

A Process for Separating Oil from Oil Sludges

1. Field of the invention

This invention relates to a method of separating the oil sludges with the
5 crude oil, especially refers to a method of separating the light crude oil and the
crude oil which to evaporate the crude oil inside the oil sludges first into the oil gas,
and to cool such oil gas into the gas and the light crude oil.

2. DESCRIPTION OF THE PRIOR ART

Usually the crude oil is buried in the deep layer of the earth, when people want
10 to mint the oil, they should first mint the correct location of the oil land, next to
proceed the dipping of the oil well, after the oil well is being minted, the crude oil
could then be dipped from the deep layer of the earth and the crude oil being
extracted could then be delivered from everywhere in the world. Next it will be
refined to become the light crude oil for usage by each countries such as leadless
15 oil, diesel oil, high-order gas oil, etc; however, since such crude oil is extracted
from the deep layer of the earth, there contains large amounts of sludges in such
extracted crude oil such as the dirt, the sand, the heavy metal as well as other
impurities, there contains a certain amounts of weight for said sludges such that it
will precipitate in the bottom location of the original oil manager such that the
20 quantities of crude oil for cracking inside said oil manager is reduced; besides,
since the crude oil is attached on the sludges such that the crude oil in the crude oil
manager could not be used by cracking which is not an economical situation. So, in
order to extract the crude oil from the crude oil manager, there is a technology for
separating the crude oil with the oil sludges according to the principle of
25 centrifugal force; however, there is only a small fraction of the crude oil that could

be extracted by said technology wherein most of the crude oil is attached on the crude oil which makes the subsequent processing of the crude oil difficult, it will cause a lot of air or environmental pollution whatever to burn it or to discard it. Thus, if it could design a technology of extracting the crude oil on the oil sludges,
5 it is the most emergency thing nowadays.

Thus it is clear that the above-mentioned conventional technology is not a good method which requires to be bettered. The inventor of this invention, after several years' hard-studying, finally invented this invention.

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SUMMARY OF THE INVENTION

The object of this invention is to provide a method of separating the oil sludges with the crude oil by utilizing high temperature indirect heating method.

Another object of this invention is to provide a method of separating the oil
15 sludges with the crude oil by cracking the extracted crude oil into the light crude oil and the gas.

Another object of this invention is to provide a method of separating the oil sludges with the crude oil of which it could add the plastic junk into the oil sludges which could increase the quantities of the light crude oil being cracked without
20 increasing the quantities of sludges dirt.

Still another object of this invention is to provide a method of separating the oil sludges with the crude oil which utilizes the bad quality oil, combustible junk as the fuel of direct heating the oil sludges by indirect heating method.

The fabricating steps of the method of separating the oil sludges with the
25 crude oil achieving the above-mentioned object of invention are as follows:

1. first to put the oil sludges containing the crude oil into the cracking furnace to heat to 400-700 degree wherein there remains the pressure value of 3 kg inside said cracking furnace such that the crude oil contained by said oil sludges is cracked into gas status;

5 2.to cool the oil gas in step 1 and cool it such that the oil gas after being cooled forms the gas and the light crude oil;

3. to guide the gas in step 2 into the gas manager and to guide the light crude oil manager into the crude oil manager for the usage as the chemical intermediate or to be distilled into the gas oil, diesel oil or the fuel oil.

10 Besides, there adds the plastic junk in the step 1 such that it could increase the yield of the light crude oil under the condition of non-increasing the sludges junk; and the fuel being used could be the self-extract bad-quality oil, self-produced gas, combustible junk as well as the coal, etc.

BRIEF DESCRIPTION OF THE DRAWINGS

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The drawings disclose an illustrative embodiment of the present invention which serves to exemplify the various advantages and objects hereof, and are as follows:

Fig. 1 is the step fig of the method of separating the oil sludges with the
20 crude oil of this invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Please refer to fig. 1, which is the step of the method of separating the oil
25 sludges with the crude oil of this invention; the fabricating step is as follows:

Step1: to proceed heating by putting the oil sludges in the cracking furnace of a combustion chamber, said heating fuel could be: bad quality oil, gas, coal as well as combustible junk, such that the crude oil in the oil sludges is heated to evaporate to be the oil gas, and it separates with the sludges completely so the
5 sludges dirt completing separation is very dry as a mine sand;

Step2: guide the oil gas into the reaction furnace and proceed pressure control to proceed irreversible reaction by cleaving the molecules.

Step3: cool the oil gas in step 2 to the condenser to near the ambient temperature such that the liquid being condensed and after precipitation become
10 the light crude oil wherein the density of said light oil is 0.86 and partial uncondensed gas is oil gas;

Step4: to guide the light crude oil in step 3 to storage in the crude oil manager to refine the related diesel oil , gas oil, etc.

Step5: to store the oil gas in step 3 after compression and liquification such
15 that it could be packed into the bottle or be used for proving the equipment of heating;

Step6: next to clear the dry sludges inside the cracking furnace which completes the separation of the crude oil and the sludges.

