CLASS 212, TRAVERSING HOISTS

SECTION I - CLASS DEFINITION

Apparatus and methods for lifting a load and shifting it laterally by an elevating means applied through a support from which a load engager is suspended and including one of the following:

A load engager freely suspended by a flexible member.

A bridge* or a boom* on which a load-supporting trolley* is adapted to move to shift the load laterally.

A trolley,* per se.

A vertically swinging boom* claimed without regard to a self-loading or unloading feature (e.g., a bucket, fork, or grab type load engager).

(1) Note. This class is the residual locus for boom sluing or luffing apparatus and subcombinations thereof which are otherwise unprovided for.

(2) Note. Subclasses 71 through 345, inclusive, were not screened during reclassification of the remaining subclasses. Accordingly, those subclasses preceding subclass 71 will be found to contain all relevant patents except those claiming linear hoists.

SECTION II - LINES WITH OTHER CLASSES AND WITHIN THIS CLASS

In the Class Definition above, regarding vertically swinging booms, apparatus having a vertically swinging boom comprised of relatively movable segments and disclosed as having a self-loading load engager (e.g., a backhoe or steam shovel) are self-loading apparatus and should be considered for Class 414, Material or Article Handling. (Note, however, that in accordance with the other part of the Class Definition, regarding load engagers, if the load engager is suspended by a flexible member, the apparatus is proper for Class 212).

The “lateral shifting” criterion specified in the class definition requires more than merely supporting a hoist on a wheeled vehicle to render the hoist ambulant. See search notes to Class 254 below.

As indicated in the general search notes below, many classes provide for traversing hoists of specific application, which generally include but are not limited to those patents which claim load engager structure peculiar to the specified application.

SECTION III - REFERENCES TO OTHER CLASSES

SEE OR SEARCH CLASS:

5, Beds, subclass 87.1 for a traversing hoist having structure peculiarly adapted for the transfer of invalids to or from a bed.

37, Excavating, subclasses 115+ for traversing hoist-type excavators having specifically claimed ground-engaging (digging) structure.

52, Static Structures (e.g., Buildings), subclasses 111+ for a rigid elongated member, a section of which is movable relative to another section or a base, and mechanical motive means to effect such movement; subclass 632 for a passive, axially extensible elongated member; and subclasses 633+ for the specific structure of an elongated rigid member, per se. Class 212 is the residual locus for combinations of a load-handler boom and a sluing or luffing mechanism therefor. Class 212, subclasses 347+, contain patents to boom structure, per se, where structure peculiar to load handling is recited (e.g., cable guide, chafing strip, etc.).

105, Railway Rolling Stock, subclass 163.1 for overhead crane trucks (trolleys). Hoisting means or structure peculiar thereto must be claimed for original placement in Class 212.

114, Ships, subclasses 365+ for life craft handling, particularly subclasses 368+ for a davit peculiarly adapted for lowering a life craft.

134, Cleaning and Liquid Contact With Solids, subclasses 76+ for cleaning apparatus of the Class 134 type claimed in combination with a traversing hoist to transfer the work.

187, Elevator, Industrial Lift Truck, or Stationary Lift for Vehicle, subclasses 222+ for an industrial lift truck or required component thereof (e.g., forklift), and subclasses 240+ for transportable elevator.

254, Implements or Apparatus for Applying Pushing or Pulling Force, subclasses 84+ for traversing jacks which lift a load from below and shift it laterally; subclasses 266+ for hoisting drum features; and subclasses 389+ for cable guide structure.

414, Material or Article Handling, subclass 143.1 for ship-charging or discharging apparatus in

the nature of a hoist line bucket; subclass 191 for the charging of a chamber of a type utilized for a heating function by means of a driven device for transporting material to and/or into, or into and within, the chamber, and wherein the device comprises a traversing hoist having a material-underlying support or a material-attracting and gripping means; subclasses 391+ for the combination of a driven device external of a wheeled, load-transporting type vehicle for raising or lowering a load which is to be taken from the vehicle, and the vehicle being unloaded thereby; subclass 399 for the combination of a device external of a wheeled, load-transporting type vehicle for raising or lowering a load which is to be moved to the vehicle, and the vehicle being loaded thereby; subclasses 486+ for a self-loading or -unloading vehicle having a load-receiving portion which is pivotable relative to the horizontal, and wherein the vehicle has means to raise a load above said portion for deposit thereon or therein, by way of further explanation, a self-loading or unloading vehicle of that class (414) handles only a load being moved to or from the vehicle; subclasses 540+ for a self-loading or unloading vehicle having a load-handling means which raises or lowers a load in a path which includes vertical, rectilinear movement; subclasses 560+ for traversing hoists combined with additional material-handling means; subclasses 564, 569, and 571 for hoists combined with additional material-handling means; subclass 591 for apparatus having a self-loading grasp suspended below a boom or bridge for guided vertical movement; subclasses 592+ for a hoist with loading or unloading means; and subclasses 680+ for vertically swinging load supports. Class 414 takes the following patents to apparatus having means to raise a load and shift it horizontally:

(a) Those which specifically claim a self-loading engager (e.g., bucket, fork, grab, magnet, etc.) which is not suspended by a flaccid member.

(b) Those which disclose a self-loading engager only and claim a vertically swinging boom comprised of relatively movable segments.

(c) Those which claim the vehicle portion of a vehicle-mounted hoist which is disclosed solely for loading or unloading the vehicle, with the exception of those patents claiming means to facilitate assembly and disassembly of the traversing hoist from the vehicle (Class 212, subclasses 180+).

(d) Those which claim a separate load-transporting vehicle which is to be loaded by the hoist (as disclosed).

(e) Those which are claimed in combination with additional handling means not of the Class 212 type.

452, Butchering, subclass 79 and 178 for a handling device (e.g., traversing hoist) which is peculiar to that art.

483, Tool Changing, generally for a process or apparatus including means to transfer a tool combined with tool support or storage means.

SECTION IV - GLOSSARY

BOOM

An elongated member protruding from a mast, crane body, trolley, or other supporting structure and from which the load is suspended.

BRIDGE

An elongated member supported horizontally at two spaced points and which either serves as or bears a track or guide between the supporting points on which a load-supporting trolley or a traveling bridge is adapted to move.

TROLLEY

A movable carriage adapted to shift a load laterally by moving along a track or other guiding means and which supports or guides a member from which the load is suspended.

SUBCLASSES

71 OVERHEAD:

This subclass is indented under the class definition. Miscellaneous traversing hoists comprising means for raising a load from overhead and traversing it, either in a straight or curved line.

(1) Note. In these instruments there is no means for shifting the load laterally in respect to the track or corresponding element.

SEE OR SEARCH THIS CLASS, SUBCLASS:

223+, for hoists having a swinging movement about a fixed point.

312+, for hoists capable of moving the load in two directions by independent movements.

SEE OR SEARCH CLASS:

104, Railways, subclass 124 for elevated track details of general application.

242, Winding, Tensioning, or Guiding, subclasses 370+, particularly subclasses 390+ for a motor powered reeling device.

72 Cable, ship coaling type:

This subclass is indented under subclass 71. Linear hoists comprising a cable supported at two points, the distance between which is subject to variations, a trolley traveling on the cable, and means for changing the elevation of the load.

(1) Note. Devices fulfilling the requirements of the above definition, but comprising some feature whereby the load is transferred from the hoisting means to the carrying means are excluded, in accordance with the general scope of the class. Similar devices comprising means for carrying or receiving the load, additional to the corresponding elements of the traversing hoist, are excluded.

SEE OR SEARCH CLASS:

104, Railways, subclass 112 and 180 for track and cable details.

242, Winding, Tensioning, or Guiding, subclasses 410+ for cable-tensioning devices adapted to cooperate with winding mechanism of general application.

254, Implements or Apparatus for Applying Pushing or Pulling Force, subclass 274 for apparatus for hauling or hoisting a load, the apparatus including a driven drum which pulls on or travels along a cable and a mechanism linked to the drum, or a rotating element of the drive for generating a control impulse to rotation-retarding means or motor when the torque on drum varies.

318, Electricity: Motive Power Systems, subclasses 6+ for tension-maintaining type electric motor control system.

414, Material or Article Handling, for various hoisting mechanisms combined with other article handling means, and particularly subclass 138 for means to load or unload ships at sea.

441, Buoys, Rafts, and Aquatic Devices, subclasses 80+ for ship to ship or ship to shore cables for transport of personnel therebetween.

474, Endless Belt Power Transmission Systems or Components, appropriate subclasses for drive systems using a belt and pulley, and particularly subclasses 101+ for belt-tensioning means.

73 Shiftable track:

This subclass is indented under subclass 71. Linear hoists comprising miscellaneous shiftable tracks.

SEE OR SEARCH THIS CLASS, SUBCLASS:

72, for linear hoists extending from ship to ship or from ship to shore.

225+, for horizontally swinging tracks.

312+, for tracks movable bodily in a direction at an angle to their length to transport the load.

74 Longitudinally movable:

This subclass is indented under subclass 73. Linear hoists mounted to move bodily in the direction of their length.

SEE OR SEARCH CLASS:

242, Winding, Tensioning, or Guiding, subclasses 410+ for a cable tensioning device adapted to cooperate with winding mechanism of general application.

75 Tilting:

This subclass is indented under subclass 73. Miscellaneous linear hoists comprising a track, either rigid or flexible, supported at two points, a trolley carriage or load adapted to move along the track but not beyond either track sup-

port, and means for elevating a portion of the track to cause the trolley or load to move along it by gravity.

SEE OR SEARCH CLASS:
104, Railways, subclass 53 for similar devices comprising some additional element specific to amusement purposes, and subclass 112 for similar devices comprising a trolley adapted to move beyond a track support.
186, Merchandising, subclasses 4+ for similar devices designed to operate within the limits of a building.

