

EUROPEAN PATENT OFFICE
U.S. PATENT AND TRADEMARK OFFICE

CPC NOTICE OF CHANGES 1506

DATE: AUGUST 1, 2023

PROJECT RP11672

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

<u>Action</u>	<u>Subclass</u>	<u>Group(s)</u>
SCHEME:		
Notes Deleted	C21D	8/02
	C21D	8/04
	C21D	8/12
DEFINITIONS:		
Definitions Modified:	C21D	Subclass
	C21D	1/00
	C21D	3/00
	C21D	5/00
	C21D	6/00
	C21D	7/00
	C21D	8/00
	C21D	8/005
	C21D	8/04
	C21D	8/06
	C21D	8/10
	C21D	8/12
	C21D	9/00
	C21D	10/00
	C21D	11/00

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

C. New, Modified or Deleted Note(s)

SUBCLASS C21D - MODIFYING THE PHYSICAL STRUCTURE OF FERROUS METALS; GENERAL DEVICES FOR HEAT TREATMENT OF FERROUS OR NON-FERROUS METALS OR ALLOYS; MAKING METAL MALLEABLE, e.g. BY DECARBURISATION OR TEMPERING (surface treatment of metallic material involving at least one process provided for in class C23 and at least one process covered by this subclass C23F 17/00; unidirectional solidification of eutectic materials or unidirectional demixing of eutectoid materials C30B)

<u>Type*</u>	<u>Location</u>	<u>Old Note</u>	<u>New/Modified Note</u>
D	C21D 8/02	In this group classification is made according to the most important feature in one subgroup only; for other features indexing codes of C21D are added	Delete the entire note
D	C21D 8/04	In this group classification is made according to the most important feature in one subgroup only; for other features indexing codes of C21D are added	Delete the entire note
D	C21D 8/12	In this group classification is made according to the most important feature in one subgroup only; for other features indexing codes of C21D are added	Delete the entire note

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

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

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2. A. DEFINITIONS (modified)

C21D

Definition statement

Replace: The existing Definition statement text with the following updated text.

General methods or devices for heat treatment, e.g. hardening, annealing, heating, quenching or tempering.

Heat treatment adapted for particular articles, e.g. springs, pipes, drills, rollers or wires; furnaces therefor.

Heat treatment of cast-iron or of ferrous alloys.

Changing the physical properties of ferrous metals by deformation, by deformation combined or followed by heat treatment or by other methods.

Diffusion processes for extraction of non-metals, e.g. decarburising; furnaces therefor.

Process control or regulation for heat treatments.

The term "ferrous alloys" refers to alloys based essentially on iron.

Relationships with other classification places

Replace: The existing Relationships text with the following updated text.

- [C22F](#) provides for decarburization of non-ferrous metal and non-ferrous alloys to modify the physical structure thereof.
- Subclass [C22B](#) covers the decarburization of metalliferous material for purposes of refining.
- [C22B](#) covers general metallurgical or chemical processes for producing or recovering metals from metal compounds, ores, metalliferous waste or scrap metal and for refining metal.

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- [C23F17/00](#) provides for surface treatment of metallic material involving at least one process provided for in class [C23](#) and at least one process covered in [C22F](#).
- When the method is intended for providing a particular use/product then the use/product is classified as well (see informative references for some of them).
- When the composition of the alloy is disclosed, either in the claims or the description, it is classified as well in [C22C](#).
- Furnaces in general and details thereof are classified in [F27B](#) and [F27D](#), respectively.

References

Limiting references

This place does not cover:

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

Chemical descaling	C23
Surface treatment of metallic material	C23F17/00
Cementation by diffusion processes	C23C

Insert: The following new Application-oriented references section.

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:

Apparatus for heat treatment of railway trains on the spot	E01B 31/18
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Informative references

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

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

Single crystals or homogeneous polycrystalline material with defined structure; Production thereof	C30B
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Special rules of classification

Replace: The existing Special rules text with the following updated text.

- Looping references between C21D and C30B have been identified. Until this inconsistency is resolved in IPC, the current classification practice in CPC is as follows: C30B is considered as “informative reference”.
- When classifying in C21D all essential features disclosed should be classified as invention.

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Replace: The existing Glossary of terms table with the following updated table.

