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FORM NUMBER	IPOPHL-BOP-INV-FERC-01	ED: 18.07.2016	AP: 2
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MAILED SEP 13 2018			

Application Type/No:	Invention 1/2018/050147	Filing Date:	23 March 2018 (23.03.2018)
Applicant:	University of Southeastern Philippines [PH]		
Title:	A MECHANICAL TRICHODERMA SOIL INJECTOR		
Division:	Inventions (MEED)	:	Christian Dave B. Galang

FORMALITY EXAMINATION REPORT

Applicant's request for grant of Philippine Patent dated filed on 23 March 2018 is hereby acknowledged and marked as Paper No. 1. Submission of one set of description, abstract, claims, and drawings is acknowledged and entered of record.

This application has been formally examined. The following are the findings of the examiner made in view of R.A. 8293 (IP Code) and its Revised Implementing Rules and Regulations (IRR).

BASIS OF THE REPORT

The report has been established on the basis of:

Request Form:	Page(s) 2	filed on 23 March 2018
Specification:	Page(s) 18	filed on 23 March 2018
Claims:	No(s) 1 – 5	filed on 23 March 2018
Drawings:	Figure No(s) 1 – 6	filed on 23 March 2018

FINDINGS

1 Formality Defects

1.1 Clarity (Rule 415 of the Revised IRR)

- 1.1.1 Claim 3 as drafted appears to lack clarity due to the use of the phrase "configured in such that". Said claim appears to define the technical features in terms of the desired function or result without explicitly stating any means or mechanism that said feature will be able to achieve said function.
- 1.1.2 Claim 3 as drafted further appears to lack clarity due to the use of the phrase "and preferably a timer relay". Said claim does not present a technical relationship between said timer relay and the

rest of the recited elements.

For the purpose of the examination, claim 3 is thus construed to read as "The mechanical Trichoderma soil injector (1000) according to claim 1, wherein said storage & pump assembly (1200) having a pressure monitoring device (1302) comprising a timer relay wherein that at a preset time, there is an equivalent biological control agent volume being injected."

REQUIREMENTS

1. The amended claims based on findings in item 1.1. The amended documents must be made in duplicate.
2. As per Rule 504 of the IRR, the applicant should submit a proof of authority (or power of attorney) which states that the applicant and/or inventors confer authority to the Representative to transact business regarding prosecution and/or maintenance of the present application and receive communications or correspondences from the Office on behalf of the applicant.

SEARCH AND WRITTEN OPINION

It is made known to the Applicant that a search report has been established citing any relevant document(s) that reflect the prior art before the effective filing date of the application.

In addition, a written opinion is also established in line with the search report. The written opinion is a document that provides a preliminary and non-binding opinion on whether the invention appears to meet the patentability criteria in light of the search report results. It aims to help the applicant to understand and interpret the results of the search report, being of special help in evaluating the chances of obtaining a patent.

Attached herein is a copy of the said search report and written opinion.

The search report shall be published in the IPOPHL E-gazette together with the application, after the expiration of eighteen (18) months from the filing date or priority date. The Office shall send a Notice of Publication containing the date and other information regarding the publication of the application and remind the period within which the request for substantive examination must be filed.

Applicant is reminded that additional prior art may be made available during the substantive examination stage which may possibly alter or change the findings of the search report and written opinion.

In view of the findings presented in the written opinion, the Applicant may amend the claims prior to entering the substantive examination stage.

REMINDERS

- *In amending the application, it is the responsibility of the applicant to correct any minor errors which may appear in the abstract, description, claims and drawings.*
- *In amending the application, the said amendment shall not include new matter outside the scope of the disclosure contained in the application as filed under Section 29 of the IP Code and Rule 917 of the IRR.*
- *All responses or communications must be addressed only to: THE DIRECTOR OF PATENTS, Intellectual Property Office of the Philippines, 14th Flr. Intellectual Property Center, 28 Upper McKinley Rd., McKinley Hill Town Center, Fort Bonifacio, Taguig City, 1634 Philippines. Applicant(s) name, Application number, Filing date, Title, Division and Name of Examiner-in-Charge should also be indicated. Applicant(s) name, Application number, Filing date, Title, Division and Name of Examiner-in-Charge should also be indicated.*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christian Dave B. Galang whose office number is (02)-2386300 local 3703. The examiner can normally be reached on Monday to Friday, 9:00 am to 4:00 pm by phone or in person in the above stated address. If attempts to reach the examiner are unsuccessful, the examiner's supervisor Merito J. Craig can be reached on the same office number and address.

