

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO



No. 10-052376- -00005-0000

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Tra. 2 PATENTES Eve: 1 REGDEPOSITO
Act. 444 RESPUESTAREQUE Folios: 18

Señores

**SUPERINTENDENCIA DE INDUSTRIA Y
DIRECCION DE NUEVAS CREACIONES**
E. S. D.

Expediente: **10-052376**

Referencia: **Patente de Invención denominada P.C.T.
"METODO PARA FABRICAR FILTROS DE GRAVILLA EN
POZOS DE PETROLEO"**

Solicitante: **MECOL OIL TOOLS CORP**

I. RESPUESTA A AUTO

Yo, **CAROLINA VERA MATIZ**, obrando como apoderada del solicitante, atentamente me permito dar respuesta en tiempo oportuno al oficio No. 1919 de fecha 9 de febrero de 2012.

De acuerdo con su solicitud me permito informar a su despacho que el pasado 21 de octubre de 2011, procedimos a presentar formulario de modificaciones con el respectivo pago para que se tenga en cuenta que es una **PATENTE DE INVENCION, FASE NACIONAL, DE P.C.T.**

II. ANEXO:

Formulario debidamente radicado y sus anexos.

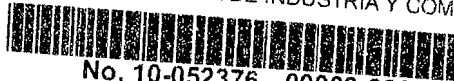
Atentamente.


CAROLINA VERA MATIZ
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No. 10-052376- -00003-0000

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Tra. 2 PATENTES Eve: 1 REGDEPOSITO
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FORMULARIO UNICO DE CORRECCIONES Y MODIFICACIONES

2000-10



SOLICITUD DE:



Corrección de error material



Modificación a una Solicitud

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IDENTIFICACION

C.C. ☐ NIT ☐

C.E. ☐ Otro ☒

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Número: 52.225.999
T.P. 91835 del C.S.

Número de Expediente: 10-052376

(Mixta) METODO PARA FABRICAR FILTROS DE GRAVILLA EN POZOS PETROLEROS



Descripción de la corrección o modificación solicitada:

MODIFICACION: DE PATENTE DE INVENCION A PCT FASE NACIONAL



Comprobante de Pago No.:

Fecha

Anexos



Comprobante de pago de la tasa.



Poderes, si fuere el caso.



Certificado de existencia y representación legal, si fuere el caso.

Nombre: CAROLINA VERA MATIZ

Firma:

C.C.: 52.225.999

T.P. 91835 del

PETITORIO

Industria y Comercio
SUPERINTENDENCIA

FORMULARIO UNICO DE SOLICITUD DE PATENTE PCT ENTRADA EN FASE NACIONAL

①

SOLICITUD DE:



Patente de Invención.



Patente de Modelo de Utilidad



Capítulo I.



Capítulo II

②

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NIT



C.E.



Otro



Número: 52.225.999
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④

INVENTOR(ES)
(72)

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Dirección:

Domicilio: MIAMI FLORIDA

⑤

PCT (86)

