Apparatus or methods for producing mixtures

(controlling the mixing apparatus and supplying the

ingredients B28C 7/00 {; separating cement from

of cement with other substances, e.g. slurries,

mortars, porous or fibrous compositions

waste concrete B03B 9/063})

CPC COOPERATIVE PATENT CLASSIFICATION

PERFORMING OPERATIONS; TRANSPORTING В

(NOTES omitted)

SHAPING

B28 WORKING CEMENT, CLAY, OR STONE

PREPARING CLAY; PRODUCING MIXTURES CONTAINING CLAY OR **B28C** CEMENTITIOUS MATERIAL, e.g. PLASTER (preparing material for foundry moulds B22C 5/00)

NOTE

In this subclass, the following terms or expressions are used with the meanings indicated:

- "cement" or "mixtures of cement with other substance" includes plaster;
- "clay" includes like ceramic compositions.

comminuting in general **B02C**; chemical features

• • • for homogenising, e.g. by mixing, kneading {;

• • • {by forcing the clay through screens or slots,

in eliminating iron or lime C04B)

e.g. using screw or rolls}

forcing through slots}

. . . for comminuting {clay lumps}

1/16

1/18

1/182

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the

1/00	Apparatus or methods for obtaining or processing clay (filtration in general <u>B01D</u> ; separation of solids	1/185 {on cylindrical or conical surfaces, e.g. on rotating drums}	
	from solids <u>B03</u> , <u>B07</u> ; chemical part <u>C04B</u> ; by mining or quarrying <u>E21C 41/16</u> , <u>E21C 41/26</u> , <u>E21C 47/10</u>)	1/187 {using co-operating rotating elements, e.g. cutters}	
1/003	• {Plant; Methods}	1/20 for separating undesired admixed bodies {, e.g.	
1/006	• • {Methods}	stones}	
1/02	 for producing or processing clay suspensions {, e.g. slip}(producing or processing suspensions in 	1/203 {by forcing the clay through screens or slots, e.g. having exchangeable screens or slots}	
	general <u>B01</u>)	1/206 • • • • • {on cylindrical or conical surfaces, e.g. on	
1/04	• • Producing suspensions, e.g. by blunging {or	rotating drums}	
	mixing; with means for removing stones}	1/22 combined with means for conditioning by	
1/06	• • Processing suspensions {, i.e. after mixing}	heating, humidifying, or vacuum treatment	
1/08	• • • Separating suspensions, e.g. for obtaining clay, for removing stones; {Cleaning clay slurries}	<pre>{, by cooling, by sub-atmospheric pressure treatment}</pre>	
1/082	• • • • {Dewatering (<u>B28C 1/088</u> takes precedence);	1/222 {by moistening, e.g. by steam}	
	Using sieves}	1/225 {by degassing, de-aerating}	
1/084	• • • {De-aerating}	1/227 • • • • {by heating, drying}	
1/086	{Washing}		
1/088	• • • {by centrifugal force}	Mixing clay or cement with other material (general arrangement or layout of plant <u>B28C 9/00</u> ; mixers in general <u>B01F</u> ; concrete paving mixers combined with distributing devices <u>E01C 19/00</u> ; machines for preparing mixtures of road-metal with bitumen <u>E01C 19/10</u>)	
1/10	• for processing clay-containing substances in non-fluid condition (clay slurries $\underline{B28C\ 1/02}$){; Plants}		
1/12	 Storing and conditioning in storage; Specially 	preparing infixtures of Toad-Inetal with oftumen <u>EoTC 15/10</u>)	
	adapted storage spaces or devices for their filling	<u>NOTE</u>	
	or emptying; {Tower structures for the storage of clay}(feeding clay to shaping apparatus B28B 13/00)	In groups <u>B28C 3/00</u> - <u>B28C 7/00</u> , the following term is used with the meaning indicated: • "mixing" includes preliminary mixing, e.g. of some of the	
1/14	 specially adapted for homogenising, comminuting or conditioning clay in non-fluid condition or for separating undesired admixtures therefrom 	ingredients final mixing, and agitating the mixture to prevent segregation thereof	
	(processes involving conversion to a slurry	3/00 Apparatus or methods for mixing clay with other	
	B28C 1/02; conditioning in storage B28C 1/12;	substances (producing clay suspensions <u>B28C 1/02</u>)	

