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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/615,539	12/22/2006	Stuart N. Milligan	34249US	1057

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ConocoPhillips Company - IP Services Group
Attention: DOCKETING
600 N. Dairy Ashford
Bldg. MA-1135
Houston, TX 77079

EXAMINER	
BOYLE, ROBERT C	

ART UNIT	PAPER NUMBER
1796	

NOTIFICATION DATE	DELIVERY MODE
10/21/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Legal-IP@conocophillips.com

Office Action Summary	Application No.	Applicant(s)	
	11/615,539	MILLIGAN ET AL.	
	Examiner	Art Unit	
	ROBERT C. BOYLE	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 27 August 2009.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-96 is/are pending in the application.

4a) Of the above claim(s) 10,12, 43-50,76-82 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) 1-9,11,13-42,51-75 and 83-96 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 8/27/2009.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 8, 2009 has been entered.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Any rejections stated in the previous Office Action and not repeated below are withdrawn.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-9, 11, 13-14, 21-23, 25-35, 41, 51-60, 63-73, 93-95 are rejected under 35 U.S.C. 102(b) as being anticipated by **Castner** (US 4,736,005).

5. As to claims 1, 25, 33, 51, 63, Castner teaches a method of adding a polymer to petroleum to modify the viscosity where the polymer has monomers with nitrogen atoms and has molecular weights of 1,000,000 or greater (abstract; col. 2, lines 37-68; col. 3, line 1-col. 4, line

30; col. 9, lines 5-25; col. 10, lines 1-8; col. 18, lines 24-36). Castner teaches an example with a molecular weight of 3.5 million (col. 10, lines 1-8). It is the examiner's position that a polymer with a molecular weight of 3.5 million has over 25,000 repeating units. While Castner does not teach the property of 'drag reducing', Castner teaches the same polymer as claimed. It is therefore inherent that the polymer of Castner are 'drag-reducing' since such a property is evidently dependent on the nature of the composition used. Case law holds that a material and its properties are inseparable. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

6. Claims 1-8, 22, 25-31, 53, 55-59, 66, 68-71 recites properties of the liquid hydrocarbon. Castner does not teach claimed properties. However, Castner teaches the liquid hydrocarbon is petroleum, the same hydrocarbon as claimed. It is therefore inherent that the petroleum of Castner has the claimed properties since such properties are evidently dependent on the nature of the composition used. Case law holds that a material and its properties are inseparable. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

7. As to claims 9, 32, 60, 72, Castner teaches petroleum (col. 3, line 1-col. 4, line 30).

8. As to claims 11, 13-14, 34-35, 93-95, Castner teaches a polymer with 100% dimethyl acrylamide monomers (col. 11, lines 20-40).

9. Claims 21, 23, 41, 52, 54, 64-65, 67, recite properties of the polymer. Castner does not teach these properties. However, Castner teaches the same polymer as claimed. It is therefore inherent that the polymer of Castner has the claimed properties since such properties are evidently dependent on the nature of the composition used. Case law holds that a material and its

properties are inseparable. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

10. As to claim 73, Castner teaches the monomer sodium styrene sulfonate (col. 2, lines 55-68).

11. Claims 1-9, 11, 13-18, 20-38, 40-42, 51-75, 93-96 are rejected under 35 U.S.C. 102(b) as being anticipated by **Inaoka** (EP 0882739) as evidenced by **Schievelbein** (US 6,007,702).

12. As to claims 1, 25, 33, 51, 63, Inaoka teaches a method of adding a drag reducing polymer to crude oil where the polymer is an ethylhexyl methacrylate homopolymer with a molecular weight of not less than 5,000,000 (abstract; page 4, lines 25-34, 44-52; page 8, lines 2-4; page 10, lines 22-38; page 17, lines 6-14). It is the examiner's position that a polymer with a molecular weight of 5 million has over 25,000 repeating units. Heavy crude oils have an API of 18 or less and an asphaltene content of 10% to 25% (see Schievelbein: col. 4, lines 8-15).

