COOPERATIVE PATENT CLASSIFICATION

B PERFORMING OPERATIONS; TRANSPORTING

NOTES omitted

TRANSPORTING

B65 CONVEYING; PACKING; STORING; HANDLING THIN OR FILAMENTARY MATERIAL

B65G TRANSPORT OR STORAGE DEVICES, e.g. CONVEYORS FOR LOADING OR TIPPING, SHOP CONVEYOR SYSTEMS OR PNEUMATIC TUBE CONVEYORS (packaging B65B; handling thin or filamentary materials, e.g. paper sheets or thread, B65H; cranes B66C; portable mobile or lifting or hauling appliances, e.g. hoists, B66D; devices for lifting or lowering goods for loading or unloading purposes, e.g. fork-lift trucks, B66F 9/00; emptying bottles, jars, casks, barrels or similar containers, not otherwise provided for, B67C 9/00; delivering or transferring liquids B67D; filling or discharging vessels for liquefied, solidified or compressed gases F17C; pipe-line systems for fluids F17D)

NOTE
This subclass does not cover road or railway vehicles, waterborne vessels or aircraft per se, or their adaptation for transport purposes. This subject matter is classified in the following places:
• vehicles adapted for load transportation B60P;
• railway wagons adapted for load transportation B61D;
• hand carts B62B;
• superstructures for load-carrying vehicles B62D 33/00;
• loading or load-accommodating arrangements on ships or vessels B63B 25/00, B63B 27/00;
• equipment for handling freight in aircraft B64D 9/00

WARNINGS
1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:
   B65G 47/10 covered by B65G 1/1373
   B65G 47/86 covered by B65G 47/842, B65G 47/847
   B65G 69/32 covered by B65G 69/28
   B65G 69/34 covered by B65G 69/28

2. 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.

Storing; Storage devices

1/00 Storing articles, individually or in orderly arrangement, in warehouses or magazines (conveyor combinations in warehouses, magazines or workshops B65G 37/00; stacking of articles B65G 57/00; removing articles from stacks B65G 59/00; loading machines B65G 65/02)

1/02 . . Storage devices (furniture A47B; shop fittings A47F)

1/023 . . [Arrangements of article supporting rollers on racks]

1/026 . . [Racks equipped with a displaceable load carrying surface to facilitate loading or unloading]

1/04 . . . mechanical

1/0407 . . . [using stacker cranes (constructional features of stacker cranes B66F 9/06)]

1/0414 . . . [provided with satellite cars adapted to travel in storage racks]

1/0421 . . . [with control for stacker crane operations]

1/0428 . . . [Transfer means for the stacker crane between the alleys]

1/0435 . . . [with pulling or pushing means on either stacking crane or stacking area]

1/0442 . . . [for elongated articles (drill pipe racking E21B 19/14)]

1/045 . . . [in a circular arrangement, e.g. towers]

1/0457 . . . [with suspended load carriers]

1/0464 . . . [with access from above]

1/0471 . . . [with access from beneath]

1/0478 . . . [for matrix-arrangements]

1/0485 . . . [Check-in, check-out devices]

1/0492 . . . [with cars adapted to travel in storage aisles]

1/06 . . . with means for presenting articles for removal at predetermined position or level (B65G 1/12 takes precedence)

1/065 . . . [with self propelled cars]
Storing; Storage devices

1/07 . . . . the upper article of a pile being always presented at the same predetermined level
1/08 . . . . the articles being fed by gravity (in braking arrangements for roller-ways B65G 13/075; separating or stopping elements B65G 47/88)
1/10 . . . . with relatively movable racks to facilitate insertion or removal of articles (in cabinets with means for moving compartments up and down A47B 51/00; cabinet system, e.g. consisting of cabinets arranged in a row with means to open or close passages between adjacent cabinets A47B 53/02)
1/12 . . . . with [separate] article supports or holders movable in a closed circuit to facilitate insertion or removal of articles (the articles being books, documents, forms or the like)
1/127 . . . . the circuit being confined in a vertical plane
1/133 . . . . the circuit being confined in a horizontal plane
1/137 . . . . with arrangements or automatic control means for selecting which articles are to be removed
1/1371 . . . . [with data records]
1/1373 . . . . [for fulfilling orders in warehouses]
1/1375 . . . . [the orders being assembled on a commissioning stacker-crane or truck]
1/1376 . . . . [the orders being assembled on a commissioning conveyor]
1/1378 . . . . [the orders being assembled on fixed commissioning areas remote from the storage areas]
1/14 . . . . Stack holders or separators
1/16 . . . . Special arrangements of articles in storage spaces
1/18 . . . . Articles inclined so as to be mutually self-supporting
1/20 . . . . Articles arranged in layers with spaces between articles
3/00 Storing bulk material or loose, i.e. disorderly, articles (filling or emptying storage spaces or containers, spreading-out or piling-up bulk material or loose articles B65G 65/28, B65G 65/30, B65G 69/04)
3/02 . . . . in the open air (B65G 3/04 takes precedence)
3/04 . . . . in bunkers, hoppers, or like containers
5/00 Storing fluids in natural or artificial cavities or chambers in the earth
5/005 . . . . [in porous layers]

Devices assisting manual conveyance of articles ove short distances, e.g. in storage depots, warehouses or factories (chutes B65G 11/00; roller-ways B65G 13/00; luggage carriers A45C 13/38; holders or carriers for hand articles or for use while travelling or camping A45F 5/00; vehicles in general, axles, wheels B60; air-cushion vehicles B60V; handcarts, sledges, features of hand-propelled wheeled devices or pedestrian-controlled, power-driven vehicles equally applicable to handcarts B62B; ship-moving devices B63C; E02C; containers, pallets B65D; air-cushions as bearing elements F16C 29/00)

7/00 Devices for assisting manual moving or tilting heavy loads (roller-ways B65G 13/00; for tilting and emptying barrels or casks B65G 65/24)
7/02 . . . . Devices adapted to be interposed between loads and the ground or floor, e.g. crowbars with means for assisting conveyance of loads

7/04 . . . . Rollers
7/06 . . . . using fluid at high pressure supplied from an independent source to provide a cushion between load and ground ([conveying articles over a flat surface by jets located in the surface B65G 51/00])
7/08 . . . . for tilting the loads
7/10 . . . . for rolling cylindrical loads
7/12 . . . . Load carriers, e.g. hooks, slings, harness, gloves, modified for load carrying
9/00 Apparatus for assisting manual handling having suspended load-carriers movable by hand or gravity
9/002 . . . . [Load-carriers, rollers therefor]
9/004 . . . . [Loading or unloading arrangements]
9/006 . . . . [Arresting, braking or escapement means]
9/008 . . . . [Rails or switches]

Chutes; Kinds or types of conveyors; Constructional features, details, or auxiliary devices peculiar to conveyors of particular types (feeding or discharging conveyors by devices incorporated in or operatively associated with conveyors B65G 47/00; loading or unloading B65G 65/00; escalators or moving walkways B66B 21/00; drag-line scraper conveyors E02F 3/46)

11/00 Chutes (used as storage devices B65G 1/02)
11/02 . . . . of straight form
11/023 . . . . [for articles]
11/026 . . . . [for bulk]
11/04 . . . . for mail in buildings
11/06 . . . . of helical or spiral form
11/063 . . . . [for articles]
11/066 . . . . [for bulk]
11/08 . . . . with discontinuous guiding surfaces, e.g. arranged in zigzag or cascade formation
11/081 . . . . [for articles (B65G 11/085 takes precedence)]
11/083 . . . . [for bulk (B65G 11/085 takes precedence)]
11/085 . . . . [with zig-zag formations]
11/086 . . . . [for articles]
11/088 . . . . [for bulk]
11/10 . . . . flexible
11/103 . . . . [for articles]
11/106 . . . . [for bulk]
11/112 . . . . pivotable
11/123 . . . . [for articles]
11/126 . . . . [for bulk]
11/14 . . . . extensible, e.g. telescopic
11/143 . . . . [for articles]
11/146 . . . . [for bulk]
11/16 . . . . Interior surfaces; Linings
11/163 . . . . [for articles]
11/166 . . . . [for bulk]
11/18 . . . . Supports or mountings
11/183 . . . . [for articles]
11/186 . . . . [for bulk]
11/20 . . . . Auxiliary devices, e.g. for deflecting, controlling speed of, or agitating articles or solids
11/203 . . . . [for articles]
11/206 . . . . [for bulk]
Chutes; Kinds or types of conveyors; Constructional features, details, or auxiliary devices peculiar to conveyors of...

