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)

Definition statement

This place covers:

Processes and specific machines and arrangements for drying objects, solid materials or fluent materials containing solids by removing water or other liquids therefrom.

References

Limiting references

This place does not cover:

Drying gases and vapours	B01D

Informative references

Attention is drawn to the following places, which may be of interest for search:

Preservation of foodstuff by drying	A23B 2/90
Apparatus for preserving meat, fish, eggs, fruit, vegetables by drying	A23B 4/03
Apparatus for preserving meat, fish, eggs, fruit, vegetables by freeze drying	A23B 4/037
Machines for drying or roasting fruits or vegetables, e.g. coffee, cocoa, nuts	A23N 12/08
Drying and activating adhesives in the process of glueing shoe parts	A43D 25/20
Drying of shoes during manufacture	A43D 95/10
Drying razor blades	A45D 27/48
Drying footwear	A47L 23/20
Physical or chemical process or apparatus in general for separating liquids from solids	B01D 43/00
Drying of gases, i.e. removing vapour, e.g. water vapour	B01D 53/00
Treating solid materials in general with rotating drums	B01J 19/28
Drying grain before milling	B02B 1/08
Pre- or after-treatment, e.g. drying or curing, of surfaces to which liquids, e.g. coatings or paints, are applied	B05D 3/00
Auxiliary treatment of plastic granules, i.e. after making them	B29B 9/16

Drying plastic pellets, e.g. before the extruder	B29B 13/065
Apparatus for making layered products for laminating, e.g. by curing or drying	B32B 37/00
Drying vehicle bodies, e.g. cars, after washing	B60S 3/002
Drying of sludge	C02F 11/12
Drying of matches	C06F 1/06
Drying or dewatering of peat	C10F 5/02
Drying apparatus for fuels	C10L
Torrefying apparatus for fuels	C10L
Heating solid fuel briquettes of mineral origin	C10L 5/28
Solid biofuels	C10L 5/44
Torrefaction of solid fuels to improve their combustion	C10L 9/083
Drying leather or hides as part of the manufacturing process	C14B 1/58
Drying of retted fibres	D01B 1/48
Forcing gases through textile materials	D06B 5/00
Removing liquids from textile materials in association with previous liquid treatment	D06B 15/00
Supporting means for linen or garments to be dried	D06F 57/00
Domestic laundry dryer, e.g. tumbler	D06F 58/00
De-watering of pulp	D21C 9/18
Machines for preparing, e.g. heating and drying, of paving materials for roads	E01C 19/05
Apparatus for drying pavement	E01C 23/14
Drying of constructions, e.g. buildings, and keeping them dry	E04B 1/70
Drying of waste products by heat prior to combustion	F23G 2201/10
Dewatering of waste products by mechanical means prior to combustion	F23G 2201/20
Preparation of solid fuel prior to combustion, e.g. drying	F23K 1/00
Drying of solid fuel prior to combustion	F23K 2201/20
Air conditioning with dehumidification of air otherwise than by heating and cooling	F24F 3/14
Equipment for the use of solar heat	F24S
Drying of photographic film in processing apparatus	G03D 15/02
Drying step in manufacturing of electric cables	H01B 13/30
Drying step in manufacturing of electric insulators	H01B 19/02
Drying of, e.g. oil cooled, transformers	H01F
Drying, filling, purifying of, e.g. oil cooled, transformers	H01F 27/14
Drying step in manufacturing capacitors	H01G 13/04
Drying of semiconductor wafers or substrates during manufacture or treatment thereof	H10P 72/0408
Production of biofuels through pyrolysis	Y02E 50/10

Special rules of classification

Documents dealing with drying specific solid materials or objects belonging to other subclasses are classified in F26B only, if the disclosed drying process or machine is of general interest, i.e. not limited to the specific solid material or object.

F26B 1/00

Preliminary treatment of solid materials or objects to facilitate drying {, e.g. mixing or backmixing the materials to be dried with predominantly dry solids (F26B 5/005 takes precedence)}

Definition statement

This place covers:

Preliminary treatment, i.e. not the actual drying treatment, of solid materials or objects.