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5/00

5/003	• {Methods for mixing (<u>B28C 5/386</u> , <u>B28C 5/402</u>	5/1238 { for materials flowing continuously through
	take precedence)}	the mixing device and with incorporated
5/006	• • {involving mechanical aspects}	feeding or discharging devices (feeding or
5/02	 without using driven mechanical means effecting 	discharging devices per se B28C 5/0818)}
	the mixing (B28C 5/48 takes precedence)	5/1246 {with feeding devices (<u>B28C 5/1276</u> ,
5/023	• • {using a flexible mat or bag}	<u>B28C 5/1292</u> take precedence)}
5/026	• • {Mixing guns or nozzles; Injector mixers	5/1253 { with discharging devices (<u>B28C 5/1276</u> , <u>B28C 5/1292</u> take precedence)}
	(applying plaster by gas pressure <u>E04F 21/12</u> ;	
	both conveying and distributing concrete E04G 21/04; conveying concrete B65G 53/32;	5/1261 {Applying pressure for discharging (applying pressure during mixing
	accelerating or decelerating material flow in	$\frac{\text{B28C 5/462}}{\text{B28C 5/462}}$
	troughs or tubes <u>B65G 53/58</u>)}	5/1269 {for making cellular concrete (in general
5/04	Gravitational mixing; Mixing by intermingling	B28C 5/381)}
	streams of ingredients ({B28C 5/026 takes	5/1276 {with consecutive separate containers with
	precedence } ; ingredients projected by fluid	rotating stirring and feeding or discharging
	pressure <u>B28C 5/06</u>)	means}
5/06	• • the mixing being effected by the action of a fluid	5/1284 {having a feeding hopper and
	(in combination with driven mechanical means,	consecutive vertical or inclined mixing
	producing cellular concrete <u>B28C 5/38</u>)	container fed at its upper part}
5/08	• using driven mechanical means affecting the	5/1292 {with rotating stirring and feeding or
	mixing (B28C 5/40, B28C 5/42, B28C 5/48 take precedence; in combination with the action of a	discharging means fixed on the same axis, e.g. in an inclined container fed at its
	fluid B28C 5/38)	lower part}
5/0806	• • {Details; Accessories}	5/14 the stirrers having motion about a horizontal
5/0812	• • {Drum mixer cover, e.g. lid}	or substantially horizontal axis {(with
5/0818	• • • (Charging or discharging gates or chutes;	feeding or discharging means <u>B28C 5/12</u>)}
	Sealing means}	5/141 { with container tiltable or elevatable for
5/0825	{Drum insulating means}	emptying}
5/0831	• • • {Drives or drive systems, e.g. toothed racks,	5/142 {the stirrer shaft carrying screw-blades}
	winches (<u>B28C 7/0876</u> takes precedence)}	5/143 (for materials flowing continuously
5/0837	{Drives for mixers of the tilted-drum type	through the mixing device} 5/145 { with several mixing chambers arranged
E/09.42	(<u>B28C 5/085</u> takes precedence)}	one after the other
5/0843	• • • {Drives for drums rotating about a horizontal axis and supported by rotating rollers	5/146 { with several stirrers with parallel shafts
	(B28C 5/085 takes precedence)	in one container (B28C 5/145 takes
5/085	• • • • {Hydraulic drives}	precedence)}
5/0856	• • • (Supporting frames or structures, e.g.	5/147 {the material being moved
	supporting wheels}	perpendicularly to the axis of the shafts}
5/0862	{Adaptations of mixing containers therefor, e.g.	5/148 {the stirrer shaft carrying a plurality of
	use of material, coatings}	radially extending mixing bars}
5/0868	• • {Mixing apparatus in which a mixing container is	5/16 the stirrers having motion about a vertical or steeply inclined axis {(with feeding or
	hoisted along an inclined or vertical track during	discharging means <u>B28C 5/12</u>)}
E/0075	mixing to discharge at a higher level}	5/161 {in containers tiltable for emptying in
5/0875	 {Mixing in separate stages involving different containers for each stage} 	containers with inclined axes}
5/0881	• • {having a stator-rotor system with intermeshing	5/163 {in annularly-shaped containers}
3/0001	teeth or cages}	5/165 {with stirrers having planetary motion}
5/0887	• • {provided with sieves or filters}	5/166 {Pan-type mixers}
5/0893	• • {Mobile mixing devices, e.g. hanging}	5/168 { with stirrers having planetary motion}
5/10	Mixing in containers not actuated to effect the	5/18 . Mixing in containers to which motion is imparted
	mixing	to effect the mixing
5/12	with stirrers sweeping through the materials $\{$,	5/1806 {rotating about an inclined axis (about a steeply
	e.g. with incorporated feeding or discharging	inclined axis <u>B28C 5/26</u>)}
	means or with oscillating stirrers}	5/1812 { with rotating mixing tools}
5/1207	• • • { with means for elevating the stirrer, e.g. out	5/1818 {Mobile or portable devices, e.g. on
5/1215	of the containers} {Independent stirrer-drive units, e.g. portable	a wheelbarrow (<u>B28C 5/1887</u> takes precedence)}
5/1215	or mounted on a wheelbarrow}	5/1825 {Mixers of the tilted-drum type, e.g. mixers
5/1223	{discontinuously operating mixing devices,	pivotable about an axis perpendicular to the
	e.g. with consecutive containers}	axis of rotation for emptying}
5/123	• • • • { with pressure or suction means for	5/1831 {to be mounted on a tractor}
	discharging}	5/1837 {provided with feeding means, e.g.
		hoisting skips (<u>B28C 5/1831</u> , <u>B28C 5/185</u> ,
		<u>B28C 5/1856</u> take precedence)}