13/00 Roller-ways (storage devices comprising roller-ways B65G 1/02; endless-chain conveyors comprising load-supporting rollers B65G 17/00; rollers or arrangements thereof B65G 39/00)

13/02 . having driven rollers
13/04 . . all rollers driven
13/06 . . Roller driving means
13/065 . . [with displacement of the roller]
13/07 . . having endless driving elements
13/071 . . with frictional engagement
13/073 . . comprising free-wheel gearing
13/075 . . Braking means
13/08 . . of curved form; with branch-offs
13/10 . . Switching arrangements
13/11 . . Roller frames
13/12 . . adjustable

15/00 Conveyors having endless load-conveying surfaces, i.e. belts and like continuous members, to which tractive effort is transmitted by means other than endless driving elements of similar configuration (having load-conveying surfaces formed by interconnected longitudinal links B65G 17/06)

15/005 . . [the surface being formed by one rope]
15/02 . . for conveying in a circular arc
15/04 . . the load being carried on the lower run of the endless surface
15/06 . . with oppositely-moving parts of the endless surface located in the same plane and parallel to one another
15/08 . . the load-carrying surface being formed by a concave or tubular belt, e.g. a belt forming a trough
15/10 . . comprising two or more co-operating endless surfaces with parallel longitudinal axes, or a multiplicity of parallel elements, e.g. ropes defining an endless surface
15/105 . . [the surface being formed by two or more ropes]
15/12 . . with two or more endless belts
15/14 . . the load being conveyed between the belts {B65G 15/18; B65G 15/20 take precedence}
15/16 . . . between an auxiliary belt and a main belt
15/18 . . . the belts being sealed at their edges
15/20 . . . arranged side by side, e.g. for conveyance of flat articles in vertical position
15/22 . . comprising a series of co-operating units
15/24 . . . in tandem
15/26 . . . extensible, e.g. telescopic {adjustment of length or configuration of load-carrier B65G 21/14}
15/28 . . Conveyors with a load-conveying surface formed by a single flat belt, not otherwise provided for
15/30 . . Belt or like endless load-carriers (co-operating with rails or the like B65G 21/22; co-operating with rollers B65G 39/20)
15/32 . . made of rubber or plastics
15/34 . . with reinforcing layers, e.g. of fabric
15/36 . . . the layers incorporating ropes, chains, or rolled steel sections
15/38 . . . with flame-resistant layers, e.g. of asbestos, glass
15/40 . . . troughed or tubular; formed with joints facilitating troughing
15/42 . . . having ribs, ridges, or other surface projections
15/44 . . . for impelling the loads
15/46 . . . formed with guides
15/48 . . . metallic

15/50 . . Endless load-carriers consisting of a series of parallel ropes or belt strips
15/52 . . . interconnected by transverse slats
15/54 . . . Endless load-carriers made of interwoven ropes or wires
15/56 . . . with edge-protecting or reinforcing means
15/58 . . . with means for holding or retaining the loads in fixed position, e.g. magnetic
15/60 . . Arrangements for supporting or guiding belts, e.g. by fluid jets
15/62 . . . Guides for sliding belts
15/64 . . . for automatically maintaining the position of the belts

17/00 Conveyors having an endless traction element, e.g. a chain, transmitting movement to a continuous or substantially-continuous load-carrying surface or to a series of individual load-carriers; Endless-chain conveyors in which the chains form the load-carrying surface

17/002 . . [comprising load carriers resting on the traction element]
17/005 . . [comprising individual load carriers which are movably mounted (B65G 17/16 takes precedence)]
17/007 . . [for conveying the load on the lower run or on both upper and lower runs of the conveyor]
17/02 . . comprising a load-carrying belt attached to or resting on the traction element
17/04 . . the belt having loops forming load-receiving pockets
17/06 . . having a load-carrying surface formed by a series of interconnected, e.g. longitudinal, links, plates, or platforms
17/061 . . . [the load carrying surface being formed by profiles, rods, bars, rollers or the like attached to a single traction element (B65G 17/24 takes precedence)]
17/062 . . . [the profiles, rods, bars, rollers or the like being interconnected by a mesh or grid-like structure]
17/063 . . . [the load carrying surface being formed by profiles, rods, bars, rollers or the like attached to more than one traction element (B65G 17/24 takes precedence)]
17/064 . . . [the profiles, rods, bars, rollers or the like being interconnected by a mesh or grid-like structure]
17/065 . . . [the load carrying surface being formed by plates or platforms attached to a single traction element]
17/066 . . . [specially adapted to follow a curved path (for individual load carriers B65G 17/22)]
17/067 . . . [the load carrying surface being formed by plates or platforms attached to more than one traction element]
17/068 . . . [specially adapted to follow a curved path (for individual load carriers B65G 17/22)]
17/069 . . . the surface being formed by the traction element
17/08 . . . [the surface being formed by profiles, rods, bars, rollers or the like]
17/083 . . . [specially adapted to follow a curved path (for individual load carriers B65G 17/22)]
17/10 . . . the surface forming a longitudinal trough
17/12 . . . comprising a series of individual load-carriers fixed, or normally fixed, relative to traction element
Chutes; Kinds or types of conveyors; Constructional features, details, or auxiliary devices peculiar to conveyors of...

19/12 . . . the impellers being plates having an area substantially smaller than that of the trough of channel cross-section
19/14 . . . for moving bulk material in closed conduits, e.g. tubes
19/16 . . . the impellers being elements having an area substantially smaller than that of the conduit cross-section
19/165 . . . [the impellers being endless helical springs]
19/18 . . . Details
19/185 . . . [for article conveyors, e.g. for container conveyors (B65G 19/20, B65G 19/22, B65G 19/28 take precedence)]
19/20 . . . Traction chains, ropes, or cables
19/205 . . . [for article conveyors, e.g. for container conveyors]
19/22 . . . Impellers, e.g. push-plates, scrapers; Guiding means therefor
19/225 . . . [for article conveyors, e.g. for container conveyors (B65G 19/24 takes precedence)]
19/24 . . . Attachment of impellers to traction element
19/245 . . . [for article conveyors, e.g. for container conveyors (B65G 19/26 takes precedence)]
19/26 . . . pivotal
19/265 . . . . . [for article conveyors, e.g. for container conveyors]
19/28 . . . Troughs, channels, or conduits
19/282 . . . [for article conveyors, e.g. for container conveyors (B65G 19/30 takes precedence)]
19/285 . . . [with detachable or replaceable parts, e.g. replaceable wear channels (B65G 19/282 takes precedence)]
19/287 . . . [Coupling means for trough sections (B65G 19/282 takes precedence)]
19/30 . . . with supporting surface modified to facilitate movement of loads, e.g. friction reducing devices
19/303 . . . . . [for article conveyors, e.g. for container conveyors]
19/306 . . . . . [the supporting surface being provided with rollers]

21/00 Supporting or protective framework or housings for endless load-carriers or traction elements of belt or chain conveyors
21/005 . . . [for conveyors floating on liquids]
21/02 . . . consisting essentially of struts, ties, or like structural elements
21/04 . . . the ties being formed by longitudinal cables or ropes
21/06 . . . constructed to facilitate rapid assembly or dismantling
21/08 . . . Protective roofs or arch supports therefor
21/10 . . . movable, or having interchangeable or relatively movable parts; Devices for moving framework or parts thereof
21/105 . . . [having demountable driving or return heads]
21/12 . . . to allow adjustment of position of load-carrier or traction element as a whole
21/14 . . . to allow adjustment of length or configuration of load-carrier or traction element (varying speed of conveyance by adjusting configuration of load-carrier B65G 23/00; tensioning arrangements for belt or chain B65G 23/44)
F21/16 . . for conveyors having endless load-carriers movable in curved paths
F21/18 . . in three-dimensionally curved paths
F21/20 . . Means incorporated in, or attached to, framework or housings for guiding load-carriers, traction elements or loads supported on moving surfaces (arrangements for supporting belts B65G 15/60; rollers or roller arrangements B65G 39/00)
F21/2009 . . [Magnetic retaining means]
F21/2018 . . . [for retaining the load on the load-carrying surface, (retaining loads by magnetic load-carriers, e.g. belts B65G 15/58; chains B65G 17/46; individual magnetic grippers B65G 17/323)]
F21/2027 . . [Suction retaining means]
F21/2036 . . . [for retaining the load on the load-carrying surface (individual suction grippers B65G 17/323)]
F21/2045 . . [Mechanical means for guiding or retaining the load on the load-carrying surface]
F21/2054 . . . [comprising elements movable in the direction of load-transport]
F21/2063 . . . [comprising elements not movable in the direction of load-transport]
F21/2072 . . . . [Lateral guidance means]
F21/2081 . . . [for bulk material, e.g. skirts]
F21/209 . . . . . [for augmenting or creating a pressure force between the load and the load-carrying surface]
F21/22 . . . Rails or the like engaging sliding elements or rollers attached to load-carriers or traction elements

23/00 Driving gear for endless conveyors; Belt- or chain-tensioning arrangements
23/02 . . Belt- or chain-engaging elements
23/04 . . . Drums, rollers, or wheels (B65G 23/18 takes precedence)
23/06 . . . with projections engaging abutments on belts or chains, e.g. sprocket wheels
23/08 . . . with self-contained driving mechanisms, e.g. motors and associated gearing
23/10 . . . arranged intermediate the ends of the conveyors
23/12 . . . Arrangements of co-operating drums or rollers to augment tractive effort applied to the belts
23/14 . . . Endless driving elements extending parallel to belt or chain (B65G 23/18 takes precedence)
23/16 . . . with dogs engaging abutments on belts or chains
23/18 . . Suction or magnetic elements
23/19 . . . Suction elements
23/20 . . . Screws
23/22 . . . Arrangements or mountings of driving motors (B65G 23/08 takes precedence)
23/23 . . . of electric linear motors
23/24 . . Gearing between driving motor and belt- or chain-engaging elements (contained in drums, rollers or wheels B65G 23/08)
23/26 . . . Applications of clutches or brakes
23/28 . . . Arrangements for equalising the drive to several elements
23/30 . . . Variable-speed gearing
23/32 . . for effecting drive at two or more points spaced along the length of the conveyors
23/34 . . . comprising a single motor coupled to spaced driving elements
23/36 . . . comprising two or more driving motors each coupled to a separate driving element, e.g. at either end of the conveyors
23/38 . . . for effecting intermittent movement of belts or chains
23/40 . . . Applications of pawl and ratchet mechanisms or Geneva wheels
23/42 . . . Reciprocating members engaging successive abutments on belts or chains
23/44 . . . Belt or chain tensioning arrangements