76 Cable:
This subclass is indented under subclass 71. Linear hoists comprising a cable or cables operated from a fixed source of power for hoisting and transferring a load.

(1) Note. If a track is used, it may be either rigid or flexible.

SEE OR SEARCH CLASS:
186, Merchandising, subclass 18 for similar devices designed to operate within the limits of a building.
226, Advancing Material of Indeterminate Length, appropriate subclasses for methods of, and apparatus for, feeding material without utilizing the leading or trailing ends to effect movement of the material.

77 Load handling:
This subclass is indented under subclass 76. Linear cable hoists comprising some special means for receiving, engaging, gripping, discharging, or releasing a load.

78 Draft rope:
This subclass is indented under subclass 77. Load-handling hoists comprising a tack, a carriage thereon, a hoisting machine fixed in relation to the track, and one or more cables extending from the hoisting machine to the carriage for hoisting and traversing the load, the latter being partly or wholly suspended during traversing movement from the hoisting means or the traversing means, or both.

SEE OR SEARCH THIS CLASS, SUBCLASS:
87+, and 94+, for similar devices comprising no special means for receiving, engaging, gripping, discharging, or releasing the load.

SEE OR SEARCH CLASS:
37, Excavating, subclasses 394+ for traversing draft-rope hoists comprising some means for loading of filling a carrying bucket or scoop by moving it laterally through the material.

79 Dumping:
This subclass is indented under subclass 78. Draft-rope hoists of the above type comprising a bucket or receptacle and means for dumping the load.

80 Double tackle:
This subclass is indented under subclass 79. Dumping draft-rope hoists of the above type in which the receptacle is supported by two tackles or cables capable of relative movement.

SEE OR SEARCH THIS CLASS, SUBCLASS:
81, for similar devices for operating grab buckets and the like.

81 Grab:
This subclass is indented under subclass 79. Dumping draft-rope hoists comprising some form of a grab, such as a clamshell bucket or grapple.

SEE OR SEARCH THIS CLASS, SUBCLASS:
84, for similar devices in which the grab is attached to the trolley during traversing movement.

82 Sling:
This subclass is indented under subclass 79. Dumping draft-rope hoists comprising a sling carrier.

SEE OR SEARCH THIS CLASS, SUBCLASS:
85, for similar devices in which the sling is attached to the trolley during traversing movement.

83 Load suspension:

This subclass is indented under subclass 77. Load-handling hoists comprising a track, a carriage thereon, a hoisting machine fixed in respect to the track, and one or move cables extending from the hoisting machine to the carriage for hoisting and traversing the load, and means for supporting the load directly from the carriage during traversing movement.

SEE OR SEARCH THIS CLASS, SUBCLASS:

97+, for similar devices comprising no special means for receiving, engaging, gripping, discharging, or releasing the load.

SEE OR SEARCH CLASS:

37, Excavating, appropriate subclasses for similar devices comprising means for filling a bucket by dragging it through the material.

84 Grab:

This subclass is indented under subclass 83. Linear Load-suspension cable hoists comprising some form of grab, such as a clamshell bucket or grapple.

SEE OR SEARCH THIS CLASS, SUBCLASS:

81, for similar devices in which the load is not attached to the carriage during traversing movement.

SEE OR SEARCH CLASS:

37, Excavating, subclass 341, 182, and 461 for the structure of the bucket.

294, Handling: Hand and Hoist-Line Implements, subclasses 86.4+ for the structure of the grapple.

85 Sling:

This subclass is indented under subclass 83. Linear cable load-handling hoist of the load-suspension type comprising a sling carrier.

SEE OR SEARCH THIS CLASS, SUBCLASS:

82, for similar devices in which the sling is not attached to the carriage during traversing movement.

SEE OR SEARCH CLASS:

294, Handling: Hand and Hoist-Line Implements, subclasses 74+ and 82.24+ for slings and releasing hooks, respectively.

86 Automatic stop:

This subclass is indented under subclass 76. Linear cable hoists comprising means for automatically cutting out the power when the load has reached a predetermined position.

SEE OR SEARCH THIS CLASS, SUBCLASS:

281, for traversing hoists having a hoisting cable which is automatically stopped when the load reaches a predetermined height.

329, for a self-propelled hoisting trolley which is automatically stopped while traversing.

87 Draft-rope, hoist-rope traverse:

This subclass is indented under subclass 76. Hoists comprising a track, a carriage thereon, a hoisting machine fixed in relation to the track, a hoisting cable extending from the hoisting machine to the carriage for hoisting the load and traversing the carriage in one direction, the load being partly or wholly suspended during traversing movement from the hoisting means, and elements thereof not elsewhere classifiable.

88 Divided hoist-rope:

This subclass is indented under subclass 87. Linear cable hoists of the draft-rope, hoist-rope type, comprising a track, a carriage thereon, and a hoist-rope consisting of two sections, one extending toward each end of the track, which serves to traverse the load in both directions.

SEE OR SEARCH THIS CLASS, SUBCLASS:

89, for similar devices in which the hoist-rope is arranged to positively lower the hook or block.

89 Hook lowering:

This subclass is indented under subclass 87. Hoist-rope traverse devices of the above type in which there is some means other than the weight of the parts themselves for lowering the

end of the hoisting rope or for lowering the fall-block at the loading or unloading point.

SEE OR SEARCH THIS CLASS, SUBCLASS:

96, for similar devices in which the trolley is moved in both directions by a cable other than the hoisting cable.

99, for similar devices comprising a traveling drum, an endless cable for rotating the drum, and a clutch between the cable and drum.

90 Running track:

This subclass is indented under subclass 87. Hoist-rope traverse systems which include a carriage and a track therefore, the track serving also as means for traversing the carriage in one direction.

SEE OR SEARCH THIS CLASS, SUBCLASS:

75, for cable hoists comprising a track, a trolley or load thereon, and means for raising a portion of the track to cause the trolley or load to be moved along it by gravity, and classes indicated in the search notes under subclass 75.

91 Cable return:

This subclass is indented under subclass 87. Draft-rope linear cable-hoist systems comprising a carriage, a hoisting cable which moves the carriage along its track in one direction, and a cable, not a hoisting cable, for moving it in the opposite direction.

92 Gravity return:

This subclass is indented under subclass 87. Systems of the type in which the hoisting rope moves the carriage in one direction, it being returned by gravity.

93 Cable:

This subclass is indented under subclass 92. Systems of the type comprising a carriage, a hoisting cable which moves the carriage in one direction, and a gravity-actuated cable for moving it in the opposite direction.

94 Draft rope, independent traverse:

This subclass is indented under subclass 76. Linear cable-hoists comprising a track, a carriage thereon, a hoisting machine fixed in relation to the track, a hoisting cable extending from the hoisting machine to the carriage, and means separate from the hoisting cable for traversing the carriage in both directions, the load being partly, or wholly suspended during traversing movement from the hoisting means.

95 Anchored hoist-rope:

This subclass is indented under subclass 94. Systems of the type comprising a hoist-rope, one end of which is anchored at some fixed point.

96 Hook lowering:

This subclass is indented under subclass 94. Draft-rope systems of the type comprising some means other than the weight of the parts themselves for lowering the end of the hoisting cable or for lowering the fall-block at the loading or unloading point.

SEE OR SEARCH THIS CLASS, SUBCLASS:

89, for similar devices in which the trolley is moved in one direction by the hoisting cable.

99, for similar devices comprising a traveling drum, an endless cable for operating the drum, and a clutch between the cable and drum.

97 Load suspension:

This subclass is indented under subclass 76. Linear cable hoists comprising a track, a carriage thereon, a hoisting machine fixed in relation to the track, and one or more cables extending from the hoisting machine to the carriage for hoisting and traversing the load, and means for supporting the load directly from the carriage during traversing movement.

SEE OR SEARCH THIS CLASS, SUBCLASS:

323, for a traveling bridge having a hoisting motor fixed in relation to a track along which a trolley traverses.

SEE OR SEARCH CLASS:

362, Illumination, subclasses 359+ for similar devices particularly adapted to shift illuminating devices.

98 Hoist, carry and lower:
This subclass is indented under subclass 97. Miscellaneous linear cable load-suspension hoists which hoist the load, automatically secure it to a carriage, traverse the carriage, and detach the load from the carriage at a second point, thereby allowing it to be lowered by slacking the hoist-rope.

SEE OR SEARCH THIS CLASS, SUBCLASS:
110+, for similar devices in which the hoisting rope is secured to the carriage by a rope-gripping device.
115, for similar devices comprising a traveling drum or sheave, around which the hoisting rope passes, and a pawl and ratchet cooperating therewith.

99 Running rope:
This subclass is indented under subclass 97. Linear hoists comprising a hoisting carriage, a track, and endless running flexible member, and a clutch mounted on the carriage for intermittently connecting the running member with a member carried by the carriage to effect the hoisting of the load or to traverse the carriage.

SEE OR SEARCH THIS CLASS, SUBCLASS:
89, and 96, for similar devices in which the endless flexible member is permanently connected with the hoisting member.
115, for similar devices comprising a ratchet mechanism for suspending the load from the carriage during traversing movement.
312+, for traveling cranes comprising similar hoists.

100 Sheave catch:
This subclass is indented under subclass 97. Load-suspension carriers comprising a catch on the carriage for engaging directly with and wholly or partly supporting the sheave of a block and tackle hoisting means.

SEE OR SEARCH THIS CLASS, SUBCLASS:
102+, for similar devices which engage with the frame of the hoisting sheave.

101 Pivoted cable extension:
This subclass is indented under subclass 100. Sheave-catch carriers comprising a catch consisting of an extension or continuation of the hoisting cable, which extension is pivoted to the carriage and upon which the sheave rests while the load is being traversed.

