

EUROPEAN PATENT OFFICE
U.S. PATENT AND TRADEMARK OFFICE

CPC NOTICE OF CHANGES 1594

DATE: JANUARY 1, 20224

PROJECT MP11966

The following classification changes will be effected by this Notice of Changes:

<u>Action</u>	<u>Subclass</u>	<u>Group(s)</u>
SCHEME:		
Titles Changed:	E21B	7/002, 7/003
	E21B	11/005
	E21B	21/103, 21/106
	E21B	27/04
	E21B	33/068
	E21B	47/10
DEFINITIONS:		
Definitions Deleted: (no frozen (F) symbol definitions should be deleted)		
Definitions New:	E21B	7/002, 7/003, 7/008, 7/024, 7/025, 7/028, 7/15, 7/265
	E21B	10/22, 10/567, 10/5671
	E21B	11/005, 11/04, 11/06
	E21B	12/02
	E21B	17/003, 17/05, 17/06, 17/14
	E21B	19/162, 19/24
	E21B	21/019, 21/06, 21/062, 21/067, 21/103
	E21B	23/001, 23/06
	E21B	25/005
	E21B	27/04
	E21B	29/10
	E21B	31/035, 31/18
	E21B	33/068, 33/08, 33/1212
	E21B	34/16
	E21B	36/001
	E21B	41/0057
	E21B	43/04, 43/105, 43/1185, 43/121, 43/122, 43/124, 43/127, 43/17, 43/247, 43/283
	E21B	45/00
	E21B	47/022, 47/0224, 47/0228, 47/138
	E21B	49/0815
	E21B	2200/20, 2200/22
Definitions Modified:	E21B	4/00
	E21B	7/128
	E21B	17/206
	E21B	19/002, 19/14, 19/20
	E21B	27/00
	E21B	33/06

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<u>Action</u>	<u>Subclass</u>	<u>Group(s)</u>
	E21B	41/005
	E21B	43/003, 43/08, 43/11, 43/28, 43/34
	E21B	47/01, 47/02, 47/026, 47/06, 47/10, 47/12
	E21B	49/006

No other subclasses/groups are impacted by this Notice of Changes.

This Notice of Changes includes the following [Check the ones included]:

1. CLASSIFICATION SCHEME CHANGES

- A. New, Modified or Deleted Group(s)
- B. New, Modified or Deleted Warning(s)
- C. New, Modified or Deleted Note(s)
- D. New, Modified or Deleted Guidance Heading(s)

2. DEFINITIONS

- A. New or Modified Definitions (Full definition template)
- B. Modified or Deleted Definitions (Definitions Quick Fix)

3. REVISION CONCORDANCE LIST (RCL)

4. CHANGES TO THE CPC-TO-IPC CONCORDANCE LIST (CICL)

5. CHANGES TO THE CROSS-REFERENCE LIST (CRL)

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1. CLASSIFICATION SCHEME CHANGES

A. New, Modified or Deleted Group(s)

SUBCLASS E21B - EARTH DRILLING, e.g. DEEP DRILLING; OBTAINING OIL, GAS, WATER, SOLUBLE OR MELTABLE MATERIALS OR A SLURRY OF MINERALS FROM WELLS

<u>Type*</u>	<u>Symbol</u>	<u>Indent Level</u> <u>Number of dots</u> <u>(e.g. 0, 1, 2)</u>	<u>Title</u> <u>“CPC only” text should normally be</u> <u>enclosed in {curly brackets}**</u>	<u>Transferred to#</u>
M	E21B7/002	1	{Drilling with diversely driven shafts extending into the borehole (E21B7/001 takes precedence)}	
M	E21B7/003	1	{Drilling with mechanical conveying means}	
M	E21B11/005	1	{Hand operated drilling tools}	
M	E21B21/103	2	{Down-hole by-pass valve arrangements, i.e. between the inside of the drill string and the annulus (valves specifically for maintaining circulation of drilling fluid while connecting or disconnecting tubular joints E21B 21/019)}	
M	E21B21/106	2	{Valve arrangements outside the borehole, e.g. kelly valves (valves specifically for maintaining circulation of drilling fluid while connecting or disconnecting tubular joints E21B21/019)}	
M	E21B27/04	1	where the collecting or depositing means include helical conveying means	
M	E21B33/068	3	having provision for introducing objects or fluids into, or removing objects from, wells (cementing-heads E21B33/05)	
M	E21B47/10	1	Locating fluid leaks, intrusions or movements	

