SECTION B — PERFORMING OPERATIONS; TRANSPORTING

B02 CRUSHING, PULVERISING, OR DISINTEGRATING; PREPARATORY TREATMENT OF GRAIN FOR MILLING

B02B PREPARING GRAIN FOR MILLING; REFINING GRANULAR FRUIT TO COMMERCIAL PRODUCTS BY WORKING THE SURFACE (making dough from cereals directly A21C; preservation or sterilisation of cereals A23B; cleaning fruit A23N; preparation of malt C12C)

1/00 **Preparing grain for milling or like processes** (hulling, husking, decorticating, polishing, removing the awns, or degerming B02B 3/00) **[1, 2006.01]**

1/02 • Dry treatment (sifting or sorting in general B07) **[1, 2006.01]**

1/04 • Wet treatment, e.g. washing, wetting, softening **[1, 2006.01]**

1/06 • • Devices with rotary parts **[1, 2006.01]**

1/08 • Conditioning grain with respect to temperature or water content (air conditioning or ventilating of silos F24F; drying apparatus F26B; hygrometers G01N) **[1, 2006.01]**

3/00 **Hulling; Husking; Decorticating** (decorticating textile fibres D01B 1/14)**; Polishing; Removing the awns** (in threshing machines A01F 12/42)**; Degerming [1, 2006.01]**

3/02 • by means of discs **[1, 2006.01]**

3/04 • by means of rollers **[1, 2006.01]**

3/06 • by means of screws or worms **[1, 2006.01]**

3/08 • by means of beaters or blades **[1, 2006.01]**

3/10 • by means of brushes **[1, 2006.01]**

3/12 • by means of fluid **[1, 2006.01]**

3/14 • Producing flour or meal directly **[1, 2006.01]**

5/00 **Grain treatment not otherwise provided for [1, 2006.01]**

5/02 • Combined processes **[1, 2006.01]**

7/00 **Auxiliary devices [1, 2006.01]**

7/02 • Feeding or discharging devices **[1, 2006.01]**

B02C CRUSHING, PULVERISING, OR DISINTEGRATING IN GENERAL; MILLING GRAIN (obtaining metallic powder by crushing, grinding or milling B22F 9/04)

Subclass index

1/00 **Crushing or disintegrating by reciprocating members [1, 2006.01]**

1/02 • Jaw crushers or pulverisers **[1, 2006.01]**

1/04 • • with single-acting jaws **[1, 2006.01]**

1/06 • • with double-acting jaws **[1, 2006.01]**

1/08 • • with jaws coacting with a rotating roller **[1, 2006.01]**

1/10 • • Shape or construction of jaws **[1, 2006.01]**

1/12 • Mills with non-rotating spiked members **[1, 2006.01]**

1/14 • Stamping mills **[1, 2006.01]**

2/00 **Crushing or disintegrating by gyratory or cone crushers [1, 2006.01]**

2/02 • eccentrically moved **[1, 2006.01]**

2/04 • • with vertical axis **[1, 2006.01]**

2/06 • • • and with top bearing **[1, 2006.01]**

2/08 • • with horizontal axis **[1, 2006.01]**

2/10 • concentrically moved; Bell crushers **[1, 2006.01]**

4/00 **Crushing or disintegrating by roller mills** (with milling members in the form of rollers or balls co-operating with rings or discs B02C 15/00; roller mills or roll refiners exclusively for chocolate A23G 1/10, A23G 1/12) **[1, 2006.01]**