Alloy	A composition of plural elements at least one of which is a free metal. It also includes material containing any combination of fibres, filaments, whiskers and particles, e.g. carbides, diamond, oxides, borides, nitrides, silicides, or other metal compounds, e.g. oxynitrides or sulfides embedded in a metallic matrix.
Cast iron	Ferrous alloy which solidifies with a eutectic, with a carbon content of 2.1-4 wt%.
Steel	Ferrous alloy with a carbon content of 0.2-2.1wt%.

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Air hardening steel	Steel which does not require quenching from a high temperature to harden but which is hardened by cooling in air from above its critical temperature range.
Sub-critical annealing/Stress relief annealing	Heat treatment for relieving or dissipating stresses in weldments, heavily machined parts, castings, forgings by heating them, uniformly heated through, and air cooled/slow cooled with subsequent finishing or heat treatment.
Oil-hardening	Process of hardening a ferrous alloy by heating within or above the transformation range and quenching in oil.
Decarburization	Subjecting the steel to high temperatures and heat treating in a media containing air, oxygen or hydrogen to remove carbon at the surface.
Recrystallization	After all metal crystals have been dissolved by heating enough to lose its structural strength, the metal temperature then falls, allowing the crystals to re-form.
Spheroidizing	Heating the carbon steel to approximately 700 °C for over 30 hours to form spheroidite, to soften higher carbon steels and allow more formability.
Aging or ageing	A process in which the hardness or strength of a metal alloy having a constituent in supersaturated solid solution is increased over time as the constituent precipitates out as a secondary phase containing the constituent. When occurring at room temperature the process is termed "natural aging", while a process that occurs when subjecting the metal alloy to elevated temperature is termed "artificial aging". Aging for a longer time than that corresponding to maximum strength or hardness at the particular temperature is termed "over-ageing".
Hardening	The increase in resistance to deformation.
Precipitation hardening	As the quenched alloy ages, a new material precipitates out of the metallic crystal lattice, filling in abutting spaces, and increasing hardness.
Normalizing	A process of heating metallic material above its critical temperature and cooling in air thereby establishing a fine

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	uniform grain size and improving the microstructural uniformity.
Quenching	The rapid cooling of metallic material either from elevated temperature to room temperature or cooling of metal to sub-ambient temperature, at a specific rate, with a given medium.
Tempering	Heating of a previously quenched or normalized metallic material to an elevated temperature, and then cooling under suitable conditions to obtain the desired mechanical properties.
Martempering	Heat treatment of steel involving austenitisation of steel followed by quenching in heat extracting medium (e.g. salt), at a rate fast enough to avoid the formation of ferrite, pearlite or bainite to a temperature slightly above the martensite start (Ms) point.
Austempering	Isothermal heat treatment applied to steel and cast iron, involves holding the metallic material at the quenching temperature for an extended period of time in order to produce a lower bainite microstructure for steels and a structure of acicular ferrite and high carbon, stabilized austenite known as ausferrite for cast-irons.
Case Hardening	Heat treatment or combination of heat treatments of surface hardening involving a change in the composition of the outer layer of an iron-base alloy in which the surface is made harder by inward diffusion of a gas or liquid followed by appropriate thermal treatment.

C21D 1/00**Definition statement**

Replace: The existing Definition statement text with the following updated text.

Methods and devices for heat treatments: annealing, hardening or quenching of ferrous alloys.

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Relationships with other classification places

Replace: The existing Relationships text with the following updated text.

Ferrous alloys are classified in [C22C38/00](#).

When the heat-treated alloy is intended for a particular use/product then the use/product is classified as well in the appropriate subclass or subgroup.

References**Informative references**

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

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

Rolling of metal	B21B
Cooling-beds for metal rolling	B21B43/00
Manufacture of metal sheets, bars, wires, rods, tubes or profiles, otherwise than by rolling	B21C
Forging	B21J
Machine tools; Metal-working not otherwise provided for	B23
Production of gases	C01 , C10
Cast-iron alloys compositions	C22C37/00
Ferrous alloys	C22C38/00
Coating material with metallic material, cementation (carburizing, nitriding, etc.); Chemical descaling	C23C
Processes for the electrolytic removal of materials from objects	C25F
Furnaces	F27

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Heat exchange apparatus in which the heat-exchange media do not come into direct contact	F28D
Investigating or analysing material by determining their chemical or physical properties	G01N
Electric heating	H05B

Special rules of classification

Replace: The existing Special rules text with the following updated text.

