



New connection on: : 02-03-2018 : 08:27:51 - Last disconnection on: : 28-02-2018 : 22:34:10

V 4.0.0.44358(LP,U,linux) (Rev:43856 2017-04-27 09:03:29 +0200#(D201802)) (RPM D201802)

Welcome to EPOQUE Rebuild under the Production Environment

[No database/cluster active] ..fi epodoc

 Database: EPODOC

[EPODOC: SS 1] (ammonium_nitrate or ANFO) and ((waste or residual or used or remaining) 1d oil) and filter+

Results in EPODOC 10

[SS 2] * and PD<2014-06-25

Results in EPODOC 2

[SS 3] ..li



1/2 © EPODOC / EPO

PN - [CN102001900](#) A 20110406

PNFP - CN102001900B B 20110928

PR - CN20101502489 20101011

AP - CN20101502489 20101011

DT - I

CT - (A)
[CN101108917](#) A []

PA - (A B)
BIN XIE

TI - (A B)
Water resistance vegetable composite oil phase

AB - (A)
The invention relates to a water resistance vegetable composite oil phase which comprises the following components in percent by mass: 5-30 percent of hydrogenated vegetable fatty acid, 5-20 percent of vegetable wax, 20-50 percent of vegetable oil foot, 5-20 percent of vegetable oil and fat, 20-50 percent of decompressed cerate and 0.5-3 percent of surfactant. The water resistance vegetable composite oil phase is prepared

- (B)

2/2 © EPODOC / EPO

PR - NL19600257050 19601020

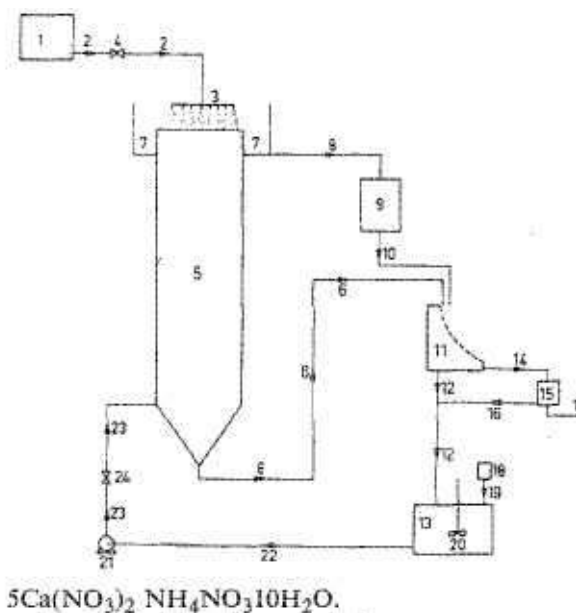
DT - *

CLC

- C05C1/02, C05C5/005, C05C5/04, INV
- C05C1/02, C05C5/005, INV

PA - SHELLINTRESEARCH

AB - <PICT:0934510/III/1> A calcium nitrate melt containing **ammonium nitrate** is



granulated by division into drops which fall into a mineral oil containing a seed material so that the drops cool during the fall and solidify into granules, and the drops fall through a zone in the mineral oil with a seed material content of from 0,01 to 0,5% by weight and having a maximum temperature of 52 DEG C.; the seed material content is brought to or kept at the required value by addition of one or more of $\text{Ca}(\text{NO}_3)_2 \cdot 2\text{H}_2\text{O}$, $\text{Ca}(\text{NO}_3)_2 \cdot 3\text{H}_2\text{O}$ and $\text{Ca}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$. The approximate formula of the melt is $5\text{Ca}(\text{NO}_3)_2 \cdot \text{NH}_4\text{NO}_3 \cdot 10\text{H}_2\text{O}$. The proportion by weight of water is between 12 and 17%, and the proportion by weight of **ammonium nitrate** does not exceed 0,44 times that of water. The solidified granules collect in the bottom of the oil shaft 5 from which they pass with oil through line 6 to a **filter** 11; the granules pass from here to a centrifuge 14, where adhering oil is flung off and passes to reservoir 13; oil also passes over the upper rim of shaft 5 and passes via line 8 through a cooler 9, which may also be used as a heater, to **filter** 11. The oil passes from **filter** 11 to reservoir 13, to which seed material may be added through line 19. The oil (with seed material) is then pumped back through line 23, where its temperature is maintained (by cooling or heating in cooler 9) above 30 DEG -40 DEG C. (according to viscosity) and below 52 DEG C., into shaft 5. The seed material in the oil flows slowly upward in shaft 5 and comes into contact with the drops to be solidified. Some unconsumed seed material

will leave the shaft with the oil via line 8 and possibly also through line 6. A small proportion of the calcium nitrate melt will be converted into finer particles of calcium nitrate, which remain suspended in the oil and act, on recirculation as seed material. Hence the flow of fresh seed material through line 19 can be reduced or discontinued. The **oil used** may be kerosine, gas oil, spindle oil or light machine oil. If 10% or more normally solid hydrocarbon wax, e.g. macro- or micro-crystalline paraffin wax, or ceresine wax, is present in the oil, granules may be obtained having a layer of solid hydrocarbon to reduce moisture sensitivity, and delay the availability in soil. Specifications 313,652 and 794,855 are referred to.

[SS 3] ANFO and (residual 1d oil)

Results in EPODOC 5

[SS 4] ..li



1/5 © EPODOC / EPO

PN - [MX2016017150](#) A 20170406

PR - WO2014PE00009 20140625

AP - MX20160017150 20140625

DT - I

CCI - [C06B31/285](#)

CQI - [C06B21/0008](#) ; [C06B21/0091](#)

PA - EXSA S A [PE]

TI - METHOD FOR PRODUCING AN **ANFO** EXPLOSIVE USING AMMONIUM NITRATE AND RESIDUAL OILS, AND PRODUCT THUS PRODUCED.

AB - The invention relates to a method for producing **ANFO** on the basis of filtration and purification of the residual oils of a mine in a filter truck especially designed and developed for this purpose, with the aim of completely replacing the diesel fuel 2 with said residual oils that have been previously treated in order to mix same with

ammonium nitrate. The invention also relates to the product resulting from said method. The aim of the invention is to use the **residual oil** produced in mines in large quantities, as the only combustible agent in the production of **ANFO**, generating cost savings by entirely substituting the diesel 2 and additionally eliminating the existing risk inherent in the removal of the **residual oil** from the mine and the negative impact that it can generate in the environment if it is not used appropriately.

2/5 © EPODOC / EPO

PN - [US2017158577](#) A1 20170608
 PR - WO2014PE00009 20140625
 AP - US201415315648 20140625
 DT - *; Rep
 CCI - [C06B31/285](#)
 CQI - [C06B21/0008](#) ; [C06B21/0091](#)
 PA - EXSA S A [PE]
 TI - Method for Producing an **ANFO** Explosive Using Ammonium Nitrate and Residual Oils and Product Thus Produced
 AB - The present invention relates to a method for producing **ANFO** on the basis of filtration and purification of the residual oils of a mine in a filter truck especially designed and developed for this purpose, with the aim of completely replacing the diesel fuel 2 with said residual oils that have been previously treated in order to mix same with ammonium nitrate, as well as the product resulting from said method. The aim of this invention is to use the **residual oil** produced in mines in large quantities, as the only combustible agent in the production of **ANFO**, generating cost savings by completely substituting diesel 2 and additionally eliminating the existing risk inherent in the removal of the **residual oil** from the mine and the negative impact that it can generate in the environment if it is not used appropriately.

3/5 © EPODOC / EPO

PN - [AU2014398702](#) A1 20170112
 PR - WO2014PE00009 20140625
 AP - AU20140398702 20140625
 DT - I
 CCI - [C06B31/285](#)
 CQI - [C06B21/0008](#) ; [C06B21/0091](#)
 PA - EXSA S A
 TI - Method for producing an **ANFO** explosive using ammonium nitrate and residual oils, and product thus produced
 AB - The invention relates to a method for producing **ANFO** on the basis of filtration and purification of the residual oils of a mine in a filter truck especially designed and developed for this purpose, with the aim of completely replacing the diesel fuel 2 with said residual oils that have been previously treated in order to mix same with ammonium nitrate. The invention also relates to the product resulting from said method. The aim of the invention is to use the **residual oil** produced in mines in large quantities, as the only combustible agent in the production of **ANFO**, generating cost

savings by entirely substituting the diesel 2 and additionally eliminating the existing risk inherent in the removal of the **residual oil** from the mine and the negative impact that it can generate in the environment if it is not used appropriately.

