

CPC**COOPERATIVE PATENT CLASSIFICATION****B66B**

ELEVATORS; ESCALATORS OR MOVING WALKWAYS ({apparatus for raising or lowering persons on theatrical stages or the like [A63J 5/12](#) ; funicular railbound systems with rigid ground-supported tracks and cable traction, e.g. cliff railways, [B61B 9/00](#); arrangements of ammunition handlers in vessels [B63G 3/00](#); hoists, lifts, or conveyers for loading or unloading in general [B65G](#); braking or detent devices controlling normal movements of winding drums or barrels [B66D](#); ship-lifting devices [E02C](#); garages for many vehicles with mechanical means for lifting vehicles [E04H 6/12](#); hoists for feeding ammunition or projectiles to launching apparatus or to loading mechanisms [F41A 9/00](#))

NOTE

In this subclass, the following term is used with the meaning indicated:

- "elevator" covers the term "lift", and the two terms are interchangeable

Common features of elevators**B66B 1/00**

Control systems of elevators in general (safety devices [B66B 5/00](#); controlling door or gate operation [B66B 13/00](#); systems of general application [G05](#))

[B66B 1/02](#)

- Control systems without regulation, i.e. without retroactive action

[B66B 1/04](#)

- • hydraulic

[B66B 1/06](#)

- • electric

[B66B 1/08](#)

- • • with devices, e.g. handles or levers, in the cars or cages for direct control of movements

[B66B 1/10](#)

- • • • specially adapted for mining hoists

[B66B 1/12](#)

- • • with devices, e.g. handles or levers, located at a control station for direct control movements, e.g. electric mining-hoist control systems

[B66B 1/14](#)

- • • with devices, e.g. push-buttons, for indirect control of movements

[B66B 1/16](#)

- • • • with means for storing pulses controlling the movements of a single car or cage {([B66B 1/2433](#) takes precedence)}

[B66B 1/18](#)

- • • • with means for storing pulses controlling the movements of several cars or cages {([B66B 1/2458](#) takes precedence)}

[B66B 1/20](#)

- • • • and for varying the manner of operation to suit particular traffic conditions, e.g. "one-way rush-hour traffic", {([B66B 1/2466](#) takes precedence)}

[B66B 1/22](#)

- • • • with means for taking account of delayed calls

[B66B 1/24](#)

- Control systems with regulation, i.e. with retroactive action, for influencing travelling speed, acceleration, or deceleration

[B66B 1/2408](#)

- • {where the allocation of a call to an elevator car is of importance, i.e. by means of a supervisory or group controller}

[B66B 1/2416](#)

- • • {For single car elevator systems}

[B66B 2001/2425](#)

- • • • {Zone definition for two cars in the same hatchway}

[B66B 1/2433](#)

- • • {For elevator systems with a single shaft and multiple cars}

- B66B 2001/2441 {with the use of a speed pattern generator}
- B66B 2001/245 {for high-speed elevators which do not attain the maximum speed during shorts runs}
- B66B 1/2458 . . . {For elevator systems with multiple shafts and a single car per shaft}
- B66B 1/2466 . . . {For elevator systems with multiple shafts and multiple cars per shaft}
- B66B 2001/2475 {by using cost function computing}
- B66B 2001/2483 {by predicting the traffic, e.g. with statistical or learning procedures}
- B66B 1/2491 . . . {For elevator systems with lateral transfers of cars or cabins between hoistways}
- B66B 1/26 . . mechanical
- B66B 1/28 . . electrical (detecting excessive speed [B66B 5/04](#)); {(control of electrical motor [H02P](#))}
- B66B 1/285 . . . {with the use of a speed pattern generator}

WARNING

This group is not complete due to reorganisation in progress, see also [B66B 1/28](#)

