

**CPC****COOPERATIVE PATENT CLASSIFICATION****F27B****FURNACES, KILNS, OVENS, OR RETORTS IN GENERAL; OPEN SINTERING OR LIKE APPARATUS****NOTE**

Attention is drawn to the references and notes following the title of class [F27](#) and the note (par. III) following the Contents of Section H.

**WARNING**

The following IPC groups are not used in the CPC system. Subject matter covered by these groups is classified in the following CPC groups:

[F27B 1/09](#) covered by [F27B 1/08](#)  
[F27B 5/05](#) " " [F27B 5/04](#)  
[F27B 14/16](#), [F27B 14/18](#) " " [F27B 14/0806](#)  
[F27B 21/08](#) to [F27B 21/14](#) " " [F27D](#)

**F27B 1/00**

**Shaft or like vertical or substantially vertical furnaces** (for preheating, burning, calcining or cooling lime, magnesia or dolomite [C04B 2/12](#))

**F27B 1/005**

. {wherein no smelting of the charge occurs, e.g. calcining or sintering furnaces }

**F27B 1/02**

. with two or more shafts or chambers, e.g. multi-storey

**F27B 1/025**

.. {with fore-hearth }

**F27B 1/04**

.. Combinations or arrangements of shafts

**F27B 1/06**

. of other than up-draught type

**F27B 1/08**

. heated otherwise than by solid fuel mixed with charge

**F27B 1/10**

. Details, accessories, or equipment peculiar to furnaces of these types

**F27B 1/12**

.. Shells or casings; Supports therefor

**F27B 1/14**

... Arrangements of linings ([linings in general F27D 1/00](#))

**F27B 1/16**

.. Arrangements of tuyeres

**F27B 1/18**

.. Arrangements of dust collectors

**F27B 1/20**

.. Arrangements of devices for charging

**F27B 1/21**

.. Arrangements of devices for discharging

**F27B 1/22**

.. Arrangements of heat-exchange apparatus ([heat-exchangers in general F28C](#), [F28D](#) )

**F27B 1/24**

.. Cooling arrangements

**F27B 1/26**

.. Arrangements of controlling devices

**F27B 1/28**

.. Arrangements of monitoring devices, of indicators, of alarm devices

**F27B 3/00**

**Hearth-type furnaces, e.g. of reverberatory type** ([F27B 9/00](#), [F27B 11/00](#), [F27B 13/00](#), [F27B 14/00](#), [F27B 15/00](#), [F27B 21/00](#) take precedence) ; **Tank furnaces**

- F27B 3/002 . {Siemens-Martin type furnaces }
- F27B 3/005 .. {Port construction }
- F27B 3/007 ... {Removable burner head }
  
- F27B 3/02 . of single-chamber fixed-hearth type
  
- F27B 3/04 . of multiple-hearth type; of multiple-chamber type; Combinations of hearth-type furnaces
- F27B 3/045 .. {Multiple chambers, e.g. one of which is used for charging }
- F27B 3/06 . with movable working chambers or hearths, e.g. tiltable, {oscillating or describing a composed movement }
- F27B 3/065 .. {tiltable }
  
- F27B 3/08 . heated electrically, with or without any other source of heat
- F27B 3/085 .. {Arc furnaces }
  
- F27B 3/10 . Details, accessories, or equipment peculiar to hearth-type furnaces
- F27B 3/105 .. {Slag chamber }
- F27B 3/12 . Working chambers or casings; Supports therefor
- F27B 3/14 ... Arrangements of linings
- F27B 3/16 ... Walls; Roofs
- F27B 3/18 . Arrangements of devices for charging
- F27B 3/183 ... {Charging of arc furnaces vertically through the roof, e.g. in three points }
- F27B 3/186 .... {Charging in a vertical chamber adjacent to the melting chamber }
- F27B 3/19 . Arrangements of devices for discharging
- F27B 3/20 . Arrangements of heating devices
- F27B 3/205 ... {Burners }
- F27B 3/22 . Arrangements of air or gas supply devices
- F27B 3/225 ... {Oxygen blowing }
- F27B 3/24 . Cooling arrangements
- F27B 3/26 . Arrangements of heat-exchange apparatus
- F27B 3/263 ... {Regenerators }
- F27B 3/266 .... {Exhaust gases reversing flow devices }
- F27B 3/28 . Arrangement of controlling, monitoring, alarm or the like devices
  
