

CPC COOPERATIVE PATENT CLASSIFICATION

C21C PROCESSING OF PIG-IRON, e.g. REFINING, MANUFACTURE OF WROUGHT-IRON OR STEEL; TREATMENT IN MOLTEN STATE OF FERROUS ALLOYS (refining metals in general [C22B 9/00](#))

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|-------------|---|-----------|--|
| 1/00 | Refining of pig-iron; Cast iron | 5/464 | {Trunnion bearings} |
| 1/02 | . Dephosphorising or desulfurising | 5/4646 | {Cooling arrangements} |
| 1/025 | . . {Agents used for dephosphorising or desulfurising} | 5/4653 | {Tapholes; Opening or plugging thereof} |
| | | 5/466 | {Charging device for converters} |
| 1/04 | . Removing impurities other than carbon, phosphorus or sulfur | 2005/4666 | {for charging with organic contaminated scrap} |
| 1/06 | . Constructional features of mixers for pig-iron | 5/4673 | {Measuring and sampling devices} |
| 1/08 | . Manufacture of cast-iron | 2005/468 | {Means for determining the weight of the converter} |
| 1/10 | . Making spheroidal graphite cast-iron | | |
| 1/105 | . . {Nodularising additive agents} | 5/4686 | {Vehicles for supporting and transporting a converter vessel} |
| 3/00 | Manufacture of wrought-iron or wrought-steel | 5/4693 | {Skull removal; Cleaning of the converter mouth} |
| 5/00 | Manufacture of carbon-steel, e.g. plain mild steel, medium carbon steel or cast steel {or stainless steel} | 5/48 | Bottoms or tuyères of converters |
| | | 5/50 | Tilting mechanisms for converters |
| 5/005 | . {Manufacture of stainless steel} | 5/52 | . Manufacture of steel in electric furnaces (C21C 5/005 takes precedence); electric heating per se H05B) |
| 5/02 | . Crucible furnace process (C21C 5/005 takes precedence) | | |
| 5/04 | . Manufacture of hearth-furnace steel, e.g. Siemens-Martin steel (C21C 5/005 takes precedence) | 5/5205 | . . {in a plasma heated furnace} |
| 5/06 | . . Processes yielding slags of special composition | 5/5211 | . . {in an alternating current [AC] electric arc furnace} |
| 5/28 | . Manufacture of steel in the converter (C21C 5/005 takes precedence) | 5/5217 | . . . {equipped with burners or devices for injecting gas, i.e. oxygen, or pulverulent materials into the furnace} |
| 5/285 | . . {Plants therefor} | | |
| 5/30 | . . Regulating or controlling the blowing | 2005/5223 | . . . {with post-combustion} |
| 5/305 | . . . {Afterburning} | 5/5229 | . . {in a direct current [DC] electric arc furnace} |
| 5/32 | . . . Blowing from above (C21C 5/35 takes precedence) | 2005/5235 | . . . {with bottom electrodes} |
| 5/34 | . . . Blowing through the bath (C21C 5/35 takes precedence) | 5/5241 | . . {in an inductively heated furnace} |
| 5/35 | . . . Blowing from above and through the bath | 5/5247 | . . . {processing a moving metal stream while exposed to an electromagnetic field, e.g. in an electromagnetic counter current channel} |
| 5/36 | . . Processes yielding slags of special composition | 5/5252 | . . {in an electrically heated multi-chamber furnace, a combination of electric furnaces or an electric furnace arranged for associated working with a non electric furnace} |
| 2005/363 | . . . {Slag cements} | | |
| 2005/366 | . . . {Foam slags} | 2005/5258 | . . {with crater formed by down-melting of scrap or charge through electrode or lance} |
| 5/38 | . . Removal of waste gases or dust | | |
| 5/40 | . . . Offtakes or separating apparatus for converter waste gases or dust | 5/5264 | . . {Manufacture of alloyed steels including ferro-alloys} |
| 5/42 | . . Constructional features of converters | 5/527 | . . {Charging of the electric furnace} |
| 5/44 | . . . Refractory linings | 2005/5276 | . . . {with liquid or solid rest, e.g. pool, "sumpf"} |
| 5/441 | {Equipment used for making or repairing linings} | 2005/5282 | . . . {with organic contaminated scrap} |
| 5/443 | {Hot fettling; Flame gunning} | 2005/5288 | . . {Measuring or sampling devices} |
| 5/445 | {Lining or repairing the taphole} | 5/5294 | . . {General arrangement or layout of the electric melt shop} |
| 2005/446 | {Dry linings} | | |
| 2005/448 | {Lining wear indicators} | 5/54 | . . Processes yielding slags of special composition |
| 5/46 | . . . Details or accessories | 5/56 | . Manufacture of steel by other methods (making liquid steel by direct processes C21B 13/00 (; C21C 5/005 takes precedence)) |
| 5/4606 | {Lances or injectors} | | |
| 5/4613 | {Refractory coated lances; Immersion lances} | 5/562 | . . {starting from scrap} |
| 5/462 | {Means for handling, e.g. adjusting, changing, coupling} | 5/565 | . . . {Preheating of scrap (apparatus for preheating scrap in general F27D 13/002)} |
| 2005/4626 | {Means for cooling, e.g. by gases, fluids or liquids} | 5/567 | . . {operating in a continuous way} |
| 5/4633 | {Supporting means} | | |