102 Sheave-frame catch:
This subclass is indented under subclass 97. Load-suspension carriers comprising a catch on the carriage for engaging with the sheave frame of a block and tackle hoisting means.

SEE OR SEARCH THIS CLASS, SUBCLASS:
100+, for suspending devices which engage directly with the sheave.

103 Sliding:
This subclass is indented under subclass 102. Sheave-frame catch carriers , each comprising a catch which has a sliding movement to engage with and wholly or partly support the sheave frame.

SEE OR SEARCH THIS CLASS, SUBCLASS:
107, for similar devices comprising a sliding catch which supports the load by means of a button or stop on the hoisting cable or by engagement with a link of the hoisting chain.

104 Pivoted:
This subclass is indented under subclass 102. Sheave-frame catch carriers comprising a catch which has a swinging movement to engage with and wholly or partly support the sheave frame.

SEE OR SEARCH THIS CLASS, SUBCLASS:
97, for pivoted catches which hold the sheave frame on a support, but do not themselves bear whole or part of the weight.
108, for similar catches which engage with a stop or button on the hoist-rope.

105 Double:
This subclass is indented under subclass 104. Sheave-frame catch carriers comprising two movable pivoted parts, acting in opposition to each other, for engaging with and supporting the sheave frame or for retaining the sheave frame upon some other support.

SEE OR SEARCH THIS CLASS, SUBCLASS:
100, for similar devices which engage directly with the sheave.
109, for similar devices which engage with a stop or button on the hoisting rope.

106 Rope catch:
This subclass is indented under subclass 97. Load-suspension carriers comprising a traveling carriage, a hoisting cable or chain, a stop, button, or the like, mounted thereon or forming a part thereof, and means on the carriage for engaging with and supporting the stop or button.

SEE OR SEARCH THIS CLASS, SUBCLASS:
110+, for similar devices in which the rope is held by being gripped by the suspending means.

107 Sliding:
This subclass is indented under subclass 106. Rope-catch carriers comprising a catch which has a sliding movement to and from supporting position.

SEE OR SEARCH THIS CLASS, SUBCLASS:
103, for similar catches which engage with the frame of the hoisting sheave.

108 Pivoted:
This subclass is indented under subclass 106. Rope-catch carriers comprising a single pivoted catch for supporting the rope stop.

SEE OR SEARCH THIS CLASS, SUBCLASS:
104, for similar catches which engage with the frame of a hoisting sheave.

109 Double:
This subclass is indented under subclass 108. Rope-catch carriers comprising two pivoted catches which move to supporting position from opposite sides of the hoisting rope.

SEE OR SEARCH THIS CLASS, SUBCLASS:
100, for similar devices which engage with a sheave.
105, for similar devices which engage with a sheave frame.

110 Rope grip:
This subclass is indented under subclass 97. Traversing cable hoists comprising a traveling carriage, a hoisting rope, and means on the carriage for gripping the rope to support the load.

SEE OR SEARCH CLASS:
24, Buckles, Buttons, Clasps, etc., subclasses 115+ for rope grips of general application.

111 Variable elevation:
This subclass is indented under subclass 110. Rope-grip carriers in which the hoisting rope may be gripped to the carriage at different elevations of the load.

SEE OR SEARCH THIS CLASS, SUBCLASS:
114, for variable elevation rope-gripping devices which consists in a member adapted to press against a sheave on the moving carriage.

112 Carriage release:
This subclass is indented under subclass 111. Miscellaneous rope-grip variable elevation carriers comprising means, usually manually operated, for releasing the carriage from a stop on the track and simultaneously causing the setting of the rope grip.

SEE OR SEARCH THIS CLASS, SUBCLASS:
114, for similar devices in which the rope is gripped by some member which coacts with and presses against the surface of a sheave.

113 Side draft:
This subclass is indented under subclass 111. Variable elevation rope-grip hoists comprising means independent of the hoisting cable for traversing the hoisting carriage. The hoist-rope during the hoisting operation extends at or about right angles to the track.

SEE OR SEARCH THIS CLASS, SUBCLASS:
87+, and 94+, for draft-rope systems comprising particular arrangements of hoisting and traversing cables.

114 Coacting sheave:
This subclass is indented under subclass 110. Rope-grip carriers including a traveling carriage, a sheave thereon, and means acting directly on the sheave to grip the hoisting rope between it and the sheave.

115 Ratchet sheave:
This subclass is indented under subclass 97. Cable hoists including a carriage, a hoisting rope passing over a sheave or drum thereon, and a ratchet mechanism interposed between the drum or sheave and the carriage, and wholly supporting the load from the carriage during traversing movement.

SEE OR SEARCH THIS CLASS, SUBCLASS:
99, for similar devices comprising an endless operating cable passing over a drum on the trolley, a hoisting rope connected with the drum, and a clutch mechanism interposed between the operating cable and the hoisting cable.
114, for similar devices comprising a pivoted member which presses the hoisting rope against a sheave and thereby prevents motion in one direction.

116 Trips, stops, and knockers:
This subclass is indented under subclass 97. Details of the knocker blocks, stops, and trips which are used in load-suspension cable hoists for the purpose of tripping the load-suspending means and allowing the load-hook or support to be detached from the carriage. They also usually hold the carriage in a fixed position on the track until the next load is hoisted and attached to the carriage.

SEE OR SEARCH THIS CLASS, SUBCLASS:
83+, and 97+, for load suspension cable hoists having some special means for receiving, engaging, gripping, discharging, or releasing a load.

117 Rope carriers:
This subclass is indented under subclass 76. Carriers , for supporting carriage-moving or load-hoisting ropes of linear cable hoists to prevent excessive sag between the ends thereof.

118 Cable stop operated:
This subclass is indented under subclass 117. Rope carriers which are placed in carrying position partly through contact with a stop or button fixed on a cable.

SEE OR SEARCH CLASS:
24, Buckles, Buttons, Clasps, etc., subclasses 115+ for cable stops, per se.

119 Trolley supported:
This subclass is indented under subclass 117. Rope carriers normally carried by the hoisting carriage or trolley and which are disengaged therefrom by means mounted on the carriage itself, said means being operated by the movement of the carriage along the track.

SEE OR SEARCH THIS CLASS, SUBCLASS:
118, for similar devices in which the carrier is disengaged from the trolley by a cable stop or button.

120 Carrier sheave operated:
This subclass is indented under subclass 117. Rope carriers which are placed in position by the coaction of a traveling rope and a sheave on the carrier.

121 Permanently spaced:
This subclass is indented under subclass 117. Rope carriers permanently located at fixed points along the line of the trackway.

122 Carriage holders, track clamp:
This subclass is indented under subclass 76. Devices comprising a clamp for gripping the track which secure a hoisting carriage of a

cable hoist in a fixed position during hoisting or lowering operation and thereafter release it for traveling movement.

SEE OR SEARCH THIS CLASS, SUBCLASS:

78+, 83+, 87+, 94+, and 97+, for this type of carriage holder in combination with other elements.

SEE OR SEARCH CLASS:

188, Brakes, subclass 43 and 44 for track-clamping devices of general application.

123 Pulley changes:

This subclass is indented under subclass 76. Details of cable hoists comprising a track, a pulley, pulley supports at two points along the track, and means for changing or shifting the pulley from one support to the other.

166 CLOSURE REMOVER:

This subclass is indented under the class definition. Apparatus comprising means specifically adapted for raising a door or other closure from above and shifting it laterally.

SEE OR SEARCH CLASS:

49, Movable or Removable Closures, subclass 210 and 324+ for a hoist permanently attached to the closure.

110, Furnaces, subclass 176 for a door or cover lifter claimed in combination with a furnace or soaking pit.

202, Distillation: Apparatus, subclasses 262+ for door or closure lifters claimed in combination with coke ovens.

414, Material or Article Handling, subclass 684.3 for door removers which include a vertically swinging door-supporting member.

167 WITH HAUL-IN LINE:

This subclass is indented under the class definition. Apparatus wherein an elongated flexible means is provided in addition to the load-supporting flexible member for pulling the load horizontally across a supporting surface to the vicinity of the load support, the load contacting the supporting surface as it is pulled to the load support.

SEE OR SEARCH CLASS:

414, Material or Article Handing, subclass 538 for a self-loading vehicle provided with a cable for hauling the load to the vehicle; subclass 569 for a self-loading, vertically swinging load support combined with a hoist or a drag line to hoist or drag the load to the vicinity of the vertically swinging load support; and subclass 571 for a guideway and a cable for hauling a load along the guideway.

168 AND MEANS TO PROJECT LOAD ENGAGER BEYOND END OF BOOM:

This subclass is indented under the class definition. Apparatus wherein means are provided for propelling or positioning a load-engaging means suspended by flexible cable beneath a boom* outwardly from its position under the boom toward the load.

169 GROUND WHEEL OPERATED:

This subclass is indented under the class definition. Apparatus including a wheel which is caused to contact a surface upon which the apparatus is supported and which rotates in response to movement of the apparatus across the surface, and wherein power transmission means is provided to utilize the wheel's rotational motion to operate the hoist (e.g., hoisting drum, boom*, trolley*, etc.).

170 HAVING CLUTCH OR VARIABLE SPEED TRANSMISSION:

This subclass is indented under the class definition. Apparatus including either (a) a selectively engageable drive between a motor and a load moving mechanism adapted to be driven by the motor, or (b) means to vary the ratio of the speed at the output of a motor to the speed at which a load-moving mechanism is driven by the motor.

SEE OR SEARCH THIS CLASS, SUBCLASS:

276+, for a clutch combined with means to disengage the clutch in response to a predetermined randomly occurring condition.