- F27B 5/00 Muffle furnaces; Retort furnaces; Other furnaces in which the charge is held completely isolated ([F27B 9/00](#) takes precedence)**
  
- F27B 5/02 . of multiple-chamber type
  
- F27B 5/04 . adapted for treating the charge in vacuum or special atmosphere
  
- F27B 5/06 . Details, accessories, or equipment peculiar to furnaces of these types
- F27B 5/08 . Arrangements of linings

- F27B 5/10 . . Muffles
- F27B 5/12 . . Arrangement of devices for charging
- F27B 5/13 . . Arrangement of devices for discharging
- F27B 5/14 . . Arrangements of heating devices
- F27B 5/16 . . Arrangements of air or gas supply devices
- F27B 5/18 . . Arrangement of controlling, monitoring, alarm or like devices

## **F27B 7/00 Rotary-drum furnaces, i.e. horizontal or slightly inclined**

- F27B 7/02 . of multiple-chamber or multiple-drum type
- F27B 7/04 . . with longitudinal divisions
- F27B 7/06 . adapted for treating the charge in vacuum or special atmosphere
- F27B 7/08 . externally heated
- F27B 7/10 . internally heated, e.g. by means of passages in the wall
- F27B 7/12 . tiltable
- F27B 7/14 . with means for agitating or moving the charge
- F27B 7/16 . . the means being fixed relatively to the drum, {e.g. composite means } ([F27B 7/04 takes precedence](#))
  - F27B 7/161 . . . {the means comprising projections jutting out from the wall }
  - F27B 7/162 . . . . {the projections consisting of separate lifting elements, e.g. lifting shovels }
  - F27B 7/166 . . . {the means comprising chains }
  - F27B 7/167 . . . {the means comprising partitions }
  - F27B 7/18 . . the means being movable within the drum
- F27B 7/20 . Details, accessories, or equipment peculiar to rotary-drum furnaces
- F27B 7/2016 . . {Arrangements of preheating devices for the charge }
  - F27B 7/2025 . . . {consisting of a single string of cyclones }
  - F27B 7/2033 . . . . {with means for precalcining the raw material }
  - F27B 7/2041 . . . {consisting of at least two strings of cyclones with two different admissions of raw material }
    - F27B 7/205 . . . . {with precalcining means on the string supplied with exhaust gases from the cooler }
    - F27B 7/2058 . . . . {with precalcining means on each string }
  - F27B 7/2066 . . . {comprising a band transporter }
- F27B 7/2075 . . {Removing incrustations }
- F27B 7/2083 . . {Arrangements for the melting of metals or the treatment of molten metals }
- F27B 7/22 . . Rotary drums; Supports therefor
  - F27B 7/2206 . . . {Bearing rings }
  - F27B 7/224 . . . {Discharge ends }
  - F27B 7/24 . . . Seals between rotary and stationary parts

F27B 7/26	.. Drives
F27B 7/28	.. Arrangements of linings
F27B 7/30	.. Arrangements of partitions
F27B 7/32	.. Arrangement of devices for charging
F27B 7/3205	... {Charging }
F27B 7/33	.. Arrangement of devices for discharging
F27B 7/34	.. Arrangements of heating devices
F27B 7/36	.. Arrangements of air or gas supply devices
F27B 7/362	... {Introducing gas into the drum axially or through the wall }
F27B 7/38	.. Arrangements of cooling devices
F27B 7/383	... {Cooling devices for the charge }
F27B 7/386	.... {Rotary-drum cooler }
F27B 7/40	... Planetary coolers
F27B 7/42	.. Arrangement of controlling, monitoring, alarm or like devices