13. Claims 1-8, 22, 25-31, 53, 55-59, 66, 68-71 recites properties of the liquid hydrocarbon. Inaoka does not teach claimed properties. However, Inaoka teaches the liquid hydrocarbon is crude oil, the same hydrocarbon as claimed. It is therefore inherent that the crude oil of Inaoka has the claimed properties since such properties are evidently dependent on the nature of the composition used. Case law holds that a material and its properties are inseparable. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

14. As to claims 9, 32, 60, 72, Inaoka teaches crude oil (page 8, lines 18-20; page 17, lines 6-14). While Inaoka does recite "heavy crude oil", the genus of 'crude oil' has only two species,

'light' and 'heavy', therefore both species can be at once envisaged by the use of the phrase 'crude oil' and 'crude oil' anticipates 'heavy crude oil'.

15. As to claims 11, 13-16, 34-37, 61, 73-75, 93-96, Inaoka teaches a polymer of ethylhexyl methacrylate (page 10, lines 22-38).

16. As to claim 17, Inaoka teaches adding multifunctional monomers, including dinvinyl benzene, (page 4, lines 35-40) which has no heteroatoms.

17. As to claims 18, 38, 62, Inaoka teaches a copolymer of ethylhexyl methacrylate and sodium ethylenediamine acetate (page 10, lines 40-58).

18. As to claims 20, 40, Inaoka teaches the polymer is added to the crude oil in amounts of 0.5-50 ppm (page 8, lines 14-20).

19. Claims 21, 23, 41, 52, 54, 64-65, 67, recite properties of the polymer. Inaoka does not recite these properties. However, Inaoka teaches the same polymer as claimed. It is therefore inherent that the polymer of Inaoka has the claimed properties since such properties are evidently dependent on the nature of the composition used. Case law holds that a material and its properties are inseparable. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

20. As to claims 24, 42, heavy crude oil is generally obtained from underground oil fields in combination with water and has residual water of 8% or less (see Schievelbein: col. 1, lines 15-22).

Claim Rejections - 35 USC § 103

21. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

22. Claims 20, 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Castner** (US 4,736,005). The discussion with respect to Castner as set forth in paragraphs 4-10 above is incorporated here by reference.

23. As to claims 20, 40, Castner teaches a method of adding a polymer to petroleum to modify the viscosity where the polymer has monomers with nitrogen atoms and has molecular weights of 1,000,000 or greater (abstract; col. 2, lines 37-68; col. 3, line 1-col. 4, line 30; col. 9, lines 5-25; col. 10, lines 1-8; col. 18, lines 24-36). Castner teaches adding high molecular weight polymers in minor amounts of 100 ppm – 1500 ppm (col. 2, lines 15-35). The ranges of Castner overlap the claimed range. It is well settled that where prior art describes the components of a claimed compound or compositions in concentrations within or overlapping the claimed concentrations a prima facie case of obviousness is established. See MPEP 2144.05; *In re Harris*, 409, F3.d 1339, 1343, 74 USPQ2d 1951, 1953 (Fed. Cir 2005); *In re Peterson*, 315 F.3d 1325, 1329, 65 USPQ 3d 1379, 1382 (Fed. Cir 1997); *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936-37 (CCPA 1990); *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974).

24. Claims 19, 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Inaoka** (EP 0882739) as evidenced by **Schievelbein** (US 6,007,702).

25. As to claims 19, 39, Inaoka teaches a method of adding a drag reducing polymer to crude oil where the polymer is an ethylhexyl methacrylate homopolymer with a molecular weight of not less than 5,000,000 (abstract; page 4, lines 25-34, 44-52; page 8, lines 2-4; page 10, lines 22-38; page 17, lines 6-14). Inaoka does not specifically teach ethylhexyl methacrylate-butyl acrylate copolymers.

26. However, Inaoka teaches that (meth)acrylates are represented by the general formula $CH_2=CR_1COOR$ (R_1 being H or CH_3) (page 4, lines 25-27) and Inaoka teaches monomers, including ethylhexyl methacrylate and butyl methacrylate, can be used in combination (page 4, lines 41-43). It would have been obvious to one of ordinary skill in the art that Inaoke's disclosure of butyl (meth)acrylate includes butyl acrylate because Inaoka defines '(meth)acrylate' to include acrylates (page 4, lines 25-27). It would have been obvious to use ethylhexyl methacrylate with butyl acrylate because Inaoka teaches the formation of ethylhexyl methacrylate polymers and butyl methacrylate polymers (pages 9-12) and Inaoka teaches the monomers can be selected and combined appropriately in accordance with the performance required in the environment the polymer is used (page 4, lines 44-52).

27. Claims 83-92 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Inaoka** (EP 0882739) in view of **Milligan** (US 6,576,732) as evidenced by **Schievelbein** (US 6,007,702).