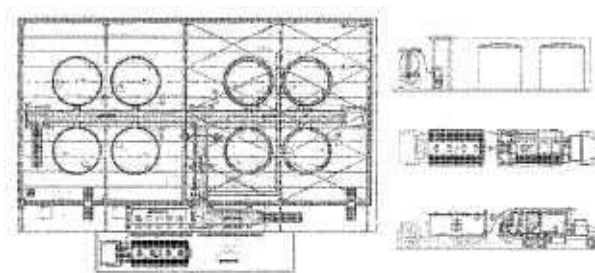
4/5 © EPODOC / EPO

- PN - [CA2951834](#) A1 20151230
- PR - WO2014PE00009 20140625
- AP - CA20142951834 20140625
- DT - I
- CCI - [C06B31/285](#)
- CQI - [C06B21/0008](#) ; [C06B21/0091](#)
- PA - EXSA S A [PE]
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5/5 © EPODOC / EPO

- PN - [WO2015199556](#) A1 20151230
- PR - WO2014PE00009 20140625
- AP - WO2014PE00009 20140625
- DT - **
- CT - |ES| ISR (A1)
[US5397405](#) A 19950314
 [X] (SMITH SYDNEY O [CA], et al)
 [X] 1-4
 *, column 1, lines 44-46 *;
[XP055248359](#) A[X];
[US2007175511](#) A1 20070802
 [A] (DOERR KEVIN [US], et al)
 [A] 1-4
 *, paragraph [53]; figures 1-2 *;
[WO2008029339](#) A2 20080313
 [A] (AFRICAN EXPLOSIVES LTD
 [ZA], et al)
 [A] 1-4
 *, page 1, line 8-14; page 2, line 11 *

FIGURA 07



CTNP	- ES ISR (A1) [X] - RUHE, T. et al., "Thermal stability of ANFO made with recycled oil"., PROCEEDINGS OF THE ANNUAL CONFERENCE ON EXPLOSIVES AND BLASTING TECHNIQUE, (19990000), vol. 2, pages 263 - 272, XP055248359 [X] 1-4 * ; pag. 1-2; tables 1-2 *
CCI	- C06B31/285
CQI	- C06B21/0008 ; C06B21/0091
PA	- EXSA S A [PE]
TI	- METHOD FOR PRODUCING AN ANFO EXPLOSIVE USING AMMONIUM NITRATE AND RESIDUAL OILS, AND PRODUCT THUS PRODUCED
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[SS 4] explosive and (residual 1d oil)

Results in EPODOC 13

[SS 5] ..li



1/13 © EPODOC / EPO

- PN - [MX2016017150](#) A 20170406
- PR - WO2014PE00009 20140625
- AP - MX20160017150 20140625
- DT - I
- CCI - [C06B31/285](#)
- CQI - [C06B21/0008](#) ; [C06B21/0091](#)
- PA - EXSA S A [PE]
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2/13 © EPODOC / EPO

- PN - [US2017158577](#) A1 20170608
- PR - WO2014PE00009 20140625
- AP - US201415315648 20140625
- DT - *; Rep
- CCI - [C06B31/285](#)
- CQI - [C06B21/0008](#) ; [C06B21/0091](#)
- PA - EXSA S A [PE]
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combustible agent in the production of ANFO, generating cost savings by completely substituting diesel 2 and additionally eliminating the existing risk inherent in the removal of the **residual oil** from the mine and the negative impact that it can generate in the environment if it is not used appropriately.

3/13 © EPODOC / EPO

PN - [AU2014398702](#) A1 20170112
PR - WO2014PE00009 20140625
AP - AU20140398702 20140625
DT - I
CCI - [C06B31/285](#)
CQI - [C06B21/0008](#) ; [C06B21/0091](#)
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AB - The invention relates to a method for producing ANFO on the basis of filtration and purification of the residual oils of a mine in a filter truck especially designed and developed for this purpose, with the aim of completely replacing the diesel fuel 2 with said residual oils that have been previously treated in order to mix same with ammonium nitrate. The invention also relates to the product resulting from said method. The aim of the invention is to use the **residual oil** produced in mines in large quantities, as the only combustible agent in the production of ANFO, generating cost savings by entirely substituting the diesel 2 and additionally eliminating the existing risk inherent in the removal of the **residual oil** from the mine and the negative impact that it can generate in the environment if it is not used appropriately.

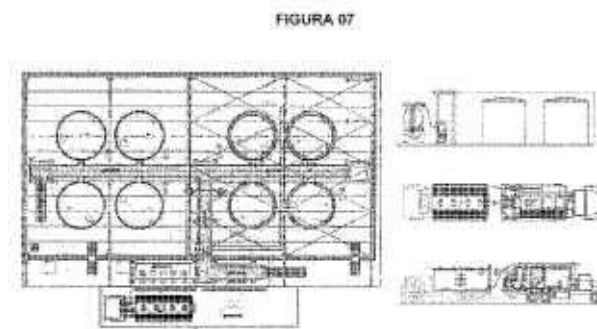
4/13 © EPODOC / EPO

PN - [CA2951834](#) A1 20151230
PR - WO2014PE00009 20140625
AP - CA20142951834 20140625
DT - I
CCI - [C06B31/285](#)
CQI - [C06B21/0008](#) ; [C06B21/0091](#)
PA - EXSA S A [PE]
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that it can generate in the environment if it is not used appropriately.

5/13 © EPODOC / EPO

- PN - [WO2015199556](#) A1 20151230
- PR - WO2014PE00009 20140625
- AP - WO2014PE00009 20140625
- DT - **
- CT - |ES| ISR (A1)
[US5397405](#) A 19950314
 [X] (SMITH SYDNEY O [CA], et al)
 [X] 1-4
 * , column 1, lines 44-46 *;
[XP055248359](#) A[X];
[US2007175511](#) A1 20070802
 [A] (DOERR KEVIN [US], et al)
 [A] 1-4
 * , paragraph [53]; figures 1-2 *;
[WO2008029339](#) A2 20080313
 [A] (AFRICAN EXPLOSIVES LTD
 [ZA], et al)
 [A] 1-4
 * , page 1, line 8-14; page 2, line
 11 *
- CTNP - |ES| ISR (A1)
 [X] - RUHE, T. et al., "Thermal
 stability of ANFO made with
 recycled oil"., PROCEEDINGS OF
 THE ANNUAL CONFERENCE ON
 EXPLOSIVES AND BLASTING
 TECHNIQUE, (19990000), vol. 2,
 pages 263 - 272, XP055248359
 [X] 1-4
 * ; pag. 1-2; tables 1-2 *
- CCI - [C06B31/285](#)
- CQI - [C06B21/0008](#) ; [C06B21/0091](#)
- PA - EXSA S A [PE]
- TI - METHOD FOR PRODUCING AN
 ANFO **EXPLOSIVE** USING
 AMMONIUM NITRATE AND
 RESIDUAL OILS, AND PRODUCT
 THUS PRODUCED
- AB - The invention relates to a
 method for producing ANFO on
 the basis of filtration and
 purification of the residual oils
 of a mine in a filter truck



especially designed and developed for this purpose, with the aim of completely replacing the diesel fuel 2 with said residual oils that have been previously treated in order to mix same with ammonium nitrate. The invention also relates to the product resulting from said method. The aim of the invention is to use the **residual oil** produced in mines in large quantities, as the only combustible agent in the production of ANFO, generating cost savings by entirely substituting the diesel 2 and additionally eliminating the existing risk inherent in the removal of the **residual oil** from the mine and the negative impact that it can generate in the environment if it is not used appropriately.