Dennis 
Lionel P. Acevedo
Assistant Division Chief



**Intellectual Property Office of the Philippines
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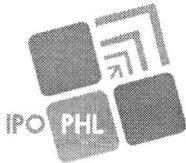
SEARCH REPORT

		IPAS FORM:	IPOPHL-BOP-INV-SR-01	ED:	20.07.2016	AP:	6
APPLICATION NO.:	1/2018/050147						
FILING DATE:	23 March 2018 (23.03.2018)	EARLIEST PRIORITY DATE:	---				
TITLE:	A MECHANICAL TRICHODERMA SOIL INJECTOR						
DIVISION:	Inventions (MEED)						
IPC(S):	A01B 39/00 (2006.01), C05G 3/00 (2006.01), C12R 1/00 (2006.01),						
DATABASE(S) CONSULTED:	IPDL, IPAS, WIPO, GOOGLE NPL, PATENTLENS, ESPACENET, DERWENT INNOVATION, EPOQUENET						
KEYWORD(S) USED:	SOIL INJECTOR, STORAGE, PUMP, FOOT REST, FOOT, ALARM, NEEDLE, NOZZLE, SOIL DEFLECTOR, TRICHODERMA						

DOCUMENTS CONSIDERED TO BE RELEVANT

Y	EP1489271B1 (Honda Motor Co., Ltd., Tokyo) Passages §0005, §0051, §0089-0092, §00139, §00151, §00174, Fig. 16	26 February 2015 (26.02.2015)	Claim No(s) 1, 3-5 2
Y	WO2007129254A1 (Konin-Kluke Philips Electronics N. V., Kudavelly, Srinivas Rao) Passages Claim 17	15 November 2007 (15.11.2007)	Claim No(s) 1, 3-5
A	US5487229A (Nathenson, et. Al.) Passages §0073	30 January 1996 (30.01.1996)	Claim No(s) 2
* 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 application or patent but published on or after the 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 filing date but later than the priority date claimed			
"T"	later document published after the 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		
"R"	documents with restricted access		

PRIMARY EXAMINER:	CHRISTIAN DAVE B. GALANG	SECONDARY EXAMINER(S):	JAN BENEDICT L. NICOLAS
DATE OF COMPLETION:	6 September 2018		



**Intellectual Property Office of the Philippines
Bureau of Patents**

WRITTEN OPINION

IPAS FORM:	IPOPHL-BOP-INV-WO-01	ED:	20.07.2016	AP:	4
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APPLICATION NO.	1/2018/050147							
FILING DATE:	23 March 2018 (23.03.2018)	EARLIEST PRIORITY DATE:	---					
TITLE:	A MECHANICAL TRICHODERMA SOIL INJECTOR							
DIVISION:	Inventions (MEED)							

* This document provides a preliminary and non-binding opinion on whether the invention appears to meet the patentability criteria in light of the search report results. It aims to help the applicant understand and interpret the results of the search report, being of special help in evaluating the possibility of obtaining a patent.

CONSIDERED RELEVANT DOCUMENTS

Document	Publication Number/Publication Title; Inventor/Applicant/Author	Publication Date (Date Month Year)
D1	WO2015025253A1 (Basf Agro B V Arnhem NL Zurich Branch)	26 February 2015
D2	WO2007129254A1 (Konin-Kluke Philips Electronics N. V., Kudavelly, Strinivas Rao)	15 November 2007
D3	US5487229A (Nathenson, et. Al.)	30 January 1996

SUMMARY STATEMENTS

NOVELTY	Claim Nos.: 1-5 Claim Nos.: None	Yes No
INVENTIVE STEP	Claim Nos.: 2 Claim Nos.: 1, 3-5	Yes No
INDUSTRIAL APPLICABILITY	Claim Nos.: 1-5 Claim Nos.: None	Yes No

1. NOVELTY (SECTION 23 OF RA 8293)

The present application relates to a soil injection apparatus.

Claims 1-5 as drafted appears to meet the requirements of Section 23 of the IP Code with regard to novelty over D1.

- 1.1. As per claims 1 and 5, D1 discloses a soil injector (**injection system 310**) comprising: a soil injector assembly (**handheld portable application tool 312**), and a storage & pump assembly (**supply cart 314; high pressure pump 382**) operably connected to the soil injector assembly, characterized in that said soil injector assembly further comprises a foot rest (**foot bracket 331**) operably connected to a plurality of needles for soil penetration (**high pressure nozzles 338**).

However, D1 failed to disclose that said soil injector is designed for *Trichoderma* fung and that said storage & pump assembly further comprises an alarm programmed to activate after the preset time, wherein said alarm is a buzzer.

- 1.2. As per claim 2, D1 discloses a soil injector wherein said plurality of needles has orifices at their tips, being arranged and spaced at the lower portion of the foot rest (**high pressure nozzles 338, Fig. 16**).

However, D1 failed to disclose that each of the said plurality of needles has a soil deflector so that soil will not cover the orifice during injection.

- 1.3. As per claim 3, D1 failed to disclose a soil injector wherein said storage & pump assembly having a pressure monitoring device comprising a timer relay wherein that at a preset time, there is an equivalent biological control agent volume being injected.
- 1.4. As per claim 4, D1 failed to disclose a soil injector wherein said storage & pump assembly further comprising a knob is used to vary the power provided to a motor pump, said power determines the volume of the biological control agent being dispensed.

2. INVENTIVE STEP (SECTION 26 OF RA 8293)

- 2.1. Claims 1 and 5 as drafted do not appear to meet the requirements of section 26 of the IP Code and Rule 206 of the IRR with regards to inventive step over D1 in view of D2.