*N = new entries where reclassification into entries is involved; C = entries with modified file scope where reclassification of documents from the entries is involved; Q = new entries which are firstly populated with documents via administrative transfers from deleted (D) entries. Afterwards, the transferred documents into the Q entry will either stay or be moved to more appropriate entries, as determined by intellectual reclassification; T = existing entries with enlarged file scope, which receive documents from C or D entries, e.g. when a limiting reference is removed from the entry title; M = entries with no change to the file scope (no reclassification); D = deleted entries; F = frozen entries will be deleted once reclassification of documents from the entries is completed; U = entries that are unchanged.

NOTES:

- **No {curly brackets} are used for titles in CPC only subclasses, e.g. C12Y, A23Y; 2000 series symbol titles of groups found at the end of schemes (orthogonal codes); or the Y section titles. The {curly brackets} are used for 2000 series symbol titles found interspersed throughout the main trunk schemes (breakdown codes).
- U groups: it is obligatory to display the required “anchor” symbol (U group), i.e. the entry immediately preceding a new group or an array of new groups to be created (in case new groups are not clearly subgroups of C-type groups). Always include the symbol, indent level and title of the U group in the table above.

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- All entry types should be included in the scheme changes table above for better understanding of the overall scheme change picture. Symbol, indent level, and title are required for all types.
- “Transferred to” column must be completed for all C, D, F, and Q type entries. F groups will be deleted once reclassification is completed.
- When multiple symbols are included in the “Transferred to” column, avoid using ranges of symbols in order to be as precise as possible.
- For administrative transfer of documents, the following text should be used: “<administrative transfer to XX>”, “<administrative transfer to XX and YY simultaneously>”, or “<administrative transfer to XX, YY, ...and ZZ simultaneously>” when administrative transfer of the same documents is to more than one place.
- Administrative transfer to main trunk groups is assumed to be the source allocation type, unless otherwise indicated.
- Administrative transfer to 2000/Y series groups is assumed to be “additional information”.
- If needed, instructions for allocation type should be indicated within the angle brackets using the abbreviations “ADD” or “INV”: <administrative transfer to XX ADD> , <administrative transfer to XX INV>, or <administrative transfer to XX ADD, YY INV, ... and ZZ ADD simultaneously>.
- In certain situations, the “D” entries of 2000-series or Y-series groups may not require a destination (“Transferred to”) symbol, however it is required to specify “<no transfer>” in the “Transferred to” column for such cases.
- For finalization projects, the deleted “F” symbols should have <no transfer> in the “Transferred to” column.
- For more details about the types of scheme change, see CPC Guide.

2. A. DEFINITIONS (new)

E21B 7/002

Definition statement

This place covers:

Drilling devices with multiple shafts in the borehole that are independently driven or one shaft is driven relative to another.

References

Limiting References

This place does not cover:

Drilling a non-circular hole	E21B 7/001
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Informative References

Attention is drawn to the following places, which may be of interest for search:

Plural down-hole drives	E21B 4/16
Simultaneously drilling and casing	E21B 7/20
Pipes with plural fluid passages	E21B 17/18

E21B 7/003

Definition statement

This place covers:

Drilling devices with mechanical means for removing drill cuttings and soil from the borehole.

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Informative references

Attention is drawn to the following places, which may be of interest for search:

Boring grabs	E21B 11/04
Containers for collecting material in boreholes	E21B 27/00
Tunneling	E21D

E21B 7/008

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Ice-fishing	A01K 97/01
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E21B 7/024

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Levelling of soil-shifting machines	E02F 9/028
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E21B 7/025

Definition statement

This place covers:

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Drilling holes into rock material or soil in mines, quarries and construction sites, e.g. blast holes or anchor bolt holes, using drilling machines with drill motor carriage displaceable on feed beam.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Machines for drilling anchor holes and setting anchor bolts	E21D 20/003
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E21B 7/028

Definition statement

This place covers:

Drilling tools portable, e.g. by hand, and detachable from portable drilling rig vehicles, e.g. from motorcars.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Hand operated drilling tools	E21B 11/005
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E21B 7/15

Definition statement

This place covers:

Drilling using, for example, lasers or electrical discharge between electrodes that generate shock waves.