SEE OR SEARCH CLASS:
254, Implements or Apparatus for Applying Push ing or Pulling Force, subclass 301, 309, 317+, 346+, and 365+ for hoist having a clutch.

171 Traveling bridge:
This subclass is indented under subclass 170. Apparatus comprising a bridge* supported above a surface for translational movement over the surface, and wherein the selectively engageable coupling or ratio varying means is provided between a motor and a mechanism for driving the bridge or a mechanism thereof.

172 Power takeoff:
This subclass is indented under subclass 170. Apparatus comprising a selectively engageable drive connection between the motor of a motor-driven vehicle and a load-moving mechanism of a traversing hoist.

173 Variable speed transmission:
This subclass is indented under subclass 170. Apparatus including means to vary the ratio of the speed at the output of a motor to the speed at which a load moving mechanism is driven by the motor.

SEE OR SEARCH CLASS:
254, Implements or Apparatus for Applying Pushing or Pulling Force, subclass 187.6 for hoisting drums having a variable speed drive.

174 Including means to selectively couple plural hoist functions to common power shaft:
This subclass is indented under subclass 170. Apparatus including means by which the working member of a motor may be engaged and disengaged with each of a plurality of load-moving mechanisms.

175 HAVING MEANS FACILITATING ASSEMBLY OR DISASSEMBLY:
This subclass is indented under the class definition. Apparatus including means to permit the ready removal or replacement of either (a) an element or subassembly of the apparatus from or on the remainder thereof, or (b) the entire traversing hoist from or on a supporting structure.

SEE OR SEARCH CLASS:
414, Material or Article Handling, subclass 686 for a self-loading (e.g., shovel or fork type) handler having means to facilitate attachment of a vertically swinging boom* to a vehicle.

176 Of sectional vertical support from boom:
This subclass is indented under subclass 175. Apparatus including an elongated vertically disposed boom* support comprising a plurality of serially arranged segments connected longitudinally in end-to-end fashion, and wherein the connections between the segments permit the ready assembly or disassembly of one segment to or from another.

SEE OR SEARCH THIS CLASS, SUBCLASS:
199+, for climbing cranes wherein the vertical support comprises a building being erected by the crane.

177 Of boom sections:
This subclass is indented under subclass 175. Apparatus including a boom* having means to permit the ready removal or replacement of a portion of the boom from another portion.

(1) Note. Removal of a connector or locking means between boom sections to enable the sections to be pivoted or telescoped relative to each other is not considered to be disassembly.

SEE OR SEARCH THIS CLASS, SUBCLASS:
299+, for foldable or collapsible booms.

178 Of counterweight from hoist:
This subclass is indented under subclass 175. Apparatus including a mass specifically employed to offset the weight of the load and means to permit the ready removal or replacement of the mass from or on the load support.

179 Of traversing hoist from support:
This subclass is indented under subclass 175. Apparatus including means to permit the ready removal or replacement of a traversing hoist from or on a supporting structure.

180 Vehicle support:
This subclass is indented under subclass 179. Apparatus wherein the supporting structure is provided with ground-engaging means to render it ambulant.

181 And having motor to swing boom:
This subclass is indented under subclass 180. Apparatus having a pivotally mounted boom* and power means to pivot the boom.

195 HAVING COUNTERWEIGHT OR COUNTERBALANCING MEANS:
This subclass is indented under the class definition. Apparatus including (a) a mass specifically employed to offset the weight of the load, or (b) a dynamic device for exerting a force in opposition to that exerted by the load.

SEE OR SEARCH THIS CLASS, SUBCLASS:
178, for apparatus having a removable counterweight.
279, for apparatus having means to regulate (e.g., position) a counterweight or counterbalancing means in response to a sensed condition.

SEE OR SEARCH CLASS:
254, Implements or Apparatus for Applying Pushing or Pulling Force, subclasses 266+ for nontraversing hoists having a counterbalance feature.
414, Material or Article Handling, subclass 673 and 719 for counterweight features for other load handlers.

196 Counterweight movable relative to load support:
This subclass is indented under subclass 195. Apparatus wherein the mass is mounted for movement with respect to the load support (e.g., boom*) to compensate for varying tilting effects of the load on the apparatus.

(1) Note. Pivotal movement of a boom with respect to a base carrying a stationary counterweight will not in itself cause classification in this subclass. The counterweight itself must be moved relative to its supporting structure.

SEE OR SEARCH THIS CLASS, SUBCLASS:
279, for apparatus having means to move a counterweight in response to a sensed condition.

197 Along rectilinear path:
This subclass is indented under subclass 196. Apparatus wherein the mass is mounted for movement along a straight line with respect to the support above the load.

198 On wheeled carriage:
This subclass is indented under subclass 197. Apparatus wherein the mass is either provided with wheels or is carried by a wheeled vehicle, and is adapted to travel along a guideway provided with the apparatus.

199 HAVING BOOM SHIFTABLE VERTICALLY ALONG A LINEAR PATH:
This subclass is indented under the class definition. Apparatus Including a boom* and structure supporting the boom which permits up or down translational movement of the entire boom along a rectilinear path.

(1) Note. A boom movable along its longitudinal axis to change its effective length (i.e., moment arm) is not considered to be a vertically shifting boom on that basis alone.

SEE OR SEARCH THIS CLASS, SUBCLASS:
176+, for booms which are moved vertically on a support comprised of longitudinal sections connected end-to-end.
179, for hoists which are moved vertically by selective assembly of the hoist at different heights on a separate structure (e.g., building, pole, etc.).
230+, for a horizontally swinging boom which is movable along its longitudinal axis relative to a support to increase its effective length.
295+, for a vertically extending boom support which is collapsed into a transport or nonuse position.
314, for a vertically shiftable traveling bridge*.

SEE OR SEARCH CLASS:

254, Implements or Apparatus for Applying Pushing or Pulling Force, subclasses 385+ for other vertically adjustable derricks which have no means for traversing the load.

200 Movable along nonvertical rectilinear path:

This subclass is indented under subclass 199. Apparatus wherein the boom* is mounted for movement along an inclined path and the up and down movement of the boom is the vertical component of motion along the inclined path.

201 Length of hoisting cable between boom and load decreases automatically as boom is raised:

This subclass is indented under subclass 199. Apparatus wherein the load is suspended beneath the boom* by an elongated flaccid strand and means are provided whereby the strand is drawn in toward the boom as the boom moves upwardly.

202 Vertically spaced fastening means along boom support:

This subclass is indented under subclass 199. Apparatus wherein the structure supporting the boom* is provided with a plurality of securing means spaced vertically along the structure whereby the boom is supported at a selected one of a plurality of positions on the support.

203 Fluid actuated:

This subclass is indented under subclass 199. Apparatus wherein means are provided to move the boom* up or down relative to its support by application of a liquid or gas under pressure.

SEE OR SEARCH CLASS:

254, Implements or Apparatus for Applying Pushing or Pulling Force, subclasses 93+ for fluid-actuating jacks.

204 By mounting on vertically extensible support:

This subclass is indented under subclass 199. Apparatus wherein the structure supporting the boom* comprises a plurality of interconnected segments movable longitudinally with respect to one another to increase the length of the support and thereby raise the boom supported thereon.

SEE OR SEARCH THIS CLASS, SUBCLASS:

296, for a boom support comprising a plurality of telescoping segments and which is collapsible to a nonuse position.

223 HAVING HORIZONTALLY SWINGING BOOM OR BRIDGE:

This subclass is indented under the class definition. Apparatus comprising a boom* or a bridge* which is mounted to a support for movement about a vertical axis.

SEE OR SEARCH THIS CLASS, SUBCLASS:

280, for means to stop the horizontal rotation of a boom as a result of its movement beyond a predetermined point or its proximity to a powerline.

286, for apparatus including means to cyclically reverse the direction of boom rotation.

317, for a traveling bridge having a horizontally swinging boom.

347, for traversing hoist boom structure, per se.

SEE OR SEARCH CLASS:

52, Static Structures (e.g., Buildings), subclass 114 for miscellaneous elongated members which are moved about an axis normal to a supporting base by mechanical motive means. A horizontally rotatable boom is classified in Class 212 when disclosed as traversing hoist structure.

414, Material or Article Handling, subclass 591 for a horizontally swinging boom from which is suspended a grab mounted for guided vertical movement; and subclass 744.1 for a horizontally swinging load support having no means to raise the load.

224 Boom mounted for guided horizontal translation (e.g., trolley mounted):

This subclass is indented under subclass 223. Apparatus comprising a boom* and means on the boom or the boom support for engaging a

guideway whereby the boom translates along the guideway.

(1) Note. The guideway must be of a discrete length, i.e., a railway car having a boom thereon is classified below as an ambulant apparatus.

SEE OR SEARCH THIS CLASS, SUBCLASS:
249, for other ambulant horizontally swinging booms.
317, for a horizontally swinging boom carried on a trolley which in turn moves along a traveling bridge.

225 Having trolley thereon:
This subclass is indented under subclass 223. Apparatus comprising a bridge* or a boom* having a track or guideway along which a load-supporting trolley* is adapted to move.

SEE OR SEARCH THIS CLASS, SUBCLASS:
71+, for an overhead hoist having a trolley, or a trolley, per se.
242, for a trolley carried by a vertically swinging boom.
312+, for a trolley carried by a traveling bridge.

226 Having vertical support remote from pivot (i.e., swinging bridge):
This subclass is indented under subclass 225. Apparatus including a bridge* pivotally mounted for horizontally swinging movement at one of the two spaced supporting points, and wherein the other supporting point either (a) rides over a horizontally extending vertical support, or (b) comprises a leg fixed to the bridge at one end and is provided with means to facilitate its movement over a surface or guideway at the other end.