**F27B 9/00** **Furnaces through which the charge is moved mechanically, e.g. of tunnel type ([F27B 7/14](#) takes precedence) ; Similar furnaces in which the charge moves by gravity**

F27B 9/02	. of multiple-track type; of multiple-chamber type; Combinations of furnaces
F27B 9/021	.. {having two or more parallel tracks }
F27B 9/022	... {With two tracks moving in opposite directions }
F27B 9/023	.... {with a U turn at one end }
F27B 9/024	..... {with superimposed tracks }
F27B 9/025	... {having two or more superimposed tracks ( <a href="#">F27B 9/024</a> takes precedence) }
F27B 9/028	.. {Multi-chamber type furnaces, ( <a href="#">F27B 9/029</a> takes precedence) }
F27B 9/029	.. {Multicellular type furnaces constructed with add-on modules }
F27B 9/04	. adapted for treating the charge in vacuum or special atmosphere
F27B 9/042	.. {Vacuum furnaces }
F27B 9/045	.. {Furnaces with controlled atmosphere }
F27B 9/047	... {the atmosphere consisting of protective gases }
F27B 9/06	. heated without contact between combustion gases and charge; electrically heated
F27B 9/061	.. {with at least two longitudinal chambers carrying combustion gases, i.e of the Dressler type }
F27B 9/062	.. {electrically heated }
F27B 9/063	... {Resistor heating, e.g. with resistors also emitting IR rays }
F27B 9/065	.... {the resistance being transported by the conveyer }
F27B 9/066	... {heated by lamps }
F27B 9/067	... {heated by induction }
F27B 9/068	.. {heated by radiant tubes, the tube being heated by a hot medium, e.g. hot gases }
F27B 9/08	.. heated through chamber walls
F27B 9/082	... {Muffle furnaces }

- F27B 9/084 . . . . {the muffle being fixed and in a single piece }
- F27B 9/086 . . . . {with two or more fixed muffles }
- F27B 9/088 . . . . {Series of separate muffles conveyed through the furnace }
- F27B 9/10 . . heated by hot air or gas
- F27B 9/12 . with special arrangements for preheating or cooling the charge
- F27B 9/14 . characterised by the path of the charge during treatment; characterised by the means by which the charge is moved during treatment ([F27B 9/28 takes precedence](#); travelling or movable supports or containers for the charge [F27D 3/12](#))
- F27B 9/142 . . {the charge moving along a vertical axis }
- F27B 9/145 . . {the charge moving along a serpentine path }
- F27B 9/147 . . {the charge moving on an inclined floor }
- F27B 9/16 . . the charge moving in a circular or arcuate path
- F27B 9/18 . . . under the action of scrapers or pushers
- F27B 9/185 . . . . {multiple hearth type furnaces }
- F27B 9/20 . . the charge moving in a substantially straight path {tunnel furnace }
- F27B 9/201 . . . {walking beam furnace }
- F27B 9/202 . . . . {Conveyer mechanisms therefor }
- F27B 9/203 . . . . . {having ramps ([F27B 9/206 takes precedence](#)) }
- F27B 9/205 . . . . . {having excentrics or lever arms ([F27B 9/206 takes precedence](#)) }
- F27B 9/206 . . . . . {consisting of a single central beam }
- F27B 9/207 . . . . . {consisting of two or more conveyers }
- F27B 9/208 . . . . {the workpieces being rotated during their advance }
- F27B 9/22 . . . {on rails, e.g. } under the action of scrapers or pushers ([F27B 9/26 takes precedence](#))
- F27B 9/222 . . . . {the path comprising a section specially adapted for effecting equalisation of the temperature of the charge }
- F27B 9/225 . . . . {the charge being subjected to an additional manipulation along the path }
- F27B 9/227 . . . . { with rotation of the charge ([F27B 9/147 takes precedence](#)) }
- F27B 9/24 . . . being carried by a conveyer {transport by conveyers in general [B65G](#) }
- F27B 9/2407 . . . . {the conveyer being constituted by rollers (roller hearth furnace) }
- F27B 9/2415 . . . . . {the charge rotating about an axis transversal to the axis of advancement of the charge }
- F27B 9/2423 . . . . . {the charge rotating about an axis parallel to the axis of advancement of the charge }
- F27B 9/243 . . . . {Endless-strand conveyer }
- F27B 9/2453 . . . . {Vibrating conveyer ([shaker hearth furnace](#)) }
- F27B 9/2461 . . . . {the charge being suspended from the conveyer }
- F27B 9/2469 . . . . {the conveyer being constituted by rollable bodies }
- F27B 9/2476 . . . . {the conveyer being constituted by air cushion }
- F27B 9/26 . . . on or in trucks, sleds, or containers
- F27B 9/262 . . . . {on or in trucks }
- F27B 9/28 . for treating continuous lengths of work