E21B 7/265

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Definition statement

This place covers:

The use of earth removal devices or processes separate from the drilling devices to remove earth or soil from the hole.

E21B 10/22

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Bearings in general	F16C
Lubricating in general	F16N

E21B 10/567

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Manufacture of articles from metallic powder	B22F
Metal-working not otherwise provided for	B23P
Alloys containing diamonds	C22C

E21B 10/5671

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Cutting tools of which the bits or tips are of special material and characterised by chip-breakers	B23B 27/143
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E21B 11/005

References

Informative References

Attention is drawn to the following places, which may be of interest for search:

Hand portable tools detachable from portable drilling rigs	E21B 7/028
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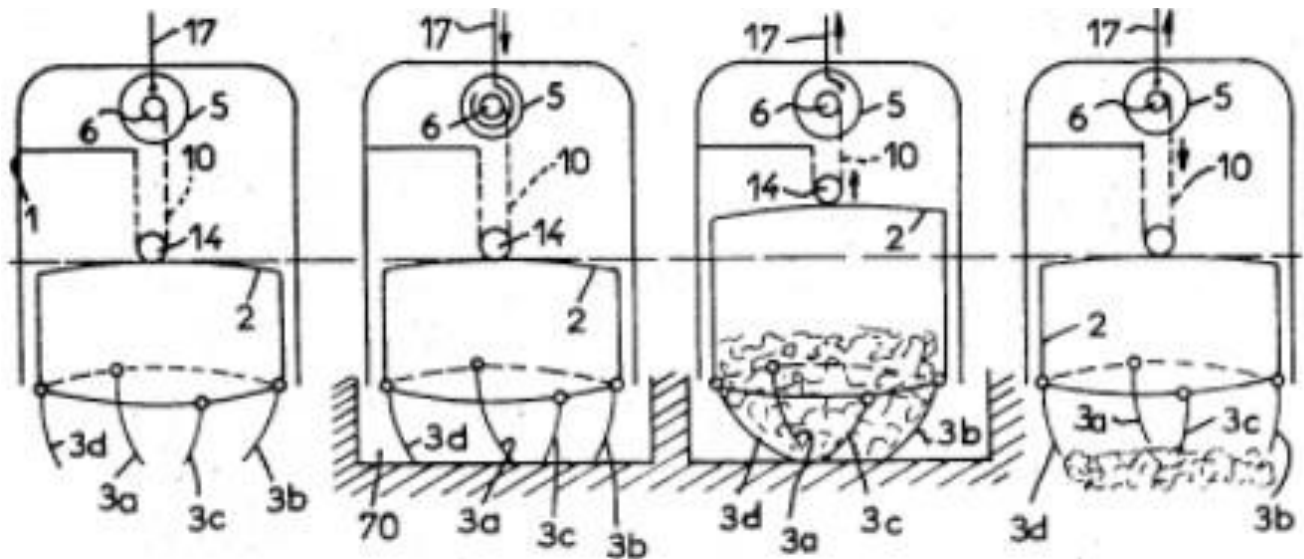
E21B 11/04

Definition statement

This place covers:

Boring devices that both form the borehole and collect material for removal from the borehole.

Illustrative example of subject matter classified in this place:



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E21B 11/06**References*****Informative references***

Attention is drawn to the following places, which may be of interest for search:

Machines slitting solely by one or more cutter chains moving unidirectionally along jibs	E21C 25/22
Slitting by unguided cutter cables or cutter chains, or by unguided tools drawn along the working face by cables or the like	E21C 25/54
Slitting by cutter cables or cutter chains or by tools drawn along the working face by cables or the like, in each case guided parallel to the face, e.g. by a conveyor, by a guide parallel to a conveyor	E21C 25/56
Machines which completely free the mineral from the seam solely by slitting by a single chain guided on a frame with or without auxiliary slitting means	E21C 27/04