- If the ferrous alloy composition is disclosed, it should be classified in the appropriate subgroups of [C22C38/00](#).
- All the disclosed heat treatments (in the claims, description, examples, figures or diagrams) are classified.

For example: A case-hardened gear steel consisting of, by weight percent, Co: 16.3, Ni: 7.5, Cr: 3.5, Mo: 1.75, W: 0.2, C: 0.11, Ti: 0.03, V: 0.02 and the balance Fe, will be classified in this group in [C21D1/22](#) as well as in [C22C38/44](#) and [C22C38/52](#).

C21D 3/00

Definition statement

Replace: The existing Definition statement text with the following updated text.

Diffusion processes for extraction of non-metals and furnaces thereof.

Relationships with other classification places

Replace: The existing Relationships text with the following updated text.

- Ferrous alloys are classified in [C22C38/00](#).
- When the heat-treated alloy is intended for a particular use/product then the use/product is classified as well in the appropriate subclass or subgroup; [C21D9/00](#) should also be considered.

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References

Informative references

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

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

Rolling of metal	B21B
Manufacture of metal sheets, bars, wires, rods, tubes or profiles, otherwise than by rolling	B21C
Forging	B21J
Production of gases	C01, C10
Cast-iron alloys compositions	C22C37/00
Ferrous alloys	C22C38/00
Coating material with metallic material, cementation (carburizing, nitriding, etc.); Chemical descaling	C23C
Processes for the electrolytic removal of materials from objects	C25F
Furnaces	F27

Special rules of classification

Replace: The Special rules text with the following updated text.

- If the ferrous alloy composition is disclosed, it should be classified in the appropriate subgroups of [C22C38/00](#).
- All the disclosed heat treatments (in the claims, description, examples, figures or diagrams) are classified.
- For example: a method for production of a surface-decarburized hot-rolled strip with the following composition C: 0.4-1.0%, Si: 0.1-0.5%, Mn: 0.3-1.2%, P: <0.02%, S: <0.008%, Al: 0.01-0.05%, Cr: 0.1-0.5%, Ni: 0.1-0.4%, Mo: <50.1%, balance Fe will be classified in [C21D3/04](#), as well as in [C21D1/74](#), in [C22C38/02](#), [C22C38/04](#), [C22C38/06](#) and [C22C38/40](#).

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- In case of a method for manufacturing oriented silicon steel: (in wt %): C: 0.020-0.050%, Si: 2.6-3.6%, S: 0.015-0.025%, Al: 0.008-0.028%, N: 0.005-0.020%, Mn: 0.15-0.5%, Cu: 0.3-1.2%, balance Fe and inevitable impurities, involves smelting steel, refining molten steel, continuously casting steel to obtain slab, hot rolling, cold rolling, annealing and applying annealing separator and insulation coating on slab, the classification in this group is: [C21D3/04](#), [C21D1/26](#), as well as [C22C38/001](#), [C22C38/02](#), [C22C38/04](#), [C22C38/06](#) and [C22C38/16](#).

C21D 5/00

Definition statement

Replace: The existing Definition statement text with the following updated text.

Heat treatments of cast iron alloys i.e. ferrous alloy which solidifies with a eutectic, with Carbon 2.1%-4% by weight percent.

Relationships with other classification places

Replace: The existing Relationships text with the following updated text.

- Cast iron is classified in [C22C37/00](#).
- When the heat-treated cast iron alloy is intended for a particular use/product then the use/product is classified as well in the relevant group(s) in the appropriate subclass or subgroup; [C21D9/00](#) should also be considered.
- Making cast iron alloys are classified in [C22C33/08](#) – [C22C33/12](#).

References

Delete: The entire Limiting references section.

Informative references

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

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

Heat treatment of non-ferrous alloys	C22F
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Special rules of classification

Replace: The existing Special rules text with the following updated text.

- If the cast-iron alloy composition is disclosed, it should be classified in the appropriate subgroups of [C22C37/00](#).
- All the disclosed heat treatments (in the claims, description, examples, figures or diagrams) are classified.