Solicitud Internacional No. PCT/US2009/006697

Fecha

23/07/2009

Publicación Internacional No. WO/2011/010985

Fecha

27/01/2011

⑥

Título (54): METODO PARA FABRICAR FILTROS DE GRAVILLA EN POZOS PETROLEROS

⑦

Clasificación Internacional (51): _____

⑧

Prioridad

SI



NO



(33) País de Origen

REPUBLICA DE BELARUS

(32) Fecha

//

(31) N° de Solicitud

⑨

Comprobante de Pago N°.: _____

Fecha _____

©

ANEXOS

- ☒ Comprobante de pago de la tasa de presentación de la solicitud.
- ☐ Documento que acredita la existencia y representación legal cuando el solicitante sea persona jurídica.
- ☐ Poderes si fuere el caso.
- ☐ Documento de cesión del inventor al solicitante o a su causante.
- ☐ Declaraciones.
- ☐ Copia de la solicitud internacional. (Resumen, descripción, reivindicaciones, dibujos).
- ☐ Traducción de la solicitud internacional al castellano. (Resumen, descripción, reivindicaciones, dibujos).
- ☐ Copia del examen preliminar internacional efectuado por la Autoridad Internacional de Examen Preliminar (IPEA).
- ☐ Traducción del examen preliminar internacional efectuado por la IPEA.
- ☐ De ser el caso, copia del contrato de acceso.
- ☐ De ser el caso, documento que acredite la licencia o autorización de uso de conocimientos tradicionales de las comunidades indígenas.
- ☐ De ser el caso, certificado de depósito del material biológico.
- ☐ Arte final 12 x 12.
- ☐ De ser el caso, información sobre otras solicitudes de patente o títulos obtenidos en el extranjero por el mismo titular o su causante, relacionadas parcial o totalmente con la invención de esta solicitud.
- ☐ De ser el caso, modificaciones efectuadas a la solicitud internacional.
- ☐ Otros.

11) FIGURA CARACTERÍSTICA:

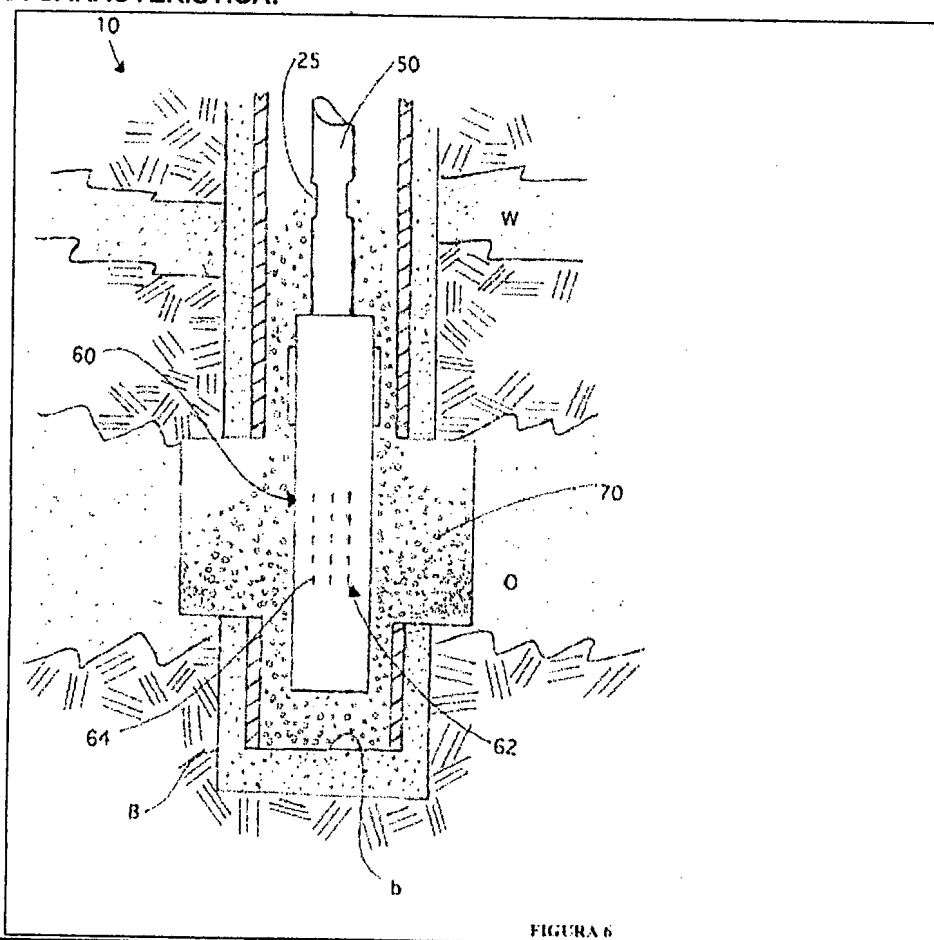


FIGURA 6

12) Solicito la consecución de la patente,

NOMBRE: CAROLINA VERA MATIZ

FIRMA:

[Signature]
C.C.: 52.225.999 T.P. 91835 del

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:
JESUS SANCHELIMA
235 S.W. LE JEUNE ROAD
MIAMI, FL 33134

PCT

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT AND
THE WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

