

# CPC COOPERATIVE PATENT CLASSIFICATION

**B02C CRUSHING, PULVERISING, OR DISINTEGRATING IN GENERAL; MILLING GRAIN** ({household tools and machines for pulverising foodstuffs, e.g. coffee and spice mills [A47J 42/00](#); pharmaceutical mortars [A61J 3/02](#); mechanical processing of refuse and garbage [B03B 9/06](#); dressing mould materials by grinding [B22C 5/04](#)}; obtaining metallic powder by crushing, grinding or milling [B22F 9/04](#); {recovery of plastics by disintegrating [B29B 17/00](#); crushing raw materials in starch making [C08B 30/02](#); beaters for papermaking [D21D 1/02](#); crushing devices specially for transport in mines [E21F 13/002](#); slag crushing devices [F23J 1/00](#); fuel milling devices in combustion apparatus [F23K 1/00](#); household devices for crushing coal [F24B 15/02](#); ice disintegrating devices [F25C 5/02](#)})

<b>1/00</b>	<b>Crushing or disintegrating by reciprocating members</b>	4/14	. . . specially adapted for milling paste-like material, e.g. paint, chocolate, colloids
1/005	. {hydraulically or pneumatically operated}	4/16	. . . specially adapted for milling grain
1/02	. Jaw crushers or pulverisers	4/18	. . in the form of a bar
1/025	. . {Jaw clearance or overload control}	4/20	. . . wherein the roller is corrugated or toothed
1/04	. . with single-acting jaws	4/22	. . . specially adapted for milling paste-like material, e.g. paint, chocolate, colloids
1/043	. . . {with cooperating single acting jaws}	4/24	. . . specially adapted for milling grain
1/046	. . . {of the plural stage type}	4/26	. . in the form of a grid or grating
1/06	. . with double-acting jaws	4/28	. Details
1/08	. . with jaws coacting with rotating roller	4/283	. . {Lateral sealing shields}
1/10	. . Shape or construction of jaws	4/286	. . {Feeding devices}
1/12	. Mills with non-rotating spiked members	4/30	. . Shape or construction of rollers
1/14	. Stamping mills	4/305	. . . {Wear resistant rollers}
<b>2/00</b>	<b>Crushing or disintegrating by gyratory or cone crushers {(with non-coaxial discs with intersecting axes <a href="#">B02C 7/005</a>)}</b>	4/32	. . Adjusting, applying pressure to, or controlling the distance between, milling members
2002/002	. {the bowl being a driven element for providing a crushing effect}	4/34	. . . in mills wherein a roller co-operates with a stationary member
2/005	. {Lining}	4/36	. . . in mills specially adapted for paste-like materials
2/007	. {Feeding devices}	4/38	. . . in grain mills
2/02	. eccentrically moved	4/40	. . Detachers, e.g. scrapers
2/04	. . with vertical axis	4/42	. . Driving mechanisms; Roller speed control
2/042	. . . {Moved by an eccentric weight}	4/423	. . . {with vibrating or oscillating mechanisms}
2/045	. . . {and with bowl adjusting or controlling mechanisms ( <a href="#">B02C 2/042</a> , <a href="#">B02C 2/06</a> take precedence)}	4/426	. . . {Torque counterbalancing mechanisms}
2/047	. . . {and with head adjusting or controlling mechanisms ( <a href="#">B02C 2/042</a> , <a href="#">B02C 2/06</a> take precedence)}	4/44	. . Cooling or heating rollers or bars
2/06	. . . and with top bearing {( <a href="#">B02C 2/042</a> takes precedence)}	<b>7/00</b>	<b>Crushing or disintegrating by disc mills (apparatus specially adapted for manufacture or treatment of cocoa or cocoa products exclusively <a href="#">A23G 1/04</a>)</b>
2/08	. . with horizontal axis	7/005	. {Crushers with non-coaxial toothed discs with intersecting axes}
2/10	. concentrically moved; Bell crushers	7/02	. with coaxial discs
<b>4/00</b>	<b>Crushing or disintegrating by roller mills (with milling members in the form of rollers or balls co-operating with rings or discs <a href="#">B02C 15/00</a>; roller mills or roll refiners exclusively for chocolate <a href="#">A23G 1/10</a>, <a href="#">A23G 1/12</a>)</b>	7/04	. . with concentric circles of intermeshing teeth
4/02	. with two or more rollers	7/06	. . with horizontal axis ( <a href="#">B02C 7/04</a> takes precedence)
4/04	. . specially adapted for milling paste-like material, e.g. paint, chocolate, colloids	7/08	. . with vertical axis ( <a href="#">B02C 7/04</a> takes precedence)
4/06	. . specially adapted for milling grain	7/10	. with eccentric discs