SEE OR SEARCH THIS CLASS, SUBCLASS:
312+, for a traveling bridge which follows a circular path.

227 And vertically swinging:
This subclass is indented under subclass 225. Apparatus wherein the boom* or bridge* is also capable of pivotal movement about a horizontal axis.

SEE OR SEARCH THIS CLASS, SUBCLASS:
257, for a trolley carried by a boom which swings only vertically.

228 And means acting independently of hoist mechanism to shift trolley:
This subclass is indented under subclass 225. Apparatus including means other than load-lifting means for moving the trolley* along the guideway.

230 Extensible by movement of boom or boom segment along longitudinal axis thereof:
This subclass is indented under subclass 223. Apparatus including a horizontally swinging boom* and wherein either (a) means are provided which permits translational movement of the boom along its longitudinal axis and relative to the boom-supporting structure, or (b) the boom consists of a plurality of interconnected segments slidably related to one another whereby the effective length of the boom may be changed.

SEE OR SEARCH THIS CLASS, SUBCLASS:
264, for a vertically swinging extensible boom.
299+, for booms or masts which are collapsible for transport or storage.
348+, for extensible boom structure, per se.

SEE OR SEARCH CLASS:
52, Static Structures (e.g., Buildings), subclasses 111+ for other extensible shaft structure combined with mechanical motive means to extend the shaft; and subclass 632 for an axially extensible shaft, per se.

231 And vertically swinging:
This subclass is indented under subclass 230. Apparatus wherein the boom* is also capable of pivotal movement about a horizontal axis.

SEE OR SEARCH THIS CLASS, SUBCLASS:
168, for a boom extension which is employed to project a grab beyond the edge of the boom but is retracted before the load is lifted.

264, for an extensible boom claimed as being swingable only in a vertical plane.
296, for an extensible boom supporting tower which is pivoted vertically to a horizontal position for transportation but remains vertical during use.
300, for a vertically swinging boom having sections which are pivoted together for collapsing the boom to a transport or nonuse position.

232 And vertically swinging:
This subclass is indented under subclass 223. Apparatus wherein the boom* is also capable of pivotal movement about a horizontal axis.

SEE OR SEARCH THIS CLASS, SUBCLASS:
225+, for apparatus having a boom claimed as being swingable about a horizontal axis only.
310, for a ship mounted horizontally and vertically swinging boom.

SEE OR SEARCH CLASS:
254, Implements or Apparatus for Applying Pushing or Pulling Force, subclasses 120+ for a load-lifting lever.
414, Material or Article Handling, subclasses 687+ for a shovel or fork type load handler having a boom swingable horizontally and vertically.

233 Plural booms:
This subclass is indented under subclass 232. Apparatus including second boom* mounted for movement about vertical and horizontal axes and having its own load engager or flexible member suspended therefrom.

(1) Note. Flexible members of the first and second booms may support a common load or load handler.

SEE OR SEARCH THIS CLASS, SUBCLASS:
311, for plural, ship-mounted horizontally and vertically swinging, cable-actuated booms.

234 With adjacent load-supporting rack:
This subclass is indented under subclass 232. Apparatus wherein a supporting means is provided adjacent the boom* and adapted to receive the load therefrom.

SEE OR SEARCH CLASS:
414, Material or Article handling, subclass 496 for self-loading vehicles having transversing hoists; and subclasses 446, 498, and 608 for material handlers having a separable load-supporting rack.

235 Including means for sluing boom as it is swung vertically:
This subclass is indented under subclass 232. Apparatus wherein means are provided for simultaneously swinging the boom* about a vertical axis in response to the boom's movement about a horizontal axis.

236 Including plural actuating means converging toward boom tip to effect both horizontal and vertical swinging:
This subclass is indented under subclass 232. Apparatus including two elongated members, each of which engages the boom* adjacent the point from which the load is suspended, and diverges to engage either the boom support or points fixed relative thereto, wherein means are provided to selectively change the length of the members to pivot the boom about both horizontal and vertical axes.

SEE OR SEARCH THIS CLASS, SUBCLASS:
310+, for a ship-mounted derrick swung horizontally and vertically by flexible cables.

237 Including means to swing boom vertically:
This subclass is indented under subclass 232. Apparatus including a motor, power transmission, or a force multiplying linkage for swinging the boom* about a horizontal axis.

SEE OR SEARCH THIS CLASS, SUBCLASS:
260, for means to swing a boom vertically, with no horizontal swinging claimed.

SEE OR SEARCH CLASS:

52, Static Structures (e.g., Buildings), subclasses 116+ for an elongated rigid member movable relative to a supporting base and mechanical motive means for applying power to affect such movement.

238 Fluid-actuated ram:

This subclass is indented under subclass 237. Apparatus wherein the motor comprises a relatively reciprocating piston and cylinder actuated by fluid pressure.

SEE OR SEARCH THIS CLASS, SUBCLASS:

261, for a fluid-actuated vertically swinging boom where no horizontal swinging is claimed.

SEE OR SEARCH CLASS:

52, Static Structures (e.g., Buildings), subclass 115 for miscellaneous elongated members which are pivoted relative to a supporting base by a fluid pressure actuated mechanism.

239 Flexible cable:

This subclass is indented under subclass 237. Apparatus wherein the means for swinging the boom* vertically includes a greatly elongated strand of flaccid material.

240 Having passage for luffing cable through boom supporting member:

This subclass is indented under subclass 239. Apparatus wherein the support on which the boom* is swingably mounted is provided with a passageway through which the strand passes to swing the boom vertically.

SEE OR SEARCH THIS CLASS, SUBCLASS:

252, for a boom support having a passage for a hoist cable.

SEE OR SEARCH CLASS:

254, Implements or Apparatus for Applying Pushing or Pulling Force, subclasses 389+ for hoisting cable guides.

241 Human or animal powered:

This subclass is indented under subclass 239. Apparatus wherein means are provided by which a person or animal may apply a force to the strand of flaccid material to swing the boom vertically.

SEE OR SEARCH THIS CLASS, SUBCLASS:

249, for a human- or animal-powered horizontally swinging boom.

263, for a human- or animal-powered vertically swinging boom.

242 Having specific engager for load:

This subclass is indented under subclass 232. Apparatus wherein significance is attributed to a particular device for engaging and retaining the load.

SEE OR SEARCH THIS CLASS, SUBCLASS:

251, for a horizontally swinging boom having a specific type load handler.

259, for a vertically swinging boom with a specific type of load handler.

326, for a gantry having a specific type load handler.

327, for a traveling bridge having a specific type of load handler.

SEE OR SEARCH CLASS:

294, Handling: Hand and Hoist-Line Implements, appropriate subclasses for a specific load engager, per se.

414, Material or Article Handling, appropriate subclasses for handlers of that class having specific types of load engagers; particularly subclass 186, 225+, 618+, 729+, 751.1, and 792.9 for grippers or grabs; and subclasses 444+ and 785 for load engager structure in general.

243 Grab:

This subclass is indented under subclass 242. Apparatus wherein the load handler comprises a plurality of relatively movable members for gripping the load.

SEE OR SEARCH CLASS:

294, Handling: Hand and Hoist-Line Implements, appropriate subclasses for a grab, per se.

414, Material or Article Handling, subclass 186, 225.01+, 618+, 729+, 751.1, and 792.9 for handlers of that class having a gripper or grab (e.g., load-handling apparatus having a swinging boom* and a grab directly connected to the boom, rather than by a cable).

245 And means to swing boom horizontally:

This subclass is indented under subclass 223. Apparatus including a motor, power transmission, or force multiplying linkage to move the boom* about a vertical axis.

SEE OR SEARCH THIS CLASS, SUBCLASS:

276+, for a motor for swinging a boom horizontally and which is activated or regulated in response to a sensed random condition.

280, for a motor for swinging a boom horizontally which is stopped or disable in response to a sensed random condition.

284+, for means, such as a switch or valve, for manually or cyclically controlling the flow of energy to a sluing motor.

SEE OR SEARCH CLASS:

52, Static Structures (e.g., Buildings), subclass 114 for miscellaneous elongated members which are moved about an axis normal to a supporting base by mechanical motive means. A horizontally rotatable boom is classified in Class 212 when disclosed as traversing hoist structure.

246 Including flexible member driving gear or pulley having axis collinear with boom pivot:

This subclass is indented under subclass 245. Apparatus including a member of flaccid material which partially encircles a disc or annular member having an axis of rotation on a vertical line defining the axis about which the boom* swings, and means are provided to engage and drive the endless or elongated member whereby the boom is swung horizontally about said axis.

247 Gear drive:

This subclass is indented under subclass 245. Apparatus wherein the means to swing the boom* horizontally comprises a power transmission which includes a disc or annular member having a tooth surface which is interdigitated with a second toothed member whereby movement of one of the members causes movement of the other member.

248 Including rack or worm:

This subclass is indented under subclass 247. Apparatus wherein the second toothed member comprises either (a) a rectangular member having teeth formed across a longitudinal face and which is reciprocated to cause rotation of the disc or annular member, or (b) an elongated cylindrical member having helical teeth on its periphery and which is rotated about its longitudinal axis to cause rotation of the disc or annular member.

249 Human or animal powered:

This subclass is indented under subclass 245. Apparatus wherein means are provided by which a person or animal may apply a force to swing the boom* horizontally.

SEE OR SEARCH THIS CLASS, SUBCLASS:

241, for a horizontally and vertically swinging boom having means by which a person or animal may swing the boom vertically.

263, for a human or animal powered vertically swinging boom.

250 Having fluid ram directly actuating load cable or sheave therefor:

This subclass is indented under subclass 223. Apparatus including a relatively reciprocating piston and cylinder which are actuated by fluid pressure and are employed to lift the load by directly connecting the piston or cylinder to either the flexible member or a pulley about which the flexible member is entrained.