25/00 Conveyors comprising a cyclically-moving, e.g. reciprocating, carrier or impeller which is disengaged from the load during the return part of its movement (jigging B65G 27/00)
25/02 . . the carrier or impeller having different forward and return paths of movement, e.g. walking beam conveyors
25/04 . . the carrier or impeller having identical forward and return paths of movement, e.g. reciprocating conveyors
25/06 . . . having carriers, e.g. belts
25/065 . . . . [Reciprocating floor conveyors]
25/08 . . . having impellers, e.g. pushers
25/10 . . . with impeller pivotally mounted on a reciprocating bar
25/12 . . . with impeller fixed to a reciprocating bar and the bar being rotated about its longitudinal axis on its return stroke

27/00 Jigging conveyors
27/02 . . comprising helical or spiral channels or conduits for elevation of materials
27/04 . . Load carriers other than helical or spiral channels or conduits
27/06 . . . Joints connecting load-carrier sections
27/08 . . Supports or mountings for load-carriers, e.g. framework, bases, spring arrangements (spring arrangements as jigging movement transmitting units B65G 27/10)
27/10 . . Applications of devices for generating or transmitting jigging movements
27/12 . . . of shaking devices, i.e. devices for producing movements of low frequency and large amplitude
27/14 . . . hydraulic
27/16 . . . of vibrators, i.e. devices for producing movements of high frequency and small amplitude
27/18 . . . Mechanical devices (B65G 27/26 takes precedence)
27/20 . . . . rotating unbalanced masses
27/22 . . . . Hydraulic or pneumatic devices
27/24 . . . . Electromagnetic devices
27/26 . . . . with elastic coupling between vibrator and load carrier
27/28 . . . with provision for dynamic balancing
27/30 . . . by means of an oppositely-moving mass, e.g. a second conveyor
27/32 . . . with means for controlling direction, frequency or amplitude of vibration or shaking movement
Chutes; Kinds or types of conveyors; Constructional features, details, or auxiliary devices peculiar to conveyors of...

37/00 Combinations of mechanical conveyors of the same kind, or of different kinds, of interest apart from their application in particular machines or use in particular manufacturing processes (series of co-operating belt conveyor units B65G 15/22; series of co-operating chain conveyor units B65G 17/22; sequence control of combined conveyors B65G 43/10)

37/005 . (comprising two or more co-operating conveying elements with parallel longitudinal axes (the conveying elements being endless surfaces B65G 15/10))

37/02 . Flow-sheets for conveyor combinations in warehouses, magazines or workshops

Common features or details of, or auxiliary devices applicable to, conveyors of different kinds or types: Feeding or discharging devices incorporated in, or operatively associated with, conveyors

39/00 Rollers, e.g. drive rollers, or arrangements thereof incorporated in roller-ways or other types of mechanical conveyors (driving gear for rollers of roller-ways B65G 13/06)

39/02 . Adaptations of individual rollers and supports therefor

39/025 . . [having spherical roller elements]

39/04 . . the rollers comprising a number of roller forming elements mounted on a single axle

39/06 . . the roller sleeves being shock-absorbing, e.g. formed by helically-wound wires

39/07 . . Other adaptations of sleeves

39/071 . . . for aligning belts or sheets

39/073 . . . for cleaning belts

39/08 . . the rollers being magnetic

39/09 . . Arrangements of bearing or sealing means

39/10 . . Arrangements of rollers (on a single axle B65G 39/04)

39/12 . . mounted on framework

39/125 . . . (for selectively adjusting troughing of the conveying belt)

39/14 . . . Spring-supported sets, e.g. permitting troughing of a load-carrying belt

39/145 . . . . . . [attached to ties formed by longitudinal cables or ropes]

39/16 . . . for aligning belts or chains

39/18 . . . for guiding loads

39/20 . . . attached to moving belts or chains

41/00 Supporting frames or bases for conveyors as a whole, e.g. transportable conveyor frames

41/001 . . (with the conveyor adjustably mounted on the supporting frame or base)

41/002 . . . [Pivoting mounted]

41/003 . . . (mounted for linear movement only)

41/005 . . . (mounted for both pivotal and linear movement)

41/006 . . . (with the conveyor not adjustably mounted on the supporting frame or base)

41/007 . . . [Means for moving conveyor frames and control arrangements therefor (B65G 41/02 takes precedence)]

41/008 . . . [frames mounted on wheels or caterpillar (for movement on rail tracks B65G 41/02)]

41/02 . Frames mounted on wheels for movement on rail tracks
Feeding or...

47/00 Control devices, e.g. for safety, warning or fault-correcting

**NOTE**

in this group the following indexing codes are used:

- B65G 2811/0673
- B65G 2812/02099 - B65G 2812/02108

47/02 . . detecting dangerous physical condition of load carriers, e.g. for interrupting the drive in the event of overheating

47/04 . . detecting slip between driving element and load-carrier, e.g. for interrupting the drive ([B65G 43/02 takes precedence])

47/06 . . interrupting the drive in case of driving element breakage; Braking or stopping loose load-carriers

47/08 . . Control devices operated by article or material being fed, conveyed or discharged ([and controlling the discharging devices B65G 47/42])

47/10 . . Sequence control of conveyors operating in combination

45/00 Lubricating, cleaning, or clearing devices

45/005 . . (Cleaning conveyor screws)

45/02 . . Lubricating devices

45/04 . . . for rollers

45/06 . . . forming belt troughing structure

45/08 . . . for chains

45/10 . . Cleaning devices (adaptations of roller sleeves for cleaning belts B65G 39/073)

45/105 . . (comprising vibrating means)

45/12 . . . comprising scrapers

45/14 . . . Moving scrapers

45/16 . . . with scraper biasing means

45/18 . . . comprising brushes

45/20 . . . comprising screws

45/22 . . . comprising fluid applying means

45/24 . . . comprising plural diverse cleaning devices

45/26 . . . for gathering residue after cleaning

47/00 Article or material-handling devices associated with conveyors; Methods employing such devices

47/02 . . Devices for feeding articles or materials to conveyors

47/04 . . . for feeding articles

47/06 . . . from a single group of articles arranged in orderly pattern, e.g. workpieces in magazines (de-stacking devices B65G 59/00)

47/08 . . . spacing or grouping the articles during feeding (during transit by conveyor B65G 47/28)

47/082 . . . . . . . (grouping articles in rows)

47/084 . . . . . . . (grouping articles in a predetermined 2-dimensional pattern)

47/086 . . . . . . . {cubiform articles}

47/088 . . . . . . . {cylindrical articles}

47/12 . . . from disorderly-arranged article piles or from loose assemblages of articles

47/14 . . . arranging or orientating the articles by mechanical or pneumatic means during feeding (during transit by conveyor B65G 47/24, B65G 47/26)

47/1407 . . . . . . . {the articles being fed from a container, e.g. a bowl]

47/1414 . . . . . . . {by means of movement of at least the whole wall of the container}

47/1421 . . . . . . . {Vibratory movement}

47/1428 . . . . . . . {rotating movement}

47/1435 . . . . . . . {using the centrifugal effect to arrange or orientate the articles}

47/1442 . . . . . . . {by means of movement of the bottom or a part of the wall of the container (devices using suction or magnetic forces B65G 47/14853)

47/145 . . . . . . . {Jigging or reciprocating movement}

47/1457 . . . . . . . {Rotating movement in the plane of the rotating part}

47/1464 . . . . . . . {using the centrifugal effect to arrange or orientate the articles}

47/1471 . . . . . . . {Movement in one direction, substantially outwards}

47/1478 . . . . . . . {by means of pick-up devices, the container remaining immobile}

47/1485 . . . . . . . {using suction or magnetic forces}

47/1492 . . . . . . . {the articles being fed from a feeding conveyor}

47/16 . . . . . . . . . for feeding materials in bulk

47/18 . . . . . . . . . Arrangements or applications of hoppers or chutes

47/19 . . . . . . . . . having means for controlling material flow, e.g. to prevent overloading

47/20 . . . . . . . . . the hoppers or chutes being movable

47/22 . . . . . . . . . Devices influencing the relative position or the attitude of articles during transit by conveyors (during feeding B65G 47/14)

47/24 . . . . . . . . . orientating the articles

47/244 . . . . . . . . . by turning them about an axis substantially perpendicular to the conveying plane

47/2445 . . . . . . . . . {by means of at least two co-operating endless conveying elements}

47/248 . . . . . . . . . by turning over or inverting them (B65G 47/244 takes precedence)

47/252 . . . . . . . . . about an axis substantially perpendicular to the conveying direction