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5/1843	• • • {having several drums}	5/36	• • • Endless-belt mixers {, i.e. for mixing while
5/185	• • • {having driven stirrers, e.g. driven from		transporting the material on an endless belt, e.g.
	underneath}		with stationary mixing elements}
5/1856	{Details or parts, e.g. drums (drives	5/365	• • • • {Mixing with driven mixing elements while
3/1030		3/303	transporting the mixture on an endless belt}
	<u>B28C 5/0831</u>)}	_,	
5/1862	• • • • {Construction of drum, e.g. provided with	5/38	 wherein the mixing is effected both by the action
	mixing blades}		of a fluid and by directly-acting driven mechanical
5/1868	{ with mixing elements held stationary}		means, e.g. stirring means {; Producing cellular
5/1875	{Tilting means; Locks or brakes therefor}		concrete}
	The state of the s	5/381	• • {Producing cellular concrete (B28C 5/1269)
5/1881	• • • { the mixing drums being tilted otherwise	3/301	takes precedence; producing foam <u>B01F 23/235</u> ,
	than about a fixed axis perpendicular to the		
	axis of rotation of the drum, e.g. by means of		<u>B01F 23/291</u>)}
	a set of links}	5/383	• • {comprising stirrers to effect the mixing}
5/1887	{Mobile or portable devices, e.g. for use by	5/385	• • • {Stirrers specially adapted therefor}
	do-it-yourself enthousiasts}	5/386	• • {Plants; Systems; Methods}
5/1902		5/388	•
5/1893	• • • {the mixing drum being rotated by pulling it		{Methods}
	over the ground; the mixing drum or the stirrer	5/40	 Mixing specially adapted for preparing mixtures
	being driven by movement of the wheel of a		containing fibres
	vehicle}	5/402	• • {Methods}
5/20	rotating about a horizontal or substantially	5/404	• • {Pre-treatment of fibres}
	horizontal axis during mixing, e.g. without	5/406	• • • {and mixing with binding material}
	independent stirrers		
<i>5</i> /2000	•	5/408	• • {by spraying fibres and binding material}
5/2009	• • • { with multi-compartment drums }	5/42	 Apparatus specially adapted for being mounted
5/2018	• • • • {Transportable containers, e.g. on a		on vehicles with provision for mixing during
	wheelbarrow, to be fixed totally or partly in a		transport ({B28C 5/1893 takes precedence; mounted
	mixer, e.g. for rotation therewith}		on a wheelbarrow <u>B28C 5/1215</u> , <u>B28C 5/1818</u> ,
5/2027	{using spiral-shaped mixing drums}		B28C 5/2018; } vehicle aspect B60P 3/16)
		5/4000	
5/2036	• • • • { with the material travelling through the	5/4203	• • {Details; Accessories}
	mixer, the discharge being opposite the feed	5/4206	• • • {Control apparatus; Drive systems, e.g. coupled
	inlet (<u>B28C 5/2072</u> , <u>B28C 5/22</u> , <u>B28C 5/24</u>		to the vehicle drive-system}