6/13 © EPODOC / EPO

PN - [CN102452866](#) A 20120516

PNFP - CN102452866B B 20131204

PR - CN20101513734 20101014

AP - CN20101513734 20101014

DT - I

CT - || STSE (A)

[US4994123](#) A 19910219 [A] (PATRICK MICHAEL A [US], et al) [A]

[AU593185B](#) B1 19900201 [A] (GANSU RES INST CHEM IND) [A]

[CN1174181](#) A 19980225 [A] (CHINA PETROCHEMICAL CORP [CN]) [A]

[CN1362389](#) A 20020807 [A] (CHINA PETROCHEMICAL CORP [CN]) [A]

PA - (A B)
CHINA PETROLEUM & CHEMICAL; SINOPEC FUSHUN RES INST PET

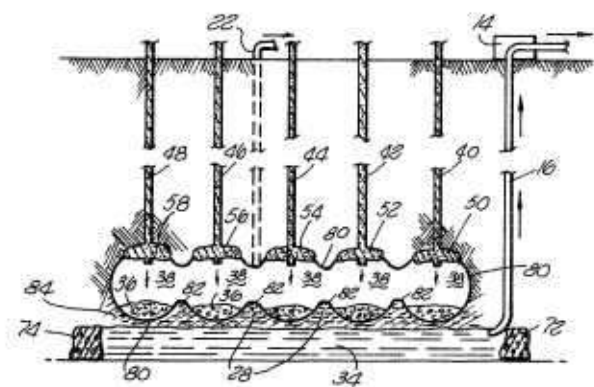
TI - (A B)
Preparation method for continuous phase material of emulsion **explosive**

AB - (A)
The present invention discloses a preparation method for a continuous phase material of an emulsion **explosive**. The raw materials of the continuous phase material

comprise, by weight, 0-20% of vacuum distillate oil, 70-95% of vacuum cerate, and 5-20% of **residual oil** cerate. According to the preparation method, a catalyst is added to the raw materials of the continuous phase material, wherein the weight of the catalyst is 0.1-1.0% of the weight of the raw materials of the continuous phase material; oxygen-containing gas is introduced to carry out a reaction for 2-10 hours at a temperature of 130-180 DEG C; phospholipid is added to the oxidation product to prepare the continuous phase material of the emulsion **explosive**, wherein the weight of the phospholipid is 0.1-5% of the weight of the raw materials of the continuous phase material. When the continuous phase material prepared by the method of the present invention is used for preparation of the emulsion **explosive**, the use amount of the emulsion can be substantially reduced under the premise of assurance of the product quality, such that the emulsion **explosive** production cost is reduced.

7/13 © EPODOC / EPO

- PN - [US4273615](#) A 19810616
- PR - US19780925576 19780717
- AP - US19780925576 19780717
- DT - *; Rep
- CT - || STSE (A)
[US3105014](#) A 19630924 [] (HARRISON WILLIAM M)
[US3113620](#) A 19631210 [] (HEMMINGER CHARLES E)
[US3233670](#) A 19660208 [] (THOMPSON GENE D, et al)
[US3659649](#) A 19720502 [] (DUNLAP HENRY F)
[US3707188](#) A 19721226 [] (HECKMAN RICHARD A)
[US3712374](#) A 19730123 [] (TERHUNE R)
[US3764660](#) A 19731009 [] (KRIKORIAN O)
[US3814185](#) A 19740604 [] (BOARDMAN C)
[US3864208](#) A 19750204 [] (VAN HUISEN ALLEN T)
[US3936353](#) A 19760203 [] (CHEN NAI YUEN)
[US4046630](#) A 19770906 [] (COAST GEOFFREY, et al)
- CCI - [B09B3/00](#) ; [C02F3/28](#) ;
[C09K8/60](#) ; [C12M21/04](#) ;
[C12M23/18](#) ; [E21B43/00](#) ;
[E21B43/24](#) ; [E21B43/263](#)
- CCA - [Y02W10/37](#)
- PA - HIRBOD FARROKH



TI - Oil stimulation process

AB - A method of converting organic waste into useful petroleum products and for recovering previously unrecoverable **residual oil** in oil bearing geologic layers. An organic slurry containing obligatory anaerobes is first formed from garbage, sewage and the like to which may be added various catalysts such as iron or cobalt. The slurry is then pumped into a geological layer, which is preferably oil bearing, having a temperature of a magnitude which allows anaerobic digestion to continue. One or more **explosive** devices are positioned above the geological layer and below an explosion directing cap. After a period of anaerobic digestion, the **explosive** devices are detonated causing heat and pressure to be applied to the organic waste in the geological layer. The combination of heat and pressure cause various chemical reactions, including molecular restructuring, to occur which convert the organic waste into various petroleum products. The catalyst added to the organic slurry encourages certain physiochemical reactions to occur more prevalently thus allowing some control over the particular petroleum products which will result.

8/13 © EPODOC / EPO

PN - [US4992118](#) A 19910212

PR - CN1989100981 19890304

AP - US19900488609 19900302

DT - *

CT - [US4472215](#) A []; [US4708753](#) A [];

[US4840687](#) A []; [US4844756](#) A [];
[US4919178](#) A []

- CCI - [C06B47/145](#)
- PA - GANSU RESEARCH INSTITUTION OF [CN]
- TI - Chemically foamed emulsion **explosive** composition and process for its preparation
- AB - A water in oil emulsion **explosive** composition containing inorganic nitrate and the process for its preparation are disclosed. The composition is an **explosive** mixture which consists of an aqueous inorganic oxidizer salt solution as disperse phase, **residual oil** and additives as continuous phase, emulsion foamer as occluded bubble producing material, and span-80 as emulsifier. By adjusting the pH of disperse phase and emulsion foamer, the foaming process at elevated temperature is achieved. it is an industrial **explosive** and has lower production cost, excellent stability, good moisture resistance and low toxicity, and has a storage life longer than 10 months.

9/13 © EPODOC / EPO

- PN - [UA22737U](#) U 20070425
- PR - UA20060013471U 20061219
- AP - UA20060013471U 20061219
- DT - I
- PA - FEDIN LEONID MYTROFANOVYCH [UA]
- TI - METHOD FOR OIL EXTRACTION
- AB - Method for extraction of **residual oil** includes separation of priority wells, effecting with underground blasts in zone of productive horizon or in water-bearing horizon that is bottom of production layer. As priority layers one chooses extraction and / or supercharge wells draining layers with minimal wave resistance of blast energy, stem of priority wells is filled with washing liquid with maximal allowed density and one installs charge of **explosive** substance strictly in interval of perforation openings.

10/13 © EPODOC / EPO

- PN - [KR20070023949](#) A 20070302
- PR - KR20050078325 20050825
- AP - KR20050078325 20050825
- DT - I
- CNOI - [C06B23/00](#) ; [C06B47/145](#) ; [C08F10/10](#)
- PA - DAELIM IND CO LTD [KR]; KORYO NOBEL EXPLOSIVES CO LTD [KR]
- TI - METHOD FOR PRODUCING POLYBUTENE FOR EMULSION **EXPLOSIVE** HAVING HIGH STORAGE STABILITY
- AB - A method of preparing polybutene having at least two carbon-carbon double bonds is provided to produce the polybutene useful for manufacturing water-in-oil emulsion **explosive** emulsifier with improved storage stability by adding 1,3-butadiene to a hydrocarbon material containing isobutene and having four carbon atoms, then polymerizing the mixture. The method includes mixing of polymeric material containing isobutene with 1,3-butadiene. The polymeric material is hydrocarbon polymeric material having 4 carbon atoms. More particularly, the polymeric material is selected

from C4 **residual oil** containing more than 10wt.% of isobutene generated during decomposition of naphtha, hydrocarbon mixture having 4 carbon atoms and containing 10wt.% of isobutene generated during oil purification, and isobutene. Amount of 1,3-butadiene to be added is sufficient to have a molar ratio of 1,3-butadiene/isobutene ranging from 0.1 to 3.0. The polybutene obtained from the method has number average molecular weight(Mn) of 300 to 5000.