- B66B 1/30 . . . effective on driving gear, {e.g. acting on power electronics, on inverter or rectifier controlled motor}
- B66B 1/302 {for energy saving}
- B66B 1/304 {with starting torque control}
- B66B 1/306 {with DC powered elevator drive}
- B66B 1/308 {with AC powered elevator drive}
- B66B 1/32 . . . effective on braking devices, {e.g. acting on electrically controlled brakes ([brake control H02P](#), lift brakes per se [B66B 5/02](#))}
- B66B 1/34 . . Details, {e.g. call counting devices, data transmission from car to control system, devices giving information to the control system}
- B66B 1/3407 . . {Setting or modification of parameters of the control system}
- B66B 1/3415 . . {Control system configuration and the data transmission or communication within the control system}
- B66B 1/3423 . . . {Control system configuration, i.e. lay-out}
- B66B 1/343 {Fault-tolerant or redundant control system configuration}
- B66B 1/3438 {Master-slave control system configuration}
- B66B 1/3446 . . . {Data transmission or communication within the control system}
- B66B 1/3453 {Procedure or protocol for the data transmission or communication}
- B66B 1/3461 {between the elevator control system and remote or mobile stations}
- B66B 1/3469 . . {mechanical}
- B66B 1/3476 . . {Load weighing or car passenger counting devices ([B66B 5/14](#) takes precedence)}
- B66B 1/3484 . . . {using load cells}
- B66B 1/3492 . . {Position or motion detectors or driving means for the detector ([B66B 1/40](#), [B66B 1/50](#) take precedence; length measuring [G01B](#); speed measuring [G01P](#))}

- B66B 1/36 . . Means for stopping the cars, cages, or skips at predetermined levels
- B66B 1/365 . . . {mechanical}
- B66B 1/38 . . . and for returning the controlling handle or lever to its neutral position
- B66B 1/40 . . . and for correct levelling at landings
- B66B 1/405 {for hydraulically actuated elevators}
- B66B 1/42 separate from the main drive
- B66B 1/425 {adapted for multi-deck cars in a single car frame}
- B66B 1/44 . . . and for taking account of disturbance factors, e.g. variation of load weight
- B66B 1/46 . . Adaptations of switches or switchgear (switches or switchgear in general, applications of switches or switchgear for floor-levelling purpose [H01H](#); panels for boards or switching arrangements [H02B 1/015](#))
- B66B 1/461 . . . {characterised by their shape or profile}
- B66B 1/462 {Mechanical or piezoelectric input devices}
- B66B 1/463 {Touch sensitive input devices}
- B66B 1/465 {being resistant to damage}
- B66B 1/466 {facilitating maintenance, installation, removal, replacement or repair}
- B66B 1/467 . . . {characterised by their mounting position}
- B66B 1/468 . . . {Call registering systems}
- B66B 1/48 . . . Adaptations of mechanically-operated limit switches (for cranes [B66C 13/50](#); for winding mechanisms [B66D 1/56](#))
- B66B 1/50 . . . with operating or control mechanisms mounted in the car or cage or in the lift well or hoistway
- B66B 1/52 . . . Floor selectors
- B66B 3/00 Applications of devices for indicating or signalling operating conditions of elevators**
- B66B 3/002 . {Indicators}
- B66B 3/004 . . {Mechanical devices that can be illuminated}
- B66B 3/006 . . {for guiding passengers to their assigned elevator car}
- B66B 3/008 . . {Displaying information not related to the elevator, e.g. weather, publicity, internet or TV}
- B66B 3/02 . Position or depth indicators
- B66B 3/023 . . {characterised by their mounting position}
- B66B 3/026 . . {Mechanical devices that can be illuminated}
- B66B 5/00 Application of checking, fault-correcting, or safety devices in elevators**
- B66B 5/0006 . {Monitoring devices or performance analysers ([B66B 5/02](#) takes precedence)}
- B66B 5/0012 . . {Devices monitoring the users of the elevator system}
- B66B 5/0018 . . {Devices monitoring the operating condition of the elevator system}
- B66B 5/0025 . . . {for maintenance or repair}
- B66B 5/0031 . . . {for safety reasons}
- B66B 5/0037 . . {Performance analysers}

