SECTION B — PERFORMING OPERATIONS; TRANSPORTING

B66 HOISTING; LIFTING; HAULING

B66C CRANES; LOAD-ENGAGING ELEMENTS OR DEVICES FOR CRANES, CAPSTANS, WINCHES, OR TACKLES (rope, cable, or chain winding mechanisms, braking or detent devices therefor B66D; specially adapted for nuclear reactors G21)

Subclass index

KINDS OF CRANES
- Trolley cranes....19/00
- Bridge; cable-way; jib....17/00, 21/00, 23/00
- Other cranes....25/00

COMMON FEATURES OR DETAILS
- Load-engaging devices....1/00, 3/00
- Supporting structures; runways....5/00, 6/00, 7/00
- Travelling gear; trolleys....9/00, 11/00
- Safety gear....15/00
- Other....13/00

Load-engaging elements or devices attached to lifting, lowering, or hauling gear of cranes or adapted for connection therewith

Note(s)

In groups B66C 1/00 or B66C 3/00, the following term is used with the meaning indicated:

- "cranes" also covers capstans, winches, or tackles.

1/00 Load-engaging elements or devices attached to lifting, lowering, or hauling gear of cranes, or adapted for connection therewith for transmitting forces to articles or groups of articles (fastening to cables or ropes F16G 11/00)

1/02 • by suction means
1/04 • by magnetic means
1/06 • • electromagnetic
1/08 • • • Circuits therefor (for electromagnets in general H01F 7/18)
1/10 • by mechanical means
1/12 • • Slings comprising chains, wires, ropes, or bands; Nets (article side grippers suspended by ropes or chains from crane hooks B66C 1/42)
1/14 • • • Slings with hooks
1/16 • • • Slings with load-engaging platforms or frameworks
1/18 • • • Band-type slings
1/20 • • • specially adapted for handling vehicles
1/22 • • Rigid members, e.g. L-shaped members, with parts engaging the under surface of the loads; Crane hooks
1/24 • • • Single members engaging the loads from one side only
1/26 • • • • with means for releasing the loads
1/28 • • • Duplicate, e.g. pivoted, members engaging the loads from two sides
1/30 • • • • and also arranged to grip the sides of the loads
1/32 • • • • • of piled or stacked articles
1/34 • • • Crane hooks
1/36 • • • • with means, e.g. spring-biased detents, for preventing inadvertent disengagement of loads
1/38 • • • • adapted for automatic disengagement from loads on release of cable tensions (for parachutes B64D)
1/40 • • • • formed or fitted with load-measuring or indicating devices
1/42 • • Gripping members engaging only the external or internal surface of the articles (for handling or stripping castings or ingots during manufacture B22D 29/00)
1/44 • • • and applying frictional forces
1/46 • • • • by inflatable elements
1/48 • • • • to vertical edge portions of sheets, tubes, or like thin or thin-walled articles (internally-expanding grippers B66C 1/54)
1/54 • • • • Internally-expanding grippers for handling hollow articles (B66C 1/46 takes precedence) **[2]**
1/56 • • • • • for handling tubes
1/58 • • • and deforming the articles, e.g. by using gripping members such as tongs or grapples
1/59 • • • • Tongs for sacks **[3]**
1/62 • • comprising article-engaging members of a shape complementary to that of the articles to be handled
1/64 • • • for T- or I-section beams or girders
1/66 • • • for engaging holes, recesses, or abutments on articles specially provided for facilitating handling thereof
1/68 • mounted on, or guided by, jibs (jibs B66C 23/64)

3/00 Load-engaging elements or devices attached to lifting or lowering gear of cranes or adapted for connection therewith and intended primarily for transmitting lifting forces to loose materials; Grabs (buckets or other containers B65D, e.g. pallets B65D 19/00; dredges equipped with grabs E02F)

3/02 • Bucket grabs
3/04 • Tine grabs
3/06 • Grabs actuated by a single rope or chain
3/08 • • and having tipping rings
3/10 • • and having buckets opening automatically upon the grab being lowered on to the dump of material
3/12 • Grabs actuated by two or more ropes
3/14 • Grabs opened or closed by driving motors thereon
3/16 • • by fluid motors
3/18 • • by electric motors
3/20 • mounted on, or guided by, jibs (jibs B66C 23/64)

Other common features; Details

5/00 Base-supporting structures with legs

5/02 • Fixed or travelling bridges or gantries, i.e. elongated structures of inverted-L- or of inverted-U-shape
5/04 • • with runways or tracks supported for movements relative to bridge or gantry
5/06 • • with runways or tracks supported for lateral swinging movements
5/08 • • with vertically-inclinable runways or tracks
5/10 • Portals, i.e. essentially circular or square platforms with three or more legs specially adapted for supporting slewing jib cranes