11/13 © EPODOC / EPO

PN - [GB1007857](#) A 19651022

PR - US19610153222 19611117

AP - GB19620041684 19621105

DT - **

CCI - [C06B31/32](#) ; [C06B47/00](#)

PA - AEROJET GENERAL CO

TI - Explosives

AB - An **explosive** composition having an oxygen balance of from -25 to +25 comprises frilled ammonium nitrate and a sensitizer comprising a liquid hydrocarbon and a liquid nitroalkane, together with a mutual solvent for the two liquids if necessary; alternatively the sensitizer may be a ketone. The sensitizer may be poured on to the ammonium nitrate at the site and is absorbed by the porous prills to 25 to 100% saturation. Extra sensitizer may be added to fill the interstices between the ammonium nitrate prills and to give the **explosive** a bulk density greater than that of water; such an **explosive** may be placed in a polyethylene bag and used under water. A yellow dye may be incorporated in the sensitizer to indicate that the **explosive** is ready for use. Liquid hydrocarbons referred to are benzene, toluene, xylenes, hexane, cetanes, heptanes, cycloheptane, methyl cyclohexane, iso-octane, gas oil, furnace **oil**, **residual fuel oil**, gasoline, kerosene, ligroin, and a high boiling aromatic oil. The preferred nitroalkane is nitromethane. Suitable mutual solvents are dimethyl ketone, methyl ethyl ketone, diethyl ketone, diisopropyl ketone, dibutyl ketone, methyl isobutyl ketone, benzene, diethyl ether, diisopropyl ether, methyl alcohol, butyl alcohol, and a mixture of benzene, naphthalene, and acetone. Ketones which may be used per se as the sensitizer are acetone, cyclohexanone, methyl isoamyl ketone, methyl isobutyl ketone, methyl ethyl ketone, and ethyl isopropyl ketone. Specification 1,007,856 is referred to.

12/13 © EPODOC / EPO

PN - [CN1174182](#) A 19980225

PNFP - CN1064945C C 20010425

PR - CN1996106443 19960820

AP - CN1996106443 19960820

DT - I

PA - (A C)
CHINA PETROCHEMICAL CORP [CN]

TI - (A C)
Compound wax for emulsified **explosive**

AB - (A)

The present invention proposes one kind of cheap and wide-source compound wax for emulsified **explosive**. The compound wax is compounded with one or more of atmospheric third side-cut, vacuum first side-cut, vacuum second side-cut, vacuum third side-cut, vacuum fourth side-cut, deoiled petrolat, dewaxed **oil**, **residual** petrolat, light deasphalted oil, heavy deasphalted oil, etc. as basic material. Using the said compound wax can reduce the cost of emulsified **explosive**.

13/13 © EPODOC / EPO

PN - [CN2186459Y](#) Y 19941228
 PR - CN1993235754U 19931222
 AP - CN1993235754U 19931222
 DT - I
 PA - JIN OU KITCHEN UTENSILS FACTOR [CN]
 TI - Improved structure of sparking plug terrestrial pole
 AB - The utility model relates to an improved structure of a sparking plug terrestrial pole. The utility model is composed of a central electrode which is throughout an insulation porcelain body and is exerted, a nut fixed on the upper end of the central electrode, a screw thread body fixed on the bottom end of the insulation porcelain body and a terrestrial pole which extends from the periphery of the screw thread body and is in a bend shape. A throughout groove is arranged on the terrestrial pole; when the high voltage current passes through, the electrode generates ignition; **explosive** sparks and the groove of the terrestrial pole eject into radial jump spark and are through a combustion chamber which is arranged behind the terrestrial pole; so the utility model can rapidly expand combustion area, complete quickly oil gas vaporizing and completely combust for explosion; the utility model can reduce the accumulation of **residual oil**, the formation of poisonous gas and air pollution.

[SS 5] 5 and filter+

Non-existent or invalid SS number(s).

- Check with the command `..HI`. When searching for numbers, use quotes e.g. `"4" W WHEEL?` *ERROR*
 (-100803)

[SS 5] * and filter+

Results in EPODOC 5

[SS 6] ..li



1/5 © EPODOC / EPO

PN - [MX2016017150](#) A 20170406
 PR - WO2014PE00009 20140625
 AP - MX20160017150 20140625
 DT - I
 CCI - [C06B31/285](#)

CQI - [C06B21/0008](#) ; [C06B21/0091](#)
 PA - EXSA S A [PE]
 TI - METHOD FOR PRODUCING AN ANFO **EXPLOSIVE** USING AMMONIUM NITRATE AND RESIDUAL OILS, AND PRODUCT THUS PRODUCED.
 AB - The invention relates to a method for producing ANFO on the basis of filtration and purification of the residual oils of a mine in a **filter** truck especially designed and developed for this purpose, with the aim of completely replacing the diesel fuel 2 with said residual oils that have been previously treated in order to mix same with ammonium nitrate. The invention also relates to the product resulting from said method. The aim of the invention is to use the **residual oil** produced in mines in large quantities, as the only combustible agent in the production of ANFO, generating cost savings by entirely substituting the diesel 2 and additionally eliminating the existing risk inherent in the removal of the **residual oil** from the mine and the negative impact that it can generate in the environment if it is not used appropriately.

2/5 © EPODOC / EPO

PN - [US2017158577](#) A1 20170608
 PR - WO2014PE00009 20140625
 AP - US201415315648 20140625
 DT - *; Rep
 CCI - [C06B31/285](#)
 CQI - [C06B21/0008](#) ; [C06B21/0091](#)
 PA - EXSA S A [PE]
 TI - Method for Producing an ANFO **Explosive** Using Ammonium Nitrate and Residual Oils and Product Thus Produced
 AB - The present invention relates to a method for producing ANFO on the basis of filtration and purification of the residual oils of a mine in a **filter** truck especially designed and developed for this purpose, with the aim of completely replacing the diesel fuel 2 with said residual oils that have been previously treated in order to mix same with ammonium nitrate, as well as the product resulting from said method. The aim of this invention is to use the **residual oil** produced in mines in large quantities, as the only combustible agent in the production of ANFO, generating cost savings by completely substituting diesel 2 and additionally eliminating the existing risk inherent in the removal of the **residual oil** from the mine and the negative impact that it can generate in the environment if it is not used appropriately.

3/5 © EPODOC / EPO

PN - [AU2014398702](#) A1 20170112
 PR - WO2014PE00009 20140625
 AP - AU20140398702 20140625
 DT - I
 CCI - [C06B31/285](#)
 CQI - [C06B21/0008](#) ; [C06B21/0091](#)
 PA - EXSA S A

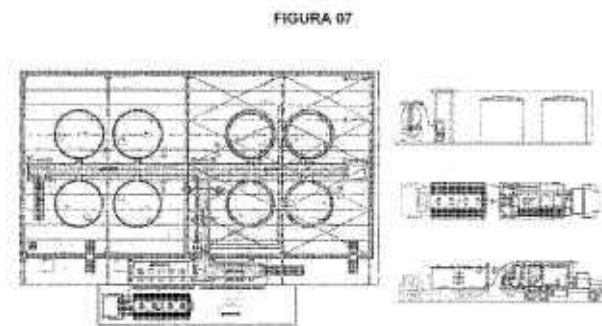
- TI - Method for producing an ANFO **explosive** using ammonium nitrate and residual oils, and product thus produced
- AB - The invention relates to a method for producing ANFO on the basis of filtration and purification of the residual oils of a mine in a **filter** truck especially designed and developed for this purpose, with the aim of completely replacing the diesel fuel 2 with said residual oils that have been previously treated in order to mix same with ammonium nitrate. The invention also relates to the product resulting from said method. The aim of the invention is to use the **residual oil** produced in mines in large quantities, as the only combustible agent in the production of ANFO, generating cost savings by entirely substituting the diesel 2 and additionally eliminating the existing risk inherent in the removal of the **residual oil** from the mine and the negative impact that it can generate in the environment if it is not used appropriately.

4/5 © EPODOC / EPO

- PN - [CA2951834](#) A1 20151230
- PR - WO2014PE00009 20140625
- AP - CA20142951834 20140625
- DT - I
- CCI - [C06B31/285](#)
- CQI - [C06B21/0008](#) ; [C06B21/0091](#)
- PA - EXSA S A [PE]
- TI - METHOD FOR PRODUCING AN ANFO **EXPLOSIVE** USING AMMONIUM NITRATE AND RESIDUAL OILS, AND PRODUCT THUS PRODUCED
- AB - The invention relates to a method for producing ANFO on the basis of filtration and purification of the residual oils of a mine in a **filter** truck especially designed and developed for this purpose, with the aim of completely replacing the diesel fuel 2 with said residual oils that have been previously treated in order to mix same with ammonium nitrate. The invention also relates to the product resulting from said method. The aim of the invention is to use the **residual oil** produced in mines in large quantities, as the only combustible agent in the production of ANFO, generating cost savings by entirely substituting the diesel 2 and additionally eliminating the existing risk inherent in the removal of the **residual oil** from the mine and the negative impact that it can generate in the environment if it is not used appropriately.