E21B 12/02**References*****Informative references***

Attention is drawn to the following places, which may be of interest for search:

Investigating resistance to wear or abrasion	G01N 3/56
Investigating machinability by cutting tools; Investigating the cutting ability of tools	G01N 3/58

E21B 17/003**References**

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Limiting References

This place does not cover:

Arrangements for connecting cables or wirelines to downhole devices	E21B 17/023
Electrical or electro-magnetic connections	E21B 17/028

Informative References

Attention is drawn to the following places, which may be of interest for search:

Electrically insulated joints or couplings	F16L 25/02
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E21B 17/05

References

Informative References

Attention is drawn to the following places, which may be of interest for search:

Swivel joints in hose-lines	E21B 21/02
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E21B 17/06

References

Informative References

Attention is drawn to the following places, which may be of interest for search:

Gun or shaped-charge perforators	E21B 43/116
Dropping perforation guns after gun actuation	E21B 43/1193

E21B 17/14

References

Informative References

Attention is drawn to the following places, which may be of interest for search:

Casing shoes having a valve	E21B 21/10
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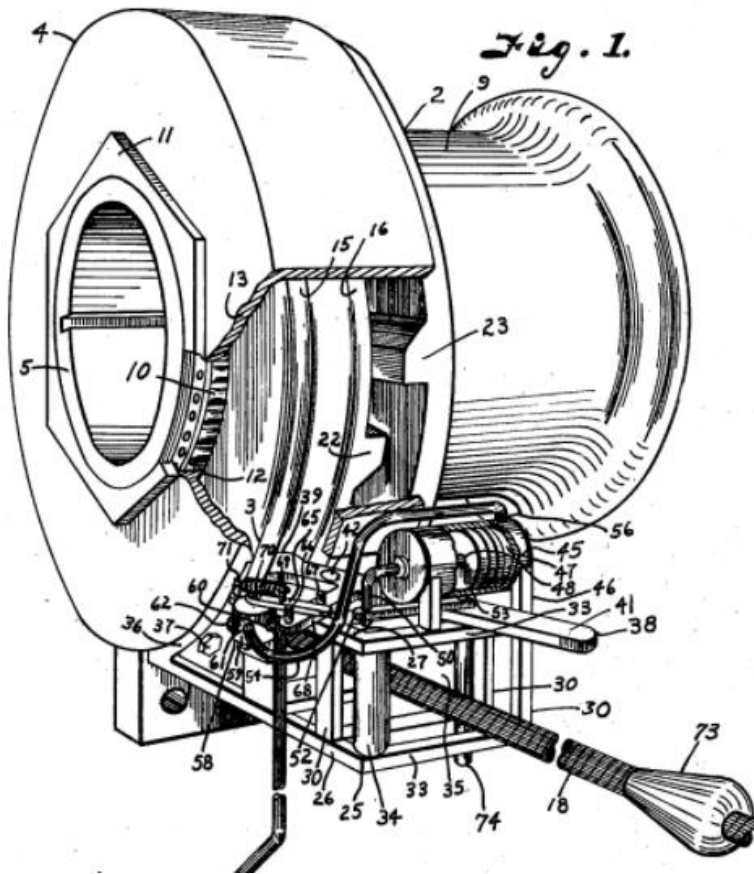
E21B 19/162

Definition statement

This place covers:

A powered winch system used to tension chains, cables and ropes for actuation of the wrench.

Illustrative example of the subject matter classified in this place:



E21B 19/24

Definition statement

This place covers:

Devices located at the surface for guiding or centralising drill pipe as it is inserted into a well.

E21B 21/019

References

Informative References

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Attention is drawn to the following places, which may be of interest for search:

Valve arrangements in drilling fluid circulation systems in general	E21B 21/10
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E21B 21/06

Definition statement

This place covers:

Treating drilling fluid outside the borehole in a way that modifies the composition of the drilling fluid. This includes drilling fluid exiting the well and new drilling fluid introduced into the well.

E21B 21/062

Definition statement

This place covers:

Treating drilling fluids and wellbore treatment fluids by mixing in new or additional components.