- B66B 5/0043 . {Devices enhancing safety during maintenance}
- B66B 5/005 . . {Safety of maintenance personnel}
- B66B 5/0056 . . . {by preventing crushing}
- B66B 5/0062 {by devices, being operable or not, mounted on the elevator car}
- B66B 5/0068 {by activating the safety brakes when the elevator car exceeds a certain upper or lower position in the elevator shaft}
- B66B 5/0075 {by anchoring the elevator car or counterweight}
- B66B 5/0081 . . . {by preventing falling by means of safety fences or handrails, being operable or not, mounted on top of the elevator car}
- B66B 5/0087 . {Devices facilitating maintenance, repair or inspection tasks (devices incorporated in the buffer [B66B 5/288](#); railings on top of the car [B66B 11/0226](#))}
- B66B 5/0093 . . {Testing of safety devices}
- B66B 5/02 . responsive to abnormal operating conditions
- B66B 5/021 . . {the abnormal operating conditions being independent of the system (alarm systems in general [G08B](#))}
- B66B 5/022 . . . {where the abnormal operating condition is caused by a natural event, e.g. earthquake}
- B66B 5/024 . . . {where the abnormal operating condition is caused by an accident, e.g. fire}
- B66B 5/025 . . . {where the abnormal operating condition is caused by human behaviour or misbehaviour, e.g. forcing the doors}
- B66B 5/027 . . {to permit passengers to leave an elevator car in case of failure, e.g. moving the car to a reference floor or unlocking the door}
- B66B 5/028 . . {Safety devices separate from control system in case of power failure, for hydraulic lifts, e.g. braking the hydraulic jack ([B66B 5/16](#) takes precedence)}
- B66B 5/04 . . for detecting excessive speed
- B66B 5/042 . . . {with characteristic location of the governor cable}
- B66B 5/044 . . . {Overspeed governors}
- B66B 5/046 {of the pendulum or rocker arm type}
- B66B 5/048 . . . {Testing of overspeed governor}
- B66B 5/06 . . . electrical
- B66B 5/08 . . for preventing overwinding
- B66B 5/10 . . . electrical
- B66B 5/12 . . in case of rope or cable slack
- B66B 5/125 . . . {electrical}
- B66B 5/14 . . in case of excessive loads
- B66B 5/145 . . . {electrical}
- B66B 5/16 . . Braking or catch devices operating between cars, cages, or skips and fixed guide elements or surfaces in hoistway or well
- B66B 5/18 . . . and applying frictional retarding forces
- B66B 5/185 {by acting on main ropes or main cables}

- B66B 5/20 by means of rotatable eccentrically-mounted members ([B66B 5/24 takes precedence](#))
- B66B 5/22 by means of linearly-movable wedges ([B66B 5/24 takes precedence](#))
- B66B 5/24 by acting on guide ropes or cables
- B66B 5/26 . . . Positively-acting devices, e.g. latches, knives
- B66B 5/28 . Buffer-stops for cars, cages, or skips
- B66B 5/282 . . {Structure thereof}
- B66B 5/284 . . {mounted on cars or counterweights}
- B66B 5/286 . . . {between two cars or two counterweights}
- B66B 5/288 . . {with maintenance features (if not incorporated in the buffer [B66B 5/0087](#))}

B66B 7/00**Other common features of elevators**

- B66B 7/02 . Guideways; Guides ([arrangements in mine shafts E21D 7/02](#))
- B66B 7/021 . . {with a particular position in the shaft}
- B66B 7/022 . . {with a special shape}
- B66B 7/023 . . {Mounting means therefor}
- B66B 7/024 . . . {Lateral supports}
- B66B 7/025 . . . {End supports, i.e. at top or bottom}
- B66B 7/026 . . . {Interconnections}
- B66B 7/027 . . . {for mounting auxiliary devices}
- B66B 7/028 . . {with earthquake protection devices}
- B66B 7/04 . . {Riding means, e.g.} Shoes, Rollers, {between car and guiding means, e.g. rails, ropes (rollers adapted to match the shape of a special guiding means [B66B 7/02](#); vibration attenuation systems acting between car and its supporting frame [B66B 11/026](#))}
- B66B 7/041 . . . {including active attenuation system for shocks, vibrations}
- B66B 7/042 {with rollers, shoes}
- B66B 7/043 {using learning}
- B66B 7/044 {with magnetic or electromagnetic means}
- B66B 7/045 {using learning}
- B66B 7/046 . . . {Rollers}
- B66B 7/047 . . . {Shoes, sliders}
- B66B 7/048 . . . {including passive attenuation system for shocks, vibrations}
- B66B 7/06 . Arrangements of ropes or cables
- B66B 7/062 . . {Belts}
- B66B 7/064 . . {Power supply or signal cables}
- B66B 7/066 . . {Chains}
- B66B 7/068 . . {Cable weight compensating devices}
- B66B 7/08 . . for connection to the cars or cages, e.g. couplings
- B66B 7/085 . . . {Belt termination devices}
- B66B 7/10 . . for equalising rope or cable tension