5/5 © EPODOC / EPO

- PN - [WO2015199556](#) A1 20151230
- PR - WO2014PE00009 20140625
- AP - WO2014PE00009 20140625
- DT - **
- CT - |ES| ISR (A1)
[US5397405](#) A 19950314
[X] (SMITH SYDNEY O [CA], et al)
[X] 1-4
*, column 1, lines 44-46 *;
[XP055248359](#) A[X];



[US2007175511](#) A1 20070802
[A] (DOERR KEVIN [US], et al)
[A] 1-4
* , paragraph [53]; figures 1-2 *;
[WO2008029339](#) A2 20080313
[A] (AFRICAN EXPLOSIVES LTD
[ZA], et al)
[A] 1-4
* , page 1, line 8-14; page 2, line
11 *

- CTNP - |ES| ISR (A1)
[X] - RUHE, T. et al., "Thermal
stability of ANFO made with
recycled oil"., PROCEEDINGS OF
THE ANNUAL CONFERENCE ON
EXPLOSIVES AND BLASTING
TECHNIQUE, (19990000), vol. 2,
pages 263 - 272, XP055248359
[X] 1-4
* ; pag. 1-2; tables 1-2 *
- CCI - [C06B31/285](#)
- CQI - [C06B21/0008](#) ; [C06B21/0091](#)
- PA - EXSA S A [PE]
- TI - METHOD FOR PRODUCING AN
ANFO **EXPLOSIVE** USING
AMMONIUM NITRATE AND
RESIDUAL OILS, AND PRODUCT
THUS PRODUCED
- AB - The invention relates to a
method for producing ANFO on
the basis of filtration and
purification of the residual oils
of a mine in a **filter** truck
especially designed and
developed for this purpose, with
the aim of completely replacing
the diesel fuel 2 with said
residual oils that have been
previously treated in order to
mix same with ammonium
nitrate. The invention also
relates to the product resulting
from said method. The aim of the
invention is to use the **residual
oil** produced in mines in large
quantities, as the only
combustible agent in the
production of ANFO, generating

cost savings by entirely substituting the diesel 2 and additionally eliminating the existing risk inherent in the removal of the **residual oil** from the mine and the negative impact that it can generate in the environment if it is not used appropriately.

[SS 6] explosive and (residual 1d oil) and filter+

Results in EPODOC 5

[SS 7] explosive and ((waste or residual or used or remaining) 1d oil+) and filter+

Results in EPODOC 12

[SS 8] * and PD<2014-06-25

Results in EPODOC 3

[SS 9] ..li



1/3 © EPODOC / EPO

PN - [CN102001900](#) A 20110406

PNFP - CN102001900B B 20110928

PR - CN20101502489 20101011

AP - CN20101502489 20101011

DT - I

CT - (A)
[CN101108917](#) A []

PA - (A B)
BIN XIE

TI - (A B)
Water resistance vegetable composite oil phase

AB - (A)
The invention relates to a water resistance vegetable composite oil phase which comprises the following components in percent by mass: 5-30 percent of hydrogenated vegetable fatty acid, 5-20 percent of vegetable wax, 20-50 percent of vegetable oil foot, 5-20 percent of vegetable oil and fat, 20-50 percent of decompressed cerate and 0.5-3 percent of surfactant. The water resistance vegetable composite oil phase is prepared by adopting the following steps of: firstly, heating various components in a single melting tank to the temperature of 75-85 DEG C and melting; and sequentially pumping the components into a reaction kettle through an oil pump according to the proportion requirement after weighted through an electronic scale, stirring, raising the

temperature to 105-110 DEG C, starting a vacuum pump for dewatering, **filtering**, forming and packaging. The invention overcomes the defect of water resistance of the modified ammonium nitrate fuel oil **explosive** and extruded explosives, and provides a high-quality and low-cost water resistance vegetable composite **oil phase used** for the modified ammonium nitrate fuel oil **explosive** and extruded explosives; and the explosives produced by using the composite oil phase have excellent water resistance, and especially the extruded explosives really have excellent water resistance.

- (B)

The invention relates to a water resistance vegetable composite oil phase which comprises the following components in percent by mass: 5-30 percent of hydrogenated vegetable fatty acid, 5-20 percent of vegetable wax, 20-50 percent of vegetable oil foot, 5-20 percent of vegetable oil and fat, 20-50 percent of decompressed cerate and 0.5-3 percent of surfactant. The water resistance vegetable composite oil phase is prepared by adopting the following steps of: firstly, heating various components in a single melting tank to the temperature of 75-85 DEG C and melting; and sequentially pumping the components into a reaction kettle through an oil pump according to the proportion requirement after weighted through an electronic scale, stirring, raising the temperature to 105-110 DEG C, starting a vacuum pump for dewatering, **filtering**, forming and packaging. The invention overcomes the defect of water resistance of the modified ammonium nitrate fuel oil **explosive** and extruded explosives, and provides a high-quality and low-cost water resistance vegetable composite **oil phase used** for the modified ammonium nitrate fuel oil **explosive** and extruded explosives; and the explosives produced by using the composite oil phase have excellent water resistance, and especially the extruded explosives really have excellent water resistance.

2/3 © EPODOC / EPO

PN - [EA200000534](#) A1 20001030

PNFP - EA001892 B1 20011022

PR - US19970971514 19971117; WO1998US24476 19981116

AP - EA20000000534 19981116

DT - I

CCI - [B01D21/262](#) ; [B03B9/02](#) ; [B09C1/00](#) ; [B09C1/02](#) ; [B09C1/08](#) ; [C10G27/12](#) ; [C10G31/06](#) ; [C10G31/10](#) ; [C10G53/02](#)

PA - (B1)

CONTINUUM ENVIROMENTAL INC [US]

TI - (B1)

SYSTEM FOR PROCESSING **OIL REFINERY WASTE**

AB - (B1)

1. A method for treating an aqueous slurry of refinery wastes to provide effluent from which petroleum products may be recovered and a cake which is substantially free of hydrocarbon residues, comprising the steps of: a) heating said waste slurry to a temperature of at least about 180 degree F to form a hot sludge; b) maintaining said slurry at said temperature for a period of time sufficient to digest said hot sludge, said digestion including melting any entrained petroleum solids, reducing the apparent viscosity of the slurry, and reducing the density of petroleum fractions in said slurry; c) passing said hot digested slurry through a first centrifuge to separate a first liquid effluent containing liquid petroleum fractions from a first cake containing bound

petroleum residues; d) dispersing said first cake in water to form a second slurry; e) treating said second slurry by adding an amount of hydrogen peroxide thereto to lyse and liberate said bound petroleum residues from inert solids contained in said first cake; and f) passing said second slurry through a second centrifuge to separate a second liquid effluent containing petroleum fractions from a second cake, said second cake containing said inert solids and being substantially free of hydrocarbon residues.

