

EUROPEAN PATENT OFFICE
U.S. PATENT AND TRADEMARK OFFICE

CPC NOTICE OF CHANGES 1564

DATE: JANUARY 1, 2024

PROJECT MP12217

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:	E21	CLASS
	E21B	SUBCLASS
	E21B	1/00
	E21B	3/00, 3/04, 3/06
	E21B	4/02, 4/06
	E21B	6/00
	E21B	7/02, 7/04, 7/12, 7/18, 7/20, 7/26, 7/28
	E21B	10/00, 10/02, 10/08, 10/10, 10/18, 10/20, 10/24, 10/26, 10/42, 10/44, 10/55, 10/58, 10/64
	E21B	11/02
	E21B	15/02
	E21B	17/00, 17/01, 17/07, 17/10, 17/1085, 17/18, 17/22
	E21B	19/00, 19/02, 19/07, 19/08, 19/09, 19/12, 19/16
	E21B	21/00, 21/01, 21/06, 21/10, 21/12, 21/16
	E21B	23/00, 23/04, 23/08, 23/14
	E21B	25/00, 25/02
	E21B	28/00
	E21B	29/00, 29/02, 29/08
	E21B	31/00, 31/107, 31/14, 31/16
	E21B	33/03, 33/038, 33/04, 33/064, 33/128, 33/13, 33/138, 33/14
	E21B	34/00, 34/10
	E21B	35/00
	E21B	36/00
	E21B	37/00, 37/04, 37/06
	E21B	41/02, 41/04, 41/06
	E21B	43/00, 43/01, 43/017, 43/02, 43/10, 43/16, 43/24, 43/25, 43/26, 43/263, 43/267, 43/285, 43/30, 43/34
	E21B	44/00
	E21B	47/003, 47/024, 47/047, 47/103, 47/125
	E21B	49/00, 49/02
Warnings Modified:	E21B	SUBCLASS
DEFINITIONS:		

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Action	Subclass	Group(s)
Definitions Deleted: (no frozen (F) symbol definitions should be deleted)		
Definitions New:	E21B	3/04, 3/06
	E21B	4/02
	E21B	7/02, 7/12, 7/26
	E21B	10/10, 10/18, 10/20, 10/26, 10/44, 10/58
	E21B	11/02
	E21B	17/01, 17/10
	E21B	19/07
	E21B	21/16
	E21B	29/02, 29/08
	E21B	31/14, 31/16
	E21B	33/03, 33/038, 33/04, 33/064, 33/128
	E21B	34/10
	E21B	37/06
	E21B	41/04, 41/06
	E21B	43/017, 43/26, 43/263, 43/267, 43/285, 43/30
	E21B	47/007, 47/024, 47/103
Definitions Modified:	E21B	Subclass
	E21B	1/00
	E21B	3/00
	E21B	4/06
	E21B	6/00
	E21B	7/00, 7/04, 7/18, 7/20, 7/28
	E21B	10/02, 10/55, 10/64
	E21B	15/02
	E21B	17/00, 17/07, 17/18, 17/22
	E21B	19/00, 19/02, 19/08, 19/09, 19/12, 19/16
	E21B	21/00, 21/01, 21/10, 21/12
	E21B	23/08, 23/14
	E21B	25/00, 25/02
	E21B	28/00
	E21B	29/00
	E21B	31/00, 31/107
	E21B	33/13, 33/138, 33/14
	E21B	34/00
	E21B	35/00
	E21B	36/00
	E21B	37/00, 37/04
	E21B	41/02
	E21B	43/00, 43/01, 43/02, 43/10, 43/12, 43/16, 43/24, 43/25
	E21B	44/00
	E21B	47/00, 47/003, 47/125
	E21B	49/00, 49/02

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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)

CLASS E21 - EARTH DRILLING; MINING

<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	E21	Class	EARTH OR ROCK DRILLING; MINING	

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	E21B	Subclass	EARTH OR ROCK DRILLING; OBTAINING OIL, GAS, WATER, SOLUBLE OR MELTABLE MATERIALS OR A SLURRY OF MINERALS FROM WELLS	
M	E21B1/00	0	Percussion drilling	
M	E21B3/00	0	Rotary drilling	
M	E21B3/04	2	Rotary tables	
M	E21B3/06	3	Adaptation of rotary draw works to drive rotary tables	
M	E21B4/02	1	Fluid rotary type drives	
M	E21B4/06	1	Down-hole impacting means, e.g. hammers (boring rams E21B11/02)	
M	E21B6/00	0	Drives for drilling with combined rotary and percussive action	
M	E21B7/02	1	Drilling rigs characterised by means for land transport {with their own drive}, e.g. skid mounting or wheel mounting	
M	E21B7/04	1	Directional drilling	
M	E21B7/12	1	Underwater drilling (using heave compensators E21B19/09)	
M	E21B7/18	1	Drilling by liquid or gas jets, with or without entrained pellets (E21B7/14 takes precedence)	
M	E21B7/20	1	Driving or forcing casings or pipes into boreholes, e.g. sinking; Simultaneously drilling and casing boreholes	
M	E21B7/26	1	Drilling without earth removal, e.g. with self-propelled burrowing devices (E21B7/30 takes precedence)	
M	E21B7/28	1	Enlarging drilled holes, e.g. by counterboring	

