A21C  MACHINES OR EQUIPMENT FOR MAKING OR PROCESSING DOUGHS; HANDLING BAKED ARTICLES MADE FROM DOUGH

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 scheme.

1/00  Mixing or kneading machines for the preparation of dough (domestic mixing or kneading machines A47J 43/00, A47J 44/00; mixing or kneading of substances in a plastic state in general B29B 7/00))

1/003 . [Plant; Systems, i.e. flow charts or diagrams]
1/006 . [Methods]
1/02 . with vertically-mounted tools; Machines for whipping or beating
1/04 . with inclined rotating mixing arms or levers
1/06 . with horizontally-mounted mixing or kneading tools; Worm [or screw] mixers
1/065 . . [Worm or screw mixers, e.g. with consecutive mixing receptacles]
1/08 . with rollers
1/083 . . [by calendering, i.e. working between rollers (using rollers for shaping dough A21C 3/02)]
1/086 . . [having a receptacle rotating about a vertical axis cooperating with rotary rollers]
1/10 . with additional aeraing apparatus for the manufacture of aerated doughs
1/105 . . [the gas being introduced through the shaft of a rotary tool]
1/12 . for the preparation of dough directly from grain
1/14 . Structural elements of mixing or kneading machines; [Parts; Accessories]
1/1405 . . [Tools]
1/141 . . . [having mixing or cutting elements essentially perpendicular to their axes]
1/1415 . . . [Shafts; Heads therefor]
1/142 . . . [Feeding mechanisms, e.g. skip lifting mechanisms]
1/1425 . . . [for feeding in measured doses]
1/143 . . . [using pneumatic means]
1/1435 . . . [for liquids (A21C 1/1425 takes precedence)]
1/144 . . [Discharge mechanisms]
1/1445 . . . [using tiltable receptacles; Tilting mechanisms therefor]
1/145 . . . [Controlling; Testing; Measuring (A21C 1/1425 takes precedence)]
1/1455 . . . [Measuring data of the driving system, e.g. torque, speed, power]
1/146 . . . [Measuring properties of the dough, e.g. moisture, electrical conductivity, temperature (A21C 1/1455 takes precedence)]
1/1465 . . [Drives]
1/147 . . . [for planetary motion]
1/1475 . . . [Brakes therefor]
1/148 . . . [Safety arrangements (A21C 1/1485 takes precedence)]
1/1485 . . . [Doors; Closures; Operating, e.g. safety, mechanisms therefor]
1/149 . . . [Receptacles, e.g. provided with means for carrying or guiding fluids, e.g. coolants]
1/1495 . . . [Arrangements for cooling or heating (receptacles with means for guiding fluids per se A21C 1/149); Arrangements for applying super- or sub-atmospheric pressure]

3/00  Machines or apparatus for shaping batches of dough before subdivision

3/02 . Dough-sheeters; Rolling-machines; Rolling-pins (mixing or kneading dough by rollers A21C 3/08; non-manual rolling and working of discrete dough pieces A21C 7/00)
3/021 . . [Rolling-pins; Hand-operated spreading or rolling devices (A21C 11/004 takes precedence)]
3/022 . . . [Laminating or undulating a continuous dough sheet, e.g. by folding transversely or longitudinally onto a moving surface (combined with filling A21C 9/045)]
3/024 . . . [using one or more rollers with an axis of rotation substantially parallel or oblique to the direction of dough transport (A21C 3/065 takes precedence); hand-operated rollers A21C 3/021)]
3/025 . . . [with one or more rollers moving perpendicularly to its rotation axis, e.g. reciprocally (A21C 3/024 takes precedence; hand-operated rollers A21C 3/021)]
3/027 . . . [with multiple rollers moving in a closed loop, e.g. in an orbital path; Planetary roller systems]
3/028 . . . [using rollers having a shape other than straight round cylinders (A21C 3/04 takes precedence)]
3/04 . Dough-extruding machines; [Hoppers with moving elements, e.g. rollers or belts as wall elements for drawing the dough]
3/06 . Machines for coiling sheets of dough, e.g. for producing rolls (e.g. crescent-rolls (as part of a machine for further moulding or forming A21C 7/00); with filling A21C 9/056)
9/06 . Machines for twisting strips of dough, e.g. for making pretzels
3/10 . combined with dough-dividing apparatus

5/00 **Dough-dividing machines**

5/003 . [with revolving bodies, e.g. with bodies having spaces separated by radially oriented elements or walls]
5/006 . [for dispensing liquid or semi-liquid dough, e.g. batter]
5/02 . with division boxes and ejection plungers
5/04 . . . with division boxes in a revolving body with radially-working pistons
5/06 . . . with division boxes in a revolving body with axially-working pistons
5/08 . . . with radial, i.e. star-like, cutter-blades slidable in the slots of, and relatively to, a pressing-plunger ((A21C 7/06 takes precedence))

7/00 **Machines which homogenise the subdivided dough by working other than by kneading**