2. A method in accordance with Claim 1 further comprising the step of adjusting the weight of solids in said waste to about 5 percent or less prior to said heating step. 3. A method in accordance with Claim 1 further comprising the step of passing said aqueous slurry through a screen to remove large particles therefrom prior to said heating step. 4. A method in accordance with Claim 1 further comprising the step of directing said first and second liquid effluents to a refinery. 5. A method in accordance with Claim 1 further comprising the step of further dewatering said second cake after said second centrifugation step. 6. A method in accordance with Claim 1 wherein said treating step includes oxidizing polycyclic aromatic hydrocarbons in said second slurry. 7. A method in accordance with Claim 1 wherein said heating step includes injection of steam into said slurry. 8. A method in accordance with Claim 1 wherein at least one of said first and second centrifuges is a disc/bowl centrifuge. 9. A method in accordance with Claim 1 wherein said waste slurry comprises residuals resulting from activities selected from the group consisting of petroleum acquisition, petroleum transporting, petroleum storing, petroleum refining, and combinations thereof, said residuals being selected from the group consisting of sludges, bottoms, waxes, oils, greases, contaminated soils, and mixtures thereof. 10. A method in accordance with Claim 1 wherein said water in said dispersing step is heated. 11. A system for processing **oil refinery waste** to provide liquid effluent from which petroleum products may be recovered and a cake which is substantially free of hydrocarbon residues, comprising: a) a conditioning vessel for receiving, tempering, and otherwise thermally conditioning a slurry of said waste; b) a first centrifuge in communication with said conditioning vessel for receiving said conditioned slurry therefrom and separating said first slurry into a first liquid effluent and a first cake, said first effluent being refinable into petroleum products; c) a reactor vessel for receiving said first cake; d) means for dispensing hydrogen peroxide and water into said reactor vessel to form a second slurry with said first cake and to lyse and liberate bound petroleum residues from inert solids contained in said first cake; e) a second centrifuge in communication with said reactor vessel for receiving said second slurry therefrom and separating said second slurry into a second liquid effluent and a second cake, said second effluent being refinable into petroleum products and said second cake being substantially free of petroleum residues. 12. A system in accordance with Claim 11 wherein at least one of said first and second centrifuges is a disc/bowl centrifuge. 13. A system in accordance with Claim 11 wherein said conditioning vessel is provided with steam for said tempering of said slurry. 14. A system in accordance with Claim 11 further comprising at least one additional reactor vessel arranged for parallel flow with said first reactor vessel. 15. A system in accordance with Claim 11 further comprising means for maintaining non- **explosive** atmospheres within said conditioning and reactor vessels. 16. A system in accordance with Claim 11 further comprising a screen for **filtering** large particles from said waste before introducing said waste to said conditioning vessel. 17. A system in accordance with Claim 11 further comprising means for diluting said waste with water to a weight percentage of about 5 percent or less. 18. A system in accordance with Claim 17 further comprising means for capturing volatile hydrocarbons escaping

from said slurries and combusting said hydrocarbons to heat said water. 19. A system in accordance with Claim 11 further comprising means for dewatering said second cake.

3/3 © EPODOC / EPO

- PN - [CN2820304Y](#) Y 20060927
- PR - CN2005265295U 20050930
- AP - CN2005265295U 20050930
- DT - I
- PA - HU XINGBANG [CN]
- TI - Emulsifying mixer for **waste oil** and diesel oil
- AB - The utility model relates to an emulsifying mixer for **waste oil** and diesel oil, which is composed of a **filtering** device with a container and a **filter**, an emulsifying device with a container, a frequency oil pump and a stirring device, a **filtering** device with a container and a frequency oil pump. By adopting the circulative, rapid and intensive mixing high pressure emulsifying processing structure device, the utility model carries out sufficient physical emulsification and chemical emulsification to the simply refined remanent **waste oil** and the diesel oil, which creates intermolecular adherence and infiltration among the **waste oil**, the emulsifier and the diesel oil, and ensures the effect that mixing oil has **explosive** force and firing effect of the common pure diesel oil after the oil is emulsified and mixed. Moreover, the proportion of the remanent **waste oil** can reach about 50%, which not only makes the remanent **waste oil** reasonably, economically and fully used, but also greatly reduces the oil use cost of automobiles and oil burning devices, and can economize the increasingly short oil resources.

[SS 9] (truck or camion or trailer) and ((waste or residual or used or remaining) 1d oil+) and filter+

Results in EPODOC 19

[SS 10] * and PD<2014-06-25

Results in EPODOC 12

[SS 11] ..li



1/12 © EPODOC / EPO

- PN - [CN203403994U](#) U 20140122
- PR - CN20132418638U 20130715
- AP - CN20132418638U 20130715
- DT - I
- PA - HEBEI IRON & STEEL GROUP LUANXIAN SIJIAYING MINING CO LTD; HEBEI IRON & STEEL GROUP MINING CO LTD; HEBEI IRON & STEEL GROUP CO
- TI - Fuel oil preheating device of large-sized mining **truck**
- AB - The utility model discloses a fuel oil preheating device of a large-sized mining **truck**, and belongs to the technical field of automobile preheating equipment. The fuel oil

preheating device of the large-sized mining **truck** is used for effectively preheating fuel oil of the large-sized mining **truck**. According to the technical scheme, the fuel oil preheating device of the large-sized mining **truck** comprises a preheating oil tank and electric heating tapes, wherein oil conveying pipelines are arranged at the two ends of the preheating oil tank respectively, and are connected with a fuel oil tank and a fuel oil **filter** element respectively, the electric heating tapes wrap the outer wall of the preheating oil tank, the bottom of the fuel oil tank, the fuel oil **filter** element and the oil conveying pipelines respectively, insulating heat preservation materials coat the electric heating tapes respectively, and a preheating water pipe is installed in the preheating oil tank, and is connected with an engine hot water pipe and a radiator. According to the fuel oil preheating device of the large-sized mining **truck**, the preheating oil tank carries out heating on the fuel oil arranged in the preheating oil tank through an electric heating tape system and an engine hot water system, No. zero diesel oil can be used by the large-sized mining **truck** on the situation that the environmental temperature is no lower than minus 30DEG C, the problems that low-temperature condensation happens, and starting of the mining **truck** is difficult due to the fact that the low-grade fuel oil is **used** by the large-sized mining **truck** in winter are solved, normal use of the large-sized mining **truck** is ensured, efficiency of the fuel oil is improved, and operating cost of the mining **truck** is reduced.

2/12 © EPODOC / EPO

- PN - [CN203336201U](#) U 20131211
- PR - CN20132418838U 20130716
- AP - CN20132418838U 20130716
- DT - I
- PA - HUBEI LONGMAI YIHE PETROLEUM SCIENCE & TECHNOLOGY CO LTD
- TI - Device for recycling lubricating oil at fluid end of fracturing **truck**
- AB - Disclosed is a device for recycling lubricating oil at the fluid end of a fracturing **truck**. The device is characterized by being composed of the fluid end, an oil collection disc, a tee provided with a valve, a lubricating oil tank, an external oil discharge port, a clean oil side, a dirty oil side, a **filter** screen, a pneumatic lubricating oil pump and a partition board. The oil collection disc for recovering lubricating fluid is installed below the fluid end, the recovered lubricating oil can flow back to the lubricating oil tank at the fluid end or flow to the external oil discharge port through the tee provided with the valve, the lubricating oil tank at the fluid end is divided into the clean oil side and the dirty oil side which are communicated through the **filter** screen, the pneumatic lubricating oil pump sucks oil from the clean oil side, recovered dirty oil flows to the bottom of the dirty oil side, is precipitated and **filtered** and then flows to the clean oil side from the top of the partition board, and accordingly the lubricating oil is recycled. The device is easy to install and can recycle the lubricating **oil, waste** of the lubricating oil is reduced, and production cost is lowered.

3/12 © EPODOC / EPO

- PN - [CN203096585U](#) U 20130731
- PR - CN2013257241U 20130131
- AP - CN2013257241U 20130131

DT - I

PA - XUZHOU XUGONG ROAD CONSTR MACH

TI - Hydraulic system of bituminous pavement maintenance **truck**

AB - The utility model discloses a hydraulic system of a bituminous pavement maintenance **truck**. The hydraulic system is formed by connecting a triple quantitative gear pump, various superimposed hydraulic solenoid valve groups, a rotary drum motor, a spiral motor, a blower motor, a rotary drum charging oil cylinder, a heat preservation charging oil cylinder, a road roller lifting oil cylinder, a **waste oil** cylinder, a feed door oil cylinder, a discharge door oil cylinder, a material guiding groove oil cylinder, a hydraulic pickaxe, a return oil suction **filter**, a heat radiator, a hydraulic oil tank and other components, and a blower speed adjustment loop, a heat preservation storage bin feed and discharge loop, a rotary drum material frying loop, a material guiding groove extension loop, a hydraulic pickaxe impact loop, a **waste oil** cylinder lifting loop and a road roller lifting loop are formed finally, so that various functions are achieved; mutual interference between various systems is reduced; the load change resistance is good; the requirement that the rotary drum material frying loop needs different rotating speeds during material frying control and discharge control is met, so that the stability of the hydraulic system is guaranteed; the cost is lower; and the energy loss is lower during flow adjustment.