	take precedence)}	5/421	• • • {Drives (in general <u>B28C 5/0831</u>)}
5/2045	• • • {Parts or components (drives <u>B28C 5/0831</u>)}	5/4213	{Hydraulic drives (B28C 5/4217 takes
5/2054	{Drums, e.g. provided with non-rotary	3/4213	
3/2034	mixing blades (B28C 5/2009 takes		precedence)}
		5/4217	• • • • {Drives in combination with drum
	precedence)}		mountings; Drives directly coupled to the
5/2063	• • • • • {Drums consisting of axially		axis of rotating drums}
	displaceable halves; Drums having	5/422	• • • {Controlling or measuring devices
	discharging opening on their cylindrical		(<u>B28C 5/4227</u> takes precedence)}
	part, e.g. the drum rotating in opposite	5/4224	• • • • • {Roll-over prevention}
	direction for mixing or for discharging;		
	Drums having a cylindrical part not	5/4227	• • • • {Transmission control mechanisms}
	being a surface of revolution}	5/4231	• • • {Proportioning or supplying water (in general
<i>5</i> /2072	· · · · · · · · · · · · · · · · · · ·		<u>B28C 7/12</u>)}
5/2072	• • • • {Feeding or discharging mechanisms}	5/4234	• • • {Charge or discharge systems therefor}
5/2081	• • • • • {Chutes pivotable about an axis parllel	5/4237	• • • {Charging, e.g. hoppers}
	to the plane of the inlet or outlet		
	opening}	5/4241	• • • • {having self-charging means, e.g. skips,
5/209	{Chutes rotatable about an axis parllel to		scoops or buckets, picking up the material
	the drum axis}		from the ground}
<i>5 /</i> 22	•	5/4244	{Discharging; Concrete conveyor means,
5/22	• • • with stirrers held stationary {, e.g. the		chutes or spouts therefor (in general
	material forming a ring zone by centrifugal		B28C 7/168)}
	force}	5/10/10	• • • • {using chutes (combined with transporting
5/24	with driven stirrers	5/4248	
5/26	rotating about a vertical or steeply inclined		belts <u>B28C 5/4255</u> , combined with pumps
	axis during the mixing {, e.g. comprising a flat		or screws <u>B28C 5/4258</u>)}
	bottomplate rotating about a vertical axis, co-	5/4251	• • • • { telescopic or foldable chutes }
		5/4255	• • • • {using transporting belts, e.g. mounted on
	operating with blades or stirrers}		a foldable frame}
5/28	without independent stirrers	5/1050	•
5/30	with stirrers held stationary	5/4258	• • • • {using pumps or transporting screws}
5/32	with driven stirrers	5/4262	• • • {Closures; Sealing mechanisms (<u>B28C 5/4237</u>
5/325	• • • • {with several stirrer shafts}		takes precedence)}
		5/4265	• • • {Mounting means for drums; Support frames}
5/34	• Mixing on or by conveyors {, e.g. by belts or	5/4268	• • • {Drums, e.g. provided with non-rotary mixing
	chains provided with mixing elements}	2200	blades (drums for concrete mixers with
			horizontal axis <u>B28C 5/2054</u>)}
			110112011ta1 ax15 <u>D20C J/20J4</u>)]