- F27B 9/30 . Details, accessories, or equipment peculiar to furnaces of these types
- F27B 9/3005 . . {arrangements for circulating gases }
- F27B 9/3011 . . . {arrangements for circulating gases transversally }
- F27B 9/3044 . . {Furnace regenerators }
- F27B 9/3077 . . {Arrangements for treating electronic components, e.g. semiconductors }
- F27B 9/32 . . Casings
- F27B 9/34 . . . Arrangements of linings
- F27B 9/36 . . Arrangements of heating devices
- F27B 9/38 . . Arrangements of devices for charging
- F27B 9/39 . . Arrangements of devices for discharging
- F27B 9/40 . . Arrangements of controlling or monitoring devices

**F27B 11/00** **Bell-type furnaces** (for treating metal strips or wire [C21D 9/663](#))

**F27B 13/00** **Furnaces with both stationary charge and progression of heating, e.g. of ring type, of type in which segmental kiln moves over stationary charge**

- F27B 13/02 . of multiple-chamber type with permanent partitions; Combinations of furnaces
- F27B 13/04 . of single-chamber type with temporary partitions
- F27B 13/06 . Details, accessories, or equipment peculiar to furnaces of this type
- F27B 13/08 . . Casings
- F27B 13/10 . . . Arrangements of linings
- F27B 13/12 . . Arrangements of heating devices
- F27B 13/14 . . Arrangement of controlling, monitoring, alarm or like devices

**F27B 14/00** **Crucible or pot furnace**

- F27B 14/02 . with tilting or rocking arrangements ([F27B 14/04](#) takes precedence)
- F27B 14/04 . adapted for treating the charge in vacuum or special atmosphere
- F27B 14/06 . heated electrically, e.g. induction crucible furnaces with or without any other source of heat ([F27B 14/04](#) takes precedence)
- F27B 14/061 . . {Induction furnaces }
- F27B 14/063 . . . {Skull melting type }
- F27B 14/065 . . . {Channel type }
- F27B 14/08 . Details peculiar to crucible or pot furnaces
- F27B 14/0806 . . {Charging or discharging devices }
- F27B 14/10 . . Crucibles
- F27B 14/12 . . . Covers therefor
- F27B 14/14 . . Arrangements of heating devices

- F27B 14/143 . . . {Heating of the crucible by convection of combustion gases }
- F27B 14/20 . . Arrangement of controlling, monitoring, alarm or like devices
  
- F27B 15/00** **Fluidised-bed furnaces; Other furnaces using or treating finely-divided materials in dispersion** { (apparatus in general for carrying out chemical or physical processes in a fluidised bed reactor [B01J 8/24](#) to [B01J 8/44](#)) }
  
- F27B 15/003 . {Cyclones or chain of cyclones }
- F27B 15/006 . {Equipment for treating dispersed material falling under gravity with ascending gases }
  
