1. (WO1992019323) A SYSTEM FOR EXTINGUISHING AN OIL WELL SUBJECTED TO VERY HIGH PRESSURE

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Title
(EN) A SYSTEM FOR EXTINGUISHING AN OIL WELL SUBJECTED TO VERY HIGH PRESSURE
(FR) SYSTEME D'EXTINCTION DES PUITS DE PETROLE SOUMIS A DE TRES FORTES PRESSIONS

Abstract:
(EN) The invention describes a system for extinguishing fires in oil wells subjected to very high pressures, and cooling of the surrounding ground. The base of the system is, for example, of conical shape resembling a volcano. The flames are stifled by introducing a non-flammable gas (e.g. nitrogen or liquid carbon dioxide) or water into the system through holes (4a, 4b) in the conical section. The turbulent propagation of this gas, achieved by using angle connectors in the system, occurs in the same direction as the flames and is intensified in an upward direction by the conical shape of the system. The outlet via the crater (1) is a form of eruption encompassing all the flames, and nitrogen is directed downward to cool the surrounding ground.

(FR)L'invention concerne un système qui permet l'extinction des puits de pétrole soumis à de très fortes pressions, et le refroidissement du sol environnant; la base du système est par exemple, en forme cônique qui ressemble à un volcan, et agissant par l'asphyxie des flammes, par l'introduction d'un gaz ininflammable (ex. l'azote ou le gaz carbonique liquide) ou d'eau, dans le système, par les trous (4a, 4b) réalisés sur la partie cônique; la propagation de ce gaz en tourbillon, obtenu par l'application de raccords en forme d'angle dans le système, avançant dans le même sens que les flammes, et s'intensifiant en montant par la forme cônique du système, pour sortir par le cratère (1), faisant une sorte d'éruption, envahissant toutes les flammes, et la propulsion de l'azote vers le bas, pour le refroidissement du sol environnant.

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A system for extinguishing an oil well subjected to very high pressure

WO 1992019323 A1

RÉSUMÉ

The invention describes a system for extinguishing fires in oil wells subjected to very high pressures, and cooling of the surrounding ground. The base of the system is, for example, of conical shape resembling a volcano. The flames are stifled by introducing a non-flammable gas (e.g. nitrogen or liquid carbon dioxide) or water into the system through holes (4a, 4b) in the conical section. The turbulent propagation of this gas, achieved by using angle connectors in the system, occurs in the same direction as the flames and is intensified in an upward direction by the conical shape of the system. The outlet via the crater (1) is a form of eruption encompassing all the flames, and nitrogen is directed downward to cool the surrounding ground.

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DESCRIPTION Langue du texte original : Français (Le texte OCR peut contenir des erreurs.)

EXTINCTION OF OIL WELL SYSTEM SUBJECT TO VERY HIGH PRESSURE

This invention relates to a system for extinguishing oil well fire in the nth time it took for them to ignite without the use of dynanite for example, the basic system is in conical shape that resembles a volcano and acting by asphyxiation flannes 1'introduction by a non-flammable gases (eg carbon dioxide or liquid nitrogen) or water in the system, holes (4a , 4b) formed on the conical portion, the propagation of this vortex gas obtained by the application of the angle-shaped connections in the system, moving in the same direction as the flames, and in increasing the amount for I tapered the system to exit the crater (1), making a kind of rash, invading all flannes, the introduction of gas connence at the monent déplacenent system to the well, the Nene pernettant nonent penetration of wells imminent invasion by gas flames, gas tanks are provided with the system.

The system comprises a recess (2) passing the pernettant flame wells, and a gate (8a, 8b) which locks the cutting following penetration of the well, and blocking the opening of said door are actuated by hydraulic cylinders (8c, 8d) radio-controlled, placed on opposite sides on the outside of the system.

The conical base of the system is extended by a drive cylinder to the crater

(1).

The system is placed on the well by means of a crane.

Cutting in (v) of the two plates (8a, 8b) of said door, to center the system relative to the bore by the locking mouvenent the two plates

(8a, 8b) simultatanément controlled by hydraulic cylinders (8c, 8d) of the two side opposite to the center (2).

Alternatively has on its base pipes (3z) pernettant propel a nonflammable gas (eg nitrogen or carbon dioxide) downwardly to cool the well and the surrounding soil, sinultanément with the process of extinction.