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7/02

. Controlling the operation of the mixing

5/4272	• • {with rotating drum rotating about a horizontal or inclined axis, e.g. comprising tilting or raising means for the drum (B28C 5/4279 takes	7/022	 {by measuring the consistency or composition of the mixture, e.g. with supply of a missing component}
	precedence)}	7/024	• • • {by measuring properties of the mixture, e.g.
5/4275	 • { with a drum rotating about a horizontal axis, e.g. perpendicular to the longitudinal axis of the vehicle} 	7/026	moisture, electrical resistivity, density}• {by measuring data of the driving system, e.g. rotational speed, torque, consumed power}
5/4279	 • {with rotating drum and independently-rotating mixing tools} 	7/028	{by counting the number of revolutions performed, or by measuring the mixing time}
5/4282	{with moving mixing tools in a stationary container}	7/04	• Supplying or proportioning the ingredients {(B28C 7/022 takes precedence; forming a
5/4286	• • { with mixing screw-blades }		predetermined ratio of the components to be mixed,
5/4289	• • • {with stirrers rotating about a vertical axis}		in general <u>B01F 35/80</u>)}
5/4293	• • { with reciprocating or oscillating stirrers}	7/0404	• • {Proportioning}
5/4296	• • {mounted on a tractor or on a tractor wheel (for tilted-drum type mixers <u>B28C 5/1831</u> ; charging	7/0409	• • { taking regard of the moisture content of the solid ingredients; Moisture indicators}
5/11	thereof <u>B28C 5/4237</u>)}	7/0413	• • • {two or more flows in predetermined ratio}
5/44	Apparatus specially adapted for drive by muscle power	7/0418	• • {control systems therefor}
5/46	. Arrangements for applying super- or sub-	7/0422	• • {Weighing predetermined amounts of ingredients, e.g. for consecutive delivery}
	atmospheric pressure during mixing; Arrangements for cooling or heating during mixing {, e.g. by	7/0427	 • {using a charging-skip, to be hoisted or tilted, provided with weight-indicating means}
	introducing vapour}	7/0431	• • {using a weighing belt or the like}
5/462	• • {Mixing at sub- or super-atmospheric pressure (B28C 5/1261 takes precedence)}	7/0436	• • {Weighing means specially adapted for use in batching plants}
5/464	• • • {at sub-atmospheric pressure}	7/044	• • • {Weighing mechanisms specially adapted
5/466	• • {Heating, e.g. using steam}		therefor; Weighing containers (other containers
5/468	• • {Cooling, e.g. using ice}		B28C 7/0046)}
5/48	• wherein the mixing is effected by vibrations (mixers with vibrating mechanisms in general <u>B01F 31/00</u>)	7/0445	• • • {using a weighing receptacle, the feeding thereof being automatically suspended after
5/485	• • {with reciprocating or oscillating stirrers; Stirrers therefor (B28C 5/4293 takes precedence)}		a predetermined weight has been obtained (B28C 7/045 takes precedence)}
7/00	Controlling the operation of apparatus for producing mixtures of clay or cement with other substances; Supplying or proportioning the	7/045	 • • {using a weighing receptacle movable between several positions, e.g. moving vertically, horizontally or rotating about an axis (B28C 7/0427 takes precedence)}
	ingredients for mixing clay or cement with other	7/0454	• • {Volumetric measuring devices, e.g. for
	substances; Discharging the mixture {(<u>B28C 5/42</u>		consecutively delivering predetermined volumes
	takes precedence; feeding material in general <u>B65G</u> ;		of ingredients}
	proportioning in general <u>G01F</u> , <u>G01G</u> ; controlling in general <u>G05</u>)}	7/0459	• • { the ingredients being first supplied into measuring chambers, e.g. containers or skips }
7/0007	• {Pretreatment of the ingredients, e.g. by heating, sorting, grading, drying, disintegrating; Preventing	7/0463	• • • { Measuring chambers or containers therefor (other containers <u>B28C 7/0046</u>)}
7/0015	generation of dust}• {Tagging of the ingredients, e.g. by using	7/0468	• • • { the measuring chambers being provided on
	ingredient identification means like RFID or labels}	7/0472	a rotating drum} {for continuous feeding, e.g. by controlling the
