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**Bisson et al.**

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(45) **Date of Patent:** **Jul. 17, 2018**

(54) **ORGANIC LIQUID FERTILIZER AND PROCESS OF MAKING**

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(72) Inventors: **Thomas Karl Bisson**, Plymouth, MA (US); **Dennis Crabtree**, Leawood, KS (US); **Sam S. Jeppson**, Worcester, MA (US); **Bill Love**, Leawood, KS (US); **John Martin**, Leawood, KS (US); **Mark M. Simon**, Wilbraham, MA (US)

(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 442 days.

(21) Appl. No.: **13/791,442**

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(65) **Prior Publication Data**

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**Related U.S. Application Data**

(63) Continuation of application No. 13/556,102, filed on Jul. 23, 2012, and a continuation of application No. PCT/US2012/047890, filed on Jul. 23, 2012.

(60) Provisional application No. 61/572,749, filed on Jul. 21, 2011, provisional application No. 61/572,751, filed on Jul. 21, 2011.

(51) **Int. Cl.**  
**C05F 3/00** (2006.01)  
**C05C 11/00** (2006.01)

(52) **U.S. Cl.**  
CPC ..... **C05C 11/00** (2013.01); **C05F 3/00** (2013.01); **Y02P 20/145** (2015.11)

(58) **Field of Classification Search**  
USPC ..... 71/8-63, 64.1  
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,865,567	A *	2/1975	Klomp et al.	65/43
5,174,805	A *	12/1992	Masuda	71/29
5,501,718	A *	3/1996	Bandurski	71/9
6,364,926	B1 *	4/2002	Gryzik et al.	71/64.1
8,409,620	B2 *	4/2013	Livingston	424/490
2004/0031302	A1 *	2/2004	Eswaran et al.	71/23
2004/0065127	A1 *	4/2004	Connell	71/15
2010/0288003	A1 *	11/2010	Burnham et al.	71/12
2012/0122196	A1 *	5/2012	Johnson	435/267

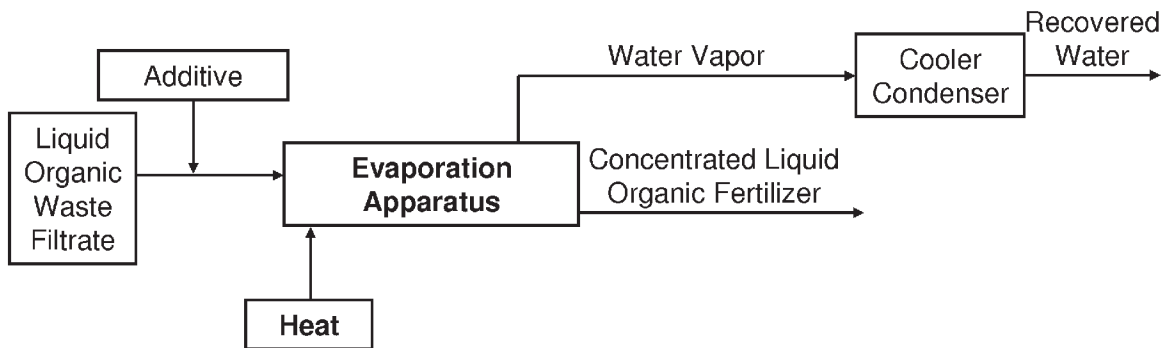
\* cited by examiner

Primary Examiner — Wayne Langel

(57) **ABSTRACT**

A fertilizer derived from an organic source and a method of making are provided. The fertilizer of the present invention advantageously has a Nitrogen content greater than 4%. The method of making the fertilizer also produces potable water.

**11 Claims, 4 Drawing Sheets**





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(12) **United States Patent**  
**Love et al.**

(10) **Patent No.:** **US 10,556,837 B2**

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(54) **ORGANIC LIQUID FERTILIZER**

(71) Applicant: **Denise Crabtree**, Tarpon Springs, FL (US)

(72) Inventors: **Bill Love**, Overland Park, KS (US);  
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(21) Appl. No.: **16/297,334**

(22) Filed: **Mar. 8, 2019**

(65) **Prior Publication Data**

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**Related U.S. Application Data**

(63) Continuation of application No. 16/020,588, filed on Jun. 27, 2018, now abandoned, which is a continuation of application No. 13/791,442, filed on Mar. 8, 2013, now Pat. No. 10,023,501, which is a continuation of application No. 13/556,102, filed on Jul. 23, 2012, now abandoned, said application No. 13/791,442 is a continuation of application No. PCT/US2012/047890, filed on Jul. 23, 2012.

(60) Provisional application No. 61/572,751, filed on Jul. 21, 2011, provisional application No. 61/572,749, filed on Jul. 21, 2011, provisional application No. 61/572,751, filed on Jul. 21, 2011.

