

## SECTION C — CHEMISTRY; METALLURGY

## C21 METALLURGY OF IRON

C21B MANUFACTURE OF IRON OR STEEL (preliminary treatment of ferrous ores or scrap C22B 1/00; electric heating H05B)

**Note(s)**

1. This subclass covers:
  - the production of iron or steel from source materials, e.g. the production of pig-iron;
  - apparatus specially adapted therefor, e.g. blast furnaces, air heaters (furnaces in general F27).
2. Processes using enzymes or micro-organisms in order to:
  - i. liberate, separate or purify a pre-existing compound or composition, or to
  - ii. treat textiles or clean solid surfaces of materials
 are further classified in subclass C12S.

**Subclass index**

MAKING PIG-IRON	
In blast furnaces.....	5/00, 7/00, 9/00
Other processes.....	11/00
General features.....	3/00
MAKING IRON.....	13/00, 15/00
MAKING LIQUID STEEL BY DIRECT PROCESSES.....	13/00

<b>3/00</b>	<b>General features in the manufacture of pig-iron</b> (mixers for pig-iron C21C 1/06)	9/02	• Brick hot-blast stoves
3/02	• by applying additives, e.g. fluxing agents	9/04	• • with combustion shaft
3/04	• Recovery of by-products, e.g. slag	9/06	• • Linings
3/06	• • Treatment of liquid slag (slag wool C03B; slag stones C04B)	9/08	• Iron hot-blast stoves
3/08	• • • Cooling slag	9/10	• Other details, e.g. blast mains
3/10	• • • Slag pots; Slag cars	9/12	• • Hot-blast valves or slides for blast furnaces (valves in general F16K)
<b>5/00</b>	<b>Making pig-iron in the blast furnace</b>	9/14	• Preheating the combustion air
5/02	• Making special pig-iron, e.g. by applying additives, e.g. oxides of other metals	9/16	• Cooling or drying the hot-blast
5/04	• Making slag of special composition	<b>11/00</b>	<b>Making pig-iron other than in blast furnaces</b>
5/06	• using top gas in the blast furnace process (in coke ovens C10B)	11/02	• in low shaft furnaces
<b>7/00</b>	<b>Blast furnaces</b> (lifts associated with blast furnaces B66B 9/06)	11/06	• in rotary kilns
7/02	• Internal forms	11/08	• in hearth-type furnaces
7/04	• with special refractories (refractory materials C04B)	11/10	• in electric furnaces
7/06	• • Linings for furnaces	<b>13/00</b>	<b>Making spongy iron or liquid steel, by direct processes</b>
7/08	• Top armourings	13/02	• in shaft furnaces
7/10	• Cooling; Devices therefor	13/04	• in retorts
7/12	• Opening or sealing the tap holes	13/06	• in multi-storied furnaces
7/14	• Discharging devices, e.g. for slag	13/08	• in rotary furnaces
7/16	• Tuyères	13/10	• in hearth-type furnaces
7/18	• Bell-and-hopper arrangements	13/12	• in electric furnaces
7/20	• • with appliances for distributing the burden	13/14	• Multi-stage processes
7/22	• Dust arresters	<b>15/00</b>	<b>Other processes for the manufacture of iron from iron compounds</b> (general methods of reducing to metal C22B 5/00; by electrolysis C25C 1/06)
7/24	• Test rods or other checking devices	15/02	• Metallothermic processes, e.g. thermit reduction
<b>9/00</b>	<b>Stoves for heating the blast in blast furnaces</b>	15/04	• from iron carbonyl