4/08	. . with co-operating corrugated or toothed crushing-rollers	7/11	. Details
4/10	. with a roller co-operating with a stationary member	7/12	. . Shape or construction of discs
4/12	. . in the form of a plate	7/13	. . . for grain mills
		7/14	. . Adjusting, applying pressure to, or controlling distance between, discs
		7/16	. . Driving mechanisms
		7/17	. . Cooling or heating of discs
		7/175	. Disc mills specially adapted for paste-like material, e.g. paint, chocolate, colloids

7/18	. Disc mills specially adapted for grain	2013/1857	. . . . {rotating coaxially around the rotor shaft}
7/182	. . {with horizontal axis}	2013/1864	. . . . {rotatable around its own axis}
7/184	. . {with vertical axis}	2013/1871	. . . . {vertically adjustable}
7/186	. . {Adjusting, applying pressure to, or controlling distance between, discs}	2013/1878	. . . . {radially adjustable}
7/188	. . {Driving mechanisms}	2013/1885	. . . . {of dead bed type}
<b>9/00</b>	<b>Other milling methods or mills specially adapted for grain</b>	2013/1892	. . . . {cooled or heated}
9/02	. Cutting or splitting grain	13/20	. with two or more co-operating rotors
9/04	. Systems or sequences of operations; Plant	13/205	. . {arranged concentrically}
<b>11/00</b>	<b>Other auxiliary devices or accessories specially adapted for grain mills</b>	13/22	. with intermeshing pins; {Pin Disk Mills}
11/02	. Breaking up amassed particles, e.g. flakes	13/24	. . arranged around a vertical axis
11/04	. Feeding devices	13/26	. Details
11/06	. Arrangements for preventing fire or explosion (methods for preventing or extinguishing fires, devices therefor <a href="#">A62C</a> )	13/28	. . Shape or construction of beater elements
11/08	. Cooling, heating, ventilating, conditioning with respect to temperature or water content (conditioning grain before milling <a href="#">B02B 1/08</a> ; air-conditioning or ventilating in general <a href="#">F24F</a> )	13/2804	. . . {the beater elements being rigidly connected to the rotor}
<b>13/00</b>	<b>Disintegrating by mills having rotary beater elements; {Hammer mills}</b>	2013/2808	. . . {the beater elements are attached to disks mounted on a shaft}
13/02	. with horizontal rotor shaft (with axial flow <a href="#">B02C 13/10</a> )	2013/2812	. . . {the beater elements are attached to a hollow cylindrical rotor}
13/04	. . with beaters hinged to the rotor; Hammer mills	2013/2816	. . . {of chain, rope or cable type}
13/06	. . with beaters rigidly connected to the rotor	13/282	. . Shape or inner surface of mill-housings
13/08	. . . and acting as a fan	2013/2825	. . . {with fastening means for fixing lining members to the inner surface of mill-housings}
13/09	. . . and throwing the material against an anvil or impact plate {(with vertical axis <a href="#">B02C 13/1807</a> )}	13/284	. . . Built-in screens
13/095	. . . . {with an adjustable anvil or impact plate}	13/286	. . Feeding or discharge
13/10	. with horizontal rotor shaft and axial flow	2013/28609	. . . {Discharge means}
13/12	. . with vortex chamber	2013/28618	. . . {Feeding means}
13/13	. with horizontal rotor shaft and combined with sifting devices, e.g. for making powdered fuel	2013/28627	. . . . {of ram or pusher type}
13/14	. with vertical rotor shaft, e.g. combined with sifting devices	2013/28636	. . . . {of conveyor belt type}
2013/145	. . {with fast rotating vanes generating vortexes effecting material on material impact}	2013/28645	. . . . {of conveyor belt and cooperating roller type}
13/16	. . with beaters hinged to the rotor	2013/28654	. . . . {of screw type}
13/18	. . with beaters rigidly connected to the rotor	2013/28663	. . . . {using rollers}
13/1807	. . . {the material to be crushed being thrown against an anvil or impact plate (with horizontal axis <a href="#">B02C 13/09</a> ; centrifugal acceleration of material through radially extending channels <a href="#">B02C 19/0025</a> ; centrifugal acceleration of material by means of an open top rotor <a href="#">B02C 19/0031</a> )}	2013/28672	. . . . {Feed chute arrangements}
13/1814	. . . . {by means of beater or impeller elements fixed on top of a disc type rotor}	2013/28681	. . . . {Feed distributor plate for vertical mill}