- B66B 7/12 . Checking, lubricating, or cleaning means for ropes, cables or guides
- B66B 7/1207 . . {Checking means}
- B66B 7/1215 . . . {specially adapted for ropes or cables}
- B66B 7/1223 {by analysing electric variables}
- B66B 7/123 {by analysing magnetic variables}
- B66B 7/1238 {by optical techniques}
- B66B 7/1246 . . . {specially adapted for guides}
- B66B 7/1253 . . {Lubricating means}
- B66B 7/1261 . . . {specially adapted for ropes or cables}
- B66B 7/1269 . . . {specially adapted for guides}
- B66B 7/1276 . . {Cleaning means}
- B66B 7/1284 . . . {specially adapted for ropes or cables}
- B66B 7/1292 . . . {specially adapted for guides}

Lifts in, or associated with, buildings

- B66B 9/00** **Kinds or types of lifts in, or associated with, buildings or other structures**
(characterised by control systems [B66B 1/00](#); apparatus for raising or lowering
persons on stages of theatres [A63J 5/12](#))
- B66B 9/003 . {for lateral transfer of car or frame, e.g. between vertical hoistways or to/from a parking position}
 - B66B 2009/006 . {Ganged elevator}
 - B66B 9/02 . actuated mechanically otherwise than by rope or cable
 - B66B 9/022 . . {by rack and pinion drives}
 - B66B 9/025 . . {by screw-nut drives}
 - B66B 9/027 . . {by rope climbing devices}
 - B66B 9/04 . actuated pneumatically or hydraulically (platforms for lifting or lowering through short distances [B66F 7/00](#))
 - B66B 9/06 . inclined, e.g. serving blast furnaces
 - B66B 9/08 . . associated with stairways, e.g. for transporting disabled persons {(facilitating access of invalids to vehicles [A61G 3/02](#))}
 - B66B 9/0807 . . . {Driving mechanisms}
 - B66B 9/0815 {Rack and pinion, friction rollers}
 - B66B 9/0823 {Screw and nut}
 - B66B 9/083 {Pull cable, pull chain}
 - B66B 9/0838 . . . {Levelling gears}
 - B66B 9/0846 . . . {Guide rail ([B66B 9/0807](#) takes precedence)}
 - B66B 9/0853 . . . {Lifting platforms, e.g. constructional features}
 - B66B 9/0861 . . . {Hanging lifts, e.g. rope suspended seat or platform}
 - B66B 9/0869 . . . {Collapsible stairways, e.g. operable between a lower level and an upper level}
 - B66B 2009/0876 . . . {Details}