References

Limiting references

This place does not cover:

Applying a combustible liquid, which is burnt off later, onto the solid materials or objects	F26B 3/005
Dipping the solid materials or objects into, or mixing with, chemical liquids for subsequent drying	F26B 5/005

Informative references

Attention is drawn to the following places, which may be of interest for search:

Replacing liquid in wet solids by other liquid	B01D 12/00

F26B 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)

Definition statement

This place covers:

Drying solid materials or objects by processes applying heat as primary drying principle.

References

Limiting references

This place does not cover:

Processes involving direct heating, e.g. radiation, or indirect heating, e.g. convection, of the drying good merely as a measure to compensate cooling effects through evaporation, e.g. in a vacuum dryer	F26B 5/00
Heat generated by friction through ultrasonic vibrations	F26B 5/02
Condensing vapour other than steam onto the surface of the materials or objects to be dried	F26B 21/471

Informative references

Attention is drawn to the following places, which may be of interest for search:

Preserving food in general by spray drying	A23B 2/93
Spray drying liquids	B01D 1/16
Spray drying liquid solutions to obtain solids	B01D 1/18
Fluidised bed technique in general	B01J 8/24
UV-curing of paint	B01J 8/24
Equipment for the use of solar heat	F24S
Magnetrons for drying	H05B 6/78

Special rules of classification

Specific machines or apparatus (F26B 9/00 - F26B 19/00) being inherent to the process take precedence.

Therefore, inventions are additionally classified in F26B 3/00 only, if the invention information lies within the process as such.

In any case, inventions are classified in F26B 3/00, if adequate entries, i.e. classes, for machines or apparatuses do not exist.

F26B 3/08

so as to loosen them, e.g. to form a fluidised bed {("fluidised-bed" technique in general B01J 8/24; centrifugal fluidised beds F26B 7/007)}

References

Limiting references

This place does not cover:

Centrifugal fluidised beds	F26B 7/007

Informative references

Attention is drawn to the following places, which may be of interest for search:

Fluidised bed technique in general	B01J 8/24

F26B 3/12

in the form of a spray {, i.e. sprayed or dispersed emulsions or suspensions (spray drying of solutions B01D 1/18)}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Freeze drying involving spraying	F26B 5/065
Preserving food in general by spray drying	A23B 2/93

Spray drying liquids	B01D 1/16
Spray drying liquids or solutions to obtain solids	B01D 1/18

F26B 3/28

by radiation, e.g. from the sun

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Heated fluid, other than combustion gases, in tubes or passages acting as radiative element	F26B 23/10
UV-curing of paint	B05D 3/065
Equipment for the use of solar heat	F24S

F26B 3/347

Electromagnetic heating, e.g. induction heating or heating using microwave energy

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Magnetrons for drying	H05B 6/78

F26B 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)

Definition statement

This place covers:

Drying solid materials or objects by processes applying a primary drying principle not involving heat.

Direct heating, e.g. radiation, or indirect heating, e.g. convection, of the drying good as measure to compensate cooling effects through evaporation are not considered to be a primary drying principle.

Relationships with other classification places

Separating a liquid product from solids by straining: B01D

Drying by electrophoresis: B01J

Centrifuges in general; details of construction:B04B

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Preserving food in general by freeze drying	A23B 2/92
Apparatus for preserving meat, fish, eggs, fruit, vegetables by freeze drying	A23B 4/037
Domestic salad spin dryer	A47J 43/24
Replacing liquid in wet solids by other liquid	B01D 12/00
Physical or chemical process or apparatus for separating liquids from solids, in general	B01D 43/00
Centrifuges, details of construction	B04B
Metal rolling; removing liquids	B21B 45/0278
Presses for squeezing out liquids	B30B 9/02
Cleaning, e.g. drying paint applying hand tools	B44D 3/006
Drying of peat using presses, rolls or centrifuges	C10F 5/04
Wringing machines for textile articles with two or more cooperating rollers	D06F 45/00
Apparatus of the press type for expelling water from textile articles	D06F 47/00
Domestic spin dryers for textile articles	D06F 49/00
Wet end, e.g. filter belt type, of machines for making a continuous web of paper	D21F 1/00
Drying of constructions or buildings using electricity, e.g. electro-osmosis	E04B 1/7007
Dewatering of waste products by mechanical means prior to combustion	F23G 2201/20

F26B 5/005

{by dipping them into or mixing them with a chemical liquid, e.g. organic; chemical, e.g. organic, dewatering aids (F26B 3/005 takes precedence; using chemical vapours or gases F26B 21/40)}