47/256 . . . . . . . . . removing incorrectly orientated articles

47/26 . . . . . . . . . arranging the articles, e.g. varying spacing between individual articles

47/261 . . . . . . . . . [Accumulating articles]

47/263 . . . . . . . . . [the conveyor drive is taken from a longitudinally extending shaft]

47/265 . . . . . . . . . {with one or more load advancing units travelling along the entire length of the accumulation line}

47/266 . . . . . . . . . {by means of a series of pivotal stop elements}

47/268 . . . . . . . . . {by means of belt or chain conveyor}

47/28 . . . . . . . . . during transit by a single conveyor

47/29 . . . . . . . . . by temporarily stopping movement ([stopping elements B65G 47/88])

47/295 . . . . . . . . . {by means of at least two stopping elements}

47/30 . . . . . . . . . during transit by a series of conveyors

47/31 . . . . . . . . . by varying the relative speeds of the conveyors forming the series

47/32 . . . . . . . . . Applications of transfer devices ([such devices per se B65G 47/74])

47/34 . . . . . . . . . Devices for discharging articles or materials from conveyor (B65G 47/256 takes precedence)
Common features or details of, or auxiliary devices applicable to, conveyors of different kinds or types:

<table>
<thead>
<tr>
<th>CPC</th>
<th>47/36</th>
<th>. . . by detaching suspended articles</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPC</td>
<td>47/38</td>
<td>. . . by dumping, tripping, or releasing load carriers (by flexing or tilting travelling structures B65G 47/94)</td>
</tr>
<tr>
<td>CPC</td>
<td>47/40</td>
<td>. . . by tilting conveyor buckets</td>
</tr>
<tr>
<td>CPC</td>
<td>47/42</td>
<td>. . . operated by article or material being conveyed and discharged {(B65G 47/46 takes precedence)}</td>
</tr>
<tr>
<td>CPC</td>
<td>47/44</td>
<td>. . . Arrangements or applications of hoppers or chutes</td>
</tr>
<tr>
<td>CPC</td>
<td>47/46</td>
<td>. . . and distributing, e.g. automatically, to desired points (in tube mail systems B65G 51/36)</td>
</tr>
<tr>
<td>CPC</td>
<td>47/48</td>
<td>. . . according to bodily destination marks on either articles or load-carriers</td>
</tr>
<tr>
<td>CPC</td>
<td>47/482</td>
<td>. . . [using exclusively mechanical transmitting means between destination marks and switching means]</td>
</tr>
<tr>
<td>CPC</td>
<td>47/485</td>
<td>. . . [using electric or electronic transmitting means between destination marks and switching means]</td>
</tr>
<tr>
<td>CPC</td>
<td>47/487</td>
<td>. . . [the destination marks being mechanically detected]</td>
</tr>
<tr>
<td>CPC</td>
<td>47/49</td>
<td>. . . without bodily contact between article or load carrier and automatic control device {, e.g. the destination marks being electrically or electronically detected}</td>
</tr>
<tr>
<td>CPC</td>
<td>47/493</td>
<td>. . . [by use of light responsive means]</td>
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<tr>
<td>CPC</td>
<td>47/496</td>
<td>. . . [by use of magnetic responsive means]</td>
</tr>
<tr>
<td>CPC</td>
<td>47/50</td>
<td>. . . according to destination signals stored in separate systems</td>
</tr>
<tr>
<td>CPC</td>
<td>47/503</td>
<td>. . . [the system comprising endless moving means]</td>
</tr>
<tr>
<td>CPC</td>
<td>47/506</td>
<td>. . . [the system comprising a shift-register]</td>
</tr>
<tr>
<td>CPC</td>
<td>47/51</td>
<td>. . . according to unprogrammed signals, e.g. influenced by supply situation at destination</td>
</tr>
<tr>
<td>CPC</td>
<td>47/5104</td>
<td>. . . [for articles]</td>
</tr>
<tr>
<td>CPC</td>
<td>47/5109</td>
<td>. . . [first In - First Out systems: FIFO]</td>
</tr>
<tr>
<td>CPC</td>
<td>47/5113</td>
<td>. . . using endless conveyors</td>
</tr>
<tr>
<td>CPC</td>
<td>47/5118</td>
<td>. . . [with variable accumulation capacity]</td>
</tr>
<tr>
<td>CPC</td>
<td>47/5122</td>
<td>. . . [by displacement of the conveyor-guiding means, e.g. of the loose pulley-type (B65G 47/5127 takes precedence)]</td>
</tr>
<tr>
<td>CPC</td>
<td>47/5127</td>
<td>. . . [by relative displacement between conveyor and input or output]</td>
</tr>
<tr>
<td>CPC</td>
<td>47/5131</td>
<td>. . . [by relative displacement between conveyors or conveyor parts and bridging means therebetween]</td>
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<tr>
<td>CPC</td>
<td>47/5136</td>
<td>. . . [using rotary conveyors]</td>
</tr>
<tr>
<td>CPC</td>
<td>47/514</td>
<td>. . . [using stacking and/or destacking arrangements or stacks of articles or article carriers]</td>
</tr>
<tr>
<td>CPC</td>
<td>47/5145</td>
<td>. . . [with recirculation means]</td>
</tr>
<tr>
<td>CPC</td>
<td>47/515</td>
<td>. . . [First In-Last Out systems [FILO]; Last In-First Out systems [LIFO]]</td>
</tr>
<tr>
<td>CPC</td>
<td>47/5154</td>
<td>. . . using endless conveyors (B65G 47/5154 takes precedence)</td>
</tr>
<tr>
<td>CPC</td>
<td>47/5159</td>
<td>. . . [with variable accumulation capacity]</td>
</tr>
<tr>
<td>CPC</td>
<td>47/5163</td>
<td>. . . [by displacement of conveyor-guiding means, e.g. of the loose pulley type (B65G 47/5163 takes precedence)]</td>
</tr>
</tbody>
</table>

Feeding or...
Feeding or...

47/69 . . . . (Lane boundaries which are of such shape that tight arrays of articles are broken up or prevented from forming)

47/70 . . . . with precedence controls among incoming article flows

47/71 . . . . the articles being discharged {or distributed} to several {distinct separate} conveyors {or to a broader conveyor lane}

47/715 . . . . (to a broader conveyor lane)

47/72 . . . . transferring materials in bulk from one conveyor to several conveyors, or vice versa.

47/74 . . . . Feeding, transfer, or discharging devices of particular kinds or types

47/76 . . . . Fixed or adjustable ploughs or transverse scrapers

47/763 . . . . [Fixed ploughs or transverse scrapers]

47/766 . . . . [Adjustable ploughs or transverse scrapers]

47/78 . . . . Troughs having discharge openings and closures ((in air-slides B65G 53/20))

47/80 . . . . Turntables carrying articles or materials to be transferred, e.g. combined with ploughs or scrapers

47/82 . . . . Rotary or reciprocating members for direct action on articles or materials, e.g. pushers, rakes, shovels ((means for pushing glass articles onto a conveyor C03B 9/453))

47/84 . . . . Star-shaped wheels or devices having endless travelling belts or chains, the wheels or devices being equipped with article-engaging elements ((not used, see B65G 47/841, B65G 47/846))

47/841 . . . . Devices having endless travelling belts or chains equipped with article-engaging elements

47/842 . . . . . . . (the article-engaging elements being grippers)

47/843 . . . . . . . (the article-engaging elements being suction or magnetic means)

47/844 . . . . . . . (the article-engaging elements being pushers transversally movable on the supporting surface, e.g. pusher-shoes)

47/845 . . . . . . . (the article engaging elements being pushers moving in parallel and independently from the supporting conveyor)

47/846 . . . . . . . [Star-shaped wheels or wheels equipped with article-engaging elements]

47/847 . . . . . . . [the article-engaging elements being grippers]

47/848 . . . . . . . [the article-engaging elements being suction or magnetic means]

47/88 . . . . Separating or stopping elements, e.g. fingers (attached to star-shaped wheels B65G 47/84)

47/8807 . . . . . . . [with one stop]

47/8815 . . . . . . . [Reciprocating stop, moving up or down in the path of the article]

47/8823 . . . . . . . [Pivoting stop, swinging in or out of the path of the article]

47/883 . . . . . . . [Fixed stop]

47/8838 . . . . . . . [with a linearly movable pusher element which lifts or releases the article]

47/8846 . . . . . . . [with a pivoting pusher element which lifts or releases the article]

47/8853 . . . . . . . [with conveyors, e.g. pivoting or rotating, to transfer the article]

47/8861 . . . . . . . [Stop in the form of a clamp on one or both sides of the article]

47/8869 . . . . . . . [stopping or lifting all articles from a conveyor]

47/8876 . . . . . . . [with at least two stops acting as gates]

47/8884 . . . . . . . [Stops acting asynchronously, e.g. one stop open, next one closed or the opposite]

47/8892 . . . . . . . [Stops acting independently of each other]

47/90 . . . . Devices for picking-up and depositing articles or materials

47/901 . . . . . . . [provided with drive systems with rectilinear movements only]

47/902 . . . . . . . [provided with drive systems incorporating rotary and rectilinear movements]

47/904 . . . . . . . [provided with rotary movements only]

47/905 . . . . . [Control arrangements]

47/907 . . . . . . . [with at least two picking-up heads]