For example: Surface hardening cast iron parts by degraphitizing a surface layer part of a cast iron member and thereafter irradiating a laser beam or an electron beam on said surface will be classified in [C21D5/00](#), as well as in [C21D3/04](#) and [C21D1/09](#).

C21D 6/00

Definition statement

Replace: The existing Definition statement text with the following updated text.

Heat treatment of ferrous alloys: iron-based alloys and all types of steels such as low alloy steels, dual-phase steels, tool steels, spring steels, maraging steels, stainless steels, ferritic, austenitic, martensitic, bainitic or pearlitic.

Relationships with other classification places

Replace: The existing Relationships text with the following updated text.

When the alloy is produced by a specifically described method (such as in the examples or claims) then the method is classified as well in the appropriate areas such as [B22F](#), [C23C](#), [B23K](#), [C25D](#), [C25B](#), [B22D](#), [B21J](#), [B21B](#) or [B21C](#).

Ferrous alloys are classified in [C22C38/00](#).

When the alloy is intended for a particular use/product then the use/product is classified as well.

References

Delete: The entire Limiting references section.

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Informative references

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

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

Soldering or welding materials	B23K35/3053 - B23K35/3093 , C21D9/50
Layered products	B32B1/00
Heat treating of non-ferrous alloys	C22F

Special rules of classification

Replace: The existing Special rules text with the following updated text.

- If the ferrous alloy composition is disclosed, it should be classified in the appropriate subgroups of [C22C38/00](#).
- Heat treatment of ferrous alloys/steels containing Ni (and no Cr) are classified in [C21D6/001](#) and [C22C38/08](#).
- Heat treatment of ferrous alloys/steels containing Cr (and no Ni) are classified in [C21D6/002](#) and [C22C38/18](#) - [C22C38/38](#).
- Heat treatment of ferrous alloys/steels containing Cr and Ni are classified in [C21D6/004](#) and [C22C38/40](#) - [C22C38/58](#).
- All the disclosed heat treatments (in the claims, description, examples, figures or diagrams) are classified.
- When classifying in group [C21D6/00](#), any aspect of the method for the heat treatment of ferrous alloys which is considered to represent information of interest for search may also be classified in groups [C21D1/02](#) - [C21D1/84](#). This can, for example, be the case when it is considered of interest to enable searching of heat treatment methods of ferrous alloys using a combination of classification symbols. Such non-obligatory classification should be given as "additional information".

For example: A case hardened gear steel having enhanced core fracture toughness includes by weight percent of about Co: 16.3, Ni: 7.5, Cr: 3.5, Mo: 1.75, W: 0.2, C: 0.11, Ti: 0.03, V: 0.02 and the balance Fe, characterized as a predominantly lath martensitic microstructure essentially free of topologically

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close-packed (TCP) phases and carburized to include fine M_2C carbides to provide a case hardness of at least about 62 HRC and a core toughness of at least about 50 ksi/in will be classified in [C21D6/004](#); [C21D6/007](#); [C21D6/02](#); [C21D6/04](#), and also in [C21D1/22](#), [C21D1/25](#), [C22C38/44](#) and [C22C38/52](#).

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Insert: A period at the end of the Glossary of terms text.

Hardening by cooling below 0 degrees Celsius	Controlled cooling below 0° C in order to alter the material microstructure, and enhance its strength and wear properties.
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C21D 7/00

Relationships with other classification places

Replace: The existing Relationships text with the following updated text.

When the iron/steel alloy is produced by a specifically described method (such as in the examples or claims) then the method is classified as well in the appropriate areas such as [B22F](#), [C23C](#), [B23K](#), [C25D](#), [C25B](#), [B22D](#), [B21J](#), [B21B](#) or [B21C](#).

Ferrous alloys are classified in [C22C38/00](#).

When the iron/steel alloy is intended for a particular use/product then the use/product is classified as well.

References

Delete: The entire Limiting references section.

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Informative references

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

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

Rolling of metal	B21B
Manufacture of metal sheets, bars, wire, rods, tubes or profiles, otherwise than by rolling	B21C
Working or processing of sheet metal or metal tubes, rods or profiles without essentially removing material; Punching	B21D
Forging	B21J
Apparatus for mechanical working of metal	B23, B24
Cast-iron alloys compositions	C22C37/00
Ferrous alloys	C22C38/00

Special rules of classification

Replace: The existing Special rules text with the following updated text.