(51) **Int. Cl.**

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(52) **U.S. Cl.**

CPC ..... **C05F 3/00** (2013.01); **C05C 3/00** (2013.01); **C05C 11/00** (2013.01); **Y02A 40/205** (2018.01); **Y02P 20/145** (2015.11)

(58) **Field of Classification Search**

CPC ..... **C05C 11/00**; **C05F 3/00**  
See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

3,865,568 A \* 2/1975 Kratzer ..... C05F 3/00  
71/21  
4,093,516 A 6/1978 Lang  
6,364,926 B1 4/2002 Gryzik et al.  
10,023,501 B2 \* 7/2018 Bisson ..... C05F 3/00  
(Continued)

**FOREIGN PATENT DOCUMENTS**

FR 517548 5/1921  
JP 2006212606 8/2006  
(Continued)

**OTHER PUBLICATIONS**

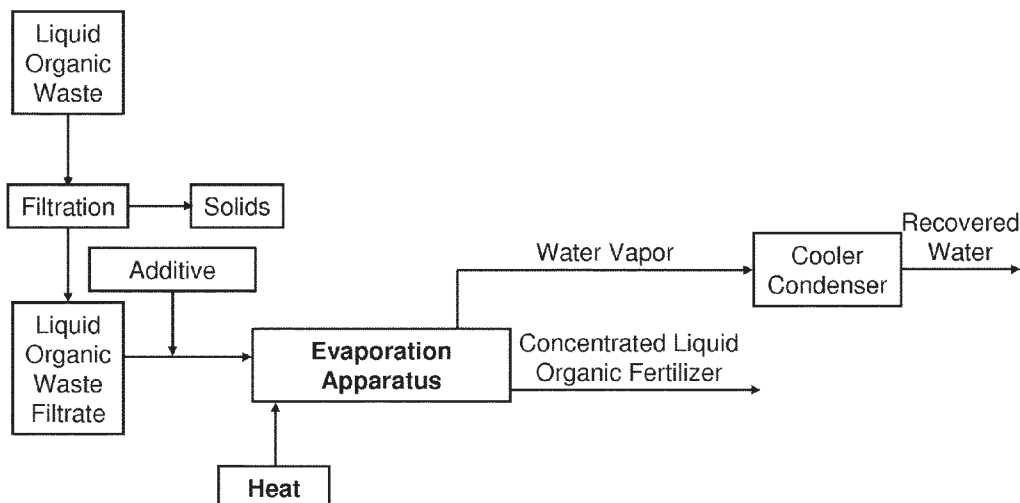
International Search Report and Written Opinion in corresponding PCT/US2012/047890, dated Jan. 23, 2013.  
(Continued)

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(74) *Attorney, Agent, or Firm* — Hovey Williams LLP

(57) **ABSTRACT**

A fertilizer derived from an organic source and a method of making are provided. The fertilizer of the present invention advantageously has a nitrogen content greater than 4%. The method of making the fertilizer also produces potable water.

**27 Claims, 4 Drawing Sheets**





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(12) **United States Patent**  
**Love et al.**

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(54) **ORGANIC LIQUID FERTILIZER**  
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(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.  
This patent is subject to a terminal disclaimer.

(52) **U.S. Cl.**  
CPC ..... **C05F 3/00** (2013.01); **C05C 3/00** (2013.01); **C05C 11/00** (2013.01); **C05G 5/23** (2020.02); **Y02A 40/20** (2018.01); **Y02P 20/145** (2015.11)  
(58) **Field of Classification Search**  
CPC ..... **C05C 11/00**; **C05F 3/00**  
See application file for complete search history.

(56) **References Cited**  
U.S. PATENT DOCUMENTS  
3,865,568 A \* 2/1975 Kratzer ..... C05F 3/00 71/21  
4,093,516 A 6/1978 Lang  
(Continued)

FOREIGN PATENT DOCUMENTS  
FR 517548 5/1921  
JP 2006212606 8/2006  
(Continued)

OTHER PUBLICATIONS  
International Search Report and Written Opinion in corresponding PCT/US2012/047890, dated Jan. 23, 2013.  
(Continued)

Primary Examiner — Wayne A Langel  
(74) *Attorney, Agent, or Firm* — Hovey Williams LLP

(57) **ABSTRACT**  
A fertilizer derived from an organic source and a method of making are provided. The fertilizer of the present invention advantageously has a nitrogen content greater than 4%. The method of making the fertilizer also produces potable water.

**20 Claims, 4 Drawing Sheets**

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(65) **Prior Publication Data**  
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(63) Continuation of application No. 16/297,334, filed on Mar. 8, 2019, now Pat. No. 10,556,837, which is a  
(Continued)  
(51) **Int. Cl.**  
**C05F 3/00** (2006.01)  
**C05C 11/00** (2006.01)  
(Continued)