7/0023	 ingredient identification means like RFID or labels} • {by heating or cooling (during mixing B28C 5/46)} 	7/0472	a rotating drum} • • {for continuous feeding, e.g. by controlling the velocity of a transporting belt or the thickness of the ingredients on the belt or by regulating
7/003	 ingredient identification means like RFID or labels} • {by heating or cooling (during mixing B28C 5/46)} • • {Heating, e.g. using steam} 	7/0472	a rotating drum} • • {for continuous feeding, e.g. by controlling the velocity of a transporting belt or the thickness of the ingredients on the belt or by regulating the outlet of a hopper (B28C 7/0477 takes)
	 ingredient identification means like RFID or labels} • {by heating or cooling (during mixing B28C 5/46)} 		a rotating drum} • • • {for continuous feeding, e.g. by controlling the velocity of a transporting belt or the thickness of the ingredients on the belt or by regulating the outlet of a hopper (B28C 7/0477 takes precedence)}
7/003	 ingredient identification means like RFID or labels} • {by heating or cooling (during mixing B28C 5/46)} • • {Heating, e.g. using steam} 	7/0472 7/0477 7/0481	a rotating drum} • • {for continuous feeding, e.g. by controlling the velocity of a transporting belt or the thickness of the ingredients on the belt or by regulating the outlet of a hopper (B28C 7/0477 takes precedence)} • • {by using conveyor screws} • {Plant for proportioning, supplying or batching
7/003 7/0038	 ingredient identification means like RFID or labels} • {by heating or cooling (during mixing B28C 5/46)} • • {Heating, e.g. using steam} • • {Cooling, e.g. using ice} • {Storage or weighing apparatus for supplying ingredients (B28C 7/04 takes precedence)} • {Storage containers, e.g. hoppers, silos, bins 	7/0477 7/0481	 a rotating drum} • • {for continuous feeding, e.g. by controlling the velocity of a transporting belt or the thickness of the ingredients on the belt or by regulating the outlet of a hopper (B28C 7/0477 takes precedence)} • • {by using conveyor screws} • {Plant for proportioning, supplying or batching (B28C 7/0436, B28C 7/0811 take precedence; plant in general B28C 9/00)}
7/003 7/0038 7/0046	 ingredient identification means like RFID or labels} • {by heating or cooling (during mixing B28C 5/46)} • • {Heating, e.g. using steam} • • {Cooling, e.g. using ice} • {Storage or weighing apparatus for supplying ingredients (B28C 7/04 takes precedence)} • {Storage containers, e.g. hoppers, silos, bins (B28C 7/0084 takes precedence)} 	7/0477 7/0481 7/0486	 a rotating drum} • • {for continuous feeding, e.g. by controlling the velocity of a transporting belt or the thickness of the ingredients on the belt or by regulating the outlet of a hopper (B28C 7/0477 takes precedence)} • • {by using conveyor screws} • {Plant for proportioning, supplying or batching (B28C 7/0436, B28C 7/0811 take precedence; plant in general B28C 9/00)} • {the plant being mobile}
7/003 7/0038 7/0046 7/0053 7/0061	 ingredient identification means like RFID or labels} • {by heating or cooling (during mixing B28C 5/46)} • • {Heating, e.g. using steam} • • {Cooling, e.g. using ice} • {Storage or weighing apparatus for supplying ingredients (B28C 7/04 takes precedence)} • {Storage containers, e.g. hoppers, silos, bins (B28C 7/0084 takes precedence)} • {Storage container plant} 	7/0477 7/0481 7/0486 7/049	a rotating drum} • • • {for continuous feeding, e.g. by controlling the velocity of a transporting belt or the thickness of the ingredients on the belt or by regulating the outlet of a hopper (B28C 7/0477 takes precedence)} • • {by using conveyor screws} • • {Plant for proportioning, supplying or batching (B28C 7/0436, B28C 7/0811 take precedence; plant in general B28C 9/00)} • • • {the plant being mobile} • • • {and broken-down for transport}
