SECTION F — MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING

F26 DRYING

F26B DRYING SOLID MATERIALS OR OBJECTS BY REMOVING LIQUID THEREFROM (drying devices for combines A01D 41/133; racks for drying fruit or vegetables A01F 25/12; drying foodstuffs A23; drying hair A45D 20/00; body-drying implements A47K 10/00; drying household articles A47L; drying gases or vapours B01D; chemical or physical processes for dewatering or like separating liquids from solids B01D 43/00; centrifugal apparatus B04; drying ceramics C04B 33/30; drying yarns or fabrics in association with some other form of treatment D06C; drying frames for laundry without heating or positive air circulation, domestic laundry-or spin-driers, wringing or hot pressing laundry D06F; furnaces, kilns, ovens F27)

Subclass index

PROCESSES FOR DRYING
Preliminary treatment.....1/00
Processes: with heat; without heat; by combination of both types.....3/00, 5/00, 7/00
MACHINES OR APPARATUS FOR DRYING
With articles to be dried at rest or locally agitated, domestic airing.....9/00
With non-progressive movement.....11/00
With progressive movement: for fabrics or yarns; for articles and compact batches; for material not in compact batches.....13/00, 15/00, 17/00
Other kinds.....19/00
Combinations using at least two of the above kinds.....20/00
ARRANGEMENTS OR DETAILS OF GENERAL APPLICATIONS
Arrangements for air or gas for drying; heating.....21/00, 23/00
Other details.....25/00

Processes for drying

1/00 Preliminary treatment of solid materials or objects to facilitate drying [1, 2006.01]

3/00 Drying solid materials or objects by processes involving the application of heat (in specific machines or apparatus F26B 9/00-F26B 19/00) **[1, 2006.01]**

3/02 • by convection, i.e. heat being conveyed from a heat source to the materials or objects to be dried by a gas or vapour, e.g. air **[1, 2006.01]**

3/04 • • the gas or vapour circulating over, or surrounding, the materials or objects to be dried (F26B 3/14 takes precedence) **[1, 2006.01]**

3/06 • • the gas or vapour flowing through the materials or objects to be dried (F26B 3/14 takes precedence) **[1, 2006.01]**

3/08 • • • so as to loosen them, e.g. to form a fluidised bed **[1, 2006.01]**

3/084 • • • • with heat exchange taking place in the fluidised bed **[5, 2006.01]**

3/088 • • • • using inert thermally-stabilised particles **[5, 2006.01]**

3/092 • • • • agitating the fluidised bed, e.g. by vibrating or pulsating **[5, 2006.01]**

3/097 • • • • using a magnetic field to stabilise the fluidised bed **[5, 2006.01]**

3/10 • • the gas or vapour carrying the materials or objects to be dried with it **[1, 2006.01]**

3/12 • • • in the form of a spray **[1, 2006.01]**

3/14 • • the materials or objects to be dried being moved by gravity **[1, 2006.01]**

3/16 • • • in a counter-flow of the gas or vapour **[1, 2006.01]**

3/18 • by conduction, i.e. the heat is conveyed from the heat source, e.g. gas flame, to the materials or objects to be dried by direct contact **[1, 2006.01]**

3/20 • • the heat source being a heated surface (F26B 3/22 takes precedence) **[1, 2006.01]**

3/22 • • the heat source and the materials or objects to be dried being in relative motion, e.g. of vibration **[1, 2006.01]**

3/24 • • • the movement being rotation **[1, 2006.01]**

3/26 • • • the movement being performed by gravity **[1, 2006.01]**

3/28 • by radiation, e.g. from the sun **[1, 2006.01]**

3/30 • • from infra-red-emitting elements **[1, 2006.01]**

3/32 • by development of heat within the materials or objects to be dried **[1, 2006.01]**

3/34 • • by using electrical effects **[1, 2006.01]**

3/347 • • • Electromagnetic heating, e.g. induction heating or heating using microwave energy **[4, 2006.01]**

3/353 • • • Resistance heating **[4, 2006.01]**

3/36 • • by using mechanical effects, e.g. by friction (by using ultrasonic vibration F26B 5/02) **[1, 2006.01]**

5/00 **Drying solid materials or objects by processes not involving the application of heat** (separating liquids from solids by straining B01D; replacing liquids in wet solids by other liquids, e.g. water by spirit, B01D 12/00; drying by electrophoresis B01J) **[1, 2006.01]**

5/02 • by using ultrasonic vibrations **[1, 2006.01]**

5/04 • by evaporation or sublimation of moisture under reduced pressure, e.g. in a vacuum **[1, 2006.01]**

5/06 • • the process involving freezing **[1, 2006.01]**

5/08 • by centrifugal treatment **[1, 2006.01]**

5/10 • • the process involving freezing **[1, 2006.01]**

5/12 • by suction **[1, 2006.01]**

5/14 • by applying pressure, e.g. wringing; by brushing; by wiping **[1, 2006.01]**