Applicant's or agent's file reference 290362		Date of mailing (day/month/year) 10 MAR 2010
International application No. PCT/US 09/06697		FOR FURTHER ACTION See paragraphs 1 and 4 below
Applicant MECOL OIL TOOLS CORPORATION		International filing date (day/month/year) 23 December 2009 (23.12.2009)

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes
1211 Geneva 20, Switzerland, Facsimile No.: +41 22 338 8270

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☐ With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:
- ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.
 - ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. Reminders

Shortly after the expiration of 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

Within 19 months from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later); otherwise, the applicant must, within 20 months from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

In respect of other designated Offices, the time limit of 30 months (or later) will apply even if no demand is filed within 19 months.

See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774
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Form PCT/ISA/220 (January 2004)

(See notes on accompanying sheet)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 09/06697

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - E21B 43/04 (2010.01)

USPC - 166/278

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC(8): E21B 43/04 (2010.01)

USPC: 166/278

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

IPC(8): E21B 43/04 (2010.01) - see search terms below

USPC: 166/51, 242.1, 244.1, 250.1, 278, 297 - see search terms below

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

PubWEST(USPT,PGPB,EPAB,JPAB); GooglePatents; GoogleScholar

Search Terms: Wellbore, formation, gravel, pack, filter, section, mill, underreammer, casing, cut, perforate, penetrate, through, screen, liner, seal, packer, enlarge, expand, bore, diameter, radius

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,255,741 A (ALEXANDER) 26 October 1993 (26.10.1993), entire document especially Fig 1-3, col 2, ln 53-59, col 3, ln 4-10, col 5, ln 11-12, col 5, ln 57-61, col 6, ln 11-16	1-3
Y	US 5,174,379 A (WHITELEY et al.) 29 December 1992 (29.12.1992), Fig 1B, col 3, ln 24-26	1-3
Y	US 5,145,004 A (CORNETTE) 08 September 1992 (08.09.1992), Fig 1-5, col 3, ln 58-62	1-3
Y	US 6,920,923 B1 (PIETROBELLI et al.) 26 July 2005 (26.07.2005), abstract, Fig 1-8	2-3

☐ Further documents are listed in the continuation of Box C. ☐

* 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 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

Date of the actual completion of the international search

09 February 2010 (09.02.2010)

Date of mailing of the international search report

10 MAR 2010

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US, Commissioner for Patents

P.O. Box 1450, Alexandria, Virginia 22313-1450

Facsimile No. 571-273-3201

Authorized officer:

Lee W. Young

PCT Helpdesk: 571-272-4300

PCT OSP: 571-272-7774

Form PCT/ISA/210 (second sheet) (July 2009)

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 09/06897

Box No. 1 Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of:
☒ the international application in the language in which it was filed.
☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).
2. ☐ This opinion has been established taking into account the rectification of an obvious mistake authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a)).
3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, this opinion has been established on the basis of a sequence listing filed or furnished:
 - a. (means)
☐ on paper
☐ in electronic form
 - b. (time)
☐ in the international application as filed
☐ together with the international application in electronic form
☐ subsequently to this Authority for the purposes of search
4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US 09/06697

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of:

Box V.2. Citations and explanations:

Neither Alexander nor Whiteley explicitly teach the steps of installing said intake screen coaxially disposed within a casing and sealing the casing from above. However, Comette, which is also drawn to a method for making gravel filters in oil wells, teaches:

D) said producing tube having said intake screen and being coaxially disposed within said casing (col 4, in 23-37, Fig 1-5, item 21 within casing 13 -- First auger-liner assembly 20 is comprised of a first fluid-permeable liner 21 having an auger blade 22 welded or otherwise secured to and extending along the outer periphery thereof. "Fluid-permeable liner", as used herein, is meant to be generic and to include any and all types of liners (e.g. screens, slotted pipes, screened pipes, perforated liners, pre-packed screens and/or liners, combinations of same, etc.) which are used or could be used in well completions of this general type. As will be recognized by those skilled in the art, there are presently several known suppliers from whom such "liners" are readily commercially available. The liner may be of a continuous length, as shown, or it may be comprised of a plurality of segments connected by subs or "blanks"); and

F) sealing a space between said bore and said casing at a predetermined distance above (Fig 1-5, items 26, 38 -- packers 26, 38 seal the space between wellbore 11 and casing 13 from a position above the casing perforations 12a, 13a).