47/908 . . . . . . . [with inflatable picking-up means (inflatable gripping members on load engaging elements for conveyors B66C 1/46)]

47/91 . . . . Incorporating pneumatic, e.g. suction, grippers

47/911 . . . . . . . [with air blasts producing partial vacuum]

47/912 . . . . . . . [provided with drive systems with rectilinear movements only]

47/914 . . . . . . . [provided with drive systems incorporating rotary and rectilinear movements]

47/915 . . . . . . . [provided with drive systems with rotary movements only]

47/917 . . . . . . . [control arrangements]

47/918 . . . . . . . [with at least two picking-up heads]

47/92 . . . . . . . [incorporating electrostatic or magnetic grippers]

47/94 . . . . . . . Devices for flexing or tilting travelling structures; Throw-off carriages

47/945 . . . . . . . [tilting endless surfaces, e.g. belts]

47/95 . . . . . . . adapted for longitudinal delivery

47/96 . . . . . . . Devices for tilting links or platform ((releasing load-carriers B65G 47/38))

47/962 . . . . . . . [tilting about an axis substantially parallel to the conveying direction]

47/965 . . . . . . . [tilting about a sided-axis, i.e. the axis is not located near the center-line of the load-carrier]

47/967 . . . . . [tilting about an axis perpendicular to the conveying direction]

49/00 Conveying systems characterised by their application for specified purposes not otherwise provided for

49/02 . . . . . for conveying workpieces through baths of liquid

49/025 . . . . . [conveyor feeding and discharging means]

49/04 . . . . . the workpieces being immersed and withdrawn by movement in a vertical direction

49/0404 . . . . . [specially adapted for very long workpieces, e.g. chains, cables or belts]

49/0409 . . . . . [specially adapted for workpieces of definite length]

49/0413 . . . . . [arrangements for conveyance through the bath]

49/0418 . . . . . [chain or belt conveyors]

49/0422 . . . . . [screws]

49/0427 . . . . . [jigging conveyors]

49/0431 . . . . . [reciprocating conveying means]
Feeding or...

49/063 ... [Transporting devices for sheet glass]
49/064 ... [in a horizontal position (B65G 49/066 takes precedence)]
49/065 ... [supported partially or completely on fluid cushions, e.g. a gas cushion (in general B65G 51/00)]
49/066 ... [being suspended; Suspending devices, e.g. clamps, supporting tongs]

Non-mechanical conveying through pipes or tubes (pipe-line systems F17D); Floating in troughs

51/00 Conveying articles through pipes or tubes by fluid flow or pressure; Conveying articles over a flat surface, e.g. the base of a trough, by jets located in the surface

51/01 ... Hydraulic transport of articles (B65G 51/04 takes precedence; water roundabouts A63G 3/00)
51/02 ... Directly conveying the articles, e.g. slips, sheets, stockings, containers or workpieces, by flowing gases

51/025 ... [Conveying ammunition through pipes]
51/03 ... over a flat surface or in troughs
51/035 ... [for suspended articles, e.g. bottles]
51/04 ... Conveying the articles in carriers having a cross-section approximating that of the pipe or tube; Tube mail systems

51/06 ... Despatch carriers for tube mail
51/08 ... Controlling or conditioning the operating medium
51/10 ... at section junctions of pneumatic systems
51/12 ... Pneumatic gates
51/14 ... Pneumatic sluices
51/16 ... varying, e.g. starting or stopping, gas pressure or flow

51/18 ... Adaptations of pipes or tubes; Pipe or tube joints
51/20 ... Braking arrangements
51/22 ... Arrangements for stopping the carriers en route in order to control carrier sequence; Blocking or separating devices

51/24 ... Switches
51/26 ... Stations
51/28 ... for despatch
51/30 ... for delivery
51/32 ... for despatch, delivery, and transit
51/34 ... Two-way operation
51/36 ... Other devices for indicating or controlling movements of carriers, e.g. for supervising individual tube sections, for counting carriers, for reporting jams or other operating difficulties

51/38 ... Contact devices on interior of tubes for detecting passage of carriers

NOTE

In group B65G 49/06 and subgroups it is desirable to add indexing codes for specific aspects of conveying systems. The indexing codes are chosen from groups B65G 2249/00 - B65G 2249/045
53/00 Conveying materials in bulk through troughs, pipes or tubes by floating the materials or by flow of gas, liquid or foam ....

53/02 Floating material troughs
53/04 Conveying materials in bulk pneumatically through pipes or tubes; Air slides
53/06 Gas pressure systems operating without fluidisation of the materials
53/08 with mechanical injection of the materials, e.g. by screw
53/10 with pneumatic injection of the materials by the propelling gas
53/12 the gas flow acting directly on the materials in a reservoir
53/14 the gas flow inducing feed of the materials by suction effect
53/16 Gas pressure systems operating with fluidisation of the materials
53/18 through a porous wall
53/20 of an air slide, e.g. a trough
53/22 of the systems comprising a reservoir, e.g. a bunker
53/24 Gas suction systems
53/26 operating with fluidisation of the materials
53/28 Systems utilising a combination of gas pressure and suction (inducing feed of the materials by suction in gas pressure systems B65G 53/14)
53/30 Conveying materials in bulk through pipes or tubes by liquid pressure
53/32 Conveying concrete, e.g. for distributing same at building sites (mixing concrete on or by conveyors B28C 5/34)
53/34 Details
53/36 Arrangements of containers (hoppers B65D 3/06; containers in general B65D)
53/38 Modification of material containing walls to facilitate fluidisation (hoppers with walls modified for fluidisation of contents B65D 88/72)
53/40 Feeding or discharging devices
53/42 Nozzles
53/44 Endless conveyors
53/46 Gates or sluices, e.g. rotary wheels
53/4608 [Turnable elements, e.g. rotary wheels with pockets or passages for material]
53/4616 [with axis of turning parallel to flow]
53/4625 [with axis of turning perpendicular to flow]
53/4633 [the element having pockets, rotated from charging position to discharging position, i.e. discrete flow]
53/4641 [with means for clearing out the pockets]
53/465 [with a closable outlet]
53/4658 [the element having passages simultaneously connectable to both inlet and outlet ports]
53/466 [with axis of turning neither parallel nor perpendicular to flow, i.e. mixed flow]
53/4675 [with flexible wall parts, e.g. peristaltic devices]
53/4683 [with a reciprocating mover acting directly on material]
53/4691 [of air-lock type, i.e. at least two valves opening asynchronously]
53/48 Screws or like rotary conveyors
53/50 Pneumatic devices (incorporated in nozzles B65G 53/42)
53/52 Adaptations of pipes or tubes
53/521 [means for preventing the accumulation or for removal of deposits (preventing accumulation in pipes in general F16L 55/24)]
53/523 [War protection]
53/525 [for conveyance in plug-form]
53/526 [with means for special treatment to facilitate transport]
53/528 [Flux combining or dividing arrangements (B65G 53/56 takes precedence)]
53/54 Flexible pipes or tubes
53/56 Switches
53/58 Devices for accelerating or decelerating flow of the materials; Use of pressure generators (controlling pressure of propelling gas B65G 53/66)
53/60 Devices for separating the materials from propellant gas
53/62 using liquid
53/64 in discrete amounts
53/66 Use of indicator or control devices, e.g. for controlling gas pressure, for controlling proportions of material and gas, for indicating or preventing jamming of material (controlling the flow of coal firing systems C21B 5/003)

54/00 Non-mechanical conveyors not otherwise provided for
54/02 electrostatic, electric, or magnetic
54/025 [the load being magnetically coupled with a piston-like driver moved within a tube]

Stacking or de-stacking; Loading or unloading (by means incorporated in, or operatively associated with, conveyors B65G 47/00; lift lifts B60P; B66F; handling sheet material or flat articles made therefrom B65H; cranes B66C; loading or unloading by soil-shifting or like equipment E02F; stacking or de-stacking data record cards in association with machines for marking or sensing data G06K)

NOTE

In groups B65G 57/00 - B65G 61/00, the following term is used with the meaning indicated:

• "stacking" means disposing articles individually or in layers one above each other

57/00 Stacking of articles (B65G 60/00 takes precedence; feeding, piling or stacking sheets B65H)
57/005 [by using insertions or spacers between the stacked layers]
57/02 by adding to the top of the stack
57/03 from above
57/035 [with a stepwise downward movement of the stack]
Stacking or de-stacking; Loading or unloading

Stacking of articles of particular shape
57/16 . . . . . . Stacking of articles of particular shape
57/165 . . . . . [nested]
57/18 . . . . . . elongated, e.g. sticks, rods, bars
57/183 . . . . . [Angle irons]
57/186 . . . . . [Cylindrical articles, e.g. tubes, rods, etc.]
57/20 . . . . . . three-dimensional, e.g. cubiform, cylindrical
57/22 . . . . . . in layers each of predetermined arrangement
57/24 . . . . . . the layers being transferred as a whole, e.g. on pallets
57/245 . . . . . . [with a stepwise downward movement of the stack]
57/26 . . . . . . the arrangement providing for spaces between the articles
57/28 . . by assembling the articles and tilting the assembled articles to a stacked position
57/30 . . by adding to the bottom of the stack
57/301 . . . . . . [by means of reciprocatory or oscillatory lifting and holding or gripping devices]
57/302 . . . . . . [added articles being lifted to substantially stationary grippers or holders]
57/303 . . . . . . [the stack being lowered by mobile grippers or holders onto added articles]
57/305 . . . . . . [by means of rotary devices or endless elements]
57/306 . . . . . . [the rotary devices being wheels]
57/307 . . . . . . [the rotary devices being screws]
57/308 . . . . . . [by means of endless elements]
57/32 . . . . . . characterised by stacking during transit