Besides, it could also add a incombustible junk such as plastic typed junk
20 into the cracking furnace to be heating and cracking with the oil sludges such that said incombustible junk could be cracked and evaporated into the oil gas so that the yield of the light crude oil and the gas increases wherein the quality of the sludges dirt inside the cracking furnace is a constant; besides, both the light crude oil and the gas refined by said step 4 and step 5 could be used as the fuel of indirect
25 heating the cracking furnace.

The method of separating the oil sludges with the crude oil of this invention having the following advantages in comparison with the other conventional technologies:

1. This invention heating the crude oil sludges indirectly by utilizing the
5 high temperature such that the crude oil adhered to the sludges is evaporated into the oil gas, next to condense the crude oil sludges to be the light crude oil and the gas for providing the usage of the users through the condenser.

2. This invention adds the plastic junk in the oil sludges so that it increases
the quality of the light crude oil being refined without increasing the quality of the
10 sludges dirt.

3. This invention could utilize the bad quality oil, the combustible junk, the coal, as well as the gas as the fuel of indirect heating the hot oil sludges; besides, said bad quality oil could be refined by using the method of this invention.

Many changes and modifications in the above described embodiment of the
15 invention can, of course, be carried out without departing from the scope thereof. Accordingly, to promote the progress in science and the useful arts, the invention is disclosed and is intended to be limited only by the scope of the appended claims.

What is claimed is:

1. A method of separating the oil sludges with the crude oil, which fabricating step comprises:

Step1: to proceed heating by putting the oil sludges in the cracking furnace
5 of a combustion chamber, such that the crude oil in the oil sludges is heated to evaporate to be the oil gas, and separating with the sludges completely so the sludges dirt completing separation is very dry as a mine sand;

Step2: to guide the oil gas into the reaction furnace and proceed pressure control to proceed irreversible reaction by cleaving the molecules.

10 Step3: to cool the oil gas in step 2 to the condenser to near the ambient temperature such that the liquid condensed and after precipitation becomes the light crude oil , therein the partial uncondensed gas is oil gas;

Step4: to guide the light crude oil in step 3 to storage in the crude oil manager,

15 Step5: to store the oil gas in step 3 after compression and to liquefied such that it could be packed into the bottle or be used for proving the equipment of heating;

Step6: next to clear the dry sludges inside the cracking furnace which completes the separation of the crude oil and the sludges.

20 2. The claim as mentioned in claim 1, wherein the heating temperature in the cracking furnace of said step 1 is 400-700 degree.

3. The claim as mentioned in claim 1, wherein the fuel in the cracking furnace of said step 1 could be the bad quality oil, the gas, the coal as well as the combustibile junk, etc.

25 4. The claim as mentioned in claim 1, wherein the pressure value in said

cracking furnace of said step1 must keep 3 kg.

5. The claim as mentioned in claim 1, wherein the density of the light crude oil of step3 is 0.7-0.94.

6. The claim as mentioned in claim 1, wherein the light crude oil in step 4
5 could be used as the petrochemical raw product as well as being refined to become the diesel oil or each kind of gas oil.

7. The claim as mentioned in claim 1, wherein the light crude oil stored in step 4 could be used as the fuel of the indirect heating cracking furnace.

8. The claim as mentioned in claim 1, wherein the gas stored in step 5 could
10 be used as the fuel of the indirect heating cracking furnace.

9. A method of separating the oil sludges with the crude oil, which fabricating step comprises:

Step1: to proceed heating by putting the oil sludges and the plastic junk in the cracking furnace of a combustion chamber, such that the crude oil and the
15 incombustible junk in the oil sludges are heated to evaporate to be the oil gas, and to separate the crude oil with the sludges completely;

Step2: to guide the oil gas into the reaction furnace and proceed pressure control to proceed irreversible reaction by cleaving the molecules.

Step3: to cool the oil gas in step 2 to the condenser to near the ambient
20 temperature such that the liquid condensed and after precipitation becomes the light crude oil, therein the partial uncondensed gas is oil gas;

Step4: to guide the light crude oil in step 3 to storage in the crude oil manager,

Step5: to store the oil gas in step 3 after compression and to liquefied such
25 that it could be packed into the bottle or be used for proving the equipment of

heating;

Step6: next to clear the dry sludges inside the cracking furnace which completes the separation of the crude oil and the sludges.

10. The claim as mentioned in claim 9, wherein the heating temperature in
5 the cracking furnace of said step 1 is 400-700 degree.

11. The claim as mentioned in claim 9, wherein the fuel in the cracking furnace of said step 1 could be the bad quality oil, the gas, the coal as well as the combustible junk, etc.

12. The claim as mentioned in claim 9, wherein the pressure value in said
10 cracking furnace of said step1 must keep 3 kg.

13. The claim as mentioned in claim 1, wherein the density of the light crude oil of step3 is 0.7-0.94.

14. The claim as mentioned in claim 9, wherein the light crude oil in step 4 could be used as the petrochemical raw product as well as being refined to become
15 the diesel oil or each kind of gas oil.

15. The claim as mentioned in claim 9, wherein the light crude oil stored in step 4 could be used as the fuel of the indirect heating cracking furnace.

16. The claim as mentioned in claim 9, wherein the gas stored in step 5 could be used as the fuel of the indirect heating cracking furnace.

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