- References [B21](#), [B23](#) and [B24](#) are non-limiting in groups [C21D1/82](#) and [C21D7/00](#), CPC will be updated once this inconsistency is resolved in IPC.
- If the ferrous alloy composition is disclosed, it should be classified in the appropriate subgroups of [C22C38/00](#).
- All the disclosed heat treatments (in the claims, description, examples, figures or diagrams) are classified.

For example: A high cleanliness spring steel useful in manufacturing a spring with SiO₂-based inclusions being extremely controlled and excellent in fatigue properties is obtained by scalping -> patenting -> cold wire drawing working (wire drawing) -> oil tempering -> process equivalent to strain relieving annealing -> shot peening -> strain relieving annealing will be classified in [C21D7/04](#), [C21D7/06](#), as well as in [C22C](#).

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C21D 8/00

Definition statement

Replace: The existing Definition statement text with the following updated text.

Modifying the physical properties by deformation combined with, or followed by, heat treatment during manufacturing processes of plates or strips, plates or strips for deep drawing, rods or wires, tubular bodies or articles with special electromagnetic properties.

Relationships with other classification places

Replace: The existing Relationships text with the following updated text.

When the alloy is intended for a particular use/product then the use/product is classified as well.

Ferrous alloys are classified in [C22C38/00](#).

References

Limiting references

This place does not cover:

Delete: All rows of the Limiting references table except the following row, so that the table appears as follows.

Hardening articles or materials formed by forging or rolling with no further heating beyond that required for the formation	C21D1/02
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Informative references

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

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

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Rolling of metal	B21B
Manufacture of metal sheets, bars, wire, rods, tubes or profiles, otherwise than by rolling	B21C
Working or processing of sheet metal or metal tubes, rods, or profiles without essentially removing material; Punching	B21D
Forging	B21J
Cast-iron alloys compositions	C22C37/00
Ferrous alloys	C22C38/00

Special rules of classification

Replace: The existing Special rules text with the following updated text.

- If the ferrous alloy composition is disclosed, it should be classified in the appropriate subgroups of C22C 38/00.
- All the disclosed heat treatments (in the claims, description, examples, figures or diagrams) are classified.
- When classifying in this main group, use of C21D orthogonal indexing symbols is mandatory.

Insert: The following new Glossary of terms section.

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Hot rolling	Rolling occurs in the austenite region of the phase diagram of the steel (above approximately 900°C).
Warm rolling	Rolling occurs in the ferrite region of the phase diagram of the steel (approximately 600°C to 800°C).
Cold rolling	Rolling occurs below the ferrite region (below 600°C).

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C21D 8/005

Relationships with other classification places

Replace: The existing Relationships text with the following updated text.

When the alloy is intended for a particular use/product then the use/product is classified as well.

Ferrous alloys are classified in [C22C38/00](#).

References

Limiting references

This place does not cover:

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

Modifying the physical properties by deformation combined with, or followed by, heat treatment during manufacturing of plates, strips, rod, wires, tubular bodies or articles with special electromagnetic properties	C21D8/02-C21D8/12
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Informative references

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

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

Rolling of metal	B21B
Manufacture of metal sheets, bars, wire, rods, tubes or profiles, otherwise than by rolling	B21C
Working or processing of sheet metal or metal tubes, rods, or profiles without essentially removing material; Punching	B21D

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Forging	B21J
Cast-iron alloys compositions	C22C37/00
Ferrous alloys	C22C38/00

Special rules of classification

Replace: The existing Special rules text with the following updated text.

- If the ferrous alloy composition is disclosed, it should be classified in the appropriate subgroups of [C22C38/00](#).
- All the disclosed heat treatments (in the claims, description, examples, figures or diagrams) are classified.

For example: A method of producing a surface-decarburised hot-rolled strip consisting of heating the strip from heat-treated steel: C: 0.4-1.0%, Si: 0.1-0.5%, Mn: 0.3-1.2%, P: <0.02%, S: <0.008%, Al: 0.01-0.05%, Cr: 0.1-0.5%, Ni: 0.1-0.4%, Mo: <50.1%, the remainder being iron and unavoidable impurities, heating it while wound as an open coil within austenitizing temperature limits, keeping it incandescent in a carbon-free atmosphere for at least 90 minutes, in which the atmosphere absorbs carbon from the steel, and cooling at an accelerated rate is classified in: [C21D8/0257](#), [C21D1/74](#), [C21D3/04](#), [C22C38/02](#), [C22C38/04](#), [C22C38/06](#) and [C22C38/40](#).