59/00 De-stacking of articles (B65G 60/00 takes precedence)
59/005 . . . . . . [by using insertions or spacers between the stacked layers]
59/02 . . . . . . De-stacking from the top of the stack
59/023 . . . . . . [by means insertable between the stacked articles or layers]
59/026 . . . . . . [with a stepwise upward movement of the stack]
59/04 . . . . . . by suction or magnetic devices
59/045 . . . . . . [with a stepwise upward movement of the stack]
59/06 . . . . . . De-stacking from the bottom of the stack
59/061 . . . . . . [articles being separated substantially along the axis of the stack]
59/062 . . . . . . [by means of reciprocating or oscillating escapement-like mechanisms]
59/063 . . . . . . [comprising lifting means]
59/065 . . . . . . [by angularly displacing the stack relatively to the lower most article or vice versa]
59/066 . . . . . . [by means of rotary devices or endless elements]

59/067 . . . . . . [articles being separated substantially perpendicularly to the axis of the stack]
59/068 . . . . . . [by means of endless elements]
59/08 . . . . . . De-stacking after preliminary tilting of the stack
59/10 . . . . . . De-stacking nested articles
59/101 . . . . . . [by means of oscillating escapement-like mechanisms]
59/102 . . . . . . [the axis of oscillation being substantially parallel to the axis of the stack]
59/103 . . . . . . [comprising lifting or gripping means]
59/105 . . . . . . [by means of reciprocating escapement-like mechanisms]
59/106 . . . . . . [comprising lifting or gripping means]
59/107 . . . . . . [by means of rotary devices or endless elements]
59/108 . . . . . . [the axis of rotation being substantially parallel to the axis of the stack]
59/12 . . . . . . characterised by de-stacking during transit

60/00 Simultaneously or alternatively stacking and de-stacking of articles
61/00 Use of pick-up or transfer devices or of manipulators for stacking or de-stacking articles not otherwise provided for

63/00 Transferring or trans-shipping at storage areas, railway yards or harbours [or in opening mining cuts]; Marshalling yard installations
63/002 . . . . . . [for articles]
63/004 . . . . . . [for containers]
63/006 . . . . . . [using slanted guides]
63/008 . . . . . . [for bulk material]
63/02 . . . . . . with essentially horizontal transit otherwise than by bridge
63/022 . . . . . . [for articles]
63/025 . . . . . . [for containers]
63/027 . . . . . . [for bulk material]
63/04 . . . . . . with essentially horizontal transit by bridges equipped with conveyors
63/042 . . . . . . [for articles]
63/045 . . . . . . . . . . . . [for containers]
63/047 . . . . . . [for bulk material]
63/06 . . . . . . with essentially-vertical transit
63/062 . . . . . . [for articles]
63/065 . . . . . . . . . . . . [for containers]
63/067 . . . . . . [for bulk material]

65/00 Loading or unloading (of vehicles B65G 67/00)
65/005 . . . . . . [Control arrangements]
65/02 . . . . . . Loading or unloading machines comprising essentially a conveyor for moving the loads associated with a device for picking-up the loads
65/04 . . . . . . with pick-up shovels [constructions of shovels E02F]
65/06 . . . . . . with endless scraping or elevating pick-up conveyors
65/08 . . . . . . with reciprocating pick-up conveyors
65/10 . . . . . . Raking or scraping devices
65/12 . . . . . . . . . . . . operations at positions off-set from the conveyor centreline
65/14 . . . . . . with jiggling pick-up conveyors, e.g. duck-bills
65/16 . . . . . . with rotary pick-up conveyors
65/18 . . . . . . Discs
65/20 . . . . . . Paddle wheels
65/22 . . . . . . Screws

CPC - 2019.08
65/23 Devices for tilting and emptying of containers
65/24 for manual tilting of barrels or casks
65/28 Piling or unpiling loose materials in bulk, e.g. coal, manure, timber, not otherwise provided for (by soil-shifting or like equipment E02F)
65/30 Methods or devices for filling or emptying bunkers, hoppers, tanks, or like containers, of interest apart from their use in particular chemical or physical processes or their application in particular machines, e.g. not covered by a single other subclass (devices for tilting and emptying containers B65G 65/23; such containers having means facilitating filling or emptying B65D 88/54)

NOTE

Methods or devices for filling bunkers, hoppers, or containers are only classified in group B65G 65/30 if they are of general application apart from their use in particular processes or their application in particular machines or if they are not covered by a single other subclass

65/32 Filling devices
65/34 Emptying devices (conveyor construction B65G 15/00 - B65G 35/00; devices similar to vehicle tipplers B65G 67/48)
65/36 Devices for emptying from the top
65/36/5 Devices comprising a vertical passage located inside the container
65/38 Mechanical devices
65/40 Devices for emptying otherwise than from the top
65/42 using belt or chain conveyors
65/42/5 [arranged to be movable]
65/44 using reciprocating conveyors, e.g. jiggling conveyors
65/46 using screw conveyors
65/46/3 [arranged vertically or substantially vertically within the container (B65G 65/46 takes precedence)]
65/46/5 [arranged to be movable]
65/48 using other rotating means, e.g. rotating pressure sluices in pneumatic systems (B65G 53/46 takes precedence)
65/48/9 [rotating about a substantially vertical axis]
65/4818 [and having the form of rotating tables or pans]
65/48/27 [with particular surface features, e.g. ribs, roughening]
65/48/36 [and moving material over a stationary surface, e.g. sweep arms or wheels]
65/48/45 [flexible, e.g. chains, cables, spring arms]
65/48/54 [mounted on a carriage, e.g. for movement along slit-like outlets]
65/48/63 [by means of eccentric motion]
65/48/72 [through which material passes, e.g. fan-like wheels]
65/48/81 [rotating about a substantially horizontal axis]
65/48/9 [in the form of rotating tubular chutes]

67/00 Loading or unloading vehicles (by means incorporated in the vehicles B60-B64, e.g., B60P 1/00, B61D 9/00, B63B 27/00, B64D 9/00; ground or aircraft-carrier-deck installations for aircraft B64F 1/32)
67/02 Loading or unloading land vehicles
67/04 Loading land vehicles (loading or unloading boats to or from land vehicles B60P 3/10)
67/06 Feeding articles or materials from bunkers or tunnels
67/08 using endless conveyors
67/10 using conveyors covering the whole length of vehicle trains
67/12 Loading elongated articles, e.g. rails, logs
67/14 Loading hardened bricks, briquettes, or the like
67/16 Loading coke-oven products (discharging coke-ovens C10B 33/00)
67/18 Refuelling locomotives with solid fuels
67/20 Loading covered vehicles
67/22 Loading moving vehicles
67/24 Unloading land vehicles
67/26 using rakes or scrapers
67/28 External transverse blades attached to endless conveyors
67/30 using transportable tipping apparatus
67/32 using fixed tipping installations
67/34 Apparatus for tipping wagons or mine cars (inverting wagons B65G 67/48)
67/36 endwise
67/38 comprising a turntable
67/40 toward one end only
67/42 sideways
67/44 by passing the vehicles over a stretch of transversely-inclined rails
67/46 Apparatus for lifting and tilting
67/48 Vehicle tipplers
67/50 Rotary vehicle tipplers, i.e. rotating through 360 degrees
67/52 having several decks
67/54 Vehicle-locking means
67/56 Vehicle and tippler interlocking controls
67/60 Loading or unloading ships (arrangement of ship-based loading or unloading equipment for cargo or passengers B63B 27/00)
67/60/5 [using devices specially adapted for articles]
67/60/6 [using devices specially adapted for bulk material]
67/62 using devices influenced by the tide or by the movements of the ship, e.g. devices on pontoons

69/00 Auxiliary measures taken, or devices used, in connection with loading or unloading (by means incorporated in, or operatively associated with, conveyors B65G 47/00; preventing fire A62C 300; in vehicles, see the relevant subclasses, e.g., B60P 1/58, B61D 7/32, B62D 33/00, B63B 25/00, B64D 9/00)
69/00/1 Buffers for vehicles at loading stations
69/00/5 the means engaging at least one wheel of the vehicle
69/00/6 Centring or aligning a vehicle at a loading station using means not being part of the vehicle
Stacking or de-stacking; Loading or unloading...