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M	E21B10/00	0	Drill bits (specially adapted for deflecting the direction of boring {E21B7/064}; with means for collecting substances E21B27/00)	
M	E21B10/02	1	Core bits (characterised by wear resisting parts E21B10/48)	
M	E21B10/08	1	Roller bits (E21B10/26 takes precedence; roller core bits E21B10/06; characterised by wear resisting parts E21B10/50)	
M	E21B10/10	2	with roller axle supported at both ends	
M	E21B10/18	2	characterised by conduits or nozzles for drilling fluids	
M	E21B10/20	2	characterised by detachable or adjustable parts, e.g. legs or axles	
M	E21B10/24	3	characterised by lubricating details (E21B10/23 takes precedence)	
M	E21B10/26	1	Drill bits with leading portion, i.e. drill bits with a pilot cutter; Drill bits for enlarging the borehole, e.g. reamers (percussion drill bits with leading portion E21B10/40)	
M	E21B10/42	1	Rotary drag type drill bits with teeth, blades or like cutting elements, e.g. fork-type bits, fish tail bits (characterised by wear resisting parts E21B10/46; by conduits or nozzles for drilling fluid E21B10/60; by detachable or adjustable parts E21B10/62)	
M	E21B10/44	1	Bits with helical conveying portion, e.g. screw type bits; Augers with leading portion or with detachable parts (E21B10/42 takes precedence)	
M	E21B10/55	3	with preformed cutting elements	
M	E21B10/58	2	Chisel-type inserts ({E21B10/485,} E21B10/52 take precedence)	
M	E21B10/64	1	characterised by the whole or part thereof being insertable into or removable from the borehole without withdrawing the drilling pipe	
M	E21B11/02	1	Boring rams	
M	E21B15/02	1	specially adapted for underwater drilling (E21B15/04 takes precedence)	
M	E21B17/00	0	Drilling rods or pipes; Flexible drill strings; Kellies; Drill collars; Sucker rods; {Cables;} Casings; Tubings	
M	E21B17/01	1	Risers	
M	E21B17/07	3	Telescoping joints for varying drill string lengths; Shock absorbers	
M	E21B17/10	1	Wear protectors; Centralising devices {, e.g. stabilisers}	
M	E21B17/1085	2	{Wear protectors; Blast joints; Hard facing}	
M	E21B17/18	1	Pipes provided with plural fluid passages {(E21B17/203 takes precedence)}	
M	E21B17/22	1	Rods or pipes with helical structure	

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M	E21B19/00	0	Handling rods, casings, tubes or the like outside the borehole, e.g. in the derrick; Apparatus for feeding the rods or cables	
M	E21B19/02	1	Rod or cable suspensions	
M	E21B19/07	3	Slip-type elevators	
M	E21B19/08	1	Apparatus for feeding the rods or cables (E21B19/22 takes precedence; automatic feed E21B44/02); Apparatus for increasing or decreasing the pressure on the drilling tool; Apparatus for counterbalancing the weight of the rods	
M	E21B19/09	2	pecially adapted for drilling underwater formations from a floating support using heave compensators supporting the drill string	
M	E21B19/12	1	Rope clamps {; Rod, casings or tube clamps not secured to elevators }	
M	E21B19/16	1	Connecting or disconnecting pipe couplings or joints (E21B19/20 takes precedence)	
M	E21B21/00	0	Methods or apparatus for flushing boreholes, e.g. by use of exhaust air from motor (freeing objects stuck in boreholes by flushing E21B31/03)	
M	E21B21/01	1	Arrangements for handling drilling fluids or cuttings outside the borehole, e.g. mud boxes	
M	E21B21/06	1	Arrangements for treating drilling fluids outside the borehole	
M	E21B21/10	1	Valve arrangements in drilling-fluid circulation systems	
M	E21B21/12	1	using drilling pipes with plural fluid passages, e.g. closed circulation systems	
M	E21B21/16	1	using gaseous fluids (E21B21/14 takes precedence)	
M	E21B23/00	0	Apparatus for displacing, setting, locking, releasing or removing tools, packers or the like in boreholes or wells (setting of casings, screens or liners E21B43/10)	
M	E21B23/04	1	operated by fluid means, e.g. actuated by explosion (E21B23/08 takes precedence)	
M	E21B23/08	1	Introducing or running tools by fluid pressure, e.g. through-the-flow-line tool systems	
M	E21B23/14	1	for displacing a cable or a cable-operated tool, e.g. for logging or perforating operations in deviated wells	
M	E21B25/00	0	Apparatus for obtaining or removing undisturbed cores, e.g. core barrels or core extractors (core bits E21B10/02)	
M	E21B25/02	1	the core receiver being insertable into, or removable from, the borehole without withdrawing the drilling pipe	
M	E21B28/00	0	Vibration generating arrangements for boreholes or wells, e.g. for stimulating production ({ for fishing for or freeing objects E21B31/005; } for transmitting	

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			measuring-signals E21B47/14; for geophysical measurements G01V1/02)	
M	E21B29/00	0	Cutting or destroying pipes, packers, plugs or wire lines, located in boreholes or wells, e.g. cutting of damaged pipes, of windows; Deforming of pipes in boreholes or wells; Reconditioning of well casings while in the ground	
M	E21B29/02	1	by explosives or by thermal or chemical means {(freeing stuck objects by explosives E21B31/002)}	
M	E21B29/08	1	Cutting or deforming pipes to control fluid flow	
M	E21B31/00	0	Fishing for or freeing objects in boreholes or wells	
M	E21B31/107	1	using impact means for releasing stuck parts, e.g. jars	
M	E21B31/14	2	with means deflecting the direction of the tool, e.g. by use of knuckle joints	
M	E21B31/16	2	combined with cutting or destroying means	
M	E21B33/03	2	Well heads; Setting-up thereof	
M	E21B33/038	4	Connectors used on well heads, e.g. for connecting blow-out preventer and riser	
M	E21B33/04	3	Casing heads; Suspending casings or tubings in well heads	
M	E21B33/064	4	specially adapted for underwater well heads	
M	E21B33/128	3	with a member expanded radially by a xial pressure (E21B33/122, E21B33/124 take precedence)	
M	E21B33/13	2	Methods or devices for cementing, for plugging holes, crevices or the like	
M	E21B33/138	3	Plastering the borehole wall; Injecting into the formation	
M	E21B33/14	3	for cementing casings into boreholes	
M	E21B34/00	0	Valve arrangements for boreholes or wells	
M	E21B34/10	2	operated by control fluid supplied from outside the borehole	
M	E21B35/00	0	Methods or apparatus for preventing or extinguishing fires	
M	E21B36/00	0	Heating, cooling or insulating arrangements for boreholes or wells, e.g. for use in permafrost zones	
M	E21B37/00	0	Methods or apparatus for cleaning boreholes or wells (E21B21/00 takes precedence)	
M	E21B37/04	2	operated by fluid pressure, e.g. free-piston scrapers	
M	E21B37/06	1	using chemical means for preventing or limiting {, e.g. eliminating,} the deposition of paraffins or like substances	
M	E21B41/02	1	<u>in situ</u> inhibition of corrosion in boreholes or wells	
M	E21B41/04	1	Manipulators for underwater operations, e.g. temporarily connected to well heads	
M	E21B41/06	1	Work chambers for underwater operations, e.g. temporarily connected to well heads	