5/16 • by contact with sorbent bodies, e.g. absorbent mould; by admixture with sorbent materials **[1, 2006.01]**

7/00 **Drying solid materials or objects by processes using a combination of processes not covered by a single one of groups F26B 3/00 or F26B 5/00 [1, 2006.01]**

Machines or apparatus for drying

9/00 **Machines or apparatus for drying solid materials or objects at rest or with only local agitation; Domestic airing cupboards [1, 2006.01]**

9/02 • in buildings (special types of buildings E04H) **[1, 2006.01]**

9/04 • in presses or clamping devices **[1, 2006.01]**

9/06 • in stationary drums or chambers **[1, 2006.01]**

9/08 • • including agitating devices **[1, 2006.01]**

9/10 • in the open air; in pans or tables in rooms; Drying stacks of loose material **[1, 2006.01]**

11/00 **Machines or apparatus for drying solid materials or objects with movement which is non-progressive [1, 2006.01]**

11/02 • in moving drums or other mainly-closed receptacles (F26B 11/18 takes precedence) **[1, 2006.01]**

11/04 • • rotating about a horizontal or slightly-inclined axis **[1, 2006.01]**

11/06 • • • with stirring devices which are held stationary **[1, 2006.01]**

11/08 • • rotating about a vertical or steeply-inclined axis **[1, 2006.01]**

11/10 • • • with stirring devices which are held stationary **[1, 2006.01]**

11/12 • in stationary drums or other mainly-closed receptacles with moving stirring devices (F26B 11/22 takes precedence) **[1, 2006.01]**

11/14 • • the stirring device moving in a horizontal or slightly-inclined plane **[1, 2006.01]**

11/16 • • the stirring device moving in a vertical or steeply-inclined plane **[1, 2006.01]**

11/18 • on or in moving dishes, trays, pans, or other mainly-open receptacles **[1, 2006.01]**

11/20 • • with stirring devices which are held stationary **[1, 2006.01]**

11/22 • on or in stationary dishes, trays, pans, or other mainly-open receptacles, with moving stirring devices **[1, 2006.01]**

13/00 **Machines or apparatus for drying fabrics, fibres, yarns, or other materials in long lengths, with progressive movement [1, 2006.01]**

13/02 • with movement in a straight line **[1, 2006.01]**

13/04 • • using rollers **[1, 2006.01]**

13/06 • with movement in a sinuous or zig-zag path **[1, 2006.01]**

13/08 • • using rollers **[1, 2006.01]**

13/10 • Arrangements for feeding, heating, or supporting materials; Regulating movement, tension, or position of materials (heating processes F26B 3/00) **[1, 2006.01]**

13/12 • • Regulating movement, tension, or position of material **[1, 2006.01]**

13/14 • • Rollers (sorbent surfaces F26B 13/26) **[1, 2006.01]**

13/16 • • • perforated (F26B 13/18 takes precedence; for applying suction F26B 13/30) **[1, 2006.01]**

13/18 • • • heated; cooled **[1, 2006.01]**

13/20 • • Supporting materials by fluid jets, e.g. air **[1, 2006.01]**

13/22 • • Arrangements of gas flames **[1, 2006.01]**

13/24 • Arrangements of devices using drying processes not involving heating (such processes <u>per se</u> F26B 5/00) **[1, 2006.01]**

13/26 • • using sorbent surfaces, e.g. bands or coverings on rollers **[1, 2006.01]**

13/28 • • for applying pressure; for brushing; for wiping **[1, 2006.01]**

13/30 • • for applying suction, e.g. through perforated rollers **[1, 2006.01]**

15/00 **Machines or apparatus for drying objects with progressive movement; Machines or apparatus with progressive movement for drying batches of material in compact form** (F26B 13/00, F26B 17/00 take precedence; conveyors in general B65G) **[1, 2006.01]**

15/02 • with movement in the whole or part of a circle **[1, 2006.01]**

15/04 • • in a horizontal plane **[1, 2006.01]**

15/06 • • • involving several planes, one above the other **[1, 2006.01]**

15/08 • • in a vertical plane **[1, 2006.01]**

15/10 • with movement in a path composed of one or more straight lines, e.g. compound **[1, 2006.01]**

15/12 • • the lines being all horizontal or slightly inclined **[1, 2006.01]**

15/14 • • • the objects or batches of materials being carried by trays or racks **[1, 2006.01]**

15/16 • • • the objects or batches of materials being carried by wheeled trucks **[1, 2006.01]**

15/18 • • • the objects or batches of materials being carried by endless belts **[1, 2006.01]**

15/20 • • the lines being all vertical or steeply inclined **[1, 2006.01]**

15/22 • • • the objects or batches of materials being carried by endless belts **[1, 2006.01]**

