

CPC COOPERATIVE PATENT CLASSIFICATION

C CHEMISTRY; METALLURGY

(NOTES omitted)

METALLURGY

C21 METALLURGY OF IRON

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

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|----------------|--|----------------|---|
| 5/5264 | . . {Manufacture of alloyed steels including ferro-alloys} | 2250/02 | . Hot oxygen |
| 5/527 | . . {Charging of the electric furnace} | 2250/04 | . Liquid gas |
| 2005/5276 | . . . {with liquid or solid rest, e.g. pool, "sumpf"} | 2250/042 | . . Liquid oxygen |
| 2005/5282 | . . . {with organic contaminated scrap} | 2250/06 | . Hollow electrode |
| 2005/5288 | . . {Measuring or sampling devices} | 2250/08 | . Porous plug |
| 5/5294 | . . {General arrangement or layout of the electric melt shop} | 2300/00 | Process aspects |
| 5/54 | . . Processes yielding slags of special composition | 2300/02 | . Foam creation |
| 5/56 | . Manufacture of steel by other methods (making liquid steel by direct processes C21B 13/00 {; C21C 5/005 takes precedence }) | 2300/04 | . Avoiding foam formation |
| 5/562 | . . {starting from scrap} | 2300/06 | . Modeling of the process, e.g. for control purposes; CII |
| 5/565 | . . . {Preheating of scrap (apparatus for preheating scrap in general F27D 13/002)} | 2300/08 | . Particular sequence of the process steps |
| 5/567 | . . {operating in a continuous way} | | |
| 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 | | |