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M	E21B43/00	0	Methods or apparatus for obtaining oil, gas, water, soluble or meltable materials or a slurry of minerals from wells (applicable only to water E03B)	
M	E21B43/01	1	specially adapted for obtaining from underwater installations	
M	E21B43/017	2	Production satellite stations, i.e. underwater installations comprising a plurality of satellite well heads connected to a central station	
M	E21B43/02	1	Subsoil filtering	
M	E21B43/10	2	Setting of casings, screens, liners {or the like} in wells	
M	E21B43/16	1	Enhanced recovery methods for obtaining hydrocarbons	
M	E21B43/24	2	using heat, e.g. steam injection	
M	E21B43/25	1	Methods for stimulating production {(by vibrating earth formations E21B43/003)}	
M	E21B43/26	2	by forming crevices or fractures	
M	E21B43/263	3	using explosives	
M	E21B43/267	3	reinforcing fractures by propping	
M	E21B43/285	1	Melting minerals, e.g. sulfur (E21B43/24 takes precedence)	
M	E21B43/30	1	Specific pattern of wells, e.g. optimising the spacing of wells	
M	E21B43/34	1	Arrangements for separating materials produced by the well	
M	E21B44/00	0	Automatic control systems specially adapted for drilling operations, i.e. self-operating systems which function to carry out or modify a drilling operation without intervention of a human operator, e.g. computer-controlled drilling systems; Systems specially adapted for monitoring a plurality of drilling variables or conditions	
M	E21B47/003	1	Determining well or borehole volumes	
M	E21B47/024	2	of devices in the borehole (determining slope or direction of the borehole E21B47/022)	
M	E21B47/047	2	Liquid level (measuring depth or liquid level using radioactive markers E21B47/053)	
M	E21B47/103	2	using thermal measurements	
M	E21B47/125	2	using earth as an electrical conductor (by electromagnetic energy E21B47/13)	
M	E21B49/00	0	Testing the nature of borehole walls; Formation testing; Methods or apparatus for obtaining samples of soil or well fluids, specially adapted to earth drilling or wells	
M	E21B49/02	1	by mechanically taking samples of the soil	

*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

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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.
- 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 in formation”.
- 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.

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B. New, Modified or Deleted Warning notice(s)

SUBCLASSE21B - 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>Location</u>	<u>Old Warning notice</u>	<u>New/Modified Warning</u>
M	E21B	2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.	2. {In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.}

*N = new warning, M = modified warning, D = deleted warning

NOTE: The "Location" column only requires the symbol PRIOR to the location of the warning. No further directions such as "before" or "after" are required.

2. A. DEFINITIONS (new)

E21B 3/04

References

Informative references

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

Portable drilling rigs with rotary tables	E21B 7/021
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E21B 3/06

References

Informative references

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

Connecting or disconnecting couplings or joints	E21B 19/16
Rope, cable or chain winding mechanisms, capstans	B66D 1/00

E21B 4/02

References

Informative references

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

Hydraulic turbines for drilling wells	F03B13/02
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E21B 7/02

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Informative references

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

Portable drilling rigs for use on underwater floors	E21B 7/124
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E21B 7/12

References

Limiting references

This place does not cover:

Underwater drilling using heave compensators	E21B 19/09
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Informative references

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

Supports for the drilling machine, e.g. derricks or masts, specially adapted for underwater drilling	E21B 15/02
Telescoping joints	E21B 17/07
Well heads specially adapted for underwater installations	E21B 33/035
Submerged foundations	E02D 27/52

E21B 7/26

Definition statement

This place covers:

Drilling or forming holes without cutting into the soil or earth.

Drilling or forming holes by driving a tool into the earth to displace and compact the soil.

References

Limiting references

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This place does not cover:

Enlarging drilled holes, e.g. by counterboring, without earth removal	E21B 7/30
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Informative references

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

Down-hole drives	E21B 4/00
Fluid operated of the self propelled-type	E21B 4/145

E21B 10/10

References

Informative references

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

Roller bits with disc cutters	E21B 10/12
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E21B 10/18

References

Informative references

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

Drilling fluid supply to the bearings	E21B 10/23
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E21B 10/20

References

Informative references

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Cross axle roller bits	E21B 10/10
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E21B 10/26**References****Limiting references***This place does not cover:*

Percussion drill bits with leading portion	E21B 10/40
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Informative references*Attention is drawn to the following places, which may be of interest for search:*

Enlarging boreholes in general	E21B 7/28
Augers with leading portion	E21B 10/44
Turning or boring with stone, rock or concrete as tool or workpiece material	B23B 2226/75
Tools for working stone or stone-like materials by boring or drilling	B28D 1/146

E21B 10/44**References****Limiting references***This place does not cover:*

Rotary drag type drill bits with teeth, blades or like cutting elements, e.g. fork-type bits or fish tail bits	E21B 10/42
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Informative references*Attention is drawn to the following places, which may be of interest for search:*

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Drilling rods with helical structure	E21B 17/22
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E21B 10/58**References****Limiting references***This place does not cover:*

Drill bits characterised by wear resisting parts, the bit being of core type with inserts in form of chisels, blades or the like	E21B 10/485
Drill bits characterised by wear resisting parts, the bit being of roller type with chisel- or button-type inserts	E21B 10/52

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

Drill bits characterised by wear resisting parts, the bit being of the rotary drag type, e.g. fork-type bits	E21B 10/54
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E21B 11/02**Definition statement***This place covers:*

Impact driven tools or devices for forming holes in ground or soil.