- F27B 15/02 . Details, accessories, or equipment peculiar to furnaces of these types
- F27B 15/04 . . Casings; Supports therefor
- F27B 15/06 . . . Arrangements of linings
- F27B 15/08 . . Arrangements of devices for charging
- F27B 15/09 . . Arrangements of devices for discharging
- F27B 15/10 . . Arrangements of air or gas supply devices
- F27B 15/12 . . Arrangements of dust collectors
- F27B 15/14 . . Arrangements of heating devices
- F27B 15/16 . . Arrangements of cooling devices
- F27B 15/18 . . Arrangements of controlling devices
- F27B 15/20 . . Arrangements of monitoring devices, of indicators, of alarm devices
  
- F27B 17/00** **Furnaces of a kind not covered by any preceding group** (structural combinations of furnaces [F27B 19/02](#))
  
- F27B 17/0008 . {Open field furnace for burning bricks }
- F27B 17/0016 . {Chamber type furnaces }
- F27B 17/0025 . . {Especially adapted for treating semiconductor wafers }
- F27B 17/0033 . . {the floor of the furnaces consisting of the support carrying the charge, e.g. car type furnaces }
- F27B 17/0041 . . { specially adapted for burning bricks or pottery ([F27B 17/0033](#) takes precedence) }
- F27B 17/005 . . . {with cylindrical chambers }
- F27B 17/0058 . . . . {with superposed cylindrical chambers }
- F27B 17/0066 . . . {arrangement of the charge, e.g. bricks }
- F27B 17/0075 . . . {Heating devices therefor }
- F27B 17/0083 . . {with means for circulating the atmosphere }
  
- F27B 17/02 . specially designed for laboratory use
- F27B 17/025 . . {for dental workpieces }
  
- F27B 19/00** **Combinations of furnaces of kinds not covered by a single preceding main group**
  
- F27B 19/02 . combined in one structure

F27B 19/04	. arranged for associated working
<b>F27B 21/00</b>	<b>Open or uncovered sintering apparatus; Other heat-treatment apparatus of like construction</b>
F27B 21/02	. Sintering grates or tables
F27B 21/04	. Sintering pots or sintering pans
F27B 21/06	. Endless-strand sintering machines
<b>F27B 2003/00</b>	<b>Hearth-type furnaces, e.g. of reverberatory type (<a href="#">F27B 9/00</a>, <a href="#">F27B 11/00</a>, <a href="#">F27B 13/00</a>, <a href="#">F27B 14/00</a>, <a href="#">F27B 15/00</a>, <a href="#">F27B 21/00</a> take precedence) ; Tank furnaces</b>
F27B 2003/10	. Details, accessories, or equipment peculiar to hearth-type furnaces
F27B 2003/12	.. Working chambers or casings; Supports therefor
<a href="#">F27B 2003/125</a>	... Hearths
F27B 2003/16	... Walls; Roofs
<a href="#">F27B 2003/165</a>	.... Roofs
<b>F27B 2005/00</b>	<b>Muffle furnaces; Retort furnaces; Other furnaces in which the charge is held completely isolated (<a href="#">F27B 9/00</a> takes precedence)</b>
F27B 2005/06	. Details, accessories, or equipment peculiar to furnaces of these types
<a href="#">F27B 2005/062</a>	.. Cooling elements
<a href="#">F27B 2005/064</a>	... disposed in the furnace, around the chamber, e.g. coils
<a href="#">F27B 2005/066</a>	... disposed around the fan
<a href="#">F27B 2005/068</a>	... for external cooling
F27B 2005/14	.. Arrangements of heating devices
<a href="#">F27B 2005/143</a>	... Heating rods disposed in the chamber
<a href="#">F27B 2005/146</a>	.... the heating rods being in the tubes which conduct the heating gases
F27B 2005/16	.. Arrangements of air or gas supply devices
<a href="#">F27B 2005/161</a>	... Gas inflow or outflow
<a href="#">F27B 2005/162</a>	.... through closable or non-closable openings of the chamber walls
<a href="#">F27B 2005/163</a>	..... Controlled openings, e.g. orientable
<a href="#">F27B 2005/164</a>	.... Air supply through a set of tubes with openings
<a href="#">F27B 2005/165</a>	..... Controlled tubes, e.g. orientable or with closable openings
<a href="#">F27B 2005/166</a>	... Means to circulate the atmosphere
<a href="#">F27B 2005/167</a>	.... the atmosphere being recirculated through the treatment chamber by a turbine
<a href="#">F27B 2005/168</a>	..... by more than one turbine
<a href="#">F27B 2005/169</a>	.... the atmosphere being continuously renewed by exterior means
<b>F27B 2007/00</b>	<b>Rotary-drum furnaces, i.e. horizontal or slightly inclined</b>