DESCRIBED IN THE ATTACHED DRAWINGS AND SYSTEMS ARE EXAMPLES AND RESTRICT

NOT THE METHOD FOR CARRYING OUT THE INVENTION.

REVENDICATIONS Langue du texte original : Français (Le texte OCR peut contenir des erreurs.)

CLAIMS

1) A system for extinguishing sounis oil well at very high pressures without using dynanite, characterized, for example, in that it comprises a furnace system having a conical base shape resembling a volcano and acting by asphyxia of the flames, by introducing a non-flammable gas (eg carbon dioxide or liquid nitrogen), or water into the system through the holes (4a, 4b) made on the conical portion, the propagation of the gas vortex, obtained by the application of the angle-shaped connections in the system, in advancing direction Nene the flames, and in nontant intensified by the conical form of the system and out through the crater (1) making a sort of rash, invading all flannes; introducing gas under pressure begins to nomient déplacenent of the system to the well, allowing the Nene upon penetration of the pipe, envahissenent the imminent flames by the gas tanks of gas are expected with the system.

2) The system of claim 1, characterized in that it comprises a recess (2) for introducing light into the well, and a gate (8a, 8b) which locks the cutting following penetration of the well, the and opening said door lock is actuated by hydraulic cylinders (8c, 8d) radio coamandés, placed on opposite sides on the outside of the system.

3) System according to claims 1,2, characterized in that the conical base of the system is extended by a crater mienant cylinder (1).

4) A system according to any one of claims, characterized in that the system is placed on the wells of a crane noyen.

5) System according to claims 1 and 3, characterized in that the cutout (v) of the two plates (8a, 8b) of said door, to center the system relative to the bore through the blocking nouvenent plates (8a, 8b), actuated simultaneously by hydraulic cylinders (8c, 8d) of two opposite sides towards the center (2) of the system.

6) The system of any one of claims, characterized in that an alternative is provided on its base pipes (3z) for propelling non-flammable gas (eg carbon dioxide or liquid nitrogen) downwardly, for cooling the well and with the surrounding soil sinultanénent extinguisher well process. AMENDED CLAIMS

[Received by the International Bureau October 1, 1992 (01.10.92) amended claim 1, claims 3 and 4 canceled;

1) System extinguishing oil wells of the type comprising eg a basic conical shape that resembles a volcano, extended by a cylinder leading to a crater (1), this new system is characterized in that it allows extinction wells subjected to intense pressure by asphyxiation flames through the introduction of a flammable gas in the system, for example THE CARBON GAS OR LIQUID NITROGEN PRESSURE, through holes (4a, 4b) which are formed on the conical part of the system, the spread of the gas vortex, obtained by the application of the angle-shaped connections in the system, moving in the same direction as the streamers, and s' in increasing amount by the conical shape of the system to exit the crater (1) making a sort of eruption invading all flames, the introduction of pressurized liquid gas starts when moving the system to the well, allowing time penetration of the pipe, the imminent invasion by the flames gas gas tanks are provided with the system.

2) The system of claim 1, in that it also comprises a cut (2) for introducing light into the well, and a gate (8a, 8b) which locks the cutting after the introduction of the well, the and opening said door lock is actuated by hydraulic cylinders (8c, 8d) of the radio-controlled two opposite sides placed outside the system.

3) System according to claims 1,2, characterized in that the plates (8a, 8b) of said door comprise cutouts (v) the system for centering relative to the bore by the locking movement of the two plates (8a, 8b), actuated simultaneously to the two opposite sides of the center of the system (2).

4) System according to claims 1,2,3, characterized in that the system comprises a variant of its base means (3Z) for propelling non-flammable gas for example, carbon dioxide and nitrogen down LIQUID for cooling the well and the surrounding soil simultaneously with the process of one extinction of the well. DECLARATION UNDER SECTION 19

Most often inventions and products have been usefully applied during decades without however gave the best solution to the problem, and most often the best solution (the invention) is the result of a new system applied with known products, or applied with a known system products for the first time.

CLAIM 1

i.modifiée by the type (for the conical shape of the system is known as document 1520288, 1857788, 1219418).