6/00 Girders, or track-supporting structures, specially adapted for cranes (base-supporting structures with legs B66C 5/00; girders in general E04C 3/02)

7/00 Runways, tracks, or trackways for trolleys or cranes

7/02 • for underhung trolleys or cranes
7/04 • • Trackway suspension
7/06 • • • on supports constructed for easy erection, e.g. transportable
7/08 • Constructional features of runway rails or rail mountings (of general application E01B)
7/10 • Arrangements or devices for extending runways or tracks
7/12 • Devices for changing direction of travel or for transferring from one runway to another; Crossings; Combinations of tracks of different gauges (transfer devices of general application E01B)
7/14 • • Runway interlocking devices
7/16 • Devices specially adapted for limiting trolley or crane travel; Arrangements of buffer-stops (buffer-stops of interest apart from this application B61K 7/18; limit-switch arrangements, limit circuits B66D 1/56)

9/00 Travelling gear incorporated in, or fitted to, trolleys or cranes (for dredgers E02F)

9/02 • for underhung trolleys or cranes
9/04 • to facilitate negotiation of curves
9/06 • for more than one rail gauge
9/08 • Runners; Runner bearings (wheels for railbound vehicles B60B)
9/10 • Undercarriages or bogies, e.g. end carriages, end bogies
9/12 • • with load-distributing means for equalising wheel pressure
9/14 • Trolley or crane travel drives (rope, cable, or chain drives for loads or trolleys B66C 11/16; control B66C 13/18)
9/16 • with means for maintaining alignment between wheels and track
9/18 • with means for locking trolleys or cranes to runways or tracks to prevent inadvertent movements

11/00 Trolleys or crabs, e.g. operating above runways (runways, tracks, or trackways therefor B66C 7/00; winch mechanisms B66D)

11/02 • with operating gear or operator's cabin suspended, or laterally offset, from runway or track
11/04 • • Underhung trolleys (power-operated hoists with driving motor and drum or barrel contained in a common housing B66D 3/20)
11/06 • • • running on monorails (overhead railway systems B61B)
11/08 • with turntables
11/10 • • equipped with jibs (jib cranes B66C 23/00)
11/12 • having hoisting gear adapted to special load-engaging elements and not otherwise provided for
11/14 • adapted to operate on crane or bridge structure of particular configuration, e.g. on reinforced concrete girders of rectangular cross-section
11/16 • Rope, cable, or chain drives for trolleys; Combinations of such drives with hoisting gear
11/18 • • comprising endless ropes or cables
11/20 • • Arrangements, e.g. comprising differential gears, enabling simultaneous or selective operation of travelling and hoisting gear; Arrangements using the same rope or cable for both travelling and hoisting, e.g. in Temperley cranes (power transmissions between driving motors and winch drums B66D 1/14)
11/22 • • actuated pneumatically or hydraulically
11/24 • • with means for locating or sustaining the loads or trolleys in predetermined positions; Hay hoists
11/26 • • • Abutments; Stop blocks; End stops

13/00 Other constructional features or details

13/02 • Devices for facilitating retrieval of floating objects, e.g. for recovering craft from water (equipment for handling lifeboats or the like B63B 23/00; loading or unloading floating cargo using ship-based equipment B63B 27/36; salvaging, or hauling-out on slipways, waterborne vessels B63C; winding mechanism controls B66D 1/52)
13/04 • Auxiliary devices for controlling movements of suspended loads, or for preventing cable slack
13/06 • • for minimising or preventing longitudinal or transverse swinging of loads
13/08 • • for depositing loads in desired attitudes or positions
13/10 • • for preventing cable slack (control devices for rope, cable, or chain winding mechanisms, e.g. for controlling tension, B66D 1/40)
13/12 • Arrangements of means for transmitting pneumatic, hydraulic, or electric power to movable parts or devices (devices of general interest specially adapted or mounted for storing and repeatedly paying-out and re-storing lengths of material B65H 75/34)
13/14 • • to load-engaging elements or motors associated therewith
13/16 • Applications of indicating, registering, or weighing devices (in crane hooks B66C 1/40; in safety gear B66C 15/00; weighing-apparatus G01G; remote indicating in general G08)