4/02 • with two or more rollers **[1, 2006.01]**
4/04 • • specially adapted for milling paste-like material, e.g. paint, chocolate, colloids **[1, 2006.01]**
4/06 • • specially adapted for milling grain **[1, 2006.01]**
4/08 • • with co-operating corrugated or toothed crushing-rollers **[1, 2006.01]**
4/10 • with a roller co-operating with a stationary member **[1, 2006.01]**
4/12 • • in the form of a plate **[1, 2006.01]**
4/14 • • • specially adapted for milling paste-like material, e.g. paint, chocolate, colloids **[1, 2006.01]**
4/16 • • • specially adapted for milling grain **[1, 2006.01]**
4/18 • • in the form of a bar **[1, 2006.01]**
4/20 • • • wherein the roller is corrugated or toothed **[1, 2006.01]**
4/22 • • • specially adapted for milling paste-like material, e.g. paint, chocolate, colloids **[1, 2006.01]**
4/24 • • • specially adapted for milling grain **[1, 2006.01]**
4/26 • • in the form of a grid or grating **[1, 2006.01]**
4/28 • Details **[1, 2006.01]**
4/30 • • Shape or construction of rollers **[1, 2006.01]**
4/32 • • Adjusting, applying pressure to, or controlling the distance between, milling members **[1, 2006.01]**
4/34 • • • in mills wherein a roller co-operates with a stationary member **[1, 2006.01]**
4/36 • • • in mills specially adapted for paste-like materials **[1, 2006.01]**
4/38 • • • in grain mills **[1, 2006.01]**
4/40 • • Detachers, e.g. scrapers **[1, 2006.01]**
4/42 • • Driving mechanisms; Roller speed control **[1, 2006.01]**
4/44 • • Cooling or heating rollers or bars **[1, 2006.01]**

7/00 Crushing or disintegrating by disc mills (apparatus specially adapted for manufacture or treatment of cocoa or cocoa products exclusively A23G 1/04) **[1, 2006.01]**

7/02 • with coaxial discs **[1, 2006.01]**
7/04 • • with concentric circles of intermeshing teeth **[1, 2006.01]**
7/06 • • with horizontal axis (B02C 7/04 takes precedence) **[1, 2006.01]**
7/08 • • with vertical axis (B02C 7/04 takes precedence) **[1, 2006.01]**
7/10 • with eccentric discs **[1, 2006.01]**
7/11 • Details **[1, 2006.01]**
7/12 • • Shape or construction of discs **[1, 2006.01]**
7/13 • • • for grain mills **[1, 2006.01]**
7/14 • • Adjusting, applying pressure to, or controlling distance between, discs **[1, 2006.01]**
7/16 • • Driving mechanisms **[1, 2006.01]**
7/17 • • Cooling or heating of discs **[1, 2006.01]**
7/175 • Disc mills specially adapted for paste-like material, e.g. paint, chocolate, colloids **[1, 2006.01]**
7/18 • Disc mills specially adapted for grain **[1, 2006.01]**

9/00 Other milling methods or mills specially adapted for grain [1, 2006.01]

9/02 • Cutting or splitting grain **[1, 2006.01]**
9/04 • Systems or sequences of operations; Plant **[1, 2006.01]**

11/00 Other auxiliary devices or accessories specially adapted for grain mills [1, 2006.01]

11/02 • Breaking up amassed particles, e.g. flakes **[1, 2006.01]**
11/04 • Feeding devices **[1, 2006.01]**
11/06 • Arrangements for preventing fire or explosion (methods for preventing or extinguishing fires, devices therefor A62C) **[1, 2006.01]**
11/08 • Cooling, heating, ventilating, conditioning with respect to temperature or water content (conditioning grain before milling B02B 1/08; air-conditioning or ventilating in general F24F) **[1, 2006.01]**

13/00 Disintegrating by mills having rotary beater elements [1, 2006.01]