251 Having specific engager for load:
This subclass is indented under subclass 223. Apparatus wherein significance is attributed to a particular device for engaging and retaining the load.

SEE OR SEARCH THIS CLASS, SUBCLASS:
242, for a horizontally and vertically swinging boom having a specific type of load handler.
259, for a vertically swinging boom having a specific type of load handler.
326, for a gantry having a specific type of load handler.
327, for a traveling bridge having a specific type of load handler.

SEE OR SEARCH CLASS:
294, Handling: Hand and Hoist-Line Implements, appropriate subclasses for a specific load engager, per se.
414, Material or Article Handling, appropriate subclasses for handlers of that class having specific types of load engagers; particularly subclass 186, 225.01+, 618+, 729+, 751.1, and 792.9 for grippers or grabs; and subclasses 444+ and 785 for load engager structure in general.

252 Having passage for hoist cable through boom supporting members:
This subclass is indented under subclass 223. Apparatus provided with an elongated strand of flaccid material which is drawn in or payed out to raise or lower the load with respect to the boom*, and wherein the support on which the boom is swingably mounted is provided with a passageway through which the strand passes.

SEE OR SEARCH THIS CLASS, SUBCLASS:
240, for a boom support having a passage for a luffing cable.

SEE OR SEARCH CLASS:
254, Implements or Apparatus for Applying Pushing or Pulling Force, subclasses 389+ for hoisting cable guides.

253 Having specific bearing structure:
This subclass is indented under subclass 223. Apparatus wherein significance is attributed to that structure at or adjacent the immediate area of contact between the boom* and the support on which the boom is swingably mounted.

255 HAVING VERTICALLY SWINGING BOOM:
This subclass is indented under the class definition. Apparatus comprising an elongated member pivoted for movement about a horizontal axis to a mast, crane body, trolley*, or other supporting structure and projecting therefrom to support or guide a flexible member from which the load is suspended.

SEE OR SEARCH THIS CLASS, SUBCLASS:
232+, for a vertically swinging boom which is additionally mounted for horizontal movement.
299, for apparatus provided with specific means which allows the boom to collapse to a position for transport or storage.
317, for a bridge-mounted trolley having a vertically swinging boom thereon.

SEE OR SEARCH CLASS:
114, Ships, subclasses 373+ for similar devices for raising and lowering boats.
414, Material or Article Handling, subclasses 680+ for residual vertically swinging load supports.

256 And compensating means to maintain horizontal movement of load:
This subclass is indented under subclass 255. Apparatus wherein means are provided to keep the load at the same vertical distance above a surface as it is moved across the surface by the vertically swinging boom*.

257 And trolley:
This subclass is indented under subclass 255. Apparatus wherein the vertically swinging boom* serves as or bears a separate track or guide on which a load-supporting trolley* is adapted to move.

SEE OR SEARCH THIS CLASS, SUBCLASS:

225+, for a horizontally and vertically swinging boom having a trolley thereon.

346+, for trolley structure, per se.

258 Protruding laterally from vehicle:

This subclass is indented under subclass 255. Apparatus wherein the boom* is pivotally carried on a vehicle for swinging movement in a vertical plane which is substantially perpendicular to the direction in which the vehicle normally moves.

259 Having specific engager load:

This subclass is indented under subclass 255. Apparatus wherein significance is attributed to a particular device for engaging and retaining the load.

SEE OR SEARCH THIS CLASS, SUBCLASS:

242, for a horizontally and vertically swinging boom* having a specific type of load handler.

251, for a horizontally swinging boom having a specific type of load handler.

326, for a gantry having a specific type of load handler.

327, for a traveling bridge* having a specific type of load handler.

SEE OR SEARCH CLASS:

294, Handling: Hand and Hoist-Line Implements, appropriate subclasses for a specific load engager, per se.

414, Material or Article Handling, appropriate subclasses for handlers of that class having specific types of load engagers; particularly subclass 186, 225.01+, 618+, 729+, 751.1, and 792.9 for grippers or grabs; and subclasses 444+ and 785 for load engager structure in general.

260 Having means to swing boom vertically:

This subclass is indented under subclass 255. Apparatus including a motor, power transmission, or a force multiplying linkage for swinging the boom* about a horizontal axis.

SEE OR SEARCH THIS CLASS, SUBCLASS:

237+, for a horizontally and vertically swinging boom and including means to swing the boom vertically.

SEE OR SEARCH CLASS:

52, Static Structures (e.g., Buildings), subclasses 116+ for an elongated member tiltable relative to supporting base and mechanical motive means for applying power to effect such movement.

261 Fluid actuated ram:

This subclass is indented under subclass 260. Apparatus wherein the motor comprises a relatively reciprocating piston and cylinder actuated by fluid pressure.

SEE OR SEARCH THIS CLASS, SUBCLASS:

238, for similar structure in a horizontally and vertically swinging boom.

SEE OR SEARCH CLASS:

52, Static Structures (e.g., Buildings), subclass 115 for miscellaneous elongated members which are pivoted relative to a supporting base by a fluid pressure actuated mechanism.

262 Flexible cable:

This subclass is indented under subclass 260. Apparatus wherein the means for swinging the boom* vertically includes a greatly elongated strand of flaccid material.

SEE OR SEARCH THIS CLASS, SUBCLASS:

239, for corresponding structure for a horizontally and vertically swinging boom.

263 Human or animal powered:

This subclass is indented under subclass 262. Apparatus wherein means are provided by which a person or animal may apply a flexible force to the cable to swing the boom* vertically.

SEE OR SEARCH THIS CLASS, SUBCLASS:

241, for similar apparatus having booms which additionally swing about a vertical axis.

264 Extensible by movement of boom or boom segment along longitudinal axis thereof:

This subclass is indented under subclass 255. Apparatus including a vertically swinging boom* and wherein either (a) means are provided which permits translational movement of the boom along its longitudinal axis and relative to the boom-supporting structure, or (b) the boom consists of a plurality of interconnected segments slidably related to one another whereby the effective length of the boom may be change.

SEE OR SEARCH THIS CLASS, SUBCLASS:

231, for a horizontally and vertically swinging extensible boom.

299+, for booms collapsible for transport or storage.

348+, for extensible boom structure, per se.

SEE OR SEARCH CLASS:

52, Static Structures (e.g., Buildings), subclasses 111+ for other extensible shaft structure.

270 METHODS:

This subclass is indented under the class definition. Process including a step of lifting a load and shifting it laterally.

271 MISCELLANEOUS:

This subclass is indented under the class definition. Subject matter which is not provided for under any of the preceding subclasses.

272 HAVING MEANS TO PREVENT OR DAMPEN LOAD OSCILLATIONS:

This subclass is indented under the class definition. Subject matter including means to arrest or reduce the periodic vertical or swinging movement of the load.

SEE OR SEARCH THIS CLASS, SUBCLASS:

308, for oscillations of ship mounted crane loads.

SEE OR SEARCH CLASS:

254, Implements or Apparatus for Applying Pushing or Pulling Force, subclass 900 for winches with wave compensation damping.

273 Antisway (i.e., horizontal movements):

This subclass is indented under subclass 272. Subject matter wherein means are provided to arrest or reduce the undesired swinging movement about an axis orthogonal to a vertical axis.

274 By triangulation of load cables:

This subclass is indented under subclass 273. Subject matter wherein the arresting or movement reducing means comprise at least two load lifting cables or cable portions arranged to diverge or converge at the load.

SEE OR SEARCH THIS CLASS, SUBCLASS:

167, for an in-haul line extending to the load.

236, and 310, for cables extending to the boom tip for luffing and slewing.

275 By cyclic control of trolley acceleration or deceleration:

This subclass is indented under subclass 273. Subject matter including a load depending from a trolley with a traveling velocity and means to control the velocity of the trolley to reduce load oscillations.

SEE OR SEARCH THIS CLASS, SUBCLASS:

98, and 286, for cyclic movements of the trolley which include raising and lowering the load automatically.

276 HAVING RANDOM CONDITION SENSOR COMBINED WITH AN INDICATOR OR ALARM OR CONTROLLING MEANS OR DISABLING MEANS:

This subclass is indented under the class definition. Subject matter including means for detecting the random occurrence of a predetermined situation and releasing, terminating, or modifying a flow of energy which in turn either produces a visually or audibly perceptible manifestation of the event or regulates a controlling

or disabling means (e.g., motor, valve, solenoid, etc.).

(1) Note. The term "random" excludes cyclic or repetitive operations or movement.

SEE OR SEARCH CLASS:
340, Communications: Electrical, subclass 685 for a condition-responsive indicating system for a crane wherein no structural details of the crane are recited.

277 Senses crane tilt (e.g., outrigger sensors):
This subclass is indented under subclass 276. Subject matter wherein the apparatus is a crane and the detecting means is responsive to movement of the crane about a horizontal axis.

SEE OR SEARCH CLASS:
200, Electricity, Circuit Makers and Breakers, subclass 61.52 for a tilt-responsive switch, per se.

278 Means determining overloading produced by load (e.g., strain gauges):
This subclass is indented under subclass 276. Subject matter comprising means which directly determine overloading, such as strain gauges, or means to compute mechanically or electronically, the overturning moment of the hoist using two or more sensed variables.

SEE OR SEARCH THIS CLASS, SUBCLASS:
276, 277, 279, and 280 for the specific individual variables.

SEE OR SEARCH CLASS:
254, Implements or Apparatus for Applying Pushing or Pulling Force, subclasses 272 through 274 for overload sensors on winches.