3885629 ii.the paper provides a locking system with the introduction of CO2 and NITROGEN to predict explosions heads wells that are located near unu wells will be treated with explosives and no extinguishing system wells fire.

CLAIM 2

unchanged (document 1498453 relates to a control valve and the heads of wells not an extinction system).

CLAIM 3

canceled (covered by the document 1219418).

CLAIM 4

Cumulative (covered by the document 1520288) not specified in the report

CLAIM 5

unchanged (not included)

CLAIM 6

unchanged (not included)

3885629 The invention cited in the report category Y is a solution to predict explosions wells that are near a well to be blown with explosives, and for blocking well not even the extinction of that it belongs to the classification E 21 B 33/03 AND E 21 B 33/02.

Before August 1991 the extinction of wells with explosives KUWAIT caused

cracking surrounding these wells, aggravating the situation and making huge unnecessary costs to repair these consequences serious were avoided since August 1991 by using this new system.

With the disaster wells KUWAIT, it turned out that he had to find a new process of extinction of wells subject to intense pressure that does not cause consequences, especially the wells at great risk are those in an area where the pressure is high.

2.5.91 The documents in 1924 were 68 years old and the newest is from 1975, which was 17. The experts used dynamite to the wells subjected to intense pressure to 7/30/91 despite the immensity of the disaster KUWAIT with more than 730 wells on fire, which brought together experts from all oil fields in the world, who discussed the whole issue, which had been given carte blanche to solve. I think we should give time to the skilled artisan without whenever wait centuries before finding the solution to the problem to solve, especially when it comes to pollution.

The properties of CO2 and nitrogen have been known for decades but was thinking of using them to extinction wells. The basic process of extinction in the history of the fire is asphyxiation, the change is simply in how to proceed.

The system is before you has been proven on wells subjected to very high pressures, and given the solution to the following problems:

I. Extinction smooth the well despite higher pressures.

II. Conservation traxté wells and facilities.

III. No impact on other wells.

AUTTRES BENEFITS

IV. Cost Control in obviating the invention 3,885,629.

V. Fire the time limitation and the pollution, without taking unnecessary precautions on the other wells as limiting the losses of oil in record time.

VI. Avoid people the dangers of the use of explosives.

The present invention describes for the first time the extinction of the wells with CO2 or nitrogen, it also comprises means for centering the system relative to the bore, and to block the oil in the base system.

CITATIONS DE BREVETS

Brevet cité	Date de dépôt	Date de publication	Déposant	Titre
FR1219418A *				*Titre non disponible*
US1498453 *	8 oct. 1923	17 juin 1924	Hudgins Ben E	Fire safety valve and control head for oil wells
US1520288 *	21 nov. 1923	23 déc. 1924	Patrick Featherstone Paul	Fire extinguisher
US1857788 *	26 déc. 1928	10 mai 1932	Murphy John S	Method and apparatus for extinguishing gas and oil well fires
US3885629 *	27 juil. 1972	27 mai 1975	Brian Richard Erb	Method and assembly for controlling blow-outs in oil wells

* Cité par l'examinateur

CLASSIFICATIONS

Classification internationale	A62C3/06, E21B35/00, A62C99/00
Classification coopérative	A62C3/06, A62C99/0018, E21B35/00
Classification européenne	A62C3/06, E21B35/00, A62C99/00B2

ÉVÉNEMENTS JURIDIQUES

Date	Code	Événement	Description
29 juin 1994	WWP		**Ref document number:** 1992910983 **Country of ref document:** EP
1 juin 1994	WWW		**Ref document number:** 1992910983 **Country of ref document:** EP

Date	Code	Événement	Description
			Kind code of ref document: A **Format of ref document f/p:** F
31 déc. 1993	WWE		**Ref document number:** 2112705 **Country of ref document:** CA
25 nov. 1993	WWE		**Ref document number:** 1992910983 **Country of ref document:** EP
2 nov. 1993	ENP		**Ref country code:** US **Ref document number:** 1993 140099 **Date of ref document:** 19931102 **Kind code of ref document:** A **Format of ref document f/p:** F
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12 nov. 1992	AL		**Kind code of ref document:** A1 **Designated state(s):** AT BE BF BJ CF CG CH CI CM DE DK ES FR GA GB GN GR IT LU MC ML MR NL SE SN TD TG