- B66B 2009/0884 {Control systems}
- B66B 2009/0892 {Seats' constructional features}
- B66B 9/10 . Paternoster type (with devices for transferring goods into, or out of, the compartments [B65G 17/00](#))
- B66B 9/16 . Mobile or transportable lifts specially adapted to be shifted from one part of a building or other structure to another part or to another building or structure (devices for lifting or lowering bulky or heavy goods for loading or unloading purposes [B66F 9/00](#), e.g. fork-lift trucks [B66B 9/06](#))
- B66B 9/187 . . with a liftway specially adapted for temporary connection to a building or other structure ([B66B 9/193](#) takes precedence)
- B66B 9/193 . . with inclined liftways
- B66B 11/00 Main component parts of lifts in, or associated with, buildings or other structures**
- B66B 11/0005 . {Constructional features of hoistways}
- B66B 11/001 . {Arrangement of controller, e.g. location}
- B66B 11/0015 . . {in the machine room}
- B66B 11/002 . . {in the hoistway}
- B66B 11/0025 . . . {on the car}
- B66B 11/003 . . . {on the counterweight}
- B66B 11/0035 . {Arrangement of driving gear, e.g. location or support}
- B66B 11/004 . . {in the machine room}
- B66B 11/0045 . . {in the hoistway}
- B66B 11/005 . . . {on the car}
- B66B 11/0055 . . . {on the counterweight}
- B66B 11/006 . {Applications of loading and unloading equipment for lifts associated with buildings (of general application [B65G](#); for paternoster lifts [B65G 17/00](#); for mine lifts [B66B 17/14](#))}
- B66B 11/0065 . {Roping (Mining hoist [B66B 15/08](#))}
- B66B 11/007 . . {for counterweightless elevators}
- B66B 11/0075 . . {with hoisting rope or cable positively attached to a winding drum}
- B66B 11/008 . . {with hoisting rope or cable operated by frictional engagement with a winding drum or sheave}
- B66B 11/0085 . . . {of rucksack elevators}
- B66B 11/009 . . . {with separate traction and suspension ropes}
- B66B 11/0095 . . . {where multiple cars drive in the same hoist way}
- B66B 11/02 . Cages, {i.e. cars} (doors, gates or other apparatus controlling access to, or exit from, cages [B66B 13/00](#))
- B66B 11/0206 . . {Car frames}
- B66B 11/0213 . . . {for multi-deck cars}
- B66B 11/022 {with changeable inter-deck distances}
- B66B 11/0226 . . {Constructional features, e.g. walls assembly, decorative panels, comfort equipment, thermal or sound insulation}

- B66B 11/0233 . . . {Lighting systems}
- B66B 11/024 . . . {Ventilation systems}
- B66B 11/0246 . . . {Maintenance features (devices facilitating maintenance in general [B66B 5/0087](#))}
- B66B 11/0253 . . . {Fixation of wall panels}
- B66B 11/026 . . {Attenuation system for shocks, vibrations, imbalance, e.g. passengers on the same side (acting between car or supporting frame and guides [B66B 7/04](#); acting between car and ropes, cables [B66B 7/08](#); correcting levelling between car and floor [B66B 1/40](#))}
- B66B 11/0266 . . . {Passive systems (aerodynamic structure [B66B 11/0226](#))}
- B66B 11/0273 {acting between car and supporting frame}
- B66B 11/028 . . . {Active systems}
- B66B 11/0286 {acting between car and supporting frame}
- B66B 11/0293 . . . {Suspension locking or inhibiting means to avoid movement when car is stopped at a floor (locking car to building while loading to avoid movement [B66B 17/34](#))}
- B66B 11/04 . . Driving gear; {Details thereof, e.g. seals (braking devices acting on the driving gear [B66B 5/02](#); of mining-hoist winding devices [B66B 15/08](#))}
- B66B 11/0407 . . {actuated by an electrical linear motor (in the counterweight [B66B 17/12](#))}
- B66B 11/0415 . . {actuated manually, e.g. additional safety system}
- B66B 11/0423 . . {actuated pneumatically or hydraulically}
- B66B 11/043 . . {actuated by rotating motor; Details, e.g. ventilation (Roping on drum, sheave, winch or pulley [B66B 11/0065](#); Power supply or control [B66B 1/28](#), [H02P](#); Motor construction [H02K](#))}
- B66B 11/0438 . . . {with a gearless driving, e.g. integrated sheave, drum or winch in the stator or rotor of the cage motor}
- B66B 11/0446 . . . {with screw-nut or worm-screw gear}
- B66B 11/0453 . . . {with planetary or epicycloidal gear, e.g. differential gear}
- B66B 11/0461 . . . {with rack and pinion gear}
- B66B 11/0469 . . . {with chain, pinion gear}
- B66B 11/0476 . . . {with friction gear, e.g. belt linking motor to sheave}
- B66B 11/0484 . . . {with a clutch or a coupling system between several motors, e.g. switching different speeds, progressive starting, torque limitation, flywheel (control [B66B 1/28](#))}
- B66B 11/0492 . . {actuated by other systems, e.g. combustion engines}
- B66B 11/06 . . with hoisting rope or cable positively attached to a winding drum {(B66B 11/0075 takes precedence)}
- B66B 11/08 . . with hoisting rope or cable operated by frictional engagement with a winding drum or sheave {(B66B 11/008 takes precedence)}
- B66B 13/00** **Doors, gates, or other apparatus controlling access to, or exit from, cages or lift well landings (door fittings, locks [E05](#))**
- B66B 13/02 . . Door or gate operation (of general application [E05F](#))
- B66B 13/04 . . of swinging doors
- B66B 13/06 . . of sliding doors