C21D 8/04

Relationships with other classification places

Replace: The existing Relationships text with the following updated text.

When the alloy is intended for a particular use/product then the use/product is classified as well.

Ferrous alloys are classified in [C22C38/00](#).

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References

Delete: The entire Limiting references section.

Informative references

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

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

Rolling of metal	B21B
Manufacture of metal sheets, bars, wire, rods, tubes or profiles, otherwise than by rolling	B21C
Working or processing of sheet metal or metal tubes, rods, or profiles without essentially removing material; punching	B21D
Forging	B21J
Cast-iron alloys compositions	C22C37/00
Ferrous alloys	C22C38/00

Special rules of classification

Replace: The existing Special rules text with the following updated text.

- If the ferrous alloy composition is disclosed, it should be classified in the appropriate subgroups of [C22C38/00](#).
- All the disclosed heat treatments (in the claims, description, examples, figures or diagrams) are classified.

For example: A micro-alloyed low carbon steel strip C: 0.04-0.08, Mn: 0.15-2.0, Si: 0.06-0.60, P: 0.010 max, S: 0.010 max, Cr: 0.35 max, Ni: 0.20 max, Mo: 0.25 max, Cu: 0.20 max, Nb: 0.012-0.070, V: 0.02-0.03, Ti <= 0.11, Al: 0.025-0.050, N: 0.0115 max, balance Fe, for the production of finished pieces by cold pressing and shearing, obtained by hot rolling at temperature of the pre-strip temperature never lower than 900 DEG C in the steps preceding the final rolling, will be

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classified in [C21D8/0405](#), [C21D8/0415](#), [C21D1/42](#), [C22C38/02](#), [C22C38/04](#), [C22C38/06](#) and [C22C38/12](#).

C21D 8/06

Relationships with other classification places

Replace: The existing Relationships text with the following updated text.

When the alloy is intended for a particular use/product then the use/product is classified as well.

Ferrous alloys are classified in [C22C38/00](#).

References

Delete: The entire Limiting references section.

Informative references

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

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

Rolling of metal	B21B
Manufacture of metal sheets, bars, wire, rods, tubes or profiles, otherwise than by rolling	B21C
Working or processing of sheet metal or metal tubes, rods, or profiles without essentially removing material; Punching	B21D
Forging	B21J
Cast-iron alloys compositions	C22C37/00
Ferrous alloys	C22C38/00

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Special rules of classification

Replace: The existing Special rules text with the following updated text.

- If the ferrous alloy composition is disclosed, it should be classified in the appropriate subgroups of [C22C38/00](#).
- All the disclosed heat treatments (in the claims, description, examples, figures or diagrams) are classified.

For example: A method of producing a steel wire suitable for reinforcement bar consists of choosing a steel of composition in wt. percent: less than 0.22% C; less than 0.5% Si; less than 1.5% Mn; and 0.01-0.15% V or 0.01-0.15% Nb or 0.01-0.15% V+Nb in which the carbon equivalent is less than 0.45 %, where the steel wire is hot rolled from billet, quenched at the end of the hot rolling stand and finally wound on a bobbin will be classified in [C21D8/08](#), [C21D1/19](#) and [C22C38/12](#).

C21D 8/10

Relationships with other classification places

Replace: The existing Relationships text with the following updated text.

When the alloy is intended for a particular use/product then the use/product is classified as well.

Ferrous alloys are classified in [C22C38/00](#).

References

Delete: The entire Limiting references section.

Informative references

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

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

Rolling of metal	B21B
Manufacture of metal sheets, bars, wire, rods, tubes or profiles, otherwise than by rolling	B21C
Working or processing of sheet metal or metal tubes, rods, or profiles without essentially removing material; Punching	B21D
Forging	B21J
Cast-iron alloys compositions	C22C37/00
Ferrous alloys	C22C38/00

Special rules of classification

Replace: The existing Special rules text with the following updated text.