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

Percussion drives used in the borehole	E21B 4/06
Self-propelled fluid-operated hammers	E21B 4/145
Burrowing devices	E21B 7/26
Percussion drill bits	E21B 10/36

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E21B 17/01**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Supporting a riser from a drilling or production platform specially adapted for underwater drilling	E21B 19/004
Riser connectors	E21B 33/038

E21B 17/10**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Drives used in the borehole with anchoring means	E21B 4/18
Guiding or centralising devices outside the borehole	E21B 19/24
Devices for positioning logging sondes with respect to the borehole wall	G01V 11/005

E21B 19/07**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Slips in rotary tables	E21B 19/10
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E21B 21/16

References

Limiting references

This place does not cover:

Methods or apparatus for flushing boreholes using liquids and gases, e.g. foams	E21B 21/14
---	------------

Informative references

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

Arrangements for handling drilling fluids outside the borehole	E21B 21/01
Arrangements for treating drilling fluids	E21B 21/06

E21B 29/02

References

Limiting references

This place does not cover:

Freeing stuck objects by explosives	E21B 31/002
-------------------------------------	-------------

Informative references

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

Destroying objects in boreholes or wells by explosives	E21B 31/16
--	------------

E21B 29/08

References

Informative references

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

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Blow-out preventers	E21B 33/06
Shear type blow-out preventers	E21B 33/063

E21B 31/14**References****Informative references**

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

Apparatus for deflecting the boring	E21B 7/06
-------------------------------------	---------------------------

E21B 31/16**References****Informative references**

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

Cutting or destroying means per se	E21B 29/00
------------------------------------	----------------------------

E21B 33/03**References****Informative references**

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

Valve arrangements for boreholes or wells	E21B 34/02
---	----------------------------

E21B 33/038**References****Application-oriented references**

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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:

Connecting a production flow line to an underwater well head	E21B 43/013
--	-----------------------------

E21B 33/04

References

Informative references

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

Setting of casings in wells	E21B 43/10
-----------------------------	----------------------------

E21B 33/064

References

Informative references

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

Control systems, e.g. hydraulic, pneumatic, electric, acoustic, for submerged well heads	E21B 33/0355
Connectors used on well heads, e.g. for connecting blow-out preventer and riser	E21B 33/038

E21B 33/128

References

Limiting references

This place does not cover:

Multiple string packers	E21B 33/122
Units with longitudinally-spaced plugs for isolating the intermediate space	E21B 33/124

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Informative references

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

Packers or plugs characterised by the construction of the sealing or packing means	E21B 33/1208
--	------------------------------

E21B 34/10

References

Informative references

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

Control means being outside the borehole	E21B 34/16
--	----------------------------

E21B 37/06

Definition statement

This place covers:

The use of chemical means for preventing, limiting, or removing substances such as paraffins and filter cakes from the wellbore.

References

Informative references

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

Compositions for preventing, limiting or eliminating depositions, e.g. for cleaning	C09K 8/52
---	---------------------------

E21B 41/04

References

Informative references

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

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Manipulators in general	B25J
-------------------------	----------------------

E21B 41/06

References

Informative references

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

Equipment for dwelling or working under water	B63C 11/00
---	----------------------------

E21B 43/017

References

Informative references

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

Underwater separating arrangements	E21B 43/36
------------------------------------	----------------------------

E21B 43/26

References

Informative references

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

Mixing of fracturing fluids	E21B 21/062
Interconnecting wells by fracturing	E21B 43/17
Combustion in-situ in association with fracturing	E21B 43/247
Dissolving minerals in association with fracturing	E21B 43/283
Chemical compositions for forming crevices or fractures	C09K 8/62

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E21B 43/263

References

Informative references

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

Combustion in situ using explosives	E21B 43/248
-------------------------------------	-----------------------------

E21B 43/267

References

Informative references

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

Chemical compositions for reinforcing fractures by propping	C09K 8/80
---	---------------------------

E21B 43/285

References

Limiting references

This place does not cover:

Enhanced recovery methods for obtaining hydrocarbons using heat, e.g. steam injection	E21B 43/24
---	----------------------------

Informative references

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

Heating, cooling or insulating arrangements for wells	E21B 36/00
---	----------------------------

E21B 43/30

References

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Informative references

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

Production satellite stations for obtaining oil, gas, water, soluble or meltable materials or a slurry of minerals from underwater installations	E21B 43/017
--	-------------

E21B 47/007

Definition statement

This place covers:

Processes or apparatus for determining the tensile or compressive force per cross-sectional area acting upon a pipe string or casing.

References

Limiting references

This place does not cover:

Locating blocked portions of pipes	E21B 47/09
------------------------------------	------------

Informative references

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

Measuring stress in general	G01L
-----------------------------	------

E21B 47/024

Definition statement

This place covers:

Processes or apparatus for measuring the inclination or orientation of down-hole tools.

References

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Limiting references

This place does not cover:

Determining slope or direction of the borehole	E21B 47/022
--	-----------------------------

E21B 47/103

References

Informative references

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

Measuring temperature of boreholes or wells	E21B 47/07
---	----------------------------

2. A. DEFINITIONS (modified)

E21B

Replace: Existing Definition for E21B with the updated one below.

Definition statement

This place covers:

Earth drilling, e.g. deep drilling; obtaining oil, gas, water, soluble or meltable materials or a slurry of minerals from wells. This subclass also includes drilling at shallow depths but over extended distances, such as drilling for laying a pipeline under surface obstacles.

References

Informative references

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

Mining or quarrying	E21C
Making shafts, driving galleries or tunnels	E21D

E21B 1/00

Definition statement

Insert: The new last paragraph and the numbers with the images, so that the Definition statement reads as follows. The images are UNCHANGED.