E21B 21/067

References

Informative References

Attention is drawn to the following places, which may be of interest for search:

Materials not provided for elsewhere for treating liquid pollutants, e.g. oil, gasoline or fat	C09K 3/32
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E21B 21/103

References

Limiting references

This place does not cover:

Valves specifically for maintaining circulation of drilling fluid while connecting or disconnecting tubular joints	E21B 21/019
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Informative References

Attention is drawn to the following places, which may be of interest for search:

Cementing valves	E21B 33/14
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E21B 23/001

References

Informative References

Attention is drawn to the following places, which may be of interest for search:

Self-propelled fluid operated hammers	E21B 4/145
Burrowing devices	E21B 7/26
Self-contained pigs	F16L 55/32

E21B 23/06

Definition statement

This place covers:

Tools for setting packers, detachable from the packer.

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References

Informative References

Attention is drawn to the following places, which may be of interest for search:

Setting by fluid means	E21B 23/04
Setting means incorporated into packers	E21B 33/10

E21B 25/005

References

Informative References

Attention is drawn to the following places, which may be of interest for search:

Investigating or analysing materials by determining their chemical or physical properties, e.g. testing of core samples per se and devices therefore	G01N
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E21B 27/04

References

Informative References

Attention is drawn to the following places, which may be of interest for search:

Drilling with helical conveying means combined with bucket-type container	E21B 7/006
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E21B 29/10

References

Informative References

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Attention is drawn to the following places, which may be of interest for search:

Enlarging drilled holes, e.g. counterboring	E21B 7/28
Expanding tools for setting expansible casings, liners, screens or the like	E21B 43/105

E21B 31/035

Definition statement

This place covers:

Processes for unsticking the pipe from the wellbore wall by, for example, applying force to pipe, lowering pressure in the wellbore or using treatment fluid.

References

Informative References

Attention is drawn to the following places, which may be of interest for search:

Additives for releasing stuck drill pipe	C09K 2208/02
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E21B 31/18

References

Informative References

Attention is drawn to the following places, which may be of interest for search:

Construction of grippers for machine tools	B23Q 7/043
Gripping heads, Manipulators in general	B25J 15/00
Gripping members for cranes	B66C 1/42

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E21B 33/068**References*****Limiting references****This place does not cover:*

Cementing-heads, e.g. having provision for introducing cementing plugs	E21B 33/05
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Informative References*Attention is drawn to the following places, which may be of interest for search:*

Wipers; Oil savers	E21B 33/08
Launching or retrieval of pigs or moles	F16L 55/46

E21B 33/08**Definition statement***This place covers:*

Wipers, oil savers and stuffing boxes.

E21B 33/1212**References*****Informative References****Attention is drawn to the following places, which may be of interest for search:*

Metal packing seals in general	F16J 15/08
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E21B 34/16

Definition statement

This place covers:

Means for controlling valves in wellheads, downhole valves, blow out preventers.

References

Informative References

Attention is drawn to the following places, which may be of interest for search:

Fluid-pressure systems with accumulators	F15B 1/00
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E21B 36/001

References

Informative References

Attention is drawn to the following places, which may be of interest for search:

Cooling of downhole sensors/electronics	E21B 47/0175
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E21B 41/0057

References

Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Disposal of radioactively contaminated liquid waste by storage in the ground	G21F 9/24
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Attention is drawn to the following places, which may be of interest for search:

Disposal of solid waste	B09B
Reclamation of contaminated soil	B09C
Storing fluid in natural or artificial cavities or chambers in the earth	B65G 5/00
Storing fluid in porous layers	B65G 5/005

E21B 43/04

References

Informative References

Attention is drawn to the following places, which may be of interest for search:

Graveling of drinking water wells	E03B 3/24
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E21B 43/105

References

Informative References

Attention is drawn to the following places, which may be of interest for search:

Tube expanders in general	B21D 39/08
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E21B 43/1185

Definition statement

This place covers:

Ignition systems, e.g. electrically-actuated.

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E21B 43/121

Definition statement

This place covers:

The use of fluid from outside the well, or tool or system to move obtained fluid to the surface.