- F27B 2007/005 . for the treatment of slurries or wet materials
- F27B 2007/02 . of multiple-chamber or multiple-drum type
- F27B 2007/022 .. the drum having a non-uniform section along its length
- F27B 2007/025 .. with different chambers, e.g. treatment zones
- F27B 2007/027 .. with more than one drum
- F27B 2007/04 .. with longitudinal divisions
- F27B 2007/041 ... Longitudinal tubes
- F27B 2007/043 ... the partition being a cylinder, coaxial to the rotary drum, defining two chambers
- F27B 2007/045 .... the charge going in one direction in one chamber, then after a turn coming back in the other direction in the other chamber
- F27B 2007/046 ... Radial partitions
- F27B 2007/048 .... defining an helical chamber
- F27B 2007/14 . with means for agitating or moving the charge
- F27B 2007/16 .. the means being fixed relatively to the drum, {e.g. composite means } ([F27B 7/04 takes precedence](#))
- F27B 2007/161 ... {the means comprising projections jutting out from the wall }
- F27B 2007/162 .... {the projections consisting of separate lifting elements, e.g. lifting shovels }
- F27B 2007/163 ..... using only a ring of lifting elements to lift the charge
- F27B 2007/165 .... forming a helical lifting projection
- F27B 2007/167 ... {the means comprising partitions }
- F27B 2007/168 .... Annular partition
- F27B 2007/20 . Details, accessories, or equipment peculiar to rotary-drum furnaces
- F27B 2007/2008 .. Devices for reintroducing dust in the drum
- F27B 2007/2091 .. Means for eliminating compounds from gases by condensation, e.g. alkali metals
- F27B 2007/22 .. Rotary drums; Supports therefor
- F27B 2007/2206 ... {Bearing rings }
- F27B 2007/2213 .... mounted floatingly on the drum
- F27B 2007/222 ..... the mounting comprising radially resilient elements, e.g. springs
- F27B 2007/2226 .... the mounting comprising elements to maintain the ring between series of abutments
- F27B 2007/2233 .... the ring being fixed to the drum, e.g. welded
- F27B 2007/2246 ... Support rollers
- F27B 2007/2253 .... mounted movable, e.g. resiliently on the ground
- F27B 2007/226 ..... constituted of series of two rollers mounted on tiltable support along the drum
- F27B 2007/2266 .... the mounting allowing a movement of the rollers support in a horizontal plane
- F27B 2007/2273 .... with arrangements, e.g. rollers, to maintain the drum against longitudinal movement
- F27B 2007/228 .... comprising rollable bodies
- F27B 2007/2286 .... supporting the drum directly, without the use of a bearing ring