D1 failed to disclose the features as stated in item 1.1. However D1 teaches that the apparatus disclosed in the prior art is operable to inject soil treatment under high pressure down into soil (**§0011**), said soil treatment includes an application of pesticides, fertilizers, or other soil treatments by direct placement into the soil under and around structures (**§0005**). Based on p. 3, l. 6-9 of the application, *T. harzanium* is classified as a pesticide.

Moreover, D1 teaches that the supply cart control system could monitor total work time and alarms activated (**§00174**). While a physical alarm was not disclosed by D1, a person skilled in the art would have enough knowledge to apply a suitable type of alarm that will activate after a preset time. An example of this is D2, in the field of medical injectors, which teaches of a timer and an alarm facility implemented into the injector unit (**Claim 17**)

Based on these teachings, a person skilled in the art would therefore be able to introduce, as a design modification, an alarm unit that will activate after a set amount of time as measured by the system in order to produce a technical effect similar to that recited by the claim 1. Furthermore, the PSA would deem the feature of a buzzer as the alarm mechanism a mere design choice and would therefore produce a technical effect similar to that recited by claim 5 as well.

- 2.2. Claim 3 as drafted does not appear to meet the requirements of section 26 of the IP Code and Rule 206 of the IRR with regards to inventive step over D1 in view of D2 as applied to claim 1.

D1 failed to disclose the features as stated in item 1.2. However D1 teaches that the carrier liquid flow rate is monitored by a flow meter. As flow rate (or fluid velocity) is dependent on the pressure gradient provided by the pump as per Bernoulli's law, the PSA would deem measuring the related parameter of pressure instead of flow rate as a mere design choice and would therefore be able to incorporate the teaching of D1 through design modifications on the supply cart control system programming in order to produce a technical effect similar to that recited by the claim.

- 2.3. Claim 4 as drafted does not appear to meet the requirements of section 26 of the IP Code and Rule 206 of the IRR with regards to inventive step over D1 in view of D2 as applied to claim 1.

D1 failed to disclose the features as stated in item 1.3. However D1 teaches that the operating rate of the pump may be automatically adjustable, such as by a suitable controller (**§00151**). The PSA would therefore be able to incorporate the teaching of D1 in order to produce a technical effect similar to that recited by the claim.

- 2.4. **Claim 2 as drafted appears to meet the requirements of section 26 of the IP Code and Rule 206 of the IRR with regards to inventive step over the presented prior art.**

D1 failed to disclose the features as stated in item 1.2. Moreover, D2, found in the field of excavation, teaches that skirt seal, right skirt and left skirt acts as soil deflector for the nozzle (**§0073**). However, based on description and figures presented by the applicant, D2 was not able to teach the integration of deflection features to the nozzle or needle provided. As such, the PSA would not be motivated to perform such integration and would instead include a soil deflection mean separate from the needles.

To reiterate, claims 2 appears to satisfy the requirements with regard to inventive step as set forth in Section 26 of the IP Code and Rule 206 of the Revised IRR for Inventions.

3. INDUSTRIAL APPLICABILITY

Claims 1 – 5 appear to meet the requirements of Section 27 of the IP Code with regard to industrial applicability because it can be made or used in industry.

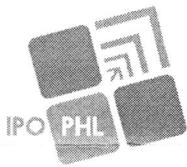
ADDITIONAL COMMENTS

In view of the findings presented in this opinion, the Applicant is invited to amend the claims. Said amended claims should be submitted before the technical preparation of this application for publication (i.e. approximately 16 months from the filing date of this application). Otherwise, Applicant may submit the said amended claims together with the request for substantive examination.

In amending said claims, applicant is advised to obtain practical ideas in the preparation thereof by perusal or study on patents of the same subject matter in the IPO Digital Library (<http://www.ipophil.gov.ph> > SERVICES > e-Services > Patent Search) or in any other foreign patent office website.

EXAMINER:	CHRISTIAN DAVE B. GALANG
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DATE OF COMPLETION:	6 September 2018
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SEARCH REPORT
INFORMATION ON PATENT FAMILY ANNEX

IPAS FORM:	IPOPHL-BOP-INV-FM-01	ED:	20.07.2016	AP:	
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APPLICATION NO.:	1/2018/050147
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Patent document cited in search report		Publication Date	Patent family member(s)			Publication Date	
WO	2015025253	A1	02/26/2015	TW EP US KR MX AR JP CN AU AU	201521567 3035787 2016/0198625 20160077033 2016002250 099347 2016533583 105848465 2014/310309 2014/310309	A A1 A1 A A A1 A A A1 B2	06/16/2015 06/29/2016 07/14/2016 07/01/2016 11/18/2016 07/20/2016 10/27/2016 08/10/2016 03/10/2016 03/29/2018
WO	2007/129254	A1	11/15/2007	US CN WO JP EP CN	20090074262 101437559 2007129254 2009535145 2015808 101437559	A1 A A8 A A1 B	3/19/2009 5/20/2009 1/17/2008 10/1/2009 1/21/2009 12/14/2011
US	5487229	A	01/30/1996	WO	1994028256	A1	12/08/1994

PRIMARY EXAMINER:	Christian Dave B. Galang	DATE OF COMPLETION:	6 September 2018
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