References

Limiting references

This place does not cover:

Monitoring of down-hole pump systems	E21B 47/008
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Informative References

Attention is drawn to the following places, which may be of interest for search:

Pumping installations for raising fluid from great depths	F04B 47/00
Non-positive displacement pumps for use in mining bore holes	F04D 13/10
Positive displacement pumps for downhole pumping	F04C 13/008

E21B 43/122

References

Informative References

Attention is drawn to the following places, which may be of interest for search:

Pumps using pressurised fluid medium acting on the surface of the liquid to be pumped from a great depth	F04F 1/08
Pumps using pressurised fluid medium being mixed with liquid being pumped from a great depth	F04F 1/20

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E21B 43/124

References

Informative References

Attention is drawn to the following places, which may be of interest for search:

Jet pumps in general	F04F 5/00
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E21B 43/127

References

Informative References

Attention is drawn to the following places, which may be of interest for search:

Driving of walking beam	F04B 47/022
Details of the walking beam	F04B 47/028

E21B 43/17

References

Limiting references

This place does not cover:

Enhanced recovery methods for obtaining hydrocarbons using heat, e.g. steam injection, in association with fracturing or crevice forming processes	E21B 43/2405
Enhanced recovery methods for obtaining hydrocarbons using combustion in situ in association with fracturing processes or crevice forming processes	E21B 43/247

Informative References

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Attention is drawn to the following places, which may be of interest for search:

Fracturing per se	E21B 43/26
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E21B 43/247

References

Informative References

Attention is drawn to the following places, which may be of interest for search:

Fracturing per se	E21B 43/26
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E21B 43/283

References

Informative References

Attention is drawn to the following places, which may be of interest for search:

Fracturing per se	E21B 43/26
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E21B 45/00

Special rules of classification

Drilling time or rate of penetration measurements should only be classified in E21B 45/00 if specific measurement techniques are disclosed, or if the drilling time or rate of penetration data is relevant for the execution of another operation.

E21B 47/022

References

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Informative References

Attention is drawn to the following places, which may be of interest for search:

Geophysics, detecting masses or objects	G01V
Navigation, gyroscopic instruments	G01C

E21B 47/0224

References

Informative References

Attention is drawn to the following places, which may be of interest for search:

Seismic or acoustic prospecting	G01V 1/00
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E21B 47/0228

References

Informative References

Attention is drawn to the following places, which may be of interest for search:

Magnetic or electric prospecting	G01V 3/00
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E21B 47/138

Definition statement

This place covers:

Devices or carriers that are flowable with or through fluids in the well for performing measurements or for transmitting data, control or actuating signals.

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E21B 49/0815

References

Informative References

Attention is drawn to the following places, which may be of interest for search:

Bailers	E21B 27/00
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E21B 2200/20

Special rules of classification

Subject matter classified here should include significant or specific details of modeling or simulating.

E21B 2200/22

References

Informative References

Attention is drawn to the following places, which may be of interest for search:

Fuzzy logic, artificial intelligence, neural networks per se	G06N
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Special rules of classification

Subject matter classified here should include significant/specific details of fuzzy logic, artificial intelligence, neural networks, or the like.

2. A. DEFINITIONS (modified)

E21B 4/00

Definition statement

Replace: The existing Definition statement TEXT with the updated text below. Do NOT update image.

Drives located inside the borehole for powering drilling units.

Illustrative example of subject matter classified in this place:

References

Informative references

Replace: The reference text for the symbol F04C 2/107 as shown below:

Rotary-piston machines with helical teeth, e.g. Moineau motors	F04C 2/107
----------------------------------------------------------------	------------

E21B 7/128

References

Informative references

Insert: The following new row to the Informative references table:

Floating drilling platforms	B63B 35/44
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E21B 17/206

References

Informative references

Insert: The following new row to the Informative references table:

Flexible electrical cables in boreholes	H01B 7/046
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E21B 19/002

Definition statement

Replace: The existing Definition statement TEXT with the updated text below. Do NOT update image.

Handling and supporting of tubulars in relation to underwater drilling operations other than feeding the drill string into the borehole or controlling the weight on bit.

Illustrative example of subject matter classified in this place:

E21B 19/14

Definition statement

Replace: The existing Definition statement with the updated one below.

Storage of rods and handling of rods between storage and a position where the rods can be connected or disconnected.

E21B 19/20

Definition statement

Replace: The existing Definition statement TEXT with the updated text below. Do NOT update image.