- If the ferrous alloy composition is disclosed, it should be classified in the appropriate subgroups of [C22C38/00](#).
- All of the disclosed heat treatments (in the claims, description, examples, figures or diagrams) are classified.

For example: The manufacture of case-hardened steel pipe for machine structural components, involves making pipe from steel composition in mass percent, C: 0.1 - 0.25%, Si: 0.2 - 0.4%, Mn: 0.3 - 0.9%, P: at most 0.02%, S: 0.001 - 0.15%, Cr: 0.5 - 0.9%, Mo: 0.15 - 1%, Al: 0.01 - 0.1%, B: 0.0005 - 0.009%, N: less than 0.006%, and a remainder essentially of Fe, followed by subjecting the resulting steel tube to normalizing by soaking at a temperature of 880 - 980 DEG C followed by cooling at a cooling rate of at most 70 DEG C per minute, carrying out cold working of the normalized steel tube, and then annealing the cold worked steel tube at a temperature of 700 - 820 DEG C will be classified in: [C21D8/105](#), [C21D8/10](#), [C21D1/28](#), [C21D1/32](#), [C21D6/02](#), [C21D7/04](#) and [C22C38/00](#).

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C21D 8/12

Definition statement

Insert: A period at the end of the Definition statement.

Modifying the physical properties by deformation combined with, or followed by, heat treatment of ferrous alloys, during manufacturing of articles with special electromagnetic properties.

Relationships with other classification places

Replace: The existing Relationships text with the following updated text.

When the alloy is intended for a particular use/product then the use/product is classified as well in the appropriate area such as [H01F1/00](#).

Ferrous alloys are classified in [C22C38/00](#).

References

Delete: The entire Limiting references section.

Informative references

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

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

Rolling of metal	B21B
Manufacture of metal sheets, bars, wire, rods, tubes or profiles, otherwise than by rolling	B21C
Working or processing of sheet metal or metal tubes, rods, or profiles without essentially removing material; Punching	B21D

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Forging	B21J
Cast-iron alloys compositions	C22C37/00
Ferrous alloys	C22C38/00

Special rules of classification

Replace: The existing Special rules text with the following updated text.

- If the ferrous alloy composition is disclosed, it should be classified in the appropriate subgroups of [C22C38/00](#).
- All the disclosed heat treatments (in the claims, description, examples, figures or diagrams) are classified.

For example: The production of grain oriented magnetic sheet used for core of electrical transformer, involving a heating slab made of steel: Si: 3 - 3.3 %, Al: 0.012 - 0.028 %, C: 0.005 - 0.065 %, Cu: 0.01 - 0.1 %, Mn: 0.045 - 0.05 %, N: 0.0035 - 0.0055%, S: 0.015 - 0.023 %, Se: 0 - 0.018 %, Sn: 0.082 %, Fe balance at a temperature (T1), hot-rolling using rolling mill at a temperature (T2), heating at a temperature (T3)>(T2), cold-rolling, optionally annealing and performing primary recrystallization and secondary recrystallization will be classified in [C21D8/1211](#), [C21D8/1222](#), [C21D8/1255](#), [C21D8/1272](#), [C21D6/008](#), [C22C38/001](#), [C22C38/008](#), [C22C38/02](#), [C22C38/04](#) and [C22C38/16](#).

[C21D 9/00](#)

Definition statement

Replace: The existing Definition statement text with the following updated text.

Heat treatment, e.g. annealing, hardening, quenching or tempering, adapted for particular articles; furnaces therefore.

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Relationships with other classification places

Replace: The existing Relationships text with the following updated text.

F27B provides for furnaces, kilns, ovens or retorts in general; open sintering or like apparatus.

F27D provides for details or accessories of furnaces, kilns, ovens or retorts, in which they are occurring in more than one kind of furnace.