This place covers:

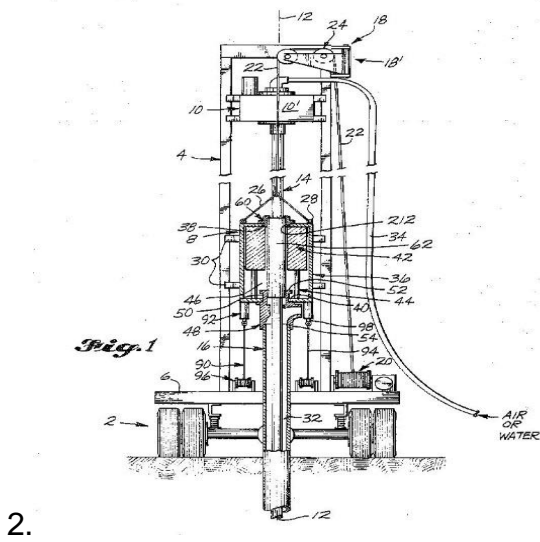
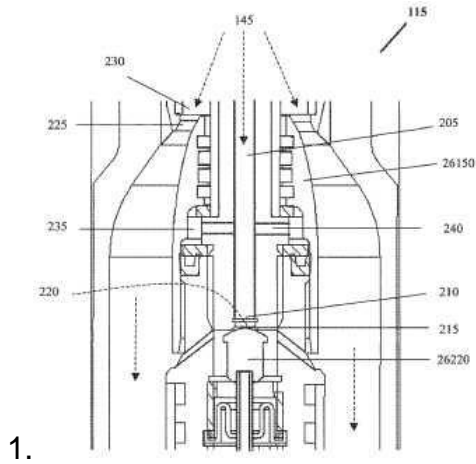
Machines and methods in which the drilling action is done principally by percussion.

The percussive drive is placed outside of the borehole, and the drilling can be for any depth, including drillholes and mining applications.

Illustrative examples of the subject matter classified in this place:

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Relationships with other classification places

Insert: Periods at the end of the last four paragraphs so the section reads as follows:

When classifying in groups [E21B 1/12](#) - [E21B 1/38](#), a symbol from one of the following main groups of [B25D](#) should also be given:

[B25D 9/00](#) Portable percussive tools with fluid-pressure drives.

[B25D 11/00](#) Portable percussive tools with motor drive.

[B25D 16/00](#) Portable percussive machines with superimposed rotation.

[B25D 17/00](#) Details of, or accessories for, portable power-driven percussive tools.

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References

Delete: The Limiting references section and table.

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:

Drives used in the borehole	E21B 4/00
-----------------------------	-----------

E21B 3/00

Definition statement

Insert: The new last paragraph, so that the Definition statement reads as follows.
The image is UNCHANGED.

Machines and methods in which the drilling action is done principally by rotation.

Illustrative example of the subject matter classified in this place:

References

Delete: The Limiting references section and table.

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:

Drives for drilling, used in the borehole	E21B 4/00
---	-----------

Delete: The Special rules of classification section and text.

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E21B 4/06

References

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

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

Limiting references

This place does not cover:

Boring rams	E21B 11/02
-------------	----------------------------

Informative references

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

Percussion drill bits	E21B 10/36
Releasing-jars	E21B 31/107

Delete: The Special rules of classification section and text.

E21B 6/00

Definition statement

Insert: The new last paragraph, so that the Definition statement reads as follows.
The image is UNCHANGED.

Drives outside the borehole for combined percussion and rotary drilling.

Illustrative example of the subject matter classified in this place:

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ReferencesDelete: The Limiting references section and table.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:*

Drives for drilling, used in the borehole	E21B 4/00
Portable drilling rigs	E21B 7/20
Derricks, masts	E21B 15/00
Methods or apparatus for generating mechanical vibrations of infrasonic, sonic or ultrasonic frequency	B06B 1/00
Portable percussive machines with superimposed rotation	B25D 16/00

Delete: The Special rules of classification section and text.**E21B 7/00****References**Replace: The Informative references table with the updated one below:**Informative references***Attention is drawn to the following places, which may be of interest for search:*

Rotary or percussion drill bits	E21B 10/00
Supports for the drilling machine, e.g. derricks or masts	E21B 15/00
Drilling rods or pipes	E21B 17/00
Obtaining cores	E21B 25/00
Setting of casings when not simultaneous with drilling of the borehole	E21B 43/10
Details of, or accessories for, portable power-driven percussive tools	B25D 17/00
Vehicles adapted to transport or to comprise special loads	B60P 3/00

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Underwater drilling for submerged foundations	E02D 27/52
Erecting posts for fences	E04H 17/263
Machines for drilling and setting anchoring bolts	E21D 20/003
Details of hydraulic circuits	F15B

E21B 7/04

References

Delete: The Limiting references section and table.

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:

Derricks or masts specially adapted therefor	E21B 15/04
--	----------------------------

E21B 7/18

References

Limiting references

Replace: The Limiting references table with the updated one below:

Drilling by use of heat, e.g. flame drilling	E21B 7/14
--	---------------------------

Informative references

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

Hydraulic monitors	E21C 45/00
--------------------	----------------------------

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E21B 7/20

References

Delete: The Limiting references section and table.

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:

Surface means for applying to-and-fro rotation movements to the casing	E21B 3/025
Drilling with multiple driven shafts	E21B 7/002
Pushing means outside of the borehole	E21B 19/08
Placing piles	E02D 7/00
Sinking shafts while moving the lining downwards	E21D 1/08
Making galleries by forcing prefabricated elements through the ground	E21D 9/005

E21B 7/28

Definition statement

Insert: The last paragraph and image numbers so the Definition statement reads as follows. Do not update images.

Vertical or horizontal drilling, in which means are provided for enlarging a borehole made previously, which borehole may have been made by the same machine carrying out the enlargement, or by a different machine or in a previous operation.