13/02 • with horizontal rotor shaft (with axial flow B02C 13/10) **[1, 2006.01]**
13/04 • • with beaters hinged to the rotor; Hammer mills **[1, 2006.01]**
13/06 • • with beaters rigidly connected to the rotor **[1, 2006.01]**
13/08 • • • and acting as a fan **[1, 2006.01]**
13/09 • • • and throwing the material against an anvil or impact plate **[1, 2006.01]**
13/10 • with horizontal rotor shaft and axial flow **[1, 2006.01]**
13/12 • • with vortex chamber **[1, 2006.01]**
13/13 • with horizontal rotor shaft and combined with sifting devices, e.g. for making powdered fuel **[1, 2006.01]**
13/14 • with vertical rotor shaft, e.g. combined with sifting devices **[1, 2006.01]**
13/16 • • with beaters hinged to the rotor **[1, 2006.01]**
13/18 • • with beaters rigidly connected to the rotor **[1, 2006.01]**
13/20 • with two or more co-operating rotors **[1, 2006.01]**
13/22 • with intermeshing pins **[1, 2006.01]**
13/24 • • arranged around a vertical axis **[1, 2006.01]**
13/26 • Details **[1, 2006.01]**
13/28 • • Shape or construction of beater elements **[1, 2006.01]**
13/282 • • Shape or inner surface of mill-housings **[1, 2006.01]**
13/284 • • • Built-in screens **[1, 2006.01]**
13/286 • • Feeding or discharge **[1, 2006.01]**
13/288 • • Ventilating, or influencing air circulation **[1, 2006.01]**
13/30 • • Driving mechanisms **[1, 2006.01]**
13/31 • • Safety devices or measures **[1, 2006.01]**

15/00 Disintegrating by milling members in the form of rollers or balls co-operating with rings or discs [1, 2006.01]

15/02 • Centrifugal pendulum-type mills **[1, 2006.01]**
15/04 • Mills with pressed pendularly-mounted rollers, e.g. spring pressed **[1, 4, 2006.01]**
15/06 • Mills with rollers forced against the interior of a rotary ring, e.g. under spring action (B02C 15/04 takes precedence) **[1, 4, 2006.01]**
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 (B02C 15/02 takes precedence) **[1, 2006.01]**
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 **[1, 2006.01]**
15/12 • Mills with at least two discs and interposed balls or rollers mounted like ball or roller bearings **[1, 4, 2006.01]**

15/14 • Edge runners, e.g. Chile mills **[1, 2006.01]**
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 **[1, 2006.01]**

17/00 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 (high-speed drum mills B02C 19/11) **[1, 2006.01]**
17/02 • with perforated container **[1, 2006.01]**
17/04 • with unperforated container **[1, 2006.01]**
17/06 • • with several compartments **[1, 2006.01]**
17/07 • • • in radial arrangement **[1, 2006.01]**
17/08 • • with containers performing a planetary movement **[1, 2006.01]**
17/10 • with one or a few disintegrating members arranged in the container **[1, 2006.01]**
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 **[1, 2006.01]**
17/16 • Mills in which a fixed container houses stirring means tumbling the charge **[1, 2006.01]**
17/18 • Details **[1, 2006.01]**
17/20 • • Disintegrating members **[1, 2006.01]**
17/22 • • Lining for containers **[1, 2006.01]**
17/24 • • Driving mechanisms **[1, 2006.01]**

18/00 Disintegrating by knives or other cutting or tearing members which chop material into fragments (slicing B26D)**; Mincing machines or similar apparatus using worms or the like** (machines for domestic use not covered otherwise A47J 43/04; multi-purpose machines for preparing food A47J 44/00) **[1, 2006.01]**
18/02 • with reciprocating knives **[1, 2006.01]**
18/04 • • Details **[1, 2006.01]**
18/06 • with rotating knives **[1, 2006.01]**
18/08 • • within vertical containers **[1, 2006.01]**
18/10 • • • with drive arranged above container **[1, 2006.01]**
18/12 • • • with drive arranged below container **[1, 2006.01]**
18/14 • • within horizontal containers **[1, 2006.01]**
18/16 • • Details **[1, 2006.01]**
18/18 • • • Knives; Mountings thereof **[1, 2006.01]**
18/20 • • • • Sickle-shaped knives **[1, 2006.01]**
18/22 • • • Feed or discharge means **[1, 2006.01]**
18/24 • • • Drives **[1, 2006.01]**
18/26 • with knives which both reciprocate and rotate **[1, 2006.01]**
18/28 • with spiked cylinders **[1, 2006.01]**
18/30 • Mincing machines with perforated discs and feeding worms **[1, 2006.01]**
18/32 • • with sharpening devices **[1, 2006.01]**
18/34 • • with means for cleaning the perforated discs **[1, 2006.01]**
18/36 • • Knives or perforated discs **[1, 2006.01]**
18/38 • • Drives **[1, 2006.01]**