4/12 © EPODOC / EPO

PN - [CN202593578U](#) U 20121212

PR - CN20122253362U 20120531

AP - CN20122253362U 20120531

DT - I

PA - DONGFENG DANA AXLE CO LTD

TI - Scrap iron vehicle

AB - The utility model relates to a scrap iron vehicle, which is used for automatically loading and pouring scrap iron. A first tractor, a second tractor and an armrest are arranged at the side surface of a compartment body of the scrap iron vehicle, the first tractor and the second tractor are used for serial connection traction of a plurality of scrap iron vehicles, two directional weight reducing wheels are arranged at the front side of the compartment body, two universal weight reducing wheels are arranged at the back side of the compartment body, a **trailer** framework device, a first reinforcing rib and a second reinforcing rib are arranged on the compartment body, a **filter** screen, a hose and a ball valve are arranged on the compartment body, and the hose and the ball valve are **used** for **oil** discharge. The scrap iron vehicle has the advantages that the structural design is ingenious and simple, the pushing and the pulling are light and convenient, the scrap iron vehicle can be effectively applicable to a hydraulic lifting mechanism of a movable iron scrap transfer system, the rigidity is good, the operation is convenient and fast, the high work intensity caused by manual loading and unloading can be reduced, the front end and the back end of the scrap iron vehicle are provided with traction devices, the operation of the traction devices is simple, the serial connection use between several scrap iron vehicles is convenient, a traction vehicle can favorably drag the several scrap iron vehicles to the transfer site, the scrap iron vehicle is provided with the **filter** net and the oil discharge hose, the **waste oil** recovery and the resource regeneration and reutilization are favorably realized, and the

important significance is realized on the environment protection and the cost reduction.

5/12 © EPODOC / EPO

- PN - [CN201546847U](#) U 20100811
- PR - CN20092198802U 20091015
- AP - CN20092198802U 20091015
- DT - I
- PA - WUXI JIALONG HEAT EXCHANGER MFG CO LTD
- TI - **Oil** cooler **used** on concrete mixer **truck**
- AB - The utility model discloses an **oil** cooler **used** on a concrete mixer **truck**, which comprises a heat-dissipating core, an upper seal head chamber and a lower seal head chamber welded on the heat-dissipating core, an oil inlet pipe opening, an oil outlet pipe opening, an oil tank, a **filter** and an oil temperature measuring port, wherein the oil temperature measuring port is positioned at the upper part of the oil tank, the **filter** is arranged inside the oil tank and connected with the oil outlet pipe opening, and a flow-deflecting plate is welded below the **filter**. Since the flow-deflecting plate is welded below the **filter** inside the oil tank, the oil is baffled by the flow-deflecting plate when flowing from the heat-dissipating core into the oil tank and flows around the flow-deflecting plate towards the upper side of the **filter** instead of directly flowing out of the **filter**, and simultaneously the oil on the upper side of the **filter** flows out of the **filter**, as a result, the low-temperature oil is fed into the oil tank continuously and then discharged, the dead oil cycle is prevented and the temperature of the oil inside the oil tank is reduced, thereby achieving better cooling effect. In addition, the oil cooler has the advantages of simple structure and low cost.

6/12 © EPODOC / EPO

- PN - [CN201400085Y](#) Y 20100210
- PR - CN2009245421U 20090519
- AP - CN2009245421U 20090519
- DT - I
- PA - JIANFENG CHEN
- TI - Burglar alarm of oil tank
- AB - The utility model relates to a burglar alarm of an oil tank. The burglar alarm comprises an integral oil **filter** and a burglar drum, wherein a plurality of oil inlet holes are arranged on the wall of the burglar drum; the burglar drum is inserted in to the oil inlet hole of the oil tank, the oil **filter** is left outside the oil inlet hole of the oil tank, and the burglar drum is fixedly connected with the oil inlet hole of the oil tank by a flat end set screw screwed from the inner wall of the burglar drum; the inner cavity of the burglar drum is fixedly clamped with a covering and sealing ring used for covering and sealing the screwing end of the flat end set screw; and a seal closure is arranged at the oil inlet hole of the oil **filter**. The burglar alarm of the oil tank is generally **used** on the **oil** tank of large-sized automobiles such as a **truck**, has simple structure and convenient installation, can effectively prevent the fuel oil in the oil tank from being stolen, and has excellent burglarproof effect.

7/12 © EPODOC / EPO

- PN - [CN201396568Y](#) Y 20100203
- PR - CN2009212989U 20090415
- AP - CN2009212989U 20090415
- DT - I
- PA - UNIVSHENYANGLIGONG
- TI - Electric walking portable lubricating oil charging **truck**
- AB - The utility model relates to an electric walking portable lubricating oil charging **truck**, which consists of an oil tank, a **truck** chassis and an electric walking mechanism. The oil tank consists of two new oil tanks and a **waste oil** tank, wherein the top of the two new oil tanks and the **waste oil** tank is provided with an oil filling opening, the filled oil is **filtered** via an oil **filtering** core, and one side of the oil tank is provided with two sets of electric oil transferring pumps which are respectively communicated with the two new oil tanks via oil transferring pipes. The electric walking mechanism consists of a driving wheel hub, a follow-up universal wheel, a transmission shaft, a driving gear, a driven gear and a transmission motor, wherein the follow-up universal wheel is arranged at the rear part of the **truck** chassis, the transmission shaft is connected with the front part of the truck chassis via supporting bearings at both ends of the transmission shaft, shaft heads at both ends of the transmission shaft are provided with driving wheel hubs, the center of the transmission shaft is provided with the driven gear, the transmission motor is fixed on the **truck** chassis, an output shaft of the transmission motor is provided with the driving gear, and the driving gear is meshed with the driven gear. An electric walking mechanism lubricating **truck** is driven to the vicinity of equipment for oil charging or oil changing. The utility model has the advantages of simple structure, low cost, convenient use and environment improvement.

8/12 © EPODOC / EPO

- PN - [CN201280498Y](#) Y 20090729
- PR - CN20082184994U 20080904
- AP - CN20082184994U 20080904
- DT - I
- PA - JIANGSU XINGBANG ENVIRONMENTAL [CN]
- TI - Integrated process apparatus for oily wastewater
- AB - The utility model discloses an integrated treatment device for **oily waste** water. The device comprises a first box body, a second box body and a third box body, wherein the three box bodies are connected with each other through a connecting pipe; a hoisting ring used for loading are respectively arranged on the first box body, the second box body and the third box body; a reaction tank, a tilted plate oil separation tank, a sludge tank, a chemical adding device, an air flotation device, a **filter**, an intermediate water tank and an electrical cabinet are arranged in the first box body; a hydrolysis-acidification pool and a contact oxidation tank are arranged in the second box body; and an inclined tube settling tank, a sludge thickener, a sludge **filter** press, a chemical adding device, a fan room and an electrical cabinet are arranged in the third box body. The utility model has the advantages of reliable performance, stable running, low operating cost and convenient management and maintenance; the device is supplied in a complete set; individual equipment is respectively manufactured according to each

procedure of treatment technology and are put on a **trailer** for transportation; when the device is used, each hose for equipment is connected; the device can be put into operation after switch on; the device further has the advantages of compact structure, small occupied area, reasonable and economic arrangement, reduced investment and operation fees.