13/1821	. . . . . {the beater or impeller elements being rotatably fixed around their own axis}	2013/2869	. . . {Arrangements of feed and discharge means in relation to each other}
13/1828	. . . . . {with dead bed protected beater or impeller elements}	13/288	. . Ventilating, or influencing air circulation
13/1835	. . . . . {by means of beater or impeller elements fixed in between an upper and lower rotor disc}	2013/29	. . {devices for manipulating beater elements}
13/1842	. . . . . {with dead bed protected beater or impeller elements}	13/30	. . Driving mechanisms
13/185	. . . . . {Construction or shape of anvil or impact plate}	13/31	. . Safety devices or measures
		<b>15/00</b>	<b>Disintegrating by milling members in the form of rollers or balls co-operating with rings or discs {(high-speed drum mills <a href="#">B02C 19/11</a>)}</b>
		15/001	. {Air flow directing means positioned on the periphery of the horizontally rotating milling surface}
		2015/002	. {combined with a classifier}
		15/003	. {Shape or construction of discs or rings}
		15/004	. {Shape or construction of rollers or balls}
		15/005	. . {Rollers or balls of composite construction}
		15/006	. {Ring or disc drive gear arrangement}
		15/007	. {Mills with rollers pressed against a rotary horizontal disc (with pendularly mounted rollers <a href="#">B02C 15/04</a> )}
		2015/008	. {Roller drive arrangements}
		15/02	. Centrifugal pendulum-type mills
		15/04	. Mills with pressed pendularly-mounted rollers, e.g. spring pressed
		15/045	. . {pressed against the interior of a ring rotating in a vertical plane}

15/06	• Mills with rollers forced against the interior of a rotary ring, e.g. under spring action ( <a href="#">B02C 15/04 takes precedence</a> )	17/183	• • {Feeding or discharging devices}
15/08	• Mills with balls or rollers centrifugally forced against the inner surface of a ring, the balls or rollers of which are driven by a centrally arranged member ( <a href="#">B02C 15/02 takes precedence</a> )	17/1835	• • • {Discharging devices combined with sorting or separating of material ( <a href="#">B02C 17/186 takes precedence</a> )}
15/10	• Mills with balls or rollers centrifugally forced against the inner surface of a ring, the balls or rollers of which are driven by other means than a centrally-arranged member	17/184	• • • • {with separator arranged in discharge path of crushing zone}
15/12	• Mills with at least two discs {or rings} and interposed balls or rollers mounted like ball or roller bearings	17/1845	• • • • • {with return of oversize material to crushing zone}
15/123	• • {with rings and interposed rollers}	17/185	• • • • • {with more than one separator}
2015/126	• • {of the plural stage type}	17/1855	• • • • • {with separator defining termination of crushing zone, e.g. screen denying egress of oversize material}
15/14	• Edge runners, e.g. Chile mills	17/186	• • • {Adding fluid, other than for crushing by fluid energy}
2015/143	• • {each runner pivot carrying more than one runner}	17/1865	• • • • {after crushing}
2015/146	• • {Step-shaped runners}	17/187	• • • • • {with recirculation of material to crushing zone}
15/16	• with milling members essentially having different peripheral speeds and in the form of a hollow cylinder or cone and an internal roller or cone	17/1875	• • • • • {passing gas through crushing zone}
<b>17/00</b>	<b>Disintegrating by tumbling mills, i.e. mills having a container charged with the material to be disintegrated with or without special disintegrating members such as pebbles or balls (<a href="#">high-speed drum mills B02C 19/11</a>; {drums for polishing or grinding <a href="#">B24B</a>})</b>	17/188	• • • • • {characterised by point of gas entry or exit or by gas flow path}
17/002	• {with rotary cutting or beating elements}	17/1885	• • • • • {the applied gas acting to effect material separation ( <a href="#">B02C 17/1895 takes precedence</a> )}
17/005	• {the charge being turned over by magnetic forces}	17/189	• • • • • {with return of oversize material to crushing zone ( <a href="#">B02C 17/1895 takes precedence</a> )}
17/007	• {specially adapted for disintegrating refuse}	17/1895	• • • • • {gas being recirculated to crushing zone}