Definition statement

This place covers:

by dipping them into or mixing them with a chemical liquid, e.g. organic; chemical, e.g. organic, dewatering aids

References

Limiting references

This place does not cover:

Applying a combustible liquid onto the material, the liquid being burnt off subsequently	F26B 3/005
Condensing vapour other than steam onto the surface of the material to be dried	F26B 21/471

Informative references

Attention is drawn to the following places, which may be of interest for search:

Replacing liquid in wet solids by other liquid	B01D 12/00

F26B 5/06

the process involving freezing

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Preserving food in general by freeze drying	A23B 2/92
Apparatus for preserving meat, fish, eggs, fruit, vegetables by freeze drying	A23B 4/037

F26B 5/08

by centrifugal treatment

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Domestic salad spin dryer	A47J 43/24
Centrifuges	B04B
Cleaning, e.g. drying paint applying hand tools	B44D 3/006
Drying of peat using centrifuges	C10F 5/04
Domestic spin dryers for textile articles	D06F 49/00

F26B 5/12

by suction

References

Limiting references

This place does not cover:

Machines for drying material of long length with progressive movement by applying suction	F26B 13/30 or F26B 13/16

Informative references

Attention is drawn to the following places, which may be of interest for search:

Metal rolling; removing liquids	B21B 45/0278
Wet end, e.g. filter belt type, of machines for making a continuous web of paper	D21F 1/00

F26B 5/14

by applying pressure, e.g. wringing; by brushing; by wiping

References

Limiting references

This place does not cover:

Machines for drying material of long length with progressive movement by applying pressure, brushing or wiping	F26B 13/28

Informative references

Attention is drawn to the following places, which may be of interest for search:

Metal rolling; removing liquids	B21B 45/0278
Presses for squeezing out liquids	B30B 9/02
Drying of peat using presses or rolls	C10F 5/04
Wringing machines for textile articles with two or more cooperating rollers	D06F 45/00
Apparatus of the press type for expelling water from textile articles	D06F 47/00
Wet end, e.g. filter belt type, of machines for making a continuous web of paper	D21F 1/00

F26B 5/16

by contact with sorbent bodies, e.g. absorbent mould; by admixture with sorbent materials

References

Limiting references

This place does not cover:

Machines for drying material of long length with progressive movement by employing sorbent surfaces	F26B 13/26

F26B 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 and F26B 5/00 {(F26B 1/005, F26B 5/04, F26B 23/026 take precedence)}

Definition statement

This place covers:

Drying solid materials or objects by processes using a synergy creating combination, opposed to a simple agglomeration, of a heat applying "hot" process and a "cold" process.

Special rules of classification

Documents classified in the combination group F26B 7/00 are also to be classified in the relevant "hot" group F26B 3/00, F26B 9/00 - F26B 19/00 respectively, and the relevant "cold" group F26B 5/00.

F26B 9/00

Machines or apparatus for drying solid materials or objects at rest or with only local agitation; Domestic airing cupboards {(domestic laundry drying cabinets or chambers having heating or ventilating means D06F 58/10)}

Definition statement

This place covers:

Machines or apparatus for drying "large" objects at rest.

Machines or apparatus for drying solid materials or "small" objects, e.g. bulk materials at rest or with local agitation, e.g. fixed or moving "small" stirrer in a "large" silo.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Ventilating means for stacks of agricultural products	A01F 25/08
Machines for drying or roasting fruits or vegetables, e.g. coffee, cocoa, nuts	A23N 12/08
Drying Hair	A45D 20/00
Drying razor blades	A45D 27/48
Body Drying Implements	A47K 10/00
Large containers having means for heating, cooling, aerating or other conditioning of contents	B65D 88/74
Supporting means for linen or garments to be dried	D06F 57/00
Domestic laundry drying cabinets	D06F 58/10
Drying or keeping dry of constructions, e.g. buildings	E04B 1/70

F26B 9/003

{Small self-contained devices, e.g. portable}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Drying razor blades	A45D 27/48

F26B 9/006

{Removable covering devices, e.g. pliable or flexible}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Roofs of drying chambers	F26B 25/10

F26B 9/10

in the open air; in pans or tables in rooms; Drying stacks of loose material {on floors which may be covered, e.g. by a roof (ventilating means of stacks for agricultural produce A01F 25/08)}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Ventilating means for stacks of agricultural products	A01F 25/08

F26B 11/00

Machines or apparatus for drying solid materials or objects with movement which is non-progressive

Definition statement

This place covers:

Machines or apparatus for drying solid materials or objects with primarily non-progressive, i.e. stirring, movement.