F27B 2007/2293	...	the furnace being suspended
F27B 2007/26	..	Drives
F27B 2007/261	...	working with a ring embracing the drum
F27B 2007/262	....	A gear ring combined with a dented wheel drive
F27B 2007/263	....	A gear ring combined with a ram drive
F27B 2007/265	....	the ring being mounted floatingly
F27B 2007/266	....	the ring being a bearing ring
F27B 2007/267	....	A gear ring combined with a chain drive
F27B 2007/268	...	Details of the motor or the pinions
F27B 2007/32	..	Arrangement of devices for charging
F27B 2007/3205	...	{Charging }
F27B 2007/3211	....	at the open end of the drum
F27B 2007/3217	.....	axially, optionally at some distance in the kiln
F27B 2007/3223	.....	the charging device being movable axially, e.g. reciprocable
F27B 2007/3229	.....	via a centrifugal device
F27B 2007/3235	.....	the introducing device comprising a spray or a lance
F27B 2007/3241	.....	in the flame of the burner
F27B 2007/3247	....	through a lateral opening in the drum
F27B 2007/3252	.....	with lifting scoops attached to the drum
F27B 2007/3258	....	at the open end of the drum
F27B 2007/3264	.....	using special discharge means located around the discharge end, e.g. lifting scoops or a transversal annular partition
F27B 2007/327	....	centrifugally through lateral openings in the drum
F27B 2007/3276	....	with a collector means extending longitudinally into the drum
F27B 2007/3282	...	Details
F27B 2007/3288	....	Sieves or grading means
F27B 2007/3294	....	Means to fluidise the charge in the air
F27B 2007/36	..	Arrangements of air or gas supply devices
F27B 2007/362	...	{Introducing gas into the drum axially or through the wall }
F27B 2007/365	....	longitudinally
F27B 2007/367	....	transversally through the wall of the drum

**F27B 2009/00**      **Furnaces through which the charge is moved mechanically, e.g. of tunnel type ([F27B 7/14](#) takes precedence) ; Similar furnaces in which the charge moves by gravity**

F27B 2009/02	.	of multiple-track type; of multiple-chamber type; Combinations of furnaces
F27B 2009/026	..	Two or more conveyers, e.g. mounted successively
F27B 2009/027	...	working in parallel
F27B 2009/12	.	with special arrangements for preheating or cooling the charge
F27B 2009/122	..	Preheating
F27B 2009/124	..	Cooling

- F27B 2009/126 . . . involving the circulation of cooling gases, e.g. air
- F27B 2009/128 . . . . the gases being further utilised as oxidants in the burners
  
- F27B 2009/14 . characterised by the path of the charge during treatment; characterised by the means by which the charge is moved during treatment ([F27B 9/28 takes precedence; travelling or movable supports or containers for the charge F27D 3/12](#))
  
- F27B 2009/20 . . the charge moving in a substantially straight path {[tunnel furnace](#) }
- F27B 2009/24 . . . being carried by a conveyer {[transport by conveyers in general B65G](#) }
- F27B 2009/243 . . . . {[Endless-strand conveyer](#) }
- F27B 2009/2438 . . . . . with means to transfer the heat from the outcoming band to the incoming band
- F27B 2009/2446 . . . . . with means to control the tension of the band
- F27B 2009/2484 . . . . the conveyer being a helical device
- F27B 2009/2492 . . . . the conveyer being constituted by series of little rams or ratchets, moving the charge along
  
- F27B 2009/26 . . . on or in trucks, sleds, or containers
- F27B 2009/262 . . . . {[on or in trucks](#) }
- F27B 2009/264 . . . . . the truck carrying a partition
- F27B 2009/266 . . . . . the truck having conducts for guiding the oven atmosphere
- F27B 2009/268 . . . . . through the structure of the car and through the charge
  
- F27B 2009/30 . Details, accessories, or equipment peculiar to furnaces of these types
- F27B 2009/3005 . . {[arrangements for circulating gases](#) }
- F27B 2009/3011 . . . {[arrangements for circulating gases transversally](#) }
- F27B 2009/3016 . . . . with arrangements to circulate gases through the charge
- F27B 2009/3022 . . . . with arrangements to maintain oxidising reducing or neutral zones
- F27B 2009/3027 . . . Use of registers, partitions
- F27B 2009/3033 . . . Fumes circulating in the same direction as the charge
- F27B 2009/3038 . . . Fumes or gases alternatively changing their longitudinal direction
- F27B 2009/305 . . Particular conformation of the furnace
- F27B 2009/3055 . . . Non-uniform section through the length of the furnace
- F27B 2009/3061 . . . Furnaces with longitudinal grooves
- F27B 2009/3066 . . Cooling the under-structure of the kiln, e.g. under the cars
- F27B 2009/3072 . . Balancing the pressure between the upper part and the lower part of the kiln, above and under the track
  