17/02	• with perforated container	17/20	• • Disintegrating members
17/04	• with unperforated container	17/205	• • • {Adding disintegrating members to the tumbling mill}
17/06	• • with several compartments	17/22	• • Lining for containers
2017/065	• • • {with several compartments in the form of multiwell blocks}	17/225	• • • {using rubber or elastomeric material}
17/07	• • • in radial arrangement	17/24	• • Driving mechanisms
17/08	• • with containers performing a planetary movement	<b>18/00</b>	<b>Disintegrating by knives or other cutting or tearing members which chop material into fragments {(tree stump comminutors <a href="#">A01G 23/067</a>)}</b>
17/10	• with one or a few disintegrating members arranged in the container	18/0007	• {specially adapted for disintegrating documents}
17/14	• Mills in which the charge to be ground is turned over by movements of the container other than by rotating, e.g. by swinging, vibrating, tilting {(mills provided with vibrators in general <a href="#">B02C 19/16</a> )}	2018/0015	• • {for disintegrating CDs, DVDs and/or credit cards}
17/16	• Mills in which a fixed container houses stirring means tumbling the charge	2018/0023	• • {Switching devices}
17/161	• • {Arrangements for separating milling media and ground material}	2018/003	• • {Removing clips, pins or staples before disintegrating}
17/163	• • {Stirring means}	2018/0038	• • {Motor drives}
2017/165	• • {with stirring means comprising more than one agitator}	2018/0046	• • {Shape or construction of frames, housings or casings}
17/166	• • {of the annular gap type}	2018/0053	• • {hand-operated}
17/168	• • {with a basket media milling device arranged in or on the container, involving therein a circulatory flow of the material to be milled}	2018/0061	• • {with compacting devices for the disintegrated material}
17/18	• Details	2018/0069	• • {with stripping devices}
17/1805	• • {Monitoring devices for tumbling mills}	18/0076	• {with cutting or tearing members fixed on endless flexible members ( <a href="#">without cutting or tearing members B02C 19/0006</a> )}
17/181	• • {Bearings specially adapted for tumbling mills}	18/0084	• {specially adapted for disintegrating garbage, waste or sewage}
17/1815	• • {Cooling or heating devices}	18/0092	• • {for waste water or for garbage}
17/182	• • {Lids}	18/02	• with reciprocating knives
17/1825	• • {Lifting devices ( <a href="#">lifting devices associated with the lining for containers B02C 17/22</a> )}	18/04	• • Details
		18/06	• with rotating knives
		18/062	• • {with rotor elements extending axially in close radial proximity of a concentrically arranged slotted or perforated ring}
		18/065	• • {within rotatable bowls, e.g. meat cutters}
		18/067	• • {Tub-grinders}

18/08	. . within vertical containers { <a href="#">(B02C 18/062, B02C 18/065 take precedence)</a> }	18/26	. with knives which both reciprocate and rotate
18/083	. . . {with a disc rotor having generally radially extending slots or openings bordered with cutting knives}	18/28	. with spiked cylinders
18/086	. . . {specially adapted for disintegrating plastics, e.g. cinematographic films (for plastic bottles <a href="#">B02C 19/0093</a> , disintegrating plastics <a href="#">B29B 17/00</a> )}	18/30	. Mincing machines with perforated discs and feeding worms
18/10	. . . with drive arranged above container { <a href="#">(B02C 18/083 takes precedence)</a> }	18/301	. . {with horizontal axis}
18/12	. . . with drive arranged below container { <a href="#">(B02C 18/083 takes precedence)</a> }	18/302	. . . {with a knife-perforated disc unit}
18/14	. . within horizontal containers { <a href="#">(B02C 18/062, B02C 18/065 take precedence)</a> }	18/304	. . . {with several axially aligned knife-perforated disc units}
18/141	. . . {with axial flow}	18/305	. . {Details}
18/142	. . . {with two or more inter-engaging rotatable cutter assemblies}	2018/307	. . . {Cooling arrangements in mincing machines}
18/143	. . . {with a disc rotor having generally radially extending slots or openings bordered with cutting knives}	2018/308	. . {with separating devices for hard material, e.g. bone}
18/144	. . . {with axially elongated knives}	18/32	. . with sharpening devices