The movement of solid materials in e.g. horizontal rotating drums such as kilns is considered not primarily progressive even though opposed inlets and outlets are typically present.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Treating in general with rotating drums	B01J 19/28
Machines for preparing, e.g. heating and drying, of paving materials for roads	E01C 19/05

F26B 11/02

in moving drums or other mainly-closed receptacles (F26B 11/18 takes precedence)

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Treating in general with rotating drums	B01J 19/28
Machines for preparing, e.g. heating and drying, of paving materials for roads	E01C 19/05

F26B 11/022

{Arrangements of drives, bearings, supports}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Driving arrangements specific to drying machines in general	F25B 25/02

F26B 11/024

{Arrangements for gas-sealing the drum}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Seals, locks for drying machines in general	F26B 25/008

F26B 11/026

{Arrangements for charging or discharging the materials to be dried, e.g. discharging by reversing drum rotation, using spiral-type inserts}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Charging and discharging of bulk materials to drying machines in general	F26B 25/002

F26B 11/028

{Arrangements for the supply or exhaust of gaseous drying medium for direct heat transfer, e.g. perforated tubes, annular passages, burner arrangements, dust separation, combined direct and indirect heating}

Definition statement

This place covers:

Arrangement for the supply or exhaust of gaseous drying medium for direct heat transfer, e.g. perforated tubes, annular passages, burner arrangements, dust separation, combined direct and indirect heat transfer

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Arrangements for supplying drying gas in general	F26B 21/00

F26B 11/04

rotating about a horizontal or slightly-inclined axis {(F26B 11/022, F26B 11/024, F26B 11/026, F26B 11/028 take precedence)}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Machines for preparing, e.g. heating and drying, of paving materials for roads	E01C 19/05

F26B 13/00

Machines and apparatus for drying fabrics, fibres, yarns, or other materials in long lengths, with progressive movement

Definition statement

This place covers:

Machines and apparatus for drying materials in long length. The materials move progressively through the apparatus either in the form of a coil or uncoiled, e.g. in the form of a web.

References

Limiting references

This place does not cover:

Drying yarn hanks	F26B 15/124

Informative references

Attention is drawn to the following places, which may be of interest for search:

Drying fishing lines	A01K 97/16
Apparatus for making layered products for laminating, e.g. by curing or drying	B32B 37/00
Treating, e.g. drying, webs after printing	B41F 23/00
Drying filamentary material, e.g. sheets, webs or cables during package formation	B65H 71/00
Drying yarns during spinning or twisting	D01H 13/30
Forcing gases through textile materials	D06B 5/00
Removing liquids from textile materials in association with previous liquid treatment	D06B 15/00
Wet end, e.g. filter belt type, of machines for making a continuous web of paper	D21F 1/00
Dryer sections of machines for making a continuous web of paper	D21F 5/00
Paper-impregnating material characterized by its constitution	D21H 17/00
Paper-impregnating material characterized by its function, form or properties	D21H 21/00

Drying step in manufacturing of cables	H01B 13/30
Drying step in manufacturing of insulators	H01B 19/02

F26B 13/005

{Seals, locks, e.g. gas barriers for web drying enclosures}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Seal, looks in drying apparatus in general	F26B 25/008

F26B 13/24

Arrangements of devices using drying processes not involving heating (such processes per se F26B 5/00)

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Metal rolling; removing liquids	B21B 45/0278

F26B 13/26

using sorbent surfaces, e.g. bands or coverings on rollers

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Drying process by contact with sorbent bodies	F26B 5/16

F26B 13/28

for applying pressure; for brushing; for wiping

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Drying process applying pressure, brushing, wiping	F26B 5/14

F26B 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)

Definition statement

This place covers:

Machines or apparatus for drying objects or object-like batches, e.g. material in a container.

The objects or batches move progressively through the machine or apparatus.

F26B 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 {; feed or discharge arrangements F26B 25/002})

Definition statement

This place covers:

Machines or apparatus for drying materials in loose form, plastic or fluidized form.