28. As to claim 83, Inaoka teaches a method of adding a drag reducing polymer to crude oil where the polymer is an ethylhexyl methacrylate homopolymer with a molecular weight of not

less than 5,000,000 (abstract; page 4, lines 25-34, 44-52; page 8, lines 2-4; page 10, lines 22-38; page 17, lines 6-14). Heavy crude oils have an API of 18 or less and an asphaltene content of 10% to 25% (see Schievelbein: col. 4, lines 8-15). Inaoka does not teach that the polymer is dispersed through a continuous phase as particles.

29. Milligan teaches adding a drag reducing polymer to crude oil as particles in a suspension (abstract; col. 8, line 6-col. 10, line 14). It would have been obvious to use the particles of Milligan with the process of Inaoka because both teach high molecular weight drag reducing polymers and Milligan teaches that the particle suspension allows for transportation or storage and does not require special equipment and that the particle suspension reduces reagglomeration, allowing for easier handling during manufacture (col. 4, lines 8-29; col. 10, lines 1-3).

30. As to claims 84-85, the ratio of monomers in the polymer and the amount of polymer in the composition are result effective variables because changing them will clearly affect the type of product obtained. See MPEP 2144.05(B). Case law holds that "discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art." See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In view of this, it would have been obvious to one of ordinary skill in the art to utilize the ratio of monomers within the scope of the present claims so as to produce desired end results.

31. As to claim 86, Inaoka teaches molecular weights of over 5,000,000 (page 8, lines 1-4). It would have been obvious to one of ordinary skill in the art that any particle containing the polymer must have a molecular weight greater than that of the polymer.

32. Claims 87-88 recite properties of the polymer particle. Inaoka does not recite these properties. However, Inaoka teaches the same polymer as claimed. It is therefore inherent that

the polymer of Inaoka has the claimed properties since such properties are evidently dependent on the nature of the composition used. Case law holds that a material and its properties are inseparable. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

33. Additionally, it is the examiner's position that the particle size is a result effective variable because changing it will clearly affect the type of product obtained. See MPEP 2144.05(B). Case law holds that "discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art." See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In view of this, it would have been obvious to one of ordinary skill in the art to utilize the particle size within the scope of the present claims so as to produce desired end results.

34. Claims 89-91 recites properties of the liquid hydrocarbon. Inaoka does not recite these properties. However, Inaoka teaches the same crude oil as claimed. It is therefore inherent that the polymer of Inaoka has the claimed properties since such properties are evidently dependent on the nature of the composition used. Case law holds that a material and its properties are inseparable. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

35. As to claim 92, Inaoka teaches crude oil (page 8, lines 18-20; page 17, lines 6-14). While Inaoka does recite "heavy crude oil", the genus of 'crude oil' has only two species, 'light' and 'heavy', therefore both species can be at once envisaged by the use of the phrase 'crude oil' and 'crude oil' anticipates 'heavy crude oil'.

Response to Arguments

36. Applicant's arguments with respect to the reference Evani (US 5,159,035) have been considered but are moot in view of the new ground(s) of rejection.

37. Applicant provides a 1.132 Declaration by Ray Johnston filed August 27, 2009 ("Johnston Declaration") discussing Evani. The arguments presented in the Johnston Declaration and the Remarks filed August 27, 2009 are moot because Evani is no longer used in a rejection.

38. In the Remarks filed August 27, 2009, Applicant argued the reference Schievelbein (US 6,007,702) does not cure the deficiencies of Evani. Applicant's arguments are moot because Evani is no longer used in a rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT C. BOYLE whose telephone number is (571)270-7347. The examiner can normally be reached on Monday-Thursday, 9:00AM-5:00PM Eastern.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571)272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ROBERT C BOYLE/
Examiner, Art Unit 1796

/Vasu Jagannathan/
Supervisory Patent Examiner, Art Unit 1796

Notice of References Cited	Application/Control No. 11/615,539	Applicant(s)/Patent Under Reexamination MILLIGAN ET AL.	
	Examiner ROBERT C. BOYLE	Art Unit 1796	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-4,736,005	04-1988	Castner, Kenneth F.	526/229
*	B	US-6,576,732	06-2003	Milligan et al.	526/347
*	C	US-6,007,702	12-1999	Schievelbein, Vernon H.	208/188
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N	0882739	09-1998	EP	Inaoka et al	
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.