCLAIMER

The attached provisional opinion on the patentability of the first invention searched serves only as information.
A reply addressing the points raised in the opinion is **not** required and will **not** be taken into account when issuing the final search report and opinion on patentability.

AVERTISSEMENT

L'avis provisoire ci-joint sur la brevetabilité de la première invention recherchée ne sert qu'à titre d'information.
Une réponse abordant les points soulevés dans l'avis n'est **pas** nécessaire et ne sera **pas** prise en compte lors de l'établissement du rapport final de la recherche et de l'avis sur la brevetabilité.

DISCLAIMER

Die beigefügte vorläufige Stellungnahme zur Patentierbarkeit der ersten geprüften Erfindung dient lediglich zur Information.
Eine Antwort auf die erhobenen Punkte in der Stellungnahme ist **nicht** erforderlich und bleibt bei der Erstellung des endgültigen Recherchenberichts und der Stellungnahme zur Patentierbarkeit **unberücksichtigt**.

Item IV

1 NON-UNITY

This Authority considers that the application does not meet the requirements of unity of invention and that there are 6 inventions covered by the claims as follows.

Group I: claim 1 (as far as related) and dependent claims 2-8, 11-13, 16, 18, 21 and 22 are directed to a method for retaining solids in a tank system by means of a permeable copolymer nodule sheet; it serves the purpose of retaining solids in a tank system and solves the problem of filtering a liquid;

Group II: claim 1 (as far as related) and dependent claims 9 and 15 are directed to portable tank systems comprising a permeable copolymer nodule sheet; it serves the purpose facilitating transportation of the tank system of operational readiness;

Group III: claim 1 (as far as related) and dependent claim 10 are directed to tank systems further comprising a non-leaching absorbent material; it serves the purpose of absorbing heavy metals/hydrocarbons/bacteria/pathogens from the solid suspension and solves the problem of further treating the solids for eliminating heavy metals/hydrocarbons/bacteria/pathogens;

Group IV: claim 1 (as far as related) and dependent claim 14 are directed to tank systems further comprising vibration means; it serves the purpose of shaking the partition for solid recovery and solves the problem of cleaning the permeable copolymer nodule sheet;

Group V: claim 1 (as far as related) and dependent claim 17 are directed to tank systems further comprising a method for sealing a permeable copolymer nodule sheet to the tank; it serves the purpose of sealedly placing the permeable copolymer nodule sheet in the tank and solves the problem of flow by-pass; and

Group VI: claim 1 (as far as related) and dependent claims 19 and 20 and directed to tank systems further comprising a method for fabricating a copolymer plastic nodule sheet; it serves the purpose of obtaining a sheet from a copolymer and serves the purpose of obtaining a permeable sheet.

The reasons, for which the inventions are not so linked as to form a single general inventive concept, as required by Rule 13.1 PCT, is that the common matter linking together the dependent claims is already known from D1 as follows:

D1 describes a permeable copolymer nodule sheet §[0076] as a partition for retaining solids in a tank system §[0028] wherein any of its sides makes contact with the surface of the tank system (figs. 1-3).

Also, examining the possible correspondence by objective problem, one finds that the objective of each of the mentioned claim-groups I to VI are different. Consequently, neither the objective problem underlying the subjects of the claimed inventions, nor their solutions defined by the special technical features allow for a relationship to be established between the said inventions, which involves a single general inventive concept as required by Rule 13.1 PCT.

Item VIII

2 CLARITY (Art. 6 PCT) (for all claims)

- 2.1 The term *permeable copolymer nodule sheet* is 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, Article 6 PCT. For the sake of efficiency, this term has been interpreted as any permeable sheet comprising copolymer nodules.
- 2.2 The formulation *sealedly attaching* of claim 1 attempts to define the subject-matter in terms of the result to be achieved, which merely amounts to a statement of the underlying problem, without providing the technical features necessary for achieving this result.
- 2.3 The subject-claim 2 refers to "components of a partition" and it is not clear, whether the partition referred to in claim 2 is the same as the partition referred to in claim 1. Same problem applies to claim 5. A clarification is required.
- 2.4 Claim 6 is not supported by the description as required by Article 6 PCT, as its scope is broader than justified by the description and drawings. Claim 6 enumerates more than 25 different elements and their combination. They are very divergent in their function and do not seem to solve the same problem. Some of them are vague (mechanical parts, power source) and/or their functional/structural relationship with the key elements of claim 1 (tank and permeable copolymer nodule sheet) is not provided in the description.
- 2.5 Claim 17 concerns 20 different way for sealedly attaching a permeable copolymer nodule sheet and their combination without providing how two (or more) different methods can be combined. Same reasoning applies mutatis mutandis to the subject-matter of claim 19. Therefore, claims 17 and 19 are not supported by the description as required by Article 6 PCT, as their scope is broader than justified by the description and drawings.

- 2.6 Claim 18 contains a reference to the drawings. According to Rule 6.2(a) PCT, claims should not contain such references except where absolutely necessary, which is not the case here.
- 2.7 Claim 22 makes reference to a single polymer nodule sheet and it is not clear whether single qualifies the polymer or the sheet. A clarification is required.

Item V

Reference is made to the following documents:

- D1 US 2017/233275 A1 (SEGROVES THOMAS KYLE [US] ET AL) 17 August 2017 (2017-08-17)
- D2 WO 2004/076023 A1 (MADISON FILTER 981 LTD [GB]; ALLEN RICHARD FRAZER [GB]; JOHNSON JOSEPH) 10 September 2004 (2004-09-10)

3 NOVELTY (Art. 33(2) PCT)(for Group I)

- 3.1 The document D1 discloses a method of retaining solids in a tank system (claim 21) comprising the steps of: a) using a filter media trap comprising polyacrylamide co-polymer powder (powder = nodules) as a partition for retaining solids from a suspension of the solids in a liquid; b) and attaching said permeable sheet where any of its sides make contact with the surface of said tank system (fig 4 and 5); wherein two or more permeable sheets are used and its thickness is not less than 15 mm (§[0076]); wherein the tank system comprises multiple tanks one of them used as a a suspension receiving container (figs. 1-3). Further elements like baffles (claim 1), pumps (§[0018]), drainage pipe systems [180] are already known from D1.

The subject-matter of claims 1-8, 11-13, 16, 18 is not new in view of D1.

- 3.2 The document D2 discloses a method of retaining solids in a tank system (figs 1-6) comprising the steps of: a) using a permeable copolymer nodule sheet (fig. 6) as a partition (references [16] and [17] in fig. 1) for retaining solids from a suspension of the solids in a liquid; b) sealedly attaching said permeable copolymer nodule sheet where any of its sides make contact with the surface of said tank system (page 8 line 12 to page 9, line 2).

- 3.3 The subject-matter of claims 21 and 22 is not new in view of D2.

3.4 NOVELTY (for Group I)