- B66B 13/08 . . . guided for horizontal movement
- B66B 13/10 . . . by car or cage movement
- B66B 13/12 . . Arrangements for effecting simultaneous opening or closing of cage and landing doors
- B66B 13/125 . . . {electrical}
- B66B 13/14 . . Control systems or devices
- B66B 13/143 . . . {electrical}
- B66B 13/146 {method or algorithm for controlling doors}
- B66B 13/16 . . . Door or gate locking devices controlled or primarily controlled by condition of cage, e.g. movement or position
- B66B 13/165 {electrical}
- B66B 13/18 without manually-operable devices for completing locking or unlocking of doors
- B66B 13/185 {electrical}
- B66B 13/20 Lock mechanisms actuated mechanically by abutments or projections on the cages
- B66B 13/22 . Operation of door or gate contacts
- B66B 13/24 . Safety devices in passenger lifts, not otherwise provided for, for preventing trapping of passengers
- B66B 13/245 . . {mechanical}
- B66B 13/26 . . between closing doors
- B66B 13/28 . . between car or cage and wells
- B66B 13/285 . . . {Toe guards or apron devices}
- B66B 13/30 . Constructional features of doors or gates (of interest apart from this application [E06B](#))
- B66B 13/301 . . {Details of door sills}
- B66B 13/303 . . {Details of door panels}
- B66B 13/305 . . . {Slat doors for elevators}
- B66B 13/306 . . {Details of door jambs}
- B66B 13/308 . . {Details of seals and joints}

Lifts in hoistways of mines

- B66B 15/00 Main component parts of mining-hoist winding devices**
- B66B 15/02 . Rope or cable carriers
- B66B 15/04 . . Friction sheaves; "Koepe" pulleys
- B66B 15/06 . . Drums
- B66B 15/08 . Driving gear
- B66B 17/00 Hoistway equipment**
- B66B 17/02 . mounted in head-frames ([winding towers for mines E04H 12/26](#))
- B66B 17/04 . Mining-hoist cars or cages

- B66B 17/06 . . with tiltable platforms
- B66B 17/08 . Mining skips
- B66B 17/10 . . adapted for passenger transport
- B66B 17/12 . Counterpoises
- B66B 17/14 . Applications of loading and unloading equipment (of general application [B65G](#))
- B66B 17/16 . . for loading and unloading mining-hoist cars or cages
- B66B 17/18 . . . Swinging bridges, e.g. for compensating for differences in level between car or cage and landing
- B66B 17/20 . . . by moving vehicles into, or out of, the cars or cages
- B66B 17/22 . . . Securing vehicles in cars or cages
- B66B 17/24 mounted on the car or cage
- B66B 17/26 . . for loading or unloading mining-hoist skips
- B66B 17/28 . . electrically controlled (for elevators in general [B66B 1/06](#))
- B66B 17/30 . . . for cars or cages
- B66B 17/32 . . . for skips
- B66B 17/34 . Safe lift clips; Keps
- B66B 17/36 . Gates or other apparatus controlling access to, or exit from, cars, cages, or hoistway landings