13/18 • Control systems or devices (exclusively for rope, cable, or chain winding mechanisms B66D 1/40)
13/20 • • for non-electric drives (transmitting control pulses B66C 13/40)
13/22 • • for electric drives (transmitting control pulses B66C 13/40; systems or devices of general application H02P)
13/23 • • • Circuits for controlling the lowering of the load
13/24 • • • • by dc motors
13/26 • • • • by ac motors
13/28 • • • • • utilising regenerative braking for controlling descent of heavy loads and having means for preventing rotation of motor in the hoisting direction when load is released
13/30 • • • Circuits for braking, traversing, or slewing motors
13/32 • • • for operating grab-bucket hoists by means of one or more electric motors used both for hoisting and lowering the loads and for opening and closing the bucket jaws (other aspects of rope, cable, or chain winding mechanisms specially adapted for actuating grab buckets B66D 1/62)
13/34 • • • • through differential or planetary gearing
13/36 • • • • Single-motor-drive control systems
13/38 • • • • Systems controlling independent motors
13/40 • • Applications of devices for transmitting control pulses; Applications of remote control devices (control in general G05)
13/42 • • • Hydraulic transmitters
13/44 • • • Electrical transmitters
13/46 • • Position indicators for suspended loads or for crane elements
13/48 • • Automatic control of crane drives for producing a single or repeated working cycle; Programme control
13/50 • • Applications of limit circuits or of limit-switch arrangements (for winding mechanisms B66D 1/56)
13/52 • Details of compartments for driving engines or motors or of operator's stands or cabins
13/54 • • Operator's stands or cabins
13/56 • • • Arrangements of handles or pedals

15/00 **Safety gear** (for rope, cable, or chain winding mechanisms B66D 1/54)
15/02 • for retaining load-engaging elements in the event of rope or cable breakage
15/04 • for preventing collisions, e.g. between cranes or trolleys operating on the same track
15/06 • Arrangements or use of warning devices **[2]**

Kinds or types of cranes [2]

17/00 **Overhead travelling cranes comprising one or more substantially-horizontal girders the ends of which are directly supported by wheels or rollers running on tracks carried by spaced supports** (adaptations of girders or of track-supporting structures B66C 6/00)
17/04 • with lifting beams, e.g. slewable beams, carrying load-engaging elements, e.g. magnets, hooks (constructions of load-engaging elements B66C 1/00, B66C 3/00)
17/06 • specially adapted for particular purposes, e.g. in foundries, forges; combined with auxiliary apparatus serving particular purposes (B66C 17/04 takes precedence)
17/08 • • for charging treatment chambers, e.g. furnaces, kilns, ovens (charging furnaces in general F27D 3/00)
17/10 • • for transporting ladles
17/12 • • for handling workpieces, e.g. ingots, which require to be supported temporarily within, or withdrawn from, a treatment chamber, e.g. tong cranes, soaking-pit cranes, stripper cranes (for manipulating ingots during forging B66C 17/18; grippers for handling or stripping castings or ingots during manufacture B22D 29/00)
17/14 • • • Tong cranes with means for moving article-pushers relative to the tongs
17/16 • • • Tong cranes with means for turning the tongs about a vertical axis
17/18 • • for manipulating workpieces during forging operations (workpiece manipulators in forging machines B21J 13/10)
17/20 • • for hoisting or lowering heavy load carriers, e.g. freight containers, railway wagons
17/22 • • for hoisting or lowering locomotives
17/24 • • for building ships on slipways
17/26 • • combined with auxiliary apparatus, e.g. log saws, pushers for unloading vehicles, means for shunting railway vehicles

19/00 **Cranes comprising trolleys or crabs running on fixed or movable bridges or gantries** (B66C 17/00 takes precedence; base-supporting structures with legs B66C 5/00; adaptations of girders or of track-supporting structures B66C 6/00; jib cranes B66C 23/00)
19/02 • collapsible

21/00 **Cable cranes, i.e. comprising hoisting devices running on aerial cable-ways** (adaptations of girders or of track-supporting structures B66C 6/00; rope or cable drives for trolleys, combinations of such drives with hoisting gear B66C 11/16; railway systems B61B; rope or cable winding mechanisms B66D 1/00)
21/02 • with cable-ways supported on framework swingably connected to ground-engaging elements
21/04 • with cable-ways supported at one end or both ends on bodily-movable framework, e.g. framework mounted on rail track
21/06 • • with one end supported on a framework movable in a curved, e.g. circular, path and the other end by a column rotatable around a vertical axis
21/08 • Sag carriers or rope trolleys, suspended or not, e.g. fixed but offering clearance for travelling gear
21/10 • • travelling

23/00 **Cranes comprising essentially a beam, boom or triangular structure acting as a cantilever and mounted for translatory or swinging movements in vertical or horizontal planes or a combination of such movements, e.g. jib cranes, derricks or tower cranes** (base-supporting structures with legs B66C 5/00; adaptations of girders or of track-supporting structures B66C 6/00)

Note(s)

Group B66C 23/64 takes precedence over groups B66C 23/02-B66C 23/16.