7/00 Treating molten ferrous alloys, e.g. steel, not covered by groups [C21C 1/00](#) - [C21C 5/00](#)
 (treating molten metals during moulding [B22D 1/00](#), [B22D 27/00](#); remelting ferrous metals [C22B](#))

- 7/0006 . {Adding metallic additives}
- 2007/0012 . . {Lead}
- 2007/0018 . . {Boron}
- 7/0025 . {Adding carbon material}
- 2007/0031 . . {being plastics, organic compounds, polymers}
- 7/0037 . {by injecting powdered material}
- 7/0043 . . {into the falling stream of molten metal}
- 7/005 . {using exothermic reaction compositions}
- 7/0056 . {using cored wires}
- 2007/0062 . . {with introduction of alloying or treating agents under a compacted form different from a wire, e.g. briquette, pellet}
- 7/0068 . {by introducing material into a current of streaming metal}
- 7/0075 . {Treating in a ladle furnace, e.g. up-/reheating of molten steel within the ladle}
- 7/0081 . {Treating and handling under pressure}
- 7/0087 . {Treatment of slags covering the steel bath, e.g. for separating slag from the molten metal}
- 2007/0093 . {Duplex process; Two stage processes}
- 7/04 . Removing impurities by adding a treating agent
- 7/06 . . Deoxidising, e.g. killing
- 7/064 . . Dephosphorising; Desulfurising
- 7/0645 . . . {Agents used for dephosphorising or desulfurising}
- 7/068 . . Decarburising
- 7/0685 . . . {of stainless steel}
- 7/072 . . Treatment with gases ([C21C 7/06](#), [C21C 7/064](#), [C21C 7/068](#) take precedence)
- 7/076 . . Use of slags or fluxes as treating agents ([C21C 7/06](#), [C21C 7/064](#), [C21C 7/068](#) take precedence)
- 7/10 . Handling in a vacuum

2100/00 Exhaust gas

- 2100/02 . Treatment of the exhaust gas
- 2100/04 . Recirculation of the exhaust gas
- 2100/06 . Energy from waste gas used in other processes

2200/00 Recycling of waste material

2250/00 Specific additives; Means for adding material different from burners or lances

- 2250/02 . Hot oxygen
- 2250/04 . Liquid gas
- 2250/042 . . Liquid oxygen
- 2250/06 . Hollow electrode
- 2250/08 . Porous plug

2300/00 Process aspects

- 2300/02 . Foam creation
- 2300/04 . Avoiding foam formation
- 2300/06 . Modeling of the process, e.g. for control purposes; CII
- 2300/08 . Particular sequence of the process steps