279 Sensor regulates counterweight or counterbalancing means:
This subclass is indented under subclass 276. Subject matter wherein the detecting means and the controller governs either (a) the movement of a mass employed to offset the weight of the load or (b) operation of a dynamic device to exert a force in opposition to that exerted by the load.

SEE OR SEARCH THIS CLASS, SUBCLASS:
195+, for other apparatus having a counterweight or counterbalancing means.

280 Boom movement stops responsive to overtravel or proximity to powerline:
This subclass is indented under subclass 276. Subject matter wherein stopping or disabling occurs in response to either (a) the pivotal movement or telescopic extension of a boom* beyond a predetermined limit or (b) the electromagnetic field of an adjacent electrical power transmission wire.

SEE OR SEARCH CLASS:
192, Clutches and Power-Stop Control, subclasses 139+ for a stop mechanism (residual or of general application) in which the drive of a machine is discontinued at the limit of travel.
324, Electricity: Measuring and Testing, appropriate subclasses for a magnetic or electric field sensor, per se.

281 Hoisting stops upon load being raised to a predetermined position (e.g., anti-two blocking):
This subclass is indented under subclass 276. Subject matter wherein the raising or lowering of a load lifting cable is halted in response to the load being moved to a predetermined position.

SEE OR SEARCH THIS CLASS, SUBCLASS:
280, for boom raising or lowering to a predetermined position.

SEE OR SEARCH CLASS:
254, Implements or Apparatus for Applying Pushing or Pulling Force, subclass 269 for winches with stop means on the hoistrope.

282 WITH MECHANICAL INDICATOR:
This subclass is indented under the class definition. Subject matter combined with mechanically activated means for producing a visual manifestation of a property or occurrence.

SEE OR SEARCH THIS CLASS, SUBCLASS:

276, for an indicator which is activated or regulated by a flow of energy in response to a sensed condition, the sensor being claimed.

SEE OR SEARCH CLASS:

116, Signals and Indicators, appropriate subclasses for a mechanical indicator or alarm provided on a nominaly recited crane. See the main definition of Class 116, section IV, for the general line.

283 With weight indicator:

This subclass is indented under subclass 282. Subject matter wherein means are provided to indicate the mass of the load.

SEE OR SEARCH THIS CLASS, SUBCLASS:

278, for an apparatus which is controlled in response to a moment calculator or overload condition..

SEE OR SEARCH CLASS:

177, Weighing Scales, subclass 147 for weighing scales combined with a hoist for merely loading or unloading the scales.

414, Material or Article Handling, subclass 21 for weighing during load handling.

284 WITH MOTOR CONTROL:

This subclass is indented under the class definition. Subject matter comprising means to initiate, terminate, or modify a flow of energy to control a power means.

SEE OR SEARCH THIS CLASS, SUBCLASS:

276, for means to initiate or regulate (e.g., cutoff) the flow of energy to a motor in response to a randomly occurring sensed condition.

285 Remote control or at dual control positions:

This subclass is indented under subclass 284. Subject matter wherein the means for controlling the power means is (a) movable to or provided at a location substantially removed from the remainder of the apparatus or (b) located at two separate control stations.

SEE OR SEARCH CLASS:

182, Fire Escape, Ladder, or Scaffold, subclass 148 for a “cherry picker” type crane having control cables passing through the boom* whereby movement of the boom may be controlled by a person carried thereby.

286 Cyclic operation:

This subclass is indented under subclass 284. Subject matter wherein the power means is controlled in response to a predetermined periodic event.

SEE OR SEARCH THIS CLASS, SUBCLASS:

98, for an overhead cyclic hoist.

275, for cyclic control of trolleys.

287 Manual fluid valve actuator:

This subclass is indented under subclass 284. Subject matter including means adapted to be manipulated by an operator to stop or start the flow of a working fluid to a fluid motor.

SEE OR SEARCH THIS CLASS, SUBCLASS:

284, for a manually actuated fluid pump for supplying pressure fluid to a motor.

SEE OR SEARCH CLASS:

91, Motors: Expansible Chamber Type, appropriate subclasses for a reciprocating or oscillating fluid motor combined with means for controlling the flow of fluid to the motor.

251, Valves and Valve Actuation, appropriate subclasses for a valve or an actuator therefore, per se.

288 Plural fluid motors:

This subclass is indented under subclass 287. Subject matter including multiple power means which convert the energy of a working fluid to mechanical movement of a working member, the flow of working fluid to each power means being controlled by a manually actuated fluid valve.

289 Controlled by common actuator:
This subclass is indented under subclass 288. Subject matter wherein the means adapted to be engaged by an operator comprises a single member by which the flow of working fluid to plural power means may be controlled.

290 In control cab:
This subclass is indented under subclass 284. Subject matter wherein the means to control the power means is located in an enclosure or partial enclosure for an operator.

SEE OR SEARCH THIS CLASS, SUBCLASS:
291, for a cab or support for the operator.

291 HAVING OPERATOR SUPPORT OR CAB:
This subclass is indented under the class definition. Subject matter including means adapted to carry a person controlling the operation of the apparatus.

292 BOOM POSITION LOCK:
This subclass is indented under the class definition. Subject matter including a boom or boom sections and means to selectively prevent movement of the boom or boom sections.

293 HAVING SNUBBER OR BOOM BACKSWING STOP:
This subclass is indented under the class definition. Subject matter wherein (a) a damper is provided to prevent sudden uncontrolled upward or backward movement of the boom* or (b) means are provided to limit upward or backward movement of the boom by direct contact.

SEE OR SEARCH THIS CLASS, SUBCLASS:
276+, for traversing hoists having means to disable or stop boom rotation in response to an unplanned or unpredictable occurrence, and to control boom rotation in response to a sensed condition.

SEE OR SEARCH CLASS:
414, Material or Article Handling, subclass 673 and 719 for similar devices on other load handlers.

294 ADJUSTABLE TO TRANSPORT OR NONUSE POSITION (E.G., COLLAPSIBLE):
This subclass is indented under the class definition. Subject matter wherein means are provided whereby either the orientation or dimension of an element of the apparatus may be changed to specifically render the apparatus or a portion thereof more easily transportable or storable.

SEE OR SEARCH CLASS:
114, Ships, subclass 366 for devices for lowering life craft which can be used from a nonuse position to a launching position.

295 Crane boom supported by foldable or collapsible tower:
This subclass is indented under subclass 294. Subject matter including a boom* supported in operative position by a vertically disposed elongated member and means are provided whereby either the orientation or a dimension of the vertically extending member may be changed to render the apparatus more easily transportable or storable.

(1) Note. The member (tower) must remain vertical during load-handling operations to be considered as a boom support as defined above.

SEE OR SEARCH CLASS:
52, Static Structures (e.g., Buildings), subclasses 111+ for an elongated member or construction at least part of which is movable relative to another part or a base, and motive means to effect such movement.

296 Extensible tower of relatively sliding sections:
This subclass is indented under subclass 295. Subject matter including a vertically disposed elongated boom* support consisting of telescoping segments whereby the length of the support may be changed.

SEE OR SEARCH THIS CLASS, SUBCLASS:

204, for a vertically extensible boom support by which the boom is supported at different hoisting heights.

348+, for extensible boom or mast structure, per se.

SEE OR SEARCH CLASS:

52, Static Structures (e.g., Buildings), subclass 118 for an elongated member or construction comprised of a plurality of telescoping segments and which is mounted on a base for tilting movement.

297 Hydraulically pivoted tower or tower sections:

This subclass is indented under subclass 295. Subject matter wherein the elongated boom* support is (a) pivoted to or from a horizontal transport attitude by pressure of a working fluid or (b) comprised of a plurality of longitudinal segments pivotally connected in end-to-end fashion.

SEE OR SEARCH THIS CLASS, SUBCLASS:

238, for apparatus having a horizontally and vertically swinging boom and a fluid-actuated ram for swinging the boom vertically.

261, for apparatus having a boom swingable vertically by a fluid-actuated ram.

SEE OR SEARCH CLASS:

52, Static Structures (e.g., Buildings), subclass 115 for an elongated member or construction moved relative to a base by a fluid-actuated mechanism and subclasses 116+ for a tiltable member having relatively moving sections.

298 Collapsible inverted "V" frame supports boom rigging:

This subclass is indented under subclass 294. Subject matter including a boom* and a system of cables or the like to raise and lower the boom, wherein the cables are in turn supported by or guided over a member in the shape of a vertical inverted "V", which is mounted on a base by means which permit the "V" to be pivoted substantially parallel to the boom.

299 Collapsible or foldable boom:

This subclass is indented under subclass 294. Subject matter including a boom* and means by which either the orientation of the boom or dimension of the boom can be changed to render the device more easily transportable or storable.

SEE OR SEARCH THIS CLASS, SUBCLASS:

230+, for horizontally swinging extensible booms.

264, for vertically swinging extensible booms.

348+, for extensible boom structure, per se.

SEE OR SEARCH CLASS:

52, Static Structures (e.g., Buildings), subclasses 116+ for a tiltable elongated member or construction and means to tilt it about a base and subclass 646 for an open work truss, mast, or the like, having adjustably or collapsibly connected components.

300 Vertically swinging boom having pivoted sections:

This subclass is indented under subclass 299. Subject matter wherein the boom* is pivoted to a support structure for movement about a horizontal axis, and wherein the boom comprises a plurality of sections hingedly connected in end-to-end fashion whereby a section may be swung to a position alongside another section for transport or storage.

SEE OR SEARCH THIS CLASS, SUBCLASS:

237+, for a vertically and horizontally swinging boom having a jibboom or other extension which is pivoted relative to the main boom to manipulate the load.

260+, for a vertically swinging boom having a jibboom or other extension which is pivoted relative to the main boom to manipulate the load.