B66B 19/00**Mining-hoist operation**

- B66B 19/002 . {installing or exchanging guide rails (details of rails [B66B 7/02](#))}
- B66B 19/005 . {installing or exchanging the elevator drive}
- B66B 19/007 . {method for modernisation of elevators}
- B66B 19/02 . installing or exchanging ropes or cables
- B66B 19/04 . installing or removing mining-hoist cars, cages, or skips
- B66B 19/06 . Applications of signalling devices (depth indicators [B66B 3/02](#); order telegraphs [G08B](#))

B66B 20/00**Elevators not provided for in groups [B66B 1/00](#) to [B66B 19/00](#)****Escalators or moving walkways****B66B 21/00****Kinds or types of escalators or moving walkways**

- B66B 21/02 . Escalators
- B66B 21/025 . . {of variable speed type}
- B66B 21/04 . . Linear type
- B66B 21/06 . . Spiral type
- B66B 21/08 . . Paternoster type, i.e. the escalator being used simultaneously for climbing and descending ([B66B 21/06](#) takes precedence)
- B66B 21/10 . Moving walkways
- B66B 21/12 . . of variable speed type

B66B 23/00**Component parts of escalators or moving walkways**

B66B 23/02

- Driving gear

B66B 23/022

- • {with polygon effect reduction means}

B66B 23/024

- • {Chains therefor}

B66B 23/026

- • {with a drive or carrying sprocket wheel located at end portions}

B66B 23/028

- • {with separate drive chain or belt that engages directly the carrying surface chain}

B66B 23/04

- • for handrails

B66B 23/06

- • • with means synchronising the operation of the steps or the carrying belts and the handrails

B66B 23/08

- Carrying surfaces

B66B 23/10

- • Carrying belts

B66B 23/12

- • Steps

B66B 23/14

- Guiding means for carrying surfaces

B66B 2023/142

- • {paternoster return type system}

B66B 23/145

- • {Roller assemblies}

B66B 23/147

- • {End portions, i.e. means for changing the direction of the carrying surface}

B66B 23/16

- Means allowing tensioning of the endless member

B66B 23/18

- • for carrying surfaces

B66B 23/20

- • for handrails

B66B 23/22

- Balustrades

B66B 23/225

- • {Lighting systems therefor}

B66B 23/24

- • Handrails (driving gear therefor [B66B 23/02](#); tensioning means therefor [B66B 23/16](#); preventing jamming thereof by foreign objects [B66B 29/04](#); accessories therefor [B66B 31/02](#))

B66B 23/26

- • • of variable speed type

B66B 25/00**Control of escalators or moving walkways** (walkways of variable speed type [B66B 21/12](#); handrails of variable speed type [B66B 23/26](#); of general application [G05](#))

B66B 25/003

- {Methods or algorithms therefor}

B66B 25/006

- {Monitoring for maintenance or repair (for security reasons [B66B 29/005](#))}

B66B 27/00**Indicating operating conditions of escalators or moving walkways** (of general application [G08](#))**B66B 29/00****Safety devices of escalators or moving walkways** (walkways of variable speed type [B66B 21/12](#); handrails of variable speed type [B66B 23/26](#))

B66B 29/005

- {Applications of security monitors}

B66B 29/02

- responsive to, or preventing, jamming by foreign objects

B66B 29/04

- • for balustrades or handrails

B66B 29/06

- • Combplates

B66B 29/08

- Means to facilitate passenger entry or exit (moving handrails [B66B 23/24](#))

B66B 31/00 **Accessories for escalators, or moving walkways, e.g. for sterilising or cleaning (for safety [B66B 29/00](#))**

- [B66B 31/003](#) . {for cleaning steps or pallets}
 - [B66B 31/006](#) . {for conveying hand carts, e.g. shopping carts (hand carts per se [B62B 1/00](#), [B62B 3/00](#))}
 - [B66B 31/02](#) . for handrails
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B66B 2201/00 **Aspects of control systems of elevators**