18/145	. . . {with knives spaced axially and circumferentially on the periphery of a cylindrical rotor unit}	18/34	. . with means for cleaning the perforated discs
18/146	. . . {with a rotor comprising a plurality of axially contiguous disc-like segments each having at least one radially extending cutting element}	18/36	. . Knives or perforated discs
2018/147	. . . {of the plural stage type}	18/362	. . . {Knives}
18/148	. . . {specially adapted for disintegrating plastics, e.g. cinematographic films (for plastic bottles <a href="#">B02C 19/0093</a> , disintegrating plastics <a href="#">B29B 17/00</a> )}	18/365	. . . {Perforated discs}
18/16	. . Details	2018/367	. . . {Resiliently mounted knives or discs}
2018/162	. . . {Shape or inner surface of shredder-housings}	18/38	. . Drives
2018/164	. . . {Prevention of jamming and/or overload}	<b>19/00</b>	<b>Other disintegrating devices or methods (for grain <a href="#">B02C 9/00</a>)</b>
2018/166	. . . {Lubricating the knives of the cutting mechanisms}	19/0006	. {Crushing by endless flexible members (with cutting or tearing members <a href="#">B02C 18/0076</a> )}
2018/168	. . . {User safety devices or measures in shredders}	19/0012	. {Devices for disintegrating materials by collision of these materials against a breaking surface or breaking body and/or by friction between the material particles (also for grain)}
18/18	. . . Knives; Mountings thereof	19/0018	. . {using a rotor accelerating the materials centrifugally against a circumferential breaking surface (rotors with beater elements <a href="#">B02C 13/09, B02C 13/1807</a> )}
18/182	. . . . {Disc-shaped knives}	19/0025	. . . {by means of a rotor with radially extending channels}
18/184	. . . . . {with peripherally arranged demountable cutting tips or elements}	19/0031	. . . {by means of an open top rotor}
18/186	. . . . {Axially elongated knives}	19/0037	. . . . {with concentrically arranged open top rotors}
2018/188	. . . . {Stationary counter-knives; Mountings thereof}	19/0043	. . {the materials to be pulverised being projected against a breaking surface or breaking body by a pressurised fluid ( <a href="#">jet mills B02C 19/06</a> )}
18/20	. . . . Sickie-shaped knives	19/005	. . {the materials to be pulverised being disintegrated by collision of, or friction between, the material particles ( <a href="#">jet mills B02C 19/06</a> )}
18/22	. . . Feed or discharge means	19/0056	. {specially adapted for specific materials not otherwise provided for}
2018/2208	. . . . {for weblike material}	19/0062	. . {specially adapted for shredding scrap metal, e.g. automobile bodies}
18/2216	. . . . {Discharge means}	19/0068	. . {specially adapted for breaking-up fluorescent tubes}
18/2225	. . . . {Feed means}	19/0075	. . {specially adapted for desintegrating medical waste ( <a href="#">disposal of medical waste B09B 3/0075</a> , <a href="#">sterilisation of refuse A61L 11/00</a> )}
18/2233	. . . . . {of ram or pusher type}	19/0081	. . {specially adapted for breaking-up bottles}
18/2241	. . . . . {of conveyor belt type ( <a href="#">B02C 18/225 takes precedence</a> )}	19/0087	. . . {for glass bottles}
18/225	. . . . . {of conveyor belt and cooperating roller type}	19/0093	. . . {for plastic bottles}
18/2258	. . . . . {of screw type}	19/06	. Jet mills
18/2266	. . . . . {of revolving drum type}	19/061	. . {of the cylindrical type ( <a href="#">B02C 19/068 takes precedence</a> )}
18/2275	. . . . . {using a rotating arm}	19/063	. . {of the toroidal type ( <a href="#">B02C 19/068 takes precedence</a> )}
18/2283	. . . . . {using rollers ( <a href="#">B02C 18/225 takes precedence</a> )}	19/065	. . {of the opposed-jet type ( <a href="#">B02C 19/068 takes precedence</a> )}
18/2291	. . . . . {Feed chute arrangements}	19/066	. . {of the jet-anvil type ( <a href="#">B02C 19/068 takes precedence</a> )}
18/24	. . . Drives		



19/068	. . {of the fluidised-bed type}	23/26	. . . characterised by point of gas entry or exit or by gas flow path
19/08	. Pestle and mortar	23/28	. . . gas moving means being integral with, or attached to, crushing or disintegrating element