23/02 • with non-adjustable and non-inclinable jibs mounted solely for slewing movements

23/04 • with jibs the effective length of which is variable in operation, e.g. longitudinally displaceable, extensible
23/06 • with jibs mounted for jibbing or luffing movements
23/08 • • and adapted to move the loads in predetermined paths
23/10 • • • the paths being substantially horizontal; Level-luffing jib cranes
23/12 • • • • with means for automatically varying the effective length of the hoisting rope or cable
23/14 • • • • with means, e.g. pantograph arrangements, for varying jib configuration
23/16 • with jibs supported by columns, e.g. towers having their lower end mounted for slewing movements
23/18 • specially adapted for use in particular locations or for particular purposes (B66C 23/02-B66C 23/16, B66C 23/58-B66C 23/88 take precedence) **[5]**
23/20 • • with supporting couples provided by walls of buildings or like structures
23/22 • • • Window cranes, i.e. adapted to be supported in window openings
23/24 • • • Mobile wall cranes
23/26 • • for use on building sites; constructed, e.g. with separable parts, to facilitate rapid assembly or dismantling, for operation at successively higher levels, for transport by road or rail (with supporting couples provided by walls or buildings B66C 23/20; mounted on vehicles B66C 23/36) **[5]**
23/28 • • • constructed to operate at successively higher levels
23/30 • • • • with frameworks composed of telescopic elements
23/32 • • • • Self-hoisting cranes
23/34 • • • Self-erecting cranes, i.e. with hoisting gear adapted for crane erection purposes
23/36 • • mounted on road or rail vehicles; Manually-movable jib cranes for use in workshops; Floating cranes (vehicle or ship aspects B60-B63)
23/38 • • • with separate prime movers for crane and vehicle
23/40 • • • with a single prime mover for both crane and vehicle
23/42 • • • with jibs of adjustable configuration, e.g. foldable
23/44 • • • Jib cranes adapted for attachment to standard vehicles, e.g. agricultural tractors
23/46 • • • Mobile jib cranes with non-slewable jibs
23/48 • • • Manually-movable jib cranes for use in workshops
23/50 • • • mounted on railway vehicles, e.g. breakdown cranes
23/52 • • • Floating cranes (floating dredgers E02F)
23/53 • • • • including counterweight or means to compensate for list, trim, or skew of the vessel or platform (counterweights or supports for balancing lifting couples B66C 23/72; equipment to decrease unwanted vessel movements B63B 39/00) **[4]**
23/58 • arranged to carry-out a desired sequence of operations automatically, e.g. hoisting followed by luffing and slewing
23/60 • Derricks **[3]**
23/61 • • with slewing force exerted at pivoted end **[3]**
23/62 • Constructional features or details (of dredgers E02F)
23/64 • • Jibs
23/66 • • • Outer or upper end constructions
23/68 • • • foldable or otherwise adjustable in configuration (B66C 23/687, B66C 23/70 take precedence) **[5]**
23/683 • • • • while in use **[5]**
23/687 • • • telescopic **[5]**
23/69 • • • • while in use **[5]**
23/693 • • • • • extensible by fluid pressure **[5]**
23/697 • • • • providing bearing means between sections **[5]**
23/70 • • • assembled from separate sections to form jibs of various discrete lengths
23/72 • • Counterweights or supports for balancing lifting couples
23/74 • • • separate from jib
23/76 • • • • and movable to take account of variations of load or of variations of length of jib
23/78 • • • Supports, e.g. outriggers, for mobile cranes
23/80 • • • • hydraulically actuated
23/82 • • Luffing gear
23/84 • • Slewing gear (anti-friction bearings F16C)
23/86 • • • hydraulically actuated
23/88 • Safety gear (for cranes in general B66C 15/00; for rope, cable, or chain winding mechanisms B66D 1/54)
23/90 • • Devices for indicating or limiting lifting movement
23/92 • • Snubbers or dash-pots for preventing backwards-swinging of jibs, e.g. in the event of cable or tackle breakage
23/94 • • for limiting slewing movements

25/00 Cranes not provided for in groups B66C 17/00-B66C 23/00 [2006.01]