The combination of feeding from rack and connecting.

Illustrative example of subject matter classified in this place:

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E21B 27/00

Definition statement

Replace: The existing Definition statement TEXT with the updated text below. Do NOT update image.

Illustrative example of subject matter classified in this place:

References

Insert: The following new Informative references section and table.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Junk baskets for fishing	E21B 31/08
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E21B 33/06

References

Informative references

Insert: The following new row to the Informative references table:

Control systems for blow-out preventers	E21B 34/16
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E21B 41/005

References

Informative references

Insert: The following new row to the Informative references table:

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Treating radioactively contaminated material; Decontamination arrangements therefor	G21F 9/00
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E21B 43/003

Definition statement

Insert: The following new Definition statement.

Processes for inducing vibrations in earth formations using tools inside the borehole or at the surface.

E21B 43/08

References

Insert: The following new row to the Informative references table:

Informative references

Attention is drawn to the following places, which may be of interest for search:

Separation, filters in general	B01D
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E21B 43/11

Definition statement

Replace: The existing Definition statement TEXT with the updated text below. Do NOT update image.

Perforators and guns used to create apertures in casing or formation in order to establish a fluid communication with the reservoir for the production of oil or gas. Included are details about construction, ignition, communication and placement.

Illustrative example of subject matter classified in this place:

DATE: JANUARY 1, 20224

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E21B 43/28

Definition statement

Replace: The existing Definition statement TEXT with the updated text below. Do NOT update image.

Production of minerals other than hydrocarbons by dissolving them in situ with a dissolving agent.

Illustrative example of subject matter classified in this place:

References

Replace: The Informative references table with the updated table below.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Methods or apparatus for cleaning boreholes or wells using chemical means for removing paraffins and other substances from the wellbore	E21B 37/06
Methods or apparatus for cleaning boreholes or wells using steerable or laterally extendable nozzles	E21B 43/292

E21B 43/34

Definition statement

Replace: The existing Definition statement TEXT with the updated text below. Do NOT update image.

Separation of materials produced by the well.

Illustrative example of subject matter classified in this place:

DATE: JANUARY 1, 20224

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E21B 47/01

Definition statement

Replace: The existing Definition statement with the updated one below.

Devices for mounting a data collection instrument upon a boring tool, boring tool string or cable-carried tool. Devices for shielding down-hole data collection instruments from damage.

E21B 47/02

Definition statement

Replace: The existing Definition statement with the updated one below.

Processes or apparatus for measuring the inclination or orientation of boreholes or devices in boreholes or wells.

E21B 47/026

Definition statement

Replace: The existing Definition statement with the updated one below.

Processes or apparatus for measuring the inclination, i.e. dip, or orientation, i.e. strike, of a drilled stratum, e.g. by using a specially adapted compass, e.g. a Brunton compass.

References

Informative references

Insert: The following new row to the Informative references table.

Geophysics; Detecting Masses or Objects	G01V
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E21B 47/06

Definition statement

Insert: The following new Definition statement

Measurements of temperature or pressure when specific measurement techniques are disclosed, or if the temperature or pressure data is relevant for the execution of another operation.

E21B 47/10

Definition statement

Insert: The following new paragraph at the end of the existing Definition statement:

Processes or apparatus for measuring or detecting flow of oil, water, or gas, or measuring properties (e.g. electrical) of fluids.

References

Delete: The Limiting references section and table.

Insert: The following new row in the Informative references table.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Locating or determining the position of objects in boreholes or wells using impression packers	E21B 47/098
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E21B 47/12

Definition statement

Replace: The existing Definition statement with the updated one below.

DATE: JANUARY 1, 20224

PROJECT MP11966

Processes or apparatus in which an information or control signal is sent to or from equipment located in the borehole over an information transmission link.

References

Informative references

Insert: The following new row in the Informative references table.

Transmission of digital information, e.g. telegraphic communication	H04L
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E21B 49/006

Definition statement

Insert: The following new Definition statement.

Measuring wall stresses in the borehole through in-situ measurements only.

References

Informative references

Insert: The following new row to the Informative references table.

Measuring stresses on core or rock samples	G01N 33/24
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