7/003 7/0038 7/0046 7/0053	 ingredient identification means like RFID or labels} • {by heating or cooling (during mixing B28C 5/46)} • • {Heating, e.g. using steam} • • {Cooling, e.g. using ice} • {Storage or weighing apparatus for supplying ingredients (B28C 7/04 takes precedence)} • {Storage containers, e.g. hoppers, silos, bins (B28C 7/0084 takes precedence)} 	7/0477 7/0481 7/0486	a rotating drum} • • {for continuous feeding, e.g. by controlling the velocity of a transporting belt or the thickness of the ingredients on the belt or by regulating the outlet of a hopper (B28C 7/0477 takes precedence)} • • {by using conveyor screws} • {Plant for proportioning, supplying or batching (B28C 7/0436, B28C 7/0811 take precedence; plant in general B28C 9/00)} • • {the plant being mobile} • • • {and broken-down for transport} • • • {with a frame carrying the supplying, proportioning or batching elements,
7/003 7/0038 7/0046 7/0053 7/0061 7/0069	 ingredient identification means like RFID or labels} • {by heating or cooling (during mixing B28C 5/46)} • • {Heating, e.g. using steam} • • {Cooling, e.g. using ice} • {Storage or weighing apparatus for supplying ingredients (B28C 7/04 takes precedence)} • {Storage containers, e.g. hoppers, silos, bins (B28C 7/0084 takes precedence)} • • {Storage container plant} • • {Storage container plant} • • {Parts or details thereof, e.g. opening, closing or unloading means} • {Storage containers or silos mounted on, or 	7/0477 7/0481 7/0486 7/049 7/0495	a rotating drum} • • • {for continuous feeding, e.g. by controlling the velocity of a transporting belt or the thickness of the ingredients on the belt or by regulating the outlet of a hopper (B28C 7/0477 takes precedence)} • • {by using conveyor screws} • {Plant for proportioning, supplying or batching (B28C 7/0436, B28C 7/0811 take precedence; plant in general B28C 9/00)} • • {the plant being mobile} • • • {and broken-down for transport} • • • • {with a frame carrying the supplying, proportioning or batching elements, movable between a horizontal transport position and an inclined working position}
7/003 7/0038 7/0046 7/0053 7/0061 7/0069 7/0076	 ingredient identification means like RFID or labels} • {by heating or cooling (during mixing B28C 5/46)} • • {Heating, e.g. using steam} • • {Cooling, e.g. using ice} • {Storage or weighing apparatus for supplying ingredients (B28C 7/04 takes precedence)} • {Storage containers, e.g. hoppers, silos, bins (B28C 7/0084 takes precedence)} • • {Storage container plant} • • {Storage compartments} • • {Parts or details thereof, e.g. opening, closing or unloading means} 	7/0477 7/0481 7/0486 7/049	a rotating drum} • • {for continuous feeding, e.g. by controlling the velocity of a transporting belt or the thickness of the ingredients on the belt or by regulating the outlet of a hopper (B28C 7/0477 takes precedence)} • • {by using conveyor screws} • {Plant for proportioning, supplying or batching (B28C 7/0436, B28C 7/0811 take precedence; plant in general B28C 9/00)} • • {the plant being mobile} • • • {and broken-down for transport} • • • • {with a frame carrying the supplying, proportioning or batching elements, movable between a horizontal transport position and an inclined working position} • • • Supplying the solid ingredients, e.g. by means of
7/003 7/0038 7/0046 7/0053 7/0061 7/0069 7/0076	 ingredient identification means like RFID or labels} • {by heating or cooling (during mixing B28C 5/46)} • • {Heating, e.g. using steam} • • {Cooling, e.g. using ice} • {Storage or weighing apparatus for supplying ingredients (B28C 7/04 takes precedence)} • {Storage containers, e.g. hoppers, silos, bins (B28C 7/0084 takes precedence)} • • {Storage container plant} • • {Storage container plant} • • {Parts or details thereof, e.g. opening, closing or unloading means} • {Storage containers or silos mounted on, or specially adapted for transport by, vehicles; 	7/0477 7/0481 7/0486 7/049 7/0495	a rotating drum} • • • {for continuous feeding, e.g. by controlling the velocity of a transporting belt or the thickness of the ingredients on the belt or by regulating the outlet of a hopper (B28C 7/0477 takes precedence)} • • {by using conveyor screws} • {Plant for proportioning, supplying or batching (B28C 7/0436, B28C 7/0811 take precedence; plant in general B28C 9/00)} • • {the plant being mobile} • • • {and broken-down for transport} • • • • {with a frame carrying the supplying, proportioning or batching elements, movable between a horizontal transport position and an inclined working position}

