COOPERATIVE PATENT CLASSIFICATION

CHEMISTRY; METALLURGY

METALLURGY

METALLURGY OF IRON

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)

1/00 Refining of pig-iron; Cast iron
1/02 . Dephosphorising or desulfurising
1/025 . . . [Agents used for dephosphorising or desulfurising]
1/04 . Removing impurities other than carbon, phosphorus or sulfur
1/06 . Constructional features of mixers for pig-iron
1/08 . Manufacture of cast-iron
1/10 . Making spheroidal graphite cast-iron
1/105 . . . { Nodularising additive agents }
3/00 Manufacture of wrought-iron or wrought-steel
5/00 Manufacture of carbon-steel, e.g. plain mild steel, medium carbon steel or cast steel [or stainless steel]
5/005 . . . [Manufacture of stainless steel]
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)]
5/06 . . . Processes yielding slags of special composition
5/28 . Manufacture of steel in the converter [(C21C 5/005 takes precedence)]
5/285 . . . { Plants therefor }
5/30 . . . Regulating or controlling the blowing
5/305 . . . . . . [Afterburning]
5/32 . . . Blowing from above [(C21C 5/35 takes precedence)]
5/34 . . . Blowing through the bath [(C21C 5/35 takes precedence)]
5/35 . . . Blowing from above and through the bath
5/36 . . . Processes yielding slags of special composition
2005/363 . . . . . . [Slag cements]
2005/366 . . . . . . [Foam slags]
5/38 . . . Removal of waste gases or dust
5/40 . . . Offtakes or separating apparatus for converter waste gases or dust
5/42 . . . Constructional features of converters
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
5/4606 . . . . . . [Lances or injectors]
5/4613 . . . . . . [Refractory coated lances; Immersion lances]
5/462 . . . . . . [Means for handling, e.g. adjusting, changing, coupling]
2005/4626 . . . . . . [Means for cooling, e.g. by gases, fluids or liquids]
5/463 . . . . . . [Supporting means]
5/464 . . . . . . [Trunnion bearings]
5/4646 . . . . . . [Cooling arrangements]
5/4653 . . . . . . [Tapholes; Opening or plugging thereof]
5/466 . . . . . . [Charging device for converters]
2005/4666 . . . . . . [for charging with organic contaminated scrap]
5/4673 . . . . . . [Measuring and sampling devices]
5/468 . . . . . . [Means for determining the weight of the converter]
5/4686 . . . . . . [Vehicles for supporting and transporting a converter vessel]
5/4693 . . . . . . [Skull removal; Cleaning of the converter mouth]
5/48 . . . . . . Bottoms or tuyéres of converters
5/50 . . . . . . Tilting mechanisms for converters
5/52 . . . Manufacture of steel in electric furnaces [(C21C 5/005 takes precedence); electric heating per se H05B]
5/505 . . . . . . [in a plasma heated furnace]
5/5211 . . . . . . [in an alternating current [AC] electric arc furnace]
5/5217 . . . . . . [equipped with burners or devices for injecting gas, i.e. oxygen, or pulverulent materials into the furnace]
2005/5223 . . . . . . [with post-combustion]
5/5229 . . . . . . [in a direct current [DC] electric arc furnace]
2005/5235 . . . . . . [with bottom electrodes]
5/5241 . . . . . . [in an inductively heated furnace]
5/5247 . . . . . . [processing a moving metal stream while exposed to an electromagnetic field, e.g. in an electromagnetic counter current channel]
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]
2005/5258 . . . . . . [with crater formed by down-melting of scrap or charge through electrode or lance]
Manufacture of alloyed steels including ferro-alloys

Charging of the electric furnace

with liquid or solid rest, e.g. pool, "sumpf"

with organic contaminated scrap

Measuring or sampling devices

General arrangement or layout of the electric melt shop

Processes yielding slags of special composition

Manufacture of steel by other methods (making liquid steel by direct processes C21B 13/00 ; C21C 5/005 takes precedence)

starting from scrap

Preheating of scrap (apparatus for preheating scrap in general F27D 13/002)

operating in a continuous way

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)

Adding metallic additives

Lead

Boron

Adding carbon material

being plastics, organic compounds, polymers

by injecting powdered material

into the falling stream of molten metal

using exothermic reaction compositions

using cored wires

with introduction of alloying or treating agents under a compacted form different from a wire, e.g. briquette, pellet

by introducing material into a current of streaming metal

Treating in a ladle furnace, e.g. up-/reheating of molten steel within the ladle

Treating and handling under pressure

Treatment of slags covering the steel bath, e.g. for separating slag from the molten metal

Duplex process; Two stage processes

Removing impurities by adding a treating agent

Deoxidising, e.g. killing

Dephosphorising; Desulfurising

Agents used for dephosphorising or desulfurising

Decarburising

(of stainless steel)

Treatment with gases (C21C 7/06, C21C 7/064, C21C 7/068 take precedence)

Use of slags or fluxes as treating agents (C21C 7/06, C21C 7/064, C21C 7/068 take precedence)

Handling in a vacuum

Exhaust gas

Treatment of the exhaust gas

Recirculation of the exhaust gas

Energy from waste gas used in other processes

Recycling of waste material

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