- [B66B 2201/10](#) . Details with respect to the type of call input
- [B66B 2201/101](#) . . Single call input
- [B66B 2201/102](#) . . Up or down call input
- [B66B 2201/103](#) . . Destination call input before entering the elevator car
- [B66B 2201/104](#) . . Call input for a preferential elevator car or indicating a special request
- [B66B 2201/20](#) . Details of the evaluation method for the allocation of a call to an elevator car
- [B66B 2201/21](#) . . Primary evaluation criteria
- [B66B 2201/211](#) . . Waiting time, i.e. response time
- [B66B 2201/212](#) . . Travel time
- [B66B 2201/213](#) . . . where the number of stops is limited
- [B66B 2201/214](#) . . Total time, i.e. arrival time
- [B66B 2201/215](#) . . Transportation capacity
- [B66B 2201/216](#) . . Energy consumption
- [B66B 2201/22](#) . . Secondary evaluation criteria
- [B66B 2201/221](#) . . Penalisation of transfers
- [B66B 2201/222](#) . . Taking into account the number of passengers present in the elevator car to be allocated
- [B66B 2201/223](#) . . Taking into account the separation of passengers or groups
- [B66B 2201/224](#) . . Avoiding potential interference between elevator cars
- [B66B 2201/225](#) . . Taking into account a certain departure interval of elevator cars from a specific floor, e.g. the ground floor
- [B66B 2201/226](#) . . Taking into account the distribution of elevator cars within the elevator system, e.g. to prevent clustering of elevator cars
- [B66B 2201/23](#) . . Other aspects of the evaluation method
- [B66B 2201/231](#) . . Sequential evaluation of plurality of criteria
- [B66B 2201/232](#) . . . where the time needed for a passenger to arrive at the allocated elevator car from where the call is made is taken into account
- [B66B 2201/233](#) . . Periodic re-allocation of call inputs
- [B66B 2201/234](#) . . Taking into account uncertainty terms for predicted values, e.g. the predicted arrival time of an elevator car at the floor where a call is made
- [B66B 2201/235](#) . . Taking into account predicted future events, e.g. predicted future call inputs
- [B66B 2201/24](#) . . Control of empty elevator cars
- [B66B 2201/241](#) . . Standby control
- [B66B 2201/242](#) . . Parking control

- B66B 2201/243 . . Distribution of elevator cars, e.g. based on expected future need
- B66B 2201/30 . Details of the elevator system configuration
- B66B 2201/301 . . Shafts divided into zones
- B66B 2201/302 . . . with variable boundaries
- B66B 2201/303 . . Express or shuttle elevators
- B66B 2201/304 . . Transit control
- B66B 2201/305 . . . with sky lobby
- B66B 2201/306 . . Multi-deck elevator cars
- B66B 2201/307 . . Tandem operation of multiple elevator cars in the same shaft
- B66B 2201/308 . . Ganged elevator cars
- B66B 2201/34 . details
- B66B 2201/40 . Details of the change of control mode
- B66B 2201/401 . . by time of the day
- B66B 2201/402 . . by historical, statistical or predicted traffic data, e.g. by learning
- B66B 2201/403 . . by real-time traffic data
- B66B 2201/404 . . by cost function evaluation
- B66B 2201/405 . . by input of special passenger or passenger group
- B66B 2201/406 . . by input of human supervisor
- B66B 2201/46 . . Switches or switchgear
- B66B 2201/4607 . . . Call registering systems
- B66B 2201/4615 Wherein the destination is registered before boarding
- B66B 2201/4623 Wherein the destination is registered after boarding
- B66B 2201/463 Wherein the call is registered through physical contact with the elevator system
- B66B 2201/4638 Wherein the call is registered without making physical contact with the elevator system
- B66B 2201/4646 using voice recognition
- B66B 2201/4653 wherein the call is registered using portable devices
- B66B 2201/4661 for priority users
- B66B 2201/4669 using passenger condition detectors
- B66B 2201/4676 for checking authorization of the passengers
- B66B 2201/4684 for preventing accidental or deliberate misuse
- B66B 2201/4692 for payment for use