15/24 • • • • in a zig-zag path **[1, 2006.01]**

15/26 • with movement in a helical path **[1, 2006.01]**

17/00 **Machines or apparatus for drying materials in loose, plastic, or fluidised form, e.g. granules, staple fibres, with progressive movement** (F26B 13/00 takes precedence) **[1, 2006.01]**

17/02 • with movement performed by belts carrying the materials; with movement performed by belts propelling the materials over stationary surfaces **[1, 2006.01]**

17/04 • • the belts being all horizontal or slightly inclined (F26B 17/08 takes precedence) **[1, 2006.01]**

17/06 • • the belts being all vertical or steeply inclined (F26B 17/08 takes precedence) **[1, 2006.01]**

17/08 • • the belts being arranged in a sinuous or zig-zag path **[1, 2006.01]**
17/10 • with movement performed by fluid currents, e.g. issuing from a nozzle (F26B 3/08 takes precedence) **[1, 5, 2006.01]**
17/12 • with movement performed solely by gravity **[1, 2006.01]**
17/14 • • the materials moving through a counter-current of gas **[1, 2006.01]**
17/16 • • the materials passing down a heated surface **[1, 2006.01]**
17/18 • with movement performed by rotating helical blades or other rotary conveyors moving materials in stationary chambers **[1, 2006.01]**
17/20 • • the axis of rotation being horizontal or slightly inclined **[1, 2006.01]**
17/22 • • the axis of rotation being vertical or steeply inclined **[1, 2006.01]**
17/24 • with movement performed by shooting or throwing the materials **[1, 2006.01]**
17/26 • with movement performed by reciprocating or oscillating conveyors propelling materials over stationary surfaces; with movement performed by reciprocating or oscillating shelves, sieves or trays **[1, 2006.01]**
17/28 • with movement performed by rollers or discs with material passing over or between them, e.g. suction drum, sieve **[1, 2006.01]**
17/30 • with movement performed by rotary or oscillating containers; with movement performed by rotary floors **[1, 2006.01]**
17/32 • • the movement being in a horizontal or slightly-inclined plane **[1, 2006.01]**
17/34 • • the movement being in a vertical or steeply-inclined plane **[1, 2006.01]**

19/00 Machines or apparatus for drying solid materials or objects not covered by groups F26B 9/00-F26B 17/00 [1, 2006.01]

20/00 Combinations of machines or apparatus covered by two or more of groups F26B 9/00-F26B 19/00 [1, 2006.01]

Details of general application

21/00 Arrangements for supplying or controlling air or gases for drying solid materials or objects (air-conditioning or ventilation in general F24F) **[1, 2006.01]**
21/02 • Circulating air or gases in closed cycles, e.g. wholly within the drying enclosure (F26B 21/14 takes precedence) **[1, 2006.01]**
21/04 • • partly outside the drying enclosure **[1, 2006.01]**
21/06 • Controlling, e.g. regulating, parameters of gas supply (F26B 21/14 takes precedence) **[1, 2006.01]**
21/08 • • Humidity **[1, 2006.01]**
21/10 • • Temperature; Pressure **[1, 2006.01]**
21/12 • • Velocity of flow; Quantity of flow **[1, 2006.01]**
21/14 • using gases or vapours other than air or steam **[1, 2006.01]**

23/00 Heating arrangements (using heated air or gases F26B 21/00) **[1, 2006.01]**
23/02 • using combustion heating (F26B 23/10 takes precedence) **[1, 2006.01]**
23/04 • using electric heating (F26B 23/10 takes precedence) **[1, 2006.01]**
23/06 • • resistance heating **[1, 2006.01]**
23/08 • • inductive heating; capacitative heating; microwave heating **[1, 2006.01]**
23/10 • using tubes or passages containing heated fluids **[1, 2006.01]**

25/00 Details of general application not covered by group F26B 21/00 or F26B 23/00 (loading, conveying, or unloading in general B65G) **[1, 2006.01]**
25/02 • Applications of driving mechanisms, not covered by another subclass **[1, 2006.01]**
25/04 • Agitating, stirring, or scraping devices **[1, 2006.01]**
25/06 • Chambers, containers, or receptacles **[1, 2006.01]**
25/08 • • Parts thereof **[1, 2006.01]**
25/10 • • • Floors, roofs, or bottoms; False bottoms **[1, 2006.01]**
25/12 • • • Walls or sides; Doors **[1, 2006.01]**
25/14 • • Chambers, containers, receptacles of simple construction **[1, 2006.01]**
25/16 • • • mainly closed, e.g. drum **[1, 2006.01]**
25/18 • • • mainly open, e.g. dish, tray, pan **[1, 2006.01]**
25/20 • Rollers (F26B 25/06 takes precedence) **[1, 2006.01]**
25/22 • Controlling the drying process in dependence on liquid content of solid materials or objects **[1, 2006.01]**