It would have been obvious to one of ordinary skill in the art to combine the steps of installing the intake screen coaxially disposed within a casing and sealing the casing of Comette with the method of Alexander and the step of cutting the casing of Whiteley because installing an intake screen within a casing would allow for the suction of formation fluids that permeate into the casing. Further, sealing the casing from above would allow the gravel trap to be contained thereby allowing the installation of multiple gravel packs along a single wellbore casing, as suggested by Comette.

Neither Alexander, Whiteley, nor Comette explicitly teach defining a space between said bore and said casing that is cemented to keep said casing in place. However, Comette does teach a space between said bore and casing (Fig 1) and Alexander does teach cementing the casing to the formation (col 5, in 11-12, Fig 2A-C, item 38 -- Surface casing 38 is shown set to the top of formation UF and cemented in place, as is customary). As a cement region is already customary, it would have been obvious to one of ordinary skill in the art to specify a defined cemented space between the casing and the bore to ensure the casing is securely held in place.

Claims 2 and 3 lack an inventive step under PCT Article 33(3) as being obvious over Alexander, Whiteley, Comette, and in further view of US 6,920,923 B1 to Pietrobelli et al. (hereinafter 'Pietrobelli').

Regarding claim 2, Alexander in view of Whiteley and Comette discloses the apparatus of claim 1. Alexander further teaches the steps of cutting and enlarging said bore's diameter being performed with an underreamer (col 5, in 13-14, Fig 2A-D, item 20 -- Apparatus 10 is shown with underreamer roller cone bits 20; col 6, in 11-16, Fig 3, item 320 -- FIG. 3 presents an alternate means for enlarging a pilot hole for use in an apparatus for drilling and installing a gravel-packed liner 10, in accordance with the present invention. As shown, the means for enlarging a pilot hole employs a pair of underreaming drag blades 320). Whiteley further teaches cutting said casing (Fig 1B-C, item 18 -- perforating gun 18 perforates casing 14). Neither references explicitly teaches said method also performed with a section mill. However, Comette does teach a fish blade mill (col 5, in 26-29). Pietrobelli teaches a section mill (abstract, Fig 1-8). It would have been obvious to one of ordinary skill in the art to combine the section mill and cutting method of Pietrobelli with that of Alexander, in view of Whiteley and Comette, thus providing a faster and more efficient method of cutting said casing and bore.

Regarding claim 3, Alexander in view of Whiteley, Comette, and Pietrobelli discloses the apparatus of claim 2. Comette further teaches the gravel being selected for predetermined diameters in accordance with the characteristics of said producing formation (col 3, in 58-66, Fig 1-5, item 14 -- "Gravel" 14 as used herein is intended to include all particulate and/or aggregate materials (e.g. gravel, sand, combinations, etc.) which are used or can be used in gravel pack or fracture completions. As known in the art, the "gravel" particles used in a particular situation are sized so as to block or filter out the particulates which may be produced with the well fluids or which are used to prop open a hydraulically-induced fractures in the formation).

Claims 1-3 have Industrial applicability as defined by PCT Article 33(4) because the subject matter can be made or used in industry.

I. TITLE: *METHOD FOR MAKING GRAVEL FILTERS IN OIL WELLS*

II. TECHNICAL FIELD

1. Field of the Invention.

[001] The present invention relates to a method for making gravel filters in oil well bores, particularly in those oil well bores where there are water veins near oil producing formations.

III. BACKGROUND ART

2. Other Related Applications.

[002] Some producing formations tapped by oil well installations have sandy characteristics that require the creation of gravel filters adjacent to the producing formation. The present methods typically gun the casing to make holes that connect the producing tube with a gravel filter that is defined by the inner surface of the well bore and the outer surface of the casing. This results in a very limited and thin gravel filter that is susceptible to getting clogged thereby frequently interrupting the operation of the well. The method is also not very precise.