References**Informative references**

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

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

Manufacture of metal sheets, bars, wire, rods, tubes or profiles, otherwise than by rolling	B21C
Vehicle parts	B62
Cast-iron alloys compositions	C22C37/00
Ferrous alloys	C22C38/00
Surface treatment of metallic material	C23, C23F
Cementation by diffusion processes	C23C
Electrolytic production or refining of metals	C25C
Single crystals or homogeneous polycrystalline material with defined structure; Production thereof	C30B
Steam turbines, turbine rotors; Blades, turbine blades	F01D, F01D5/00
Valve guides/valve seat inserts	F01L
Gas turbine plants	F02C

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Bearings, shafts/crankshafts	F16C13/00, F16C23/00, F16C29/00, F16C33/00
Springs	F16F
Sliding member	F16J, F16K
Furnaces	F27B, F27D

Special rules of classification

Replace: The existing Special rules text with the following updated text.

- If the ferrous alloy composition is disclosed, it should be classified in the appropriate subgroups of [C22C38/00](#).
- For example: a heat treatment method of manufacturing high carbon bearing steel having excellent abrasion resistance and fatigue resistance, a steel wire rod for high carbon bearing steel subjected to the heat treatment, a manufacturing method of the steel wire rod, high carbon bearing steel manufactured by the heat treatment and a soaking method of a steel bloom used for manufacturing the steel wire rod. The heat treatment method of bearings includes the steps of: quenching a bearing-shaped steel part containing, by weight, 0.5% to 1.20% carbon and 1.0% to 2.0% silicon; and partitioning the quenched steel part at a temperature ranging from Ms - 100 degrees C to Ms for at least 10 minutes, where Ms represents a temperature at which formation of martensite will start, will be classified in [C21D9/0075](#) (rod of limited length), [C21D9/38](#), [C21D9/40](#), [C21D1/19](#), [C21D1/32](#), [C22C38/02](#), [C22C38/04](#) and [C22C38/34](#).
- Similarly, a rod of unlimited length, respectively a large gauge high strength steel rod having a diameter of not less than 9 mm, is produced from high carbon steel containing, by weight percent, from 0.65 to 0.90% carbon and from 0.15 to 1.5% chromium capable of being drawn without subsequent heat treatment will be classified in [C21D9/525](#), [C21D8/06](#) and [C22C38/18](#).
- The case-hardened gear steel (example group [C21D1/00](#)- [C21D1/84](#)) consisting of, by weight percent, Co: 16.3, Ni: 7.5, Cr: 3.5, Mo: 1.75, W: 0.2, C: 0.11, Ti: 0.03, and V: 0.02 and the balance Fe, classified in

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[C21D1/22](#) as well as in [C22C38/44](#), [C22C38/52](#), [C21D1/25](#) and [C21D9/32](#).

- The method for production of a surface-decarburized hot-rolled strip with specific disclosed composition (example group [C21D3/00 - C21D3/10](#)) will be classified in [C21D3/04](#), [C21D1/74](#), [C21D9/46](#), [C21D9/48](#) and the corresponding subgroups of [C22C38/00](#).

C21D 10/00

Relationships with other classification places

Replace: The existing Relationships text with the following updated text.

When the alloy is intended for a particular use/product then the use/product is classified as well in the appropriate area such as [H01F1/00](#).

Ferrous alloys are classified in [C22C38/00](#).

References

Delete: The entire Limiting references section.

Informative references

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

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

Abrasive or related blasting with particulate material	B24C
Modifying the physical properties of iron and steel by deformation	C21D7/06
Modifying the physical properties by heat treatment or deformation	C21D1/00- C21D7/04 ,

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	C21D7/08- C21D9/70
Alloys	C22C

Special rules of classification

Replace: The existing Special rules text with the following updated text.

- If the ferrous alloy composition is disclosed, it should be classified in the appropriate subgroups of [C22C38/00](#).
- All the disclosed heat treatments (in the claims, description, examples, figures or diagrams) are classified.

For example: A steel tube with excellent steam oxidation resistance and a method for producing the steel tube by shot peening the inner surface of the steel tube will be classified in [C21D10/005](#) as well as in [C21D7/06](#), the corresponding [C22C38/00](#) subgroups and in [B24C1/00](#).

C21D 11/00

Special rules of classification

Replace: The existing Special rules text with the following updated text.

- All the disclosed heat treatments (in the claims, description, examples, figures or diagrams) are classified.

For example: A metal processing system for forming and heat treating of metal casing comprises process control temperature station upstream from heat treatment station and having temperature sensing device, with a controlled cooling, is classified in [C21D 1/84](#), [C21D 9/0068](#) and in [C21D 11/005](#).