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7/061	{from stationary storage means having	7/165	{using a fluid, e.g. gas (<u>B28C 5/06</u> ,
	elements for dividing the ground sectorially (B28C 7/0811 takes precedence)}	7/166	B28C 5/1261 take precedence)} {comprising a lock rotor with pockets for
7/062	• • { with a pneumatic or hydraulic conveyor}	7/100	feeding determined quantities of material
7/064	{Supply from sacks; Sack openers}		from a hopper into the driving fluid}
7/065	• • {supply from stacks, stack openers} • • • {with a pivotable charging-bin (B28C 7/068)}	7/167	• • {by means of a screw conveyor}
	takes precedence)}	7/168	{Discharging chutes for concrete mixers}
7/067	• • • {by means of stationary hoppers, chambers	9/00	General arrangement or layout of plant
	or bins from which the material is fed	5700	{(<u>B28C 7/0061</u> , <u>B28C 7/0481</u> take precedence)}
	gravitationally, e.g. having agitating means	9/002	• {Mixing systems, i.e. flow charts or diagrams;
	therein (hoppers or bins per se B28C 7/0053)}	37002	Making slurries; Involving methodical aspects;
7/068	• • • {having means to elevate or hoist a charging-bin or container}		Involving pretreatment of ingredients; Involving packaging}
7/08	• • • by means of scrapers or skips	9/004	• • {Making slurries, e.g. with discharging means for
7/0805	• • • {by means of a barrow or the like}	2/004	injecting in a well or projecting against a wall}
7/0811	• • • { from stationary storage means having	9/006	• {comprising a multicompartment silo with the
	elements for dividing the ground sectorially}	9/000	mixing device, e.g. a mixing screw, fitted directly
7/0817	• • • { on an endless chain }		at the underside of the silo, e.g. with proportioning
7/0823	• • • { using manually-operated cable-pulled drag		means at the exit of the silo}
	shovels (<u>B28C 7/0841</u> takes precedence)}	9/008	• {Plant adapted for mixing materials lying on
7/0829	• • • • { using reciprocating cable-suspended drag	2/000	the ground, e.g. in sectors (B28C 9/0436 takes
	shovels}		precedence)}
7/0835	• • • {using skips to be hoisted along guides or	9/02	• for producing mixtures of clay or cement with other
	to be tilted, to charge working-site concrete	9/02	materials
	mixers (proportioning by means of a skip	9/04	• the plant being mobile, {e.g. mounted on a carriage
	B28C 7/0427, B28C 7/0459)}	9/04	or a set of carriages (B28C 5/42, {B28C 9/004,
7/0841	• • • • {having mechanisms to fill the skip in its		<u>B28C 9/006</u> } take precedence)
	lowest position, e.g. by drag shovels, from	9/0409	• • {and broken-down for transport (B28C 9/0445)
	a hopper}	2/0402	takes precedence)}
7/0847	{the skips being hoisted along vertical or	9/0418	• • • {with a storage silo movable between a
	inclined guides}	2/0410	horizontal transport position and a vertical
7/0852	{ and being tilted in their upmost		working position}
	position for discharging them at their	9/0427	• • • {with a frame carrying the supplying and
	upper side}	2/0427	mixing elements movable between a horizontal
7/0858	• • • • { the skips being tilted (<u>B28C 7/0852</u> takes		transport position and an inclined working
	precedence)}		position}
7/0864	• • • • {about a fixed axis}	9/0436	• • {Plant adapted for mixing material lying in
7/087	• • • • {Parts; Accessories, e.g. safety devices}		sectors on the ground}
7/0876	• • • • • {Drives therefor, e.g. winches, hydraulic	9/0445	• • { and broken-down for transport }
	drives}	9/0454	• • {Self-contained units, i.e. mobile plants
7/0882	{Skips}		having storage containers for the ingredients
7/0888	• • • • • {Vibration devices, e.g. for facilitating		(<u>B28C 9/0472</u> , <u>B28C 9/0481</u> take precedence)}
	the emptying of the skips}	9/0463	• • { with a mixing discharge trough with a free
7/0894	• • • {Parts, e.g. winches}		end, e.g. provided with a mixing screw or
7/10	• • by means of rotary members {, e.g. inclinable		pivotable about a vertical or horizontal axis}
	screws}	9/0472	• • {provided with two or more carriages for storing
7/12	Supplying or proportioning liquid ingredients		the ingredients or for the mixing device, e.g.
7/122	• • • {by means of a measuring chamber, e.g.		transportable on rails}
	container}	9/0481	• • { with means for loading the material from ground
7/124	{for use with a skip}		level to the mixing device, e.g. with an endless
7/126	• • {Supply means, e.g. nozzles}		conveyor or a charging skip (B28C 9/0436 takes
7/128	{Nozzles; Valves; Valve-actuating means}		precedence)}
7/14	Supply means incorporated in, or mounted on,	9/049	• • { with at least a storage compartment for one of
	mixers		the ingredients}
7/16	• Discharge means {, e.g. with intermediate storage of		
n //	fresh concrete}		
7/161	• • {with storage reservoirs for temporarily storing		
	the fresh concrete; Charging or discharging		
n /	devices therefor}		
7/162	• • {by means of conveyors, other than those		
	comprising skips or containers, e.g. endless belts,		
7/1/2	screws, air under pressure}		
7/163	• • {using a pump}		

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