[003] Several methods for making gravel filters in oil well bores have been used in the past. None of them, however, have the flexibility and precision, nor the effectiveness (from its larger size), of the present method. Additionally, this method can be used in new and old oil wells, including those where the gun

method was used. The precision characteristics of the present method are quite desirable in oil wells with water veins in relative proximity to the oil producing formation.

[004] Applicants believe that one of the related references corresponds to U.S. patent No. 2,371,385 issued to Eckel in 1942 for a gravel packed liner and perforation assembly. Eckel's patent discloses the use of a gun perforator **21** that is suspended by a cable **24** within a liner or casing **11**. The latter includes an envelope carrying the granular material or gravel **17**. The difficulties with the uncertain path of the bullets passing through granular material **17** are documented by the patentee. Page 2, Col. **3**, lines 25-32. Another problem with present gunned oil well casings is that the gravel material needs to be selected so that it is smaller than the unpredictable perforations. In sum, there is little control or precision to anticipate the resulting openings with gun operated procedures.

[005] Other patents describing the closest subject matter provide for a number of more or less complicated features that fail to solve the problem in an efficient and economical way. None of these patents suggest the novel features of the present invention.

V. BRIEF DESCRIPTION OF THE DRAWINGS

[006] With the above and other related objects in view, the invention consists in the details of construction and combination of parts as will be more fully understood from the following description, when read in conjunction with the accompanying drawings in which:

Figure 1 represents an elevational cross-sectional view of an oil well bore **B** with a new (unused) casing **20** and a cemented bottom. A producing formation and a water vein above it are also represented to show typical characteristics in an oil well.

Figure 2 shows an elevational representation similar to the one shown in the previous figure with a section mill tool positioned to start cutting through the casing.

Figure 3 illustrates another elevational view similar to the previous figures with the blades cutting through the casing.

Figure 4 is a representation of an elevational view of the well's bore with the tool section milling the casing.

Figure 5 shows a cross-sectional view of the well's bore except for the underreamer tool for which the cross-section is not shown. The underreamer is shown enlarging the bore in a predetermined location.

Figure 6 shows an elevational view of the well's bore with a tool forming a gravel-packed filter between the enlarged portion of the bore and the casing.

Figure 7 represents another elevational view of the well's bore shown in the previous figures with a producing tube in place that includes a screen through which the filtered sand with oil is passed.

Figure 8 shows an elevational view of a conventional oil well as it exists in the prior art.

VI. DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[007] Referring now to the drawings, where the relevant portion of an oil well installation is generally referred to with numeral 10, it can be observed that it basically includes casing 20 that extends coaxially inside bore B that includes a cemented bottom b, as it is typically found in new oil well installations. Bore B typically passes through water formations W and oil producing formations O. The space S between casing 20 and bore B is typically cemented to keep casing 20 in place. The lowermost end 22 of casing 20 is typically brought against bottom b. Several tools are then inserted in casing 20 and lowered to the required locations and finally the producing casing is installed.

[008] In old oil well installations, a filter has been previously made with a gun perforator that caused holes 23 to be made through casing 20 at predetermined locations, as shown in figure 8. The explosives used penetrate through cemented space S. The present invention can also be used to repair these conventional operating oil well installations.

[009] The first step in the present method is to ascertain the location where the window for the filter is to be made or where the repair is to take place. Once this is determined, a section milling tool is lowered to that location and casing 20 is cut, creating an interruption. The cutting takes place with precision that is not possible with the gunning method. In this manner, a user can avoid water formations W.

Casing **20** is kept in place since the annular space between casing **20** and the surface of bore **B** has been cemented, as it is conventionally done in the industry. A section milling tool, like the one described in U.S. patent No. 6,920,923, can be used to perform this function. A section milling tool is used to cut casing **20** and concentrates its blades' action on this operation.

[010] The next step, after withdrawing the section milling tool **30**, is the lowering of the underreamer **40** to the location where the window was formed. An underreamer, like the one described in Applicant's U.S. patent No. 5,896,940, can be used for this step. The underreamer enlarges the diameter of the bore at a location adjacent to where the window **25** was formed as it can be seen in figure 5.