69/008 . . . [Dock- or bumper-seals]
69/02 . . . Filling storage spaces as completely as possible, e.g. application of vibrators
69/04 . . . Spreading out the materials conveyed over the whole surface to be loaded; Trimming heaps of loose materials
69/0408 . . . [by relatively moving an endless feeding means (B65G 69/0458 takes precedence)]
69/0416 . . . [with scraping belts or chains]
69/0425 . . . [with vibrating or shaking means]
69/0433 . . . [with screw conveyors]
69/0441 . . . [with chutes, deflector means or channels (B65G 69/0458 takes precedence)]
69/045 . . . [with scraping devices (B65G 69/0416 takes precedence)]
69/0458 . . . [with rotating means, e.g. tables, arms]
69/0466 . . . [with throwing devices]
69/0475 . . . [with air jets]
69/0483 . . . [with electric or magnetic means]
69/0491 . . . [with a pneumatic feeding conveyor]
69/06 . . . Fluidising
69/08 . . . Devices for emptying storage spaces as completely as possible (devices preventing the formation of bridges in large containers B65D 88/64)
69/10 . . . Obtaining an average product from stored bulk material
69/12 . . . Sieving bulk materials during loading or unloading
69/14 . . . Pulverising loaded or unloaded materials
69/16 . . . Preventing pulverisation, deformation, breakage, or other mechanical damage to the goods or materials
69/165 . . . [using descending or lowering endless conveyors]
69/18 . . . Preventing escape of dust
69/181 . . . [by means of sealed systems]
69/182 . . . [with aspiration means]
69/183 . . . [with co-operating closure members on each of the parts of a separable transfer channel]
69/185 . . . [by means of non-sealed systems]
69/186 . . . [with aspiration means]
69/187 . . . [with non-return closures]
69/188 . . . [with spraying means]
69/20 . . . Auxiliary treatments, e.g. aerating, heating, humidifying, deaerating, cooling, de-watering or drying, during loading or unloading; Loading or unloading in a fluid medium other than air
69/22 . . . Horizontal loading or unloading platforms (as road or railway equipment B61B 1/00, E01F 1/00)
69/24 . . . having platform level adjusting means
69/26 . . . Rotatable platforms
69/28 . . . Loading ramps; Loading docks (as road or railway equipment B61B 1/00, E01F 1/00)
69/2805 . . . [permanently installed on the dock]
69/2811 . . . [pivoting ramps]
69/2817 . . . [with fluid-operated means]
69/2823 . . . . . . . . . . . . [extensible by pivoting parts]
69/2829 . . . . . . . . . . [extensible by sliding parts]
69/2835 . . . . . . . . . . [with spring-operated means]
69/2841 . . . . . . . . . . [extensible by pivoting parts]
69/2847 . . . . . . . . . . [extensible by sliding parts]
69/2852 . . . . . . . . . . [with electric motor-operated means]
69/2858 . . . . . . . . . . [with weight counterbalancing means]
69/2864 . . . . . . . . . . [adjustable with respect to the dock]
69/287 . . . [Constructional features of deck or surround]
69/2876 . . . . . . . [Safety or protection means, e.g. skirts]
69/2882 . . . . . . . [operated by detectors or sensors]
69/2888 . . . . . . . [Vehicle barriers mounted on deck]
69/2894 . . . . . . . [Safety legs]
69/30 . . . Non-permanently installed loading ramps, e.g. transportable

2201/00 Indexing codes relating to handling devices, e.g. conveyors, characterised by the type of product or load being conveyed or handled
2201/02 . . . Articles
2201/0202 . . . . . . . Agricultural and processed food products
2201/0205 . . . . . . . Biscuits
2201/0208 . . . . . . . Eggs
2201/0211 . . . . . . . Fruits and vegetables
2201/0214 . . . . . . . Articles of special size, shape or weigh
2201/0217 . . . . . . . Elongated
2201/022 . . . . . . . Flat
2201/0223 . . . . . . . Heavy
2201/0226 . . . . . . . Cigarettes
2201/0229 . . . . . . . Clothes, clothes hangers
2201/0232 . . . . . . . Coils, bobbins, rolls
2201/0235 . . . . . . . Containers
2201/0238 . . . . . . . Bags
2201/0241 . . . . . . . Barrels, drums
2201/0244 . . . . . . . Bottles
2201/0247 . . . . . . . Suspended bottles
2201/025 . . . . . . . Boxes
2201/0252 . . . . . . . Cans
2201/0255 . . . . . . . Milk cans
2201/0258 . . . . . . . Trays, totes or bins
2201/0261 . . . . . . . Puck as article support
2201/0264 . . . . . . . Luggage
2201/0267 . . . . . . . Pallets
2201/027 . . . . . . . Tablets, capsules, pills or the like
2201/0273 . . . . . . . Tires
2201/0276 . . . . . . . Tubes and pipes
2201/0279 . . . . . . . Wheelbarrows
2201/0282 . . . . . . . Wooden articles, e.g. logs, trunks or planks
2201/0285 . . . . . . . Postal items, e.g. letters, parcels
2201/0288 . . . . . . . Signatures, i.e. sections of printed magazines, papers or books
2201/0291 . . . . . . . Pig used in pipe conveyors, e.g. a Molch
2201/0294 . . . . . . . Vehicle bodies
2201/0297 . . . . . . . Wafer cassette
2201/029 . . . . . . . Bulk
2201/042 . . . . . . . Granular material
2201/045 . . . . . . . Sand, soil and mineral ore
2201/047 . . . . . . . Articles manipulated as bulk
2201/06 . . . . . . . Articles and bulk

Storing; Storage devices
2203/00 Indexing code relating to control or detection of the articles or the load carriers during conveying
2203/02 . . . Control or detection
2203/0208 . . . . . . . relating to the transported articles
2203/0216 . . . . . . . Codes or marks on the article
2203/0225 . . . . . . . Orientation of the article
2203/0233 . . . . . . . Position of the article
2203/0241 . . . . . . . Quantity of articles
| 2203/025 | Speed of the article |
| 2203/0258 | Weight of the article |
| 2203/0266 | relating to the load carrier(s) |
| 2203/0275 | Damage on the load carrier |
| 2203/0283 | Position of the load carrier |
| 2203/0291 | Speed of the load carrier |
| 2203/04 | Detection means |
| 2203/041 | Camera |
| 2203/042 | Sensors |
| 2203/043 | Magnetic |
| 2203/044 | Optical |
| 2203/045 | Thermic |
| 2203/046 | RFID |
| 2203/047 | Switches |
| 2203/048 | Satellite |

### 2205/00 Stopping elements in conveyors to stop articles or arrays of articles

- Where the stop device is adaptable to the size of the article or array
- Where the stop device is not adaptable
- Cushioned or damping stop devices, e.g. using springs or other mechanical actions

### 2207/00 Indexing codes relating to constructional details, configuration and additional features of a handling device, e.g. Conveyors

- Use of adhesive
- Advertising elements
- Air cushion support of articles
- Adjustable and/or adaptable to the article size
- Antistatic features
- Chain pin retainers
- Combination of conveyors
- Convertible to another type of conveyor
- Crossing conveyors
- Earthquake protection
- Heat or fire protection
- Helical or spiral conveying path
- Hygienic features, e.g. easy to sanitize
- Impact protection
- Modular constructions
- Noise prevention features
- Omni-directional rolls
- Pushing shoes on conveyors
- Pin used as carrier of one article
- Safety features of loads, equipment or persons
- Soft elements to prevent damage to articles, e.g. bristles, foam
- Spiral conveyor tracks
- Tray unloading features
- Wear protection or indication features

### 2209/00 Indexing codes relating to order picking devices in General

- Batch order forming, e.g. several batches simultaneously
- Indication location means
- Use of order trucks
- Orders with a high and a low volume
- Partial order forming

### 2249/00 Aspects relating to conveying systems for the manufacture of fragile sheets

- Controlled or contamination-free environments or clean space conditions
- Arrangements of vacuum systems or suction cups
- Details of suction cups suction cups

### 2811/00 Indexing codes relating to common features for more than one conveyor kind or type

- Devices controlling the relative position of articles
- by arranging articles in groups or arranging grouped articles
- Grouping articles in layers
- Devices for arranging grouped articles in a single lane
- by modifying the orientation or position of articles
- Changing the direction of movement of articles or bulk material
- Accessories
- Deflectors
- Pick-up means
- Magnetic or electrostatic devices
- Control of conveying operations
- Determining the path to be followed
- by stopping or tilting load-carriers not leaving the conveyor path
- Releasing constant material flow
- for permanently occupying the conveyor path
- Driving means for the conveyors
- the conveyor type being irrelevant
- a single conveyor having more than one driving means
- Control means for automatic stop, start or warning variation during conveying operations
- Speed variation control means
- without reversal of the conveying direction
- with reversal of the conveying direction
- for combined motions

### 2812/00 Indexing codes relating to the kind or type of conveyors

- Conveyors composed of several types of conveyors
- one conveyor being driven by another one
- for conveying material successively by a series of conveyors
- without relative movement between conveyors
- with relative movement between conveyors
- the conveyors being movably linked
- for conveying material by co-operating units in tandem
- using tilted or side by side conveyor sections
- between conveyor sections
- using two or more elevators
- Belt or chain conveyors
- Common features for belt or chain conveyors
- Supporting or guiding frames
- Transportable conveyor frames
- Profiles or beams
Storing; Storage devices