Illustrative examples of the subject matter classified in this place:

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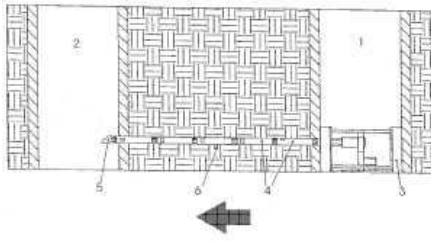


Fig. 1

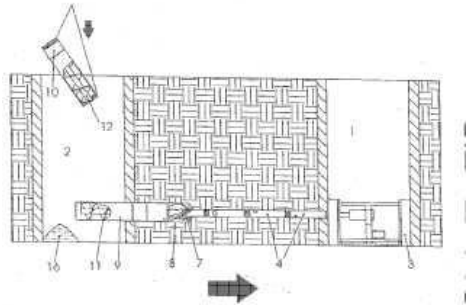
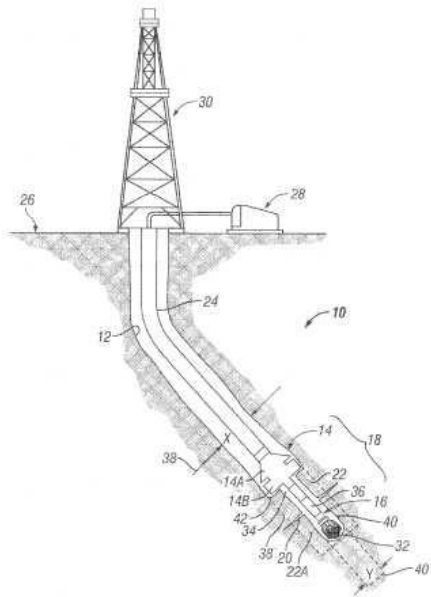


Fig. 2

1.



2.

References

Delete: The Limiting references section and table.

Insert: The new Informative references section and table below:

Informative references

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

Drill bits for enlarging the borehole	E21B 10/26
---------------------------------------	------------

E21B 10/02

References

Limiting references

Insert: The new Limiting references section and table.

Core bits characterised by wear resisting parts	E21B 10/48
---	------------

Informative references

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

Obtaining undisturbed cores	E21B 25/00
-----------------------------	------------

Delete: The Special rules of classification section and text.

E21B 10/55

Delete: The Special rules of classification section and text.

E21B 10/64

Delete: The Special rules of classification section and text.

E21B 15/02

References

Limiting references

Replace: The existing Limiting references table with the updated table below:

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Supports for the drilling machine specially adapted for directional drilling, e.g. slant hole rigs	E21B 15/04
--	------------

Informative references

Insert: The following two new rows to the Informative references table.

Floating drilling platforms	B63B 35/44
Drilling platforms on legs	E02B 17/00

E21B 17/00**References****Informative references**

Replace: The reference text to F16L, F16L 1/00, and F17D 1/00 as shown below:

Tubes or tube couplings in general	F16L
Repairing or joining pipes on or under water, e.g. subsea flow lines	F16L 1/00
Pipe-line systems	F17D 1/00

Delete: The Special rules of classification section and text.

E21B 17/07**References**

Delete: The Limiting references section and table.

Insert: The following two new rows to the Informative references table.

Informative references

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

Heave compensators in the derrick	E21B 19/09
Releasing-jars	E21B 31/107

E21B 17/18

References

Limiting references

Delete: The following row from the Limiting references table.

Circulation of drilling fluid by means of such pipes	E21B 21/12
--	------------

Informative references

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

Circulation of drilling fluid by means of such pipes	E21B 21/12
--	------------

E21B 17/22

Delete: The Special rules of classification section and text.

E21B 19/00

References

Delete: The Limiting references section and table.

Insert: The new Informative references section and table below:

Informative references

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

Surface drives	E21B 1/02, E21B 3/02
Manipulators mounted on wheels or on carriages	B25J5/00
Gripping heads	B25J15/00

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E21B 19/02

Definition statement

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

Apparatus for suspension by rods or cables that have normally no capacity of applying rotation. A spinner or other rotary drive may be suspended from the suspension apparatus.

Illustrative example of the subject matter classified in this place:

References

Informative references

Replace: The reference text for B66D so it reads as follows:

Tackles, e.g. pulley blocks or crown blocks	B66D
---	------

Delete: The Special rules of classification section and text.

E21B 19/08

Definition statement

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

Apparatus for pushing drilling tools into the borehole. All kinds of earth drilling tools are classified in these groups, such as deep drilling tools, rock drills for mining, horizontal drills or coiled tubing.

Apparatus for increasing/decreasing the pressure on the drilling tool.

Apparatus for counterbalancing the weight of the rods.

Illustrative example of the subject matter classified in this place:

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References

Limiting references

Replace: The reference text for symbol E21B 19/22 so it reads as below:

Handling reeled pipe or rod units, e.g. flexible drilling pipes	E21B 19/22
--	------------

Informative references

Delete: The words “in general” from the reference text for B66D so the reference reads as below:

Hoisting drums	B66D
----------------	------

Delete: The Special rules of classification section and text.

E21B 19/09

Definition statement

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

Feeding the drill string for underwater drilling.

Illustrative example of the subject matter classified in this place:

References

Delete: The Limiting references section and table.

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:

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Heave compensators for supporting a riser	E21B 19/006
---	-----------------------------

Delete: The Special rules of classification section and text.

E21B 19/12

Delete: The Special rules of classification section and text.

E21B 19/16

Definition statement

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

Method or apparatus for connecting or disconnecting the rods.

Illustrative example of the subject matter classified in this place:

References

Limiting references

Insert: The phrase and leading comma “, e.g. automatically” to the reference text for E21B 19/20 as shown below

Combined feeding from rack and connecting, e.g. automatically	E21B 19/20
---	----------------------------

Informative references

Delete: The phrase “in general” from the reference text for B25B as shown below.

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Pipe wrenches or the like	B25B
---------------------------	------

Delete: The Special rules of classification section and text.

E21B 21/00

References

Limiting references

Delete: The following row from the Limiting references table.

Well drilling compositions	C09K 8/02
----------------------------	-----------

Informative references

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

Well drilling compositions	C09K 8/02
----------------------------	-----------

E21B 21/01

Insert: The following new Definition statement.

Definition statement

This place covers:

Handling drilling fluids or cuttings outside the borehole without modification to the composition of the drilling fluid.

References

Delete: The Limiting references section and table.

Insert: The following two new rows to the Informative references table.

Informative references

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

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Arrangements for treating drilling fluids	E21B 21/06
Waste disposal systems	E21B 41/005

E21B 21/10

References

Informative references

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

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

Delete: The Special rules of classification section and text.

E21B 21/12

References

Replace: The reference text for E21B 17/18 with the updated text below.