The materials move progressively through the machine or apparatus.

References

Limiting references

This place does not cover:

Machines with primarily non-progressive movement of materials, e.g. mixing of materials	F26B 11/00
Fibres forming a material of long length, e.g. yarn, web	F26B 13/00

Informative references

Attention is drawn to the following places, which may be of interest for search:

Machines for drying or roasting fruits or vegetables, e.g. coffee, cocoa, nuts	A23N 12/08
Drying tobacco	A24B 3/04
Drying grain before milling	B02B 1/08
Treatment, e.g. drying of wood particles in the production of pressed articles, e.g. boards	B27N 1/00

Special rules of classification

The movement of materials through rotating drums, e.g. kiln, is considered non-progressive; rotating drums are therefore classified in F26B 11/00

F26B 17/02

with movement performed by belts carrying the materials; with movement performed by belts propelling the materials over stationary surfaces {(F26B 17/003, F26B 17/263 take precedence)}

References

Limiting references

This place does not cover:

Machines or apparatus for drying materials in loose, plastic or fluidised form, e.g. granules or staple fibres, with progressive movement down superimposed fixed floors provided with scrapers	F26B 17/003
Machines or apparatus for drying materials in loose, plastic or fluidised form, e.g. granules or staple fibres, with movement performed by reciprocating or oscillating conveyors that make a rotary working movement while being transversely moved in one direction (with the reverse or return movement being inoperative, e.g. lifted or at rest)	F26B 17/263

Informative references

Attention is drawn to the following places, which may be of interest for search:

Drying solid materials or objects by direct contact with a heated surface, where heat is transferred through conduction from the surface to the material	F26B 3/20
Machines or apparatus for drying objects or batches of material in compact form with progressive movement in a helical path	F26B 15/26

F26B 17/10

with movement performed by fluid currents, e.g. issuing from a nozzle, {e.g. pneumatic, flash, vortex or entrainment dryers} (F26B 3/08 takes precedence)

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Apparatus using free vortex flow for separating in general	B04C

F26B 17/107

{pneumatically inducing within the drying enclosure a curved flow path, e.g. circular, spiral, helical; Cyclone or Vortex dryers (swirl or curved flow path induced mechanically, i.e. by rotating element F26B 3/0923)}

References

Limiting references

This place does not cover:

Drying processes for loose materials involving a fluidised bed	F26B 3/08

Informative references

Attention is drawn to the following places, which may be of interest for search:

Jet Mills, e.g. for drying and milling, having a cyclone or vortex type flow pattern	B02C 19/06
Apparatus using free vortex flow for separating in general	B04C

F26B 17/14

the materials moving through a counter-current of gas

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Drying plastic pellets, e.g. before the extruder	B29B 13/065

F26B 17/24

with movement performed by shooting or throwing the materials {, e.g. after which the materials are subject to impact (F26B 17/108 takes precedence)}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Auxiliary treatment of plastic granules, e.g. after making them	B29B 9/16

F26B 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 {(F26B 17/006 takes precedence)}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Auxiliary treatment of plastic granules, e.g. after making them	B29B 9/16

F26B 19/00

Machines or apparatus for drying solid materials or objects not covered by groups F26B 9/00 - F26B 17/00

Definition statement

This place covers:

Miscellaneous machines and machines of any type for drying solid materials or objects featuring a self contained mobile arrangement, the drying taking place with the mobile machine at rest or with moving machine, e.g. moving along or around the large object to be dried.

Special rules of classification

Combinations of two or more non-mobile machines individually covered by groups F26B 9/00 - F26B 17/00 to be classified in F26B 20/00.

Self contained mobile devices to be classified also in the relevant "stationary" groups F26B 9/00 - F26B 19/00.

F26B 19/005

{Self-contained mobile devices, e.g. for agricultural produce (movable devices with radiation means F26B 3/28; small self-contained devices for drying objects at rest F26B 9/003)}

References

Limiting references

This place does not cover:

Small self-contained devices for drying objects at rest	F26B 9/003

Informative references

Attention is drawn to the following places, which may be of interest for search:

Movable devices with radiation means	F26B 3/28
Harvester with Dryer	A01D 41/133
Large containers having means for heating, cooling, aerating or other conditioning of contents	B65D 88/74
Apparatus for drying pavement	E01C 23/14
Drying, or keeping dry, of constructions, e.g. buildings	E04B 1/70

F26B 20/00

Combinations of machines or apparatus covered by two or more of groups F26B 9/00 - F26B 19/00

Definition statement

This place covers:

Combinations of machines or apparatus, either creating a synergetic effect or being a simple agglomeration, covered by two or more of groups F26B 9/00 - F26B 19/00.