B65G

2812/02049 . . . . . . . with guiding means for displaceable conveyor accessories
2812/02059 . . . . . . . with supporting arrangements for ducts or cables or shaped as fluid ducts
2812/02069 . . . . . . . Rails
2812/02079 . . . . . . . Switches
2812/02089 . . . . . . . Driving means
2812/02099 . . . . . . . Safety measures in case of driving element breakage
2812/02108 . . . . . . . Protection means
2812/02118 . . . . . . . Gathering means for material falling from the conveyor
2812/02128 . . . . . . . Belt conveyors
2812/02138 . . . . . . . Common features for belt conveyors
2812/02148 . . . . . . . Driving means for the belts
2812/02158 . . . . . . . Means preventing dust penetration
2812/02168 . . . . . . . Belts provided with guiding means, e.g. rollers
2812/02178 . . . . . . . characterised by the material
2812/02188 . . . . . . . Metallic belts
2812/02198 . . . . . . . Non-metallic belts
2812/02207 . . . . . . . Partially metallic belts
2812/02217 . . . . . . . characterised by the configuration
2812/02227 . . . . . . . for vertical conveyance
2812/02237 . . . . . . . provided with buckets
2812/02247 . . . . . . . using belts with bucket profiles
2812/02257 . . . . . . . the load remaining on the belt due to centrifugal forces
2812/02267 . . . . . . . Conveyors having endless traction elements
2812/02277 . . . . . . . Common features for chain conveyors
2812/02287 . . . . . . . Driving means
2812/02297 . . . . . . . Arrangements for downward conveyance
2812/02306 . . . . . . . Driving drums
2812/02316 . . . . . . . with means for assuring constant linear speed of chains
2812/02326 . . . . . . . Chains, cables or the like
2812/02336 . . . . . . . Accessories
2812/02346 . . . . . . . Grippers associated with chain parts
2812/02356 . . . . . . . characterised by the material
2812/02366 . . . . . . . Flexible links
2812/02376 . . . . . . . characterised by the configuration
2812/02386 . . . . . . . Woven chains
2812/02396 . . . . . . . Links and their attaching means
2812/02405 . . . . . . . Means preventing dust penetration
2812/02415 . . . . . . . with load-carrying surfaces supported by traction means
2812/02425 . . . . . . . Continuous or uninterrupted load-carrying surfaces
2812/02435 . . . . . . . the surfaces being below the traction means
2812/02445 . . . . . . . the surfaces being an endless belt
2812/02455 . . . . . . . the surfaces being above, between or beside the traction means
2812/02465 . . . . . . . for conveyance along curves
2812/02475 . . . . . . . along vertical curves
2812/02485 . . . . . . . the load-carrying surfaces being fixed or non-movably linked to the traction means
2812/02495 . . . . . . . load-carrying surfaces using platforms or grids
2812/02504 . . . . . . . load-carrying surfaces with upstanding walls, e.g. with bucket profile
2812/02514 . . . . . . . in longitudinal direction only
2812/02524 . . . . . . . in transverse direction only
2812/02534 . . . . . . . the surfaces being an endless belt
2812/02544 . . . . . . . with bucket profile
2812/02554 . . . . . . . the load-carrying surfaces being pivotally attached to the traction means
2812/02564 . . . . . . . Tipping means
2812/02574 . . . . . . . Guiding means to maintain load-carrying surfaces horizontal
2812/02584 . . . . . . . the load-carrying surfaces resting on the traction means
2812/02594 . . . . . . . Reversing means
2812/02603 . . . . . . . Load-carrying surfaces adapted to be displaced relative to the traction means
2812/02613 . . . . . . . the load-carrying surfaces being separated from each other, e.g. individual load carriers
2812/02623 . . . . . . . and pivotally mounted
2812/02633 . . . . . . . for bulk material
2812/02643 . . . . . . . Loading or unloading means
2812/02653 . . . . . . . for articles
2812/02663 . . . . . . . Loading or unloading means
2812/02673 . . . . . . . the load-carriers being arranged above, between or beside the traction means
2812/02683 . . . . . . . and fixed or non-movably linked to the traction means
2812/02693 . . . . . . . for vertical or inclined conveyance
2812/02703 . . . . . . . Details
2812/02712 . . . . . . . Loading or unloading means
2812/02722 . . . . . . . Frames
2812/02732 . . . . . . . with guiding means for the traction means
2812/02742 . . . . . . . Bucket elevators for bulk material
2812/02752 . . . . . . . Elevators for articles
2812/02762 . . . . . . . Load-carriers
2812/02772 . . . . . . . Plates or buckets
2812/02782 . . . . . . . with upstanding walls
2812/02792 . . . . . . . the load-carriers being connected pivotally to the traction means
2812/02801 . . . . . . . Loading or unloading means
2812/02811 . . . . . . . guided at least partially along a vertical or inclined direction
2812/02821 . . . . . . . with guiding means to remain in a load-carrying position
2812/02831 . . . . . . . the load-carriers resting on the traction means
2812/02841 . . . . . . . Reversing means
2812/02851 . . . . . . . load-carriers adapted to be displaced relative to the traction means
2812/02861 . . . . . . . moving the materials over supporting surfaces by impeller means, e.g. scrapers
2812/02871 . . . . . . . for bulk material
2812/02881 . . . . . . . Scraper conveyors
2812/02891 . . . . . . . Troughs, channels or conduits
2812/02909 . . . . . . . Guiding means for displaceable conveyor accessories
2812/02919 . . . . . . . Supporting arrangements for cables or ducts
2812/02929 . . . . . . . with oppositely-moving parts of the conveyor located in a common plane
2812/02939 . . . . . . . Guiding means for the scrapers
2812/02949 . . . . . . . Wear pieces
2812/02959 . . . . . . . Scraper chains
Storing; Storage devices

Conveyors having independant belt or chain conveyor sections

Vibrating conveyors

Driving means or auxiliary devices

Drilling means

for shaking

using oppositely moving cylinders

Help-conveyors

Frames

movable

Frame parts

Guiding means for conveyed materials

Supporting or guiding means for troughs

Rollers or balls

the roller or ball holders joining trough parts

Pivoting arms

Springs

Flexible non-elastic suspension means, e.g.

chains, cables

Connections between trough parts

using a traction or stiffening means connecting all trough parts

adjustable

Troughs, tubes or the like

characterised by the configuration

Screw-, spiral- or ring-shaped

characterised by the material

Screw-conveyors

Driven means, constitutive elements or auxiliary devices

Conveyor screws

characterised by the material

Flexible screws

characterised by the configuration, e.g.

hollow, toothed

with opposite threads

with changing diameter

Houses or frames

Connecting means

characterised by the materials, e.g. flexible houses

characterised by the shape

for preventing blockage of materials

Discharging valves

for bulk material

Drum arrangements

without houses

with parallel screws

Skip or hopper conveyors

Constitutive elements or auxiliary devices

Skips, hoppers or similar containers

characterised by the configuration

provided with guiding means

for vertical transport

Tipping means

arranged on tracks along which the skips are guided

Loading or unloading skips

by reciprocating skips along guiding means

for vertical shaft transport

Chutes

Connecting means

telescopic

pivoting

Cleaning means

characterised by the configuration

Screw-like chutes

provided with material moving or braking means

characterised by the material

Walking beam conveyors

Conveyors with reciprocating means

Turntables

Throwing-conveyors

Pneumatic conveyors

for bulk material

Common means for pneumatic conveyors

Feeding or discharging means

using Venturi effect

Air pressure systems

Details

with fluidisation of materials

without porous wall

in which materials continuously flow from suction to pressure pipes

without passing through the air-pressure generator

Conveyors with suspended load-carriers operated by hand or gravity

load-carriers, rollers therefor

loading or unloading arrangements

Arresting, braking or escapement means

Rails or switches

Conveyor systems not otherwise provided for

Indexing codes relating to transport for special purposes

Devices without motors and bearing wheels for moving or tilting heavy loads

Load-carriers

for bales, boxes or the like, by using pointed means

Indexing codes relating to loading or unloading articles or bulk materials

Auxiliary devices or arrangements

for preventing breakage, pulverisation or damage to materials

using moving braking means to slow down the speed during free fall

for emptying as completely as possible

General arrangements

Air jet devices

using liquid means

for spreading out the material over the whole surface to be loaded

by displacement of the feeding means
Loading or unloading means

carriers for cars or linked car-trains with individual load-
for guided skips
weight measuring means
Control or feeding or discharging using level or
General arrangements

removal of the car floor and subframe being tilted or
beneath the load
the load being lifted and the cars being moved
Cars
Feeding or discharging devices operated by
shapes
Feeding or discharging devices adapted to car
material spillage

Continuous loading or unloading of bulk material
horizontally
for moving bulk material upwards or
for moving bulk material downwards

Other article loading or unloading devices
Destacking devices
Stacking devices
Central control devices

Picking-up means

opening
through a closable or non-closable outlet

with vertically reciprocating platforms
with a crystallization structure

by means of car tipplers
by means of tilting rails

Scraper conveyors
Bucket conveyors

Shaking or vibrating conveyors
Paddle wheels
Inclined plates or chutes
Raking devices
Scraping devices
Rotating discs, drums or gathering arms
Control or feeding or discharging using level or weight measuring means
for guided skips
for cars or linked car-trains with individual load-carriers
loading continuously successive cars without material spillage
Feeding or discharging devices adapted to car shapes
Feeding or discharging devices operated by cars
the load being lifted and the cars being moved beneath the load
the car floor and subframe being tilted or removed
the whole car being tilted
by means of tilting rails
by means of car tipplers

Storing; Storage devices