Informative references

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

Pipes with plural fluid passages	E21B 17/18
----------------------------------	----------------------------

Delete: The Special rules of classification section and text.

E21B 23/08

References

Delete: The Limiting references section and table.

Informative references

Insert: The following three new rows to the Informative references table.

Special provisions on heads for introducing objects or fluids into, or removing objects from, wells	E21B 33/068
Cementing plugs	E21B 33/16
Scrapers operated by fluid pressure	E21B 37/04

E21B 23/14

References

Delete: The Limiting references section and table.

Insert: The following three new rows to the Informative references table.

Informative references

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

Surface apparatus for feeding cables	E21B 19/08
Introducing or running tools by fluid pressure, e.g. through-the-flow-line tool systems	E21B 23/08
Provision on well heads for introducing or removing cable-operated tools	E21B 33/072, E21B 33/076

E21B 25/00

Definition statement

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

Tools for receiving, preserving, transporting, etc., a core.

Illustrative example of the subject matter classified in this place:

References

Replace: The existing Limiting references table with the updated one below

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

Limiting references

This place does not cover:

Core bits	E21B 10/02
-----------	----------------------------

Informative references

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

Methods or apparatus for obtaining samples of soil or well fluids, specially adapted to earth drilling or wells, using explosives or projectiles in boreholes	E21B 49/04
Side-wall sampling or coring	E21B 49/06

Delete: The Special rules of classification section and text.

[E21B 25/02](#)

Delete: The Special rules of classification section and text.

[E21B 28/00](#)

Definition statement

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Insert: The last paragraph, image number, and updated image to the Definition statement so the Definition statement reads as follows:

The vibration is normally generated by tools inside the borehole.

Illustrative example of the subject matter classified in this place:

References

Limiting references

Replace: The Limiting references table with the updated one below.

Vibration for fishing for or freeing objects	E21B 31/005
Means for transmitting measuring-signals or control signals from the well to the surface, or from the surface to the well, e.g. for logging while drilling, using acoustic waves	E21B 47/14
Generating seismic energy for geophysical measurements	G01V 1/02

Informative references

Insert: The following two new rows to the Informative references table.

Vibration for drilling	E21B 7/24
Generating vibrations in general	B06B

E21B 29/00

References

Delete: The Limiting references section and table.

Insert: The following two new rows to the Informative references table.

Informative references

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

Reconditioning of well casings while in the ground by enlarging drilled holes or counterboring	E21B 7/28
Perforators	E21B 43/11

E21B 31/00

References

Delete: The Limiting references section and table.

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:

Provisions on well heads for introducing or removing objects	E21B 33/068
Locating or determining the position of objects in boreholes or wells	E21B 47/09

E21B 31/107

References

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

Informative references

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

Downhole impacting means	E21B 4/06
--------------------------	---------------------------

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Telescoping joints	E21B 17/07
--------------------	------------

Delete: The Special rules of classification section and text.

E21B 33/13

Definition statement

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

Tools for plugging the bore or a well, and to methods for cementing parts of a wellbore, for cementing a casing in the wellbore and similar.

Illustrative example of the subject matter classified in this place:

References

Delete: The Limiting references section and table.

Insert: The following two new rows to the Informative references table.

Informative references

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

Dump bailers	E21B 27/02
Chemical compositions for cementing, plugging holes, crevices or the like	C09K 8/00

E21B 33/138

References

Delete: The Limiting references section and table.

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

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Informative references

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

Packers	E21B 33/12
---------	----------------------------

E21B 33/14

References

Delete: The Limiting references section and table.

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:

Control of cementation quality or level	E21B 47/005
---	-----------------------------

E21B 34/00

Definition statement

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

Constructive details of valves specifically adapted for use at the surface of a wellbore or in the interior of a wellbore.

Illustrative example of the subject matter classified in this place:

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ReferencesDelete: The Limiting references section and table.Insert: The following five new rows to the Informative references table.**Informative references***Attention is drawn to the following places, which may be of interest for search:*

Valve arrangements in drilling fluid circulation systems	E21B 21/10
Valve drill bits	E21B 27/00
Blow-out preventers	E21B 33/06
Oil flow regulating apparatus	E21B 43/12
Gas lift valves	E21B 43/123

Delete: The Special rules of classification section and text.**E21B 35/00****References**Delete: The Limiting references section and table.Insert: The following two new rows to the Informative references table.**Informative references***Attention is drawn to the following places, which may be of interest for search:*

Cutting or deforming pipes to control fluid flow	E21B 29/08
Controlling flow of fluid to or in wells	E21B 43/12

Delete: The Special rules of classification section and text.

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E21B 36/00

Definition statement

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

Equipment for heating or cooling a wellbore, either at the surface or from within the wellbore.

Heating or cooling fluid produced or treatment fluids in the wellbore.

Illustrative example of the subject matter classified in this place:

References

Delete: The Limiting references section and table.

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:

Drilling by use of heat	E21B 7/14
Secondary recovery methods using heat	E21B 43/24

E21B 37/00

Definition statement

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

Methods or apparatus for cleaning boreholes or wells. Cleaning by physical or chemical action.

Illustrative example of the subject matter classified in this place:

References

Limiting references

Replace: The existing Limiting references table with the updated one below.

Methods or apparatus for flushing boreholes, e.g. by use of exhaust air from motor	E21B 21/00
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Informative references

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

Bailers	E21B 27/00
---------	------------

Delete: The Special rules of classification section and text.

E21B 37/04

References

Informative references

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

Introducing or running tools by fluid pressure, e.g. through-the-flow-line tool systems	E21B 23/08
---	------------

Delete: The Special rules of classification section and text.

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E21B 41/02

References

Delete: The Limiting references section and table.

Delete: The References out of a residual place section and table.

Insert: The following two new rows to the Informative references table.

Informative references

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

Dump bailer	E21B 27/02
Compositions for in situ inhibition of corrosion in boreholes or wells	C09K 8/54

Delete: The Special rules of classification section and text.

E21B 43/00

References

Limiting references

Replace: The existing Limiting references table with the updated table below.