F26B 21/00

Arrangements for supplying or controlling air or other gases for drying solid materials or objects

Definition statement

This place covers:

Arrangements for supplying air, gases or steam to the drying apparatus, or directly to or into the solid materials or objects.

Arrangements for routing and circulating the air, gases or steam for drying.

Arrangements for controlling the properties of air, gases or steam for drying.

Condensing vapour other than steam onto the surface of the materials or objects to be dried.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Drying solid materials or objects by processes involving the application of heat	F26B 3/00
Machines or apparatus for drying solid materials or objects at rest or with only local agitation in the open air, or in pans or tables in rooms; Drying stacks of loose material	F26B 9/10
Details, component parts of blowers in general	F04D 29/00
Valves in general	F16K

F26B 21/001

{Air generating units, e.g. movable or independent of drying enclosure}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Apparatus for drying pavement	E01C 23/14
Drying of constructions, e.g. buildings	E04B 1/7015

F26B 21/002

{with means for indirect air heating, i.e. using heat exchangers}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Heating arrangements using waste heat	F26B 23/001
Heating arrangements using tubes or passages containing heating fluids; Closed-loop systems	F26B 23/10

F26B 21/006

{with the air or gases passing through hollow spaces or cores within the materials or objects to be dried, e.g. tubes, pipes or bottles}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Small self-contained devices, e.g. portable, for drying solid materials or objects	F26B 9/003
Drying stacks of loose material using drying channels placed in the stack	F26B 9/103
Devices or implements for drying footwear, also with heating arrangements	A47L 23/20

F26B 21/008

{the objects being flexible, e.g. inflatable tubes or sausage casings}

References

Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Apparatus for drying fire-fighting hoses	A62C 33/02

Informative references

Attention is drawn to the following places, which may be of interest for search:

Supports adapted to retain the shape of particular textile articles being dried, such as garments, gloves or stockings	D06F 59/00

F26B 21/202

{with means for changing the flow pattern, e.g. by reversing gas flow or by moving the materials or objects through subsequent compartments, at least two of which have a different flow direction}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Controlling flow velocity or quantity of gas for drying solid material or objects	F26B 21/37

F26B 21/33

Humidity

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Separation of gases and vapours by absorption in general	B01D 53/14
Drying gases or vapours	B01D 53/26

F26B 21/331

{by using sorbent or hygroscopic materials, e.g. chemical substances or molecular sieves}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Separation of gases and vapours by adsorption in general	B01D 53/02
Drying gases by adsorption	B01D 53/261

F26B 21/333

{by condensing the moisture in the drying medium, which may be recycled, e.g. using a heat pump cycle}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Separating volatiles from dryer exhaust gases	F26B 25/006
Condensation of vapours; Recovering volatile solvents by condensation	B01D 5/00
Sublimation	B01D 7/00
Separation of gases and vapours by condensation in general	B01D 53/002
Drying gases by condensation	B01D 53/265

F26B 21/471

{condensing vapours onto the surface of the materials to be dried}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Drying solid materials or objects by processes involving the application of heat	F26B 3/00
Drying solid materials or objects without applying heat, by immersing them in or mixing them with a chemical liquid	F26B 5/005

F26B 21/50

Ducting arrangements from the source of air or other gases to the materials or objects being dried

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Arrangement of devices, e.g. grids or nozzles, for distributing fluidising gas in fluidised-bed dryers	F26B 3/082
Fluid blowing arrangements, e.g. Coanda nozzles, for supporting materials in flotation dryers	F26B 13/104
Blowing devices with adjustable effective area for adapting to the width of the material being dried	F26B 13/108

F26B 23/00

Heating arrangements (using heated air or other gases F26B 21/00)

Definition statement

This place covers:

Heating arrangements providing a heat source for drying machines, located outside or within the drying enclosure.