19/00 Other disintegrating devices or methods (for grain B02C 9/00) **[1, 2006.01]**
19/06 • Jet mills **[1, 2006.01]**
19/08 • Pestle and mortar **[1, 2006.01]**
19/10 • Mills in which a friction block is towed along the surface of a cylindrical or annular member **[1, 2006.01]**
19/11 • High-speed drum mills (for separating B04B) **[1, 2006.01]**
19/16 • Mills provided with vibrators (tumbling mills B02C 17/14) **[1, 2006.01]**
19/18 • Use of auxiliary physical effects, e.g. ultrasonics, irradiation, for disintegrating **[1, 2006.01]**
19/20 • Disintegrating by grating **[1, 2006.01]**
19/22 • Crushing mills with screw-shaped crushing means **[1, 2006.01]**

21/00 Disintegrating plant with or without drying of the material (for grain B02C 9/04) **[1, 2006.01]**
21/02 • Transportable disintegrating plant **[1, 2006.01]**

23/00 Auxiliary methods or auxiliary devices or accessories specially adapted for crushing or disintegrating not provided for in groups B02C 1/00-B02C 21/00 or not specially adapted to apparatus covered by one only of groups B02C 1/00-B02C 21/00 (separating or sorting in general B03, B04, B07) **[1, 2006.01]**
23/02 • Feeding devices (transport devices in general B65G) **[1, 2006.01]**
23/04 • Safety devices (in general F16P) **[1, 2006.01]**
23/06 • Selection or use of additives to aid disintegrating **[1, 2006.01]**
23/08 • Separating or sorting of material, associated with crushing or disintegrating (B02C 23/18 takes precedence) **[2, 2006.01]**
23/10 • • with separator arranged in discharge path of crushing or disintegrating zone **[2, 2006.01]**
23/12 • • • with return of oversize material to crushing or disintegrating zone **[2, 2006.01]**
23/14 • • with more than one separator **[2, 2006.01]**
23/16 • • with separator defining termination of crushing or disintegrating zone, e.g. screen denying egress of oversize material **[2, 2006.01]**
23/18 • Adding fluid, other than for crushing or disintegrating by fluid energy (feeding devices B02C 23/02) **[2, 2006.01]**
23/20 • • after crushing or disintegrating **[2, 2006.01]**
23/22 • • • with recirculation of material to crushing or disintegrating zone **[2, 2006.01]**
23/24 • • Passing gas through crushing or disintegrating zone (B02C 23/38, B02C 23/40 take precedence) **[2, 2006.01]**
23/26 • • • characterised by point of gas entry or exit or by gas flow path **[2, 2006.01]**
23/28 • • • gas moving means being integral with, or attached to, crushing or disintegrating element **[2, 2006.01]**
23/30 • • • the applied gas acting to effect material separation (B02C 23/34 takes precedence) **[2, 2006.01]**
23/32 • • • with return of oversize material to crushing or disintegrating zone (B02C 23/34 takes precedence) **[2, 2006.01]**
23/34 • • • gas being recirculated to crushing or disintegrating zone **[2, 2006.01]**
23/36 • • the crushing or disintegrating zone being submerged in liquid **[2, 2006.01]**
23/38 • • in apparatus having multiple crushing or disintegrating zones **[2, 2006.01]**
23/40 • • with more than one means for adding fluid to the material being crushed or disintegrated **[2, 2006.01]**

25/00 Control arrangements specially adapted for crushing or disintegrating [1, 2006.01]