7/005 . [the dough pieces being worked in radially disposed cavities in a rotating drum]
7/01 . with endless bands ((A21C 7/005 takes precedence))
7/02 . with moulding channels (A21C 7/01 takes precedence)
7/04 . with moulding cups (A21C 7/01 takes precedence)
7/06 . combined with dividing machines with radial, i.e. star-like, cutter-blades slidable in the slots of, and relatively to, a pressing-plunger

9/00 **Other apparatus for handling dough or dough pieces**

9/02 . Apparatus for hanging or distributing strings of dough, such as noodles, spaghetti or macaroni, on bars
9/04 . Apparatus for spreading granular material on, or sweeping or coating the surfaces of, pieces or sheets of dough ((coating baked articles A21C 15/002))
9/045 . . . [Laminating dough sheets combined with applying a filling in between, e.g. lasagnatype products (ravioli-making machines A21C 9/066; making laminated baked wafer sheets A21C 15/02)]
9/06 . Apparatus for filling pieces of dough such as doughnuts ((A21C 11/163 takes precedence; apparatus for filling baked articles A21C 15/007))
9/061 . . . [Making continuous filled tubular products, e.g. with subsequent cutting]
9/063 . . . [Applying a folding, wrapping, rolling action (A21C 9/045, A21C 9/061 take precedence)]
9/065 . . . [by means of injection into a piece of dough (filling baked articles A21C 15/007)]
9/066 . . . [using two separate sheets or pieces of dough with filling in between, e.g. crimped at their edges; Ravioli-making machines (A21C 11/163 takes precedence)]
9/068 . . . [Tools for crimping or trimming of edges or rims, e.g. hand-operated]
9/08 . Depositing, arranging and conveying apparatus for handling pieces, e.g. sheets of dough ((for handling liquid or semi-liquid dough, e.g. batter A21C 5/006))
9/081 . . . [Charging of baking tins or forms with dough]
9/083 . . . [Manipulating tins, pans etc., e.g. charging or discharging conveyors, trolleys or ovens]
9/085 . . . [Separating, spacing, orienting or aligning discrete dough pieces, e.g. after passing a cutting device]
9/086 . . . [Stacking or unstacking discrete dough sheets (with filling in between sheets A21C 9/045)]
9/088 . . . [Folding or bending discrete dough pieces or dough strips (twisting strips of dough A21C 3/08; with filling action A21C 9/063; forming toroid-shaped dough pieces A21C 11/002)]

11/00 **Other machines for forming the dough into its final shape before cooking or baking**

11/002 . [the shape being toroid-like, e.g. bagels, doughnuts (extruding machines for toroid shaped products A21C 11/166)]
11/004 . [forming the dough into a substantially disc-like shape with or without an outer rim, e.g. for making pie crusts, cake shells or pizza bases]
11/006 . . . [by pressing or press-moulding (A21C 11/008 takes precedence)]
11/008 . . . [by press-rolling]
11/02 . Embossing machines
11/04 . . . with cutting and embossing rollers or drums ((A21C 11/106 takes precedence))
11/06 . . . handling regularly pre-shaped sheets of dough
11/08 . . . with engraved moulds, e.g. rotary machines with die rolls
11/10 . combined with cutting apparatus ((A21C 11/004 takes precedence))
11/103 . . . [having multiple cutting elements slidably or rotatably mounted in a diaphragm-like arrangement]
11/106 . . . [using hand-operated cutting tools (A21C 9/068 takes precedence)]
11/12 . . . Apparatus for slotting, slitting or perforating the surface of pieces of dough
11/14 . . . for star-like stamping
11/16 . Extruding machines
11/163 . . . [Applying co-extrusion, i.e. extruding two or more plastic substances simultaneously, e.g. for making filled dough products; Making products from two or more different substances supplied to the extruder]
11/166 . . . [for making toroid-shaped products, e.g. doughnuts (A21C 11/163 takes precedence)]
11/18 . . . with pistons
11/20 . . . with worms
11/22 . . . Apparatus with rollers and cutting discs or blades for shaping noodles
11/24 . . . Apparatus for cutting out noodles from a sheet or ribbon of dough by an engaging pair of grooved rollers

13/00 **Provers, i.e. apparatus permitting dough to rise** ((testing dough properties G01N 33/10))
13/02 . . . with endless conveyors [, e.g. for moving the dough pieces progressively through the prover]
A21C

14/00  Machines or equipment for making or processing dough, not provided for in other groups of this subclass

15/00  Apparatus for handling baked articles

15/002  [Apparatus for spreading granular material on, or sweeping or coating the surface of baked articles (of pieces of dough A21C 9/04; for confectionary A23G 3/28)]

15/005  [of which at least the dispensing part is hand-held, e.g. comprising a flexible container, pouch or gun-like applicator]

15/007  [Apparatus for filling baked articles (filling pieces of dough A21C 9/06; filled bakery products A21D 13/30; A21D 13/80)]

15/02  Apparatus for shaping or moulding baked wafers; Making multi-layer wafer sheets

15/025  [Apparatus for shaping or moulding baked wafers, e.g. to obtain cones for ice cream]

15/04  Cutting or slicing machines or devices specially adapted for baked articles other than bread (for cutting or slicing bread B26B, B26D)