- F27B 2009/3083 . . Arrangements to handle skid marks
- F27B 2009/3088 . . Drying arrangements
- F27B 2009/3094 . . Means to store a part of the charge in the furnace
- F27B 2009/36 . . Arrangements of heating devices
- F27B 2009/3607 . . . Heaters located above the track of the charge
- F27B 2009/3615 . . . . Burner in the ceiling directed vertically downwards
- F27B 2009/3623 . . . Heaters located under the track
- F27B 2009/363 . . . . Burners in the hearth directed towards the ceiling
- F27B 2009/3638 . . . Heaters located above and under the track

F27B 2009/3646	...	Heating the ceiling or the walls for a reverberatory effect
F27B 2009/3653	...	Preheated fuel
F27B 2009/3661	....	preheated with the exhaust gases
F27B 2009/3669	....	preheated with the gases of the cooling zone
F27B 2009/3676	....	preheated with the gases of the preheating zone
F27B 2009/3684	...	Combustion within a combustion chamber with outlets in the kiln chamber
F27B 2009/3692	...	The charge containing combustible materials
F27B 2009/38	..	Arrangements of devices for charging
F27B 2009/382	...	Charging
F27B 2009/384	...	Discharging
F27B 2009/386	...	Lateral intake or outtake
F27B 2009/388	....	Centrally in the lateral wall

## **F27B 2014/00      Crucible or pot furnace**

F27B 2014/002	.	Smelting process, e.g. sequences to melt a specific material
F27B 2014/004	..	Process involving a smelting step, e.g. vaporisation
F27B 2014/006	..	involving a salt bath or help metal bath
F27B 2014/008	.	Continuous casting
F27B 2014/04	.	adapted for treating the charge in vacuum or special atmosphere
F27B 2014/045	..	Vacuum
F27B 2014/06	.	heated electrically, e.g. induction crucible furnaces with or without any other source of heat ( <a href="#">F27B 14/04 takes precedence</a> )
F27B 2014/061	..	{ <a href="#">Induction furnaces</a> }
F27B 2014/066	...	Construction of the induction furnace
F27B 2014/068	..	with the use of an electrode producing a current in the melt
F27B 2014/08	.	Details peculiar to crucible or pot furnaces
F27B 2014/0806	..	{ <a href="#">Charging or discharging devices</a> }
F27B 2014/0812	...	Continuously charging
F27B 2014/0818	...	Discharging
F27B 2014/0825	..	Crucible or pot support
F27B 2014/0831	...	Support or means for the transport of crucibles
F27B 2014/0837	..	Cooling arrangements
F27B 2014/0843	..	Lining or casing
F27B 2014/085	..	Preheating of the charge
F27B 2014/0856	...	Preheating of the crucible
F27B 2014/0862	..	Flux guides
F27B 2014/0868	..	Magnetic shields
F27B 2014/0875	..	Two zones or chambers, e.g. one used for charging
F27B 2014/0881	..	Two or more crucibles

- F27B 2014/0887 . . Movement of the melt
- F27B 2014/0893 . . Heat-conductive material disposed on the surface of the melt
- F27B 2014/10 . . Crucibles
- F27B 2014/102 . . . Form of the crucibles
- F27B 2014/104 . . . Crucible linings
- F27B 2014/106 . . . Ladles
- F27B 2014/108 . . . Cold crucibles ([transparent to electromagnetic radiations](#))
- F27B 2014/14 . . Arrangements of heating devices
- F27B 2014/146 . . . Recuperation of lost heat, e.g. regenerators
  
- F27B 2017/00** **Furnaces of a kind not covered by any preceding group** ([structural combinations of furnaces F27B 19/02](#))
  
- F27B 2017/0016 . {Chamber type furnaces }
- F27B 2017/0091 . . Series of chambers, e.g. associated in their use