Installations or methods for obtaining, collecting or distributing water	E03B
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Informative references

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

Survey of wellbore pump systems	E21B 47/008
Obtaining oil-bearing deposits or soluble or meltable materials by mining techniques	E21C 41/00
Pumps	F04

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Pumping liquids and elastic fluids at the same time, e.g. multiphase pumps	F04D 31/00
Jet pumps	F04F 5/00

Special rules of classification

Replace: The existing text of the Special rules of classification with the updated text below.

Enhanced recovery methods (E21B 43/16), methods for stimulating production (E21B 43/25) and methods of fracturing (E21B 43/26) are sometimes carried out on the basis of specific chemical compositions. In these cases, the use of those compositions is classified respectively in C09K 8/58, C09K 8/60 and C09K 8/62.

E21B 43/01

Definition statement

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

Methods specially adapted for obtaining from underwater installations;

Illustrative example of the subject matter classified in this place:

Subsea production equipment

Relationships with other classification places

Insert: The new Relationships with other classification places section and text.

Group E21B 43/01 covers all aspects of obtaining fluids or the like from underwater installations except for details of underwater well heads. Details of individual underwater well heads are classified in group E21B 33/035. A plurality of underwater satellite well heads connected to a central station is classified in group E21B 43/017.

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Connectors used on underwater well heads are classified in group E21B 33/038, but the connection of a production flow line to an underwater well head is classified in group E21B 43/013.

Multiple classification across the groups mentioned in the paragraphs above may be appropriate.

Delete: The Limiting references section and table.

E21B 43/02

Definition statement

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

- Subsoil filtering;
- Production screens and gravelling.

Illustrative example of the subject matter classified in this place:

References

Delete: The Limiting references section and table.

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:

Perforators; Permeators	E21B 43/11
Chemical compositions for consolidating loose sand or the like around wells	C09K 8/56

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E21B 43/10

Definition statement

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

Setting and securing of casings, screens, liners or the like in wells.

Running in and installation of tubulars, expandable tubulars.

Illustrative example of the subject matter classified in this place:

References

Delete: The Limiting references section and table.

Insert: The following two new rows to the Informative references table.

Informative references

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

Driving or forcing casings into boreholes, simultaneously drilling and casing boreholes	E21B 7/20
Suspending casings in well heads	E21B 33/04

Delete: The Special rules of classification section and text.

E21B 43/12

Definition statement

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

Production pumps, lifting wellbore fluids, production chokes.

Illustrative example of the subject matter classified in this place:

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References

Delete: The Informative references section and table.

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

Limiting references

This place does not cover:

Valve arrangements for boreholes or wells	E21B34/00
---	-----------

Delete: The Special rules of classification section and text.

E21B 43/16

Definition statement

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

Injecting fluids to mobilize hydrocarbons towards a production well.

Increasing the fraction of original oil recovered in place in a reservoir, including waterflooding, chemical flooding, gas injection, and thermal methods.

Illustrative example of the subject matter classified in this place:

References

Delete: The Limiting references section and table.

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:

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Fracturing	E21B 43/26
Obtaining slurry	E21B 43/29
Reclamation of contaminated soil in situ	B09C
Chemical compositions therefor	C09K 8/58

E21B 43/24

References

Delete: The Limiting references section and table.

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:

Compositions for enhanced recovery methods for obtaining hydrocarbons used in combination with generated heat	C09K 8/592
---	------------

Delete: The Special rules of classification section and text.

E21B 43/25

Definition statement

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

Treatment of production wells to increase production of hydrocarbons, typically hydraulic fracturing treatments and matrix treatments (acidizing).

Illustrative example of the subject matter classified in this place:

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References

Limiting references

Delete: Every row from the Limiting references table except for the row below:

Methods for stimulating production by vibrating earth formations	E21B 43/003
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Informative references

Insert: The new Informative references section and table.

Mixing of treatment fluids	E21B 21/062
Dump bailers	E21B 27/02
Vibration generating arrangements	E21B 28/00
Compositions for stimulating production in drilling boreholes or wells by acting on the underground formation	C09K 8/60

[E21B 44/00](#)

Definition statement

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

Methods and devices such as sensors for monitoring drilling operations and for controlling the drilling operation in response to the information obtained.

Illustrative example of the subject matter classified in this place:

References

Delete: The Limiting references section and table.

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Insert: The following four new rows to the Informative references table.

Informative references

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

Automatic feeding from rack and connecting of drilling pipes	E21B 19/20
Controlling pressure or flow of drilling fluid	E21B 21/08
Control systems in general	G05
Adaptive control systems	G05B13/00

E21B 47/00

Definition statement

Insert: The following new first paragraph, so now the Definition statement reads as follows:

Specific applications in a downhole environment, including:

- Sensors or devices for obtaining data relative to the wellbore itself.
- Means for sending information from the well to the surface or from the surface into the well.

Delete: The Special rules of classification section and text.

Glossary of terms

Replace: The capitalized leading letters in the term and the explanation with lowercase letter so that the entry reads as follows:

borehole	an unlined shaft drilled into the ground, typically for the purposes of extracting water, crude oil or natural gas. This is often referred to as the wellbore.
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E21B 47/003

References

Delete: The Limiting references section and table.

Insert: The following two new rows to the Informative references table.

Informative references

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

Measuring depth or liquid level of boreholes or wells	E21B 47/04
Measuring diameter or related dimensions at the borehole	E21B 47/08

E21B 47/125

References

Limiting references

Replace: The existing row in the Limiting references table with the updated one below.

Means for transmitting measuring-signals or control signals from the well to the surface, or from the surface to the well, e.g. for logging while drilling, by electromagnetic energy	E21B 47/13
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Informative references

Replace: The existing row in the Informative references table with the updated one below.

Transmission systems in which the earth is the medium	H04B 13/02
---	------------

E21B 49/00

References

Informative references

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

Sampling in general	G01N 1/00
Geomodelling in general	G01V20/00

Delete: The Special rules of classification section and text.

E21B 49/02

References

Delete: The Limiting references section and table.

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:

Apparatus for obtaining undisturbed cores	E21B 25/00
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Delete: The Special rules of classification section and text.