References

Limiting references

This place does not cover:

Arrangements for supplying or controlling heated air or other gases for drying solid material or objects	F26B 21/00

Informative references

Attention is drawn to the following places, which may be of interest for search:

Drying solid materials or objects by processes involving heat radiation, e.g. from the sun	F26B 3/28
Drying solid materials or objects by processes involving heat radiation from infrared-emitting elements	F26B 3/30

F26B 23/001

{using waste heat}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Waste heat recuperation with combustion	F23G 2206/00

F26B 23/02

using combustion heating ({F26B 3/305, F26B 13/186, F26B 21/001, } F26B 23/10 take precedence)

References

Limiting references

This place does not cover:

Combustion for generating IR radiation, either through flame radiation or combustion heated tubes	F26B 3/305
Heating rollers for drying materials of long length	F26B 13/186
Air generating units for drying solid materials or objects	F26B 21/001

Informative references

Attention is drawn to the following places, which may be of interest for search:

Arrangements of gas flames for drying materials of long length	F26B 13/22
Waste combustion control aspects	F23G 2207/00
Regulating or controlling combustion	F23N

F26B 23/028

{using solid fuel; burning the dried product}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Using combustion flue gas to predry fuel	F23G 2206/10

F26B 25/00

Details of general application not covered by group F26B 21/00 or F26B 23/00 (loading, conveying, and unloading in general B65G)

Definition statement

This place covers:

Details of machines or processes other than arrangements of drying air or gas supply or heating arrangements such as:

Cleaning arrangements, e.g. for drying chambers.

Loading, unloading and other handling of objects or materials to be dried or dried.

Treatment of dryer exhaust gases.

Seals, locks and air curtains for drying enclosures.

Alarm, safety and fire protection systems.

Driving mechanisms specific for drying machines.

Agitating, stirring or scraping devices.

Drying chambers and parts thereof.

Rollers, e.g. for conveying specific to drying machines and their requirements.

Controlling the drying process depending on the liquid content of dried material or wet material being charged.

References

Limiting references

This place does not cover:

Driving mechanisms for rotary drums, e.g. kiln	F26B 11/022
Arrangements for gas sealing drum dryers, e.g. kilns	F26B 11/024
Loading and unloading materials in rotary drums, e.g. kilns	F26B 11/026
Seals, locks for web drying enclosures	F26B 13/005
Rollers and driving mechanisms for rollers for drying material of long length	F26B 13/14
Treatment of dryer exhaust gas through incineration of volatiles	F26B 13/22
Loading and unloading of wicket conveyor	F26B 15/085
Material feeding means for pneumatic, flash or vortex dryers	F26B 17/103
Safety and fire protection system using inert gases	F26B 21/40
Driving mechanisms covered by another subclass, e.g. regarding centrifuges	B04B 9/00

Informative references

Attention is drawn to the following places, which may be of interest for search:

Mixing or backmixing of wet materials to be charged, thus changing the liquid content	F26B 1/00
Drying process involving brushing or wiping	F26B 5/14
Stationary drying chamber with mechanical agitating device	F26B 9/082
Loading and unloading materials in rotary drums, e.g. kilns	F26B 11/026
Moving stirring devices in stationary drums	F26B 11/12
Moving stirring devices in stationary dishes, tray or pans	F26B 11/22
Arrangements for wiping material of long length, e.g. webs	F26B 13/28
Scraping device to remove dried material from roller or disc, e.g. doctor blade	F26B 17/286
Large containers having means for heating, cooling, aerating or other conditioning of contents	B65D 88/74
Loading, conveying and unloading in general	B65G
Driving mechanisms in connection with general conveying machines	B65G

F26B 25/002

{for bulk goods}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Loading and unloading materials in rotary drums, e.g. kilns	F26B 11/026
Material feeding means for pneumatic, flash or vortex dryers	F26B 17/103
Devices for feeding particles into and evacuation of particles out of the reactor	B01J 8/0015

F26B 25/008

{Seals, locks, e.g. gas barriers or air curtains, for drying enclosures (F26B 11/024 and F26B 13/005 take precedence)}

References

Limiting references

This place does not cover:

Arrangements for gas sealing drum dryers, e.g. kilns	F26B 11/024
Seals, locks for web drying enclosures	F26B 13/005

Informative references

Attention is drawn to the following places, which may be of interest for search:

Seals in general	F16J 15/00