19/10	. Mills in which a friction block is towed along the surface of a cylindrical or annular member	23/30	. . . the applied gas acting to effect material separation ( <a href="#">B02C 23/34</a> takes precedence)
19/11	. High-speed drum mills ( <a href="#">for separating B04B</a> )	23/32	. . . with return of oversize material to crushing or disintegrating zone ( <a href="#">B02C 23/34</a> takes precedence)
19/16	. Mills provided with vibrators ({ <a href="#">roller mills B02C 4/423</a> }; <a href="#">tumbling mills B02C 17/14</a> )	23/34	. . . gas being recirculated to crushing or disintegrating zone
19/18	. Use of auxiliary physical effects, e.g. ultrasonics, irradiation, for disintegrating	23/36	. . the crushing or disintegrating zone being submerged in liquid
2019/183	. . {Crushing by discharge of high electrical energy}	23/38	. . in apparatus having multiple crushing or disintegrating zones
19/186	. . {Use of cold or heat for disintegrating ( <a href="#">B02C 4/44</a> , <a href="#">B02C 7/17</a> , <a href="#">B02C 11/08</a> take precedence)}	23/40	. . with more than one means for adding fluid to the material being crushed or disintegrated
19/20	. Disintegrating by grating ({ <a href="#">domestic food grating devices A47J 43/25</a> })		
19/22	. Crushing mills with screw-shaped crushing means		
<b>21/00</b>	<b>Disintegrating plant with or without drying of the material (<a href="#">for grain B02C 9/04</a>)</b>	<b>25/00</b>	<b>Control arrangements specially adapted for crushing or disintegrating</b>
21/002	. {using a combination of a roller mill and a drum mill}	<b>2201/00</b>	<b>Codes relating to disintegrating devices adapted for specific materials</b>
21/005	. . {the roller mill having cooperating rollers}	2201/02	. for reinforced concrete
21/007	. {using a combination of two or more drum or tube mills}	2201/04	. for used tyres
21/02	. Transportable disintegrating plant	2201/06	. for garbage, waste or sewage
2021/023	. . {for disintegrating material on the surface of the ground}	2201/063	. . for waste water or sewage
21/026	. . {self-propelled}	2201/066	. . for garden waste
<b>23/00</b>	<b>Auxiliary methods or auxiliary devices or accessories specially adapted for crushing or disintegrating not provided for in preceding groups or not specially adapted to apparatus covered by a single preceding group ({<a href="#">specially adapted for grain mills B02C 11/00</a>}; <a href="#">separating or sorting in general B03</a>, <a href="#">B04</a>, <a href="#">B07</a>)</b>	<b>2210/00</b>	<b>Codes relating to different types of disintegrating devices</b>
23/02	. Feeding devices ({ <a href="#">for grain mills B02C 11/04</a> ; <a href="#">for roller mills B02C 4/286</a> }; <a href="#">transport devices in general B65G</a> )	2210/01	. Indication of wear on beaters, knives, rollers, anvils, linings and the like
23/04	. Safety devices ( <a href="#">in general F16P</a> ; { <a href="#">for rotary mills B02C 13/31</a> })	2210/02	. Features for generally used wear parts on beaters, knives, rollers, anvils, linings and the like
23/06	. Selection or use of additives to aid disintegrating		
23/08	. Separating or sorting of material, associated with crushing or disintegrating ( <a href="#">B02C 23/18</a> takes precedence; { <a href="#">beater mills combined with sifting devices B02C 13/13</a> , <a href="#">B02C 13/14</a> ; <a href="#">for tumbling mills B02C 17/1835</a> })		
23/10	. . with separator arranged in discharge path of crushing or disintegrating zone		
23/12	. . . with return of oversize material to crushing or disintegrating zone		
23/14	. . with more than one separator		
23/16	. . with separator defining termination of crushing or disintegrating zone, e.g. screen denying egress of oversize material		
2023/165	. . . {Screen denying egress of oversize material}		
23/18	. Adding fluid, other than for crushing or disintegrating by fluid energy ({ <a href="#">for tumbling mills B02C 17/186</a> }; <a href="#">feeding devices B02C 23/02</a> )		
23/20	. . after crushing or disintegrating		
23/22	. . . with recirculation of material to crushing or disintegrating zone		
23/24	. . Passing gas through crushing or disintegrating zone ({ <a href="#">B02C 15/001</a> }, <a href="#">B02C 23/38</a> , <a href="#">B02C 23/40</a> take precedence)		