[011] After retrieving underreamer **40**, a setting tool **50** is lowered and a mix of gravel and a fluid is pumped radially through window **25**, as seen in figure 6. The fluid can be water or other suitable liquid conventionally used to carry granular material, such as gravel, in oil well installations. Once a sufficient amount of the gravel mix **70** is pumped in the enlarged portion of the well, setting tool **50** is retrieved and producing tube **60** is installed. The result is a considerably larger volume of gravel filter **80** with an extended life, as best seen in figure 7.

[012] Producing tube **60** includes a screen **62** with through holes **64** cooperatively smaller than the diameter of the granular material constituting the annular filter to prevent this material from entering producing tube **60**. Different types of producing tubes **60** are conventionally used.

[013] One of the advantages of the present method for creating a gravel filter is its precision. A user can control the dimensions of the window or windows to be

built in casing 20. The size of the gravel used can also be controlled thereby knowing what the characteristics of the filter will be. The present methods for building gravel filters at present involve gunning a portion of casing 20 with unpredictable locations and dimensions for the holes.

[014] The foregoing description conveys the best understanding of the objectives and advantages of the present invention. Different embodiments may be made of the inventive concept of this invention. It is to be understood that all matter disclosed herein is to be interpreted merely as illustrative, and not in a limiting sense.

VII. INDUSTRIAL APPLICABILITY

[015] It is apparent from the previous paragraphs that an improvement of the type for such a method for making gravel filters in oil wells is quite desirable for making oil well filters with precision and less likely to become clogged over a predetermined period of time.

VIII. CLAIMS

What is claimed is:

1. A method for making gravel filters in oil wells having a casing coaxially mounted within a well bore and defining a space between said bore and said casing that is cemented to keep said casing in place, comprising the steps of:

- A) ascertaining the location, at the cemented casing in an oil well bore, adjacent to a producing formation where a gravel filter is to be built;
- B) cutting a portion of said casing adjacent to said producing formation;
- C) enlarging said bore's diameter where said portion was cut to create an enlarged annular space by removing the cemented space adjacent to said portion and beyond the bore's initial diameter;
- D) lowering and installing a producing tube having a distal end with an intake screen and being coaxially disposed within said casing and positioning said intake screen substantially adjacent to said casing portion which was removed;

E) depositing an effective amount of gravel in said enlarged annular space; and

F) sealing said space between said bore and said casing at a predetermined distance above said portion.

2. The method set forth in claim 1 wherein the steps of cutting said casing and enlarging said bore's diameter is performed with a section mill and an underreamer.

3. The method set forth in claim 2 wherein the gravel is selected for predetermined diameters in accordance with the characteristics of said producing formation.

ABSTRACT OF THE DISCLOSURE

A method for making gravel filters in oil well bores by ascertaining the location of a producing formation adjacent to a cemented casing in a well bore, cutting a portion of the casing adjacent to the producing formation, enlarging the bore adjacent to the producing formation and depositing a sufficient amount of gravel in the enlarged portion of the bore to create an effective filter for a producing tube with a screen at its distal end positioned adjacent to the cemented bottom of the well bore.

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
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RECIBO DE CAJA

No. 11 - 0089420

Industria y Comercio
SUPERINTENDENCIA

Bogotá D.C., Septiembre 12 de 2011 - 15:35:33

RECIBIDO DE : VERA ABOGADOS ASOCIADOS S.A. NI 830.026.910

*** Soporte del Pago ***

TIPO PAGO	BANCO	CUENTA	No. PAGO	FECHA PAGO	VR. PAGO
CONSIGNACION	BANCO DE BOGOTA	062754387	353468371	08/09/2011	118.000.00

*** Conceptos Pagados ***

CANT.	RENTISTICO	CONCEPTO	Vr. UNDITARIO	Vr. CONCEPTO
1	50005-01-03 CAMBIO DE MODALIDAD Y MODIFICACIONES EN CREACION CORRECCION A SOLICITUD EN TRAMITE / MODIFICA		118.000.00	118.000.00
				\$118.000.00

SON: **CIENTO DIECIOCHO MIL PESOS MONEDA CORRIENTE***

Responsable: _____
Recibo de Caja Aplicado al Expediente No. _____