9/12 © EPODOC / EPO

PN - [US2005006290](#) A1 20050113

PR - US20040862051
20040604; US20030476064P
20030605

AP - US20040862051 20040604

DT - *; Rep

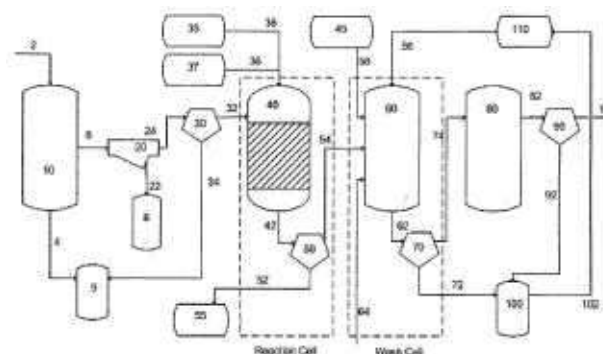
CT - || R141 (A1)
[US5839360](#) A 19981124 [
] (WILLIAMS DAVID R [US]);
[US6979426](#) B2 20051227 [
] (TEALL RUSSELL [US], et al)

CCI - [B01D17/0202](#) ; [B01D17/0214](#) ;
[C10L1/026](#)

CCA - [Y02E50/13](#) ; [C10G2300/4062](#)

TI - Mobile biodiesel refinery

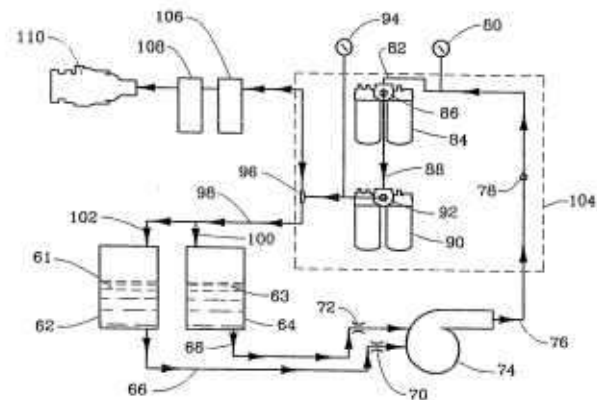
AB - This is a computer controlled and automated mobile and/or static process to reclaim used **waste** fryer **oil used** for cooking and convert it into biodiesel. The waste, which can contain many contaminants including food particles, and water and emulsified or congealed grease, is forcibly vacuumed into a container and heated. Contaminates are removed by passing the heated fluid via a strainer. Once determined clean by the computer, the fluid travels out of the vessel through the strainer and back into the vessel. Any water settles to the bottom of the heated chamber. As the computer senses the presence of water, it is removed via a drain. The grease is then pumped to a second chamber and treated with a titrated amount of



catalyst, as determined by sensors and software. After reaction takes place, glycerin levels are monitored and removed via a strainer, and the fluid is pumped to the next chamber. pH is measured by the computer and balanced. It is processed in a final wash to remove any remaining impurities. The product is tested for standards via sensors and software and then is moved to the delivery tank through a **filter**. Upon reaching the delivery site, the biodiesel is pumped and measured from the delivery vessel through a final **filter** to the customer's tank. Unless the computer notices a failure of one of the modular components, the **truck** is periodically sent to a maintenance facility for replenishment of catalyst and removal of food particles or other contaminants. In the case of failure the driver is immediately notified by the computer, and the **truck** is directed to the nearest service center. This system is monitored continuously and may be checked via the internet.

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- PN - [US5336396](#) A 19940809
 PR - US19930038710 19930329
 AP - US19930038710 19930329
 DT - *; Rep
 CT - || STSE (A)
[US3915860](#) A 19751028 [
] (PRIEST GLEN R);
[US4095571](#) A 19780620 [
] (FLEETWOOD WILLARD EUGENE,
 et al);
[US4192750](#) A 19800311 [
] (ELFES LEE E [US], et al);
[US4253819](#) A 19810303 [
]



	] (JORET ROBERT); US4338189 A 19820706 [] (JOHNSON SR LESTER L); US4354946 A 19821019 [] (WARLICK FRANK M, et al); US4360436 A 19821123 [] (POVEROMO VITO L); US4413604 A 19831108 [] (TUNE HERBERT E [GB]); US4417561 A 19831129 [] (YASUHARA SEISHI [JP]); US4604205 A 19860805 [] (AYERS WILLIAM R [US]); US4629558 A 19861216 [] (GARRITTY LAWRENCE K [AU]); US4846967 A 19890711 [] (MCGEHEE RONALD R [US]); US4997555 A 19910305 [] (CHURCH JOHN F [US], et al); JPS5550439 A 19800412 [] (KOGYO GIJUTSUIN, et al)
CCI	- B01D35/12 ; B01D35/147 ; B01D29/21 ; B01D29/52 ; B01D29/92 ; F02M37/22 ; F02D19/0628 ; F02D19/0657 ; F02D19/0684 ; F02D19/081 ; F02D19/0668
CCA	- Y02T10/36 ; F02B3/06 ; F01M2011/0475 ; Y10S210/912
PA	- SHETLEY MICHAEL C [US]
TI	- Waste oil management system
AB	- A fuel management system for blending of an alternative fuel such as waste oil with a conventional fuel and the continuous filtration thereof before delivery to fuel injection system of a conventional diesel engine. The system attaches to the storage tanks of a heavy duty truck using a proportioning device for withdrawing of the fuels from their respective tanks before blending by use of an air operated diaphragm transfer pump. The blended fuel is continuously recirculated through at least one

fiberglass **filter** with a device for metering the final flow to the injection system and the remainder to the storage tanks. The system can remove up to 99.5 percent of the heavy contaminants found in the diesel fuel and alternative fuels.

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PN - [US2003077181](#) A1 20030424

PNFP - US6626646 B2 20030930

PR - CA20012359441 20011019

AP - US20010032304 20011221

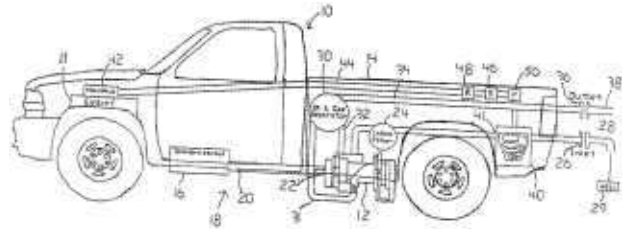
DT - *

CT - (B2)
[US3787146](#) A []; [US3789820](#) A [];
[US4139019](#) A []; [US4342199](#) A [];
[US5056601](#) A []; [US6176690](#) B1 []

CCI - [F04C25/00](#) ; [F04C18/16](#) ;
[F04C23/00](#) ; [F04C29/026](#)

TI - (A1)
In-line gas compression system
- (B2)
Vehicle mounted gas well pumping unit

AB - (A1 B2)
An in-line gas compression system, comprising a vehicle, preferably a **truck**, having a drive train, with a gas compressor mounted on the vehicle and driven by the drive train of the vehicle. The gas compressor is connected through a **filter** to a gas inlet and has a compressed gas outlet line. When a rotary screw gas compressor is **used**, an **oil** and gas separator is provided on the compressed gas outlet line, with the oil and gas separator being connected to return oil to the rotary screw gas compressor. The in-line gas



compression system is typically connected into a gas pipeline system through the compressed gas outlet line, and is connected to a source of gas, for example a well at a well site.

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PN - [EP1593858](#) A2 20051109

PNFP - EP1593858 A3 20060906

- EP1593858 B1 20100721

PR - DE20042007062U 20040504

AP - EP20050008201 20050414

DT - *; Rep

CT - || STSE (A3)

[DE4011913](#) A1 19911017 [X] (BEYER RUDI DIPL ING [DE])

[X] 1-4

* figure 1; claims 1,2 *;

[DE4203062](#) C1 19930701 [X] (HEMSCHIEDT MASCHINENTECHNIK SCHWERIN GMBH & CO, O-2781 SCHWERIN, DE)

[X] 1-4

* column 3, line 20 - line 60; figures 1,5 *;

[DE19515962](#) A1 19961002 [X] (ARGO GMBH FUER FLUIDTECHNIK [DE])

[X] 1-4

* column 3, line 34 - line 66; figure 1 *;

[US4027595](#) A 19770607 [A] (FRANK EARL E, et al)

[A] 1,3,4

* column 3, line 7 - line 26; figure 1 *

CCI - [F15B21/041](#)

PA - (A2 A3 B1)

LIEBHERR WERK NENZING [AT]

TI - (A2 A3 B1)

Hydraulic system for fork lift **truck**

AB - (A2)

A hydraulic system (10) has a **filter** plant for the cleaning of the hydraulic oil (12) flow by filtration of particles, and a removing device for a defined part of a flow of the hydraulic oil. The removing device has **filter** element(s) for filtration of the partial flow of hydraulic oil. Independent claims are also included for the following: (A) a system comprising a reach stacker, and the above hydraulic system coupled to the reach stacker; and (B) **filtering** hydraulic oil in a hydraulic system of a reach stacker, comprising pressurizing hydraulic oil from the hydraulic system and providing the pressurized oil to an oil line; removing a defined flow portion of the pressurized hydraulic oil from the oil line; **filtering** the defined flow portion separately from **remaining oil** in the oil line via a **filter**; and supplying the **filtered** defined flow portion back to the hydraulic system at a lower pressure level.