SEE OR SEARCH CLASS:

52, Static Structures (e.g., Buildings), subclasses 117+ for a tiltable elongated member or construction having relatively moving sections.

301 Vehicle stabilizing means:

This subclass is indented under subclass 294. Subject matter including means to prevent undesired movement of the apparatus during the operation thereof, said means being provided with a portion for engaging a support surface, the apparatus including a position to render it more easily transportable.

302 Lowered from vehicle body (e.g., outrigger):

This subclass is indented under subclass 301. Subject matter wherein a ground engaging stabilizing means is extended downwardly from the vehicle body.

SEE OR SEARCH CLASS:

254, Implements or Apparatus for Applying Pushing or Pulling Force, digest 1 for jack bases and subclasses 418+ for vehicle attached jacks, including retractable ground supports which are extended by power to stabilize the vehicle when not in use.

280, Land Vehicles, subclasses 763.1+ for a vehicle provided with a retractable prop or support for stabilizing the vehicle when not in motion.

303 Gear or screw drive to extend foot:

This subclass is indented under subclass 302. Subject matter wherein said ground engaging stabilizing means is attached to the vehicle body and includes a portion which is extensible to engage a support surface by means of a toothed or threaded drive.

304 Hydraulic means to extend foot:

This subclass is indented under subclass 302. Subject matter wherein said ground engaging stabilizing means is attached to the vehicle body and includes a portion which is extensible to engage a support surface by fluidic means.

305 Pivoted lever or link to extend foot:

This subclass is indented under subclass 302. Subject matter wherein said ground engaging stabilizing means is attached to the vehicle body and includes a portion which is extensible to engage a support surface by means of a fulcrumed arm or interconnector.

306 Boom or mast attached:

This subclass is indented under subclass 301. Subject matter wherein said stabilizing means is connected to a boom or mast.

307 SHIP MOUNTED OR FLOATING (E.G., A CRANE FIXED TO A PLATFORM ADAPTED TO FLOAT):

This subclass is indented under the class definition. Subject matter peculiarly adapted to be fixed to a marine vessel or adapted to remain suspended within or on the surface of a fluid without sinking.

SEE OR SEARCH CLASS:

114, Ships, subclasses 44+ for hoisting devices designed for raising sunken or submerged vessels; and subclass 268 for vessels with lifting and hauling apparatus not elsewhere provided for; and subclasses 368+ for cranes specially adapted to raise and lower small boats.

414, Material or Article Handling, subclasses 137.1+ for a ship loading or unloading hoist having a claimed bucket, scoop, or scraper-type load engager.

308 Including counterweight or means to compensate for list, trim or skew of vessel:

This subclass is indented under subclass 307. Subject matter including either (a) a mass specifically employed to offset the weight of the load or (b) means to neutralize the effect of a tilting attitude about the longitudinal, lateral, or vertical axis of the vessel or platform.

SEE OR SEARCH THIS CLASS, SUBCLASS:

272+, for means to prevent or dampen oscillations of the load as it moves.

SEE OR SEARCH CLASS:

254, Implements or Apparatus for Applying Pushing or Pulling Force, subclass 900 for winches with wave compensation damping.

309 Having horizontally and vertically swinging boom:

This subclass is indented under subclass 307. Subject matter including a boom* pivotally mounted on the vessel or platform for movement about two mutually orthogonal axes, one disposed vertically and the other horizontally.

SEE OR SEARCH THIS CLASS, SUBCLASS:

232+, for other horizontally and vertically swinging booms.

310 Cable actuated horizontally and vertically:

This subclass is indented under subclass 309. Subject matter including at least one flexible rope, or rope-like element, for swinging the boom about both axes.

SEE OR SEARCH THIS CLASS, SUBCLASS:

236, for other apparatus having a boom which is swung both horizontally and vertically by cables.

311 Plural booms:

This subclass is indented under subclass 310. Subject matter including additional cable-actuated swiveled booms* carried on the marine vessel or platform.

SEE OR SEARCH THIS CLASS, SUBCLASS:

233, for other apparatus having a plurality of horizontally and vertically swinging booms.

312 TRAVELING BRIDGE:

This subclass is indented under the class definition. Subject matter comprising an elongated member supported horizontally at two spaced points above a surface for translational movement across the surface, and which serves as or bears a track or guide between the supporting points on which a load-supporting trolley* or another traveling bridge* is adapted to move.

SEE OR SEARCH THIS CLASS, SUBCLASS:

171, for a traveling bridge having a clutch or variable transmission.

226, for a bridge which is supported for pivotal movement, rather than translational movement.

285, for a pendant control mechanism suspended below a traveling bridge.

SEE OR SEARCH CLASS:

414, Material or Article Handling, subclass 186, 225.01+, and 561+ for a device which may be in the nature of a traveling crane including means for gripping its load.

313 Flexible:

This subclass is indented under subclass 312. Subject matter wherein the member, movably supported at two points, comprises an elongated pliant member.

SEE OR SEARCH THIS CLASS, SUBCLASS:

76+, for overhead cable hoists.

314 Having vertically adjustable track:

This subclass is indented under subclass 312. Subject matter wherein means are provided to raise or lower the track or guide with respect to the surface over which the bridge* translates.

SEE OR SEARCH CLASS:

254, Implements or Apparatus for Applying Pushing or Pulling Force, subclass 90 for portable platforms for supporting hoisting apparatus mounted upon multiple lifting means, so as to straddle a track or roadway.

315 Supporting second traveling bridge:

This subclass is indented under subclass 312. Subject matter including a second bridge* carried by the first and mounted for translational movement along the track or guide of the first bridge.

316 Having plural trolleys:

This subclass is indented under subclass 312. Subject matter wherein two trolleys* are provided which are concurrently supported for movement along the track or guide of the traveling bridge.

317 Having vertically or horizontally swinging boom on bridge or trolley:
This subclass is indented under subclass 312. Subject matter wherein a boom* is pivotally attached to (a) the traveling bridge* or (b) a trolley* adapted to travel along the bridge.

SEE OR SEARCH THIS CLASS, SUBCLASS:
224, for a trolley-mounted horizontally swinging boom wherein the track or guide on which the trolley moves is not carried by a traveling bridge.

318 Having horizontally swingable track- or load-rotating means on trolley:
This subclass is indented under subclass 312. Subject matter wherein (a) the traveling bridge* comprises an elongated member having a track or guide mounted thereon for pivotal movement about a vertical axis or (b) a trolley* is carried by the traveling bridge and comprises a first portion engaging track or guide and a second pivotally mounted portion from which the load is suspended.

SEE OR SEARCH THIS CLASS, SUBCLASS:
334, for grabs with load rotating means on the trolley.

319 Having load engager mounted for guided vertical movement beneath trolley:
This subclass is indented under subclass 312. Subject matter including a load carrier beneath a rigid vertically oriented member which engages structure on the trolley* to guide the load carrier in up-and-down movement with respect to the trolley.

SEE OR SEARCH THIS CLASS, SUBCLASS:
333, for guide bars for guided vertical movement.

SEE OR SEARCH CLASS:
187, Elevator, Industrial Lift Truck, or Stationary Lift for Vehicle, subclasses 9+ for an ambulant elevator comprising a platform upon which a load is to be placed and which is mounted for guided vertical movement.
414, Material or Article Handling, subclass 591 for analogous structure having a claimed self-loading grab for engaging the load.

320 Motor fixed to bridge-supporting structure:
This subclass is indented under subclass 312. Subject matter including a power means for raising or traversing the load. The power means is mounted adjacent the traveling bridge whereby the bridge translates with respect to the power means.

321 Trolley mounted motor for trolley traversal via cable means:
This subclass is indented under subclass 312. Subject matter wherein the traveling bridge* carries a trolley* on which is mounted a power means employed to pull an elongated flexible member, thereby moving the trolley along the bridge.

322 Bridge mounted motor for trolley traversal via cable means:
This subclass is indented under subclass 312. Subject matter wherein the bridge carries a trolley which is moved with a flexible rope-like member by a motor supported on the bridge and remote from the trolley.

323 Bridge mounted motor for load lifting:
This subclass is indented under subclass 312. Subject matter wherein the load carried by the trolley is lowered and raised by means of a motor supported on the bridge and remote from the trolley.

324 Having vertical supporting legs (e.g., gantry):
This subclass is indented under subclass 312. Subject matter wherein the bridge* is supported above the surface by two elongated vertical-supporting members, each of which is fixed at its upper end to the elongated member of the bridge and is provided at the lower end with means to facilitate movement of the bridge over a supporting surface.

SEE OR SEARCH THIS CLASS, SUBCLASS:
343, for vehicles with supporting legs which stradle a load and have a means to translate the load with respect to the vehicle, wherein the load is primarily

moved by movement of the loaded vehicle.

325 Overhanging end:
This subclass is indented under subclass 324. Subject matter including track or guiding structure for a trolley* which extends beyond one of the elongated vertical-supporting members in cantilever fashion.

326 Having specific engager for load:
This subclass is indented under subclass 324. Subject matter wherein significance is attributed to the particular structure for carrying the load.

SEE OR SEARCH THIS CLASS, SUBCLASS:
242, for a specific load handler suspended from a horizontally and vertically swinging boom.
251, for a specific load handler suspended from a horizontally swinging boom.
259, for a specific load handler suspended from a vertically swinging boom.
327, for a specific load handler suspended from a traveling bridge other than a gantry.

SEE OR SEARCH CLASS:
294, Handling, Hand and Hoist-Line Implements, appropriate subclasses for a specific load engager, per se.
414, Material or Article Handling, appropriate subclasses for handlers having specific types of load engagers; particularly subclass 186, 225.01+, 618+, 729+, 751.1, and 792.9 for grippers and grabs; and subclasses 444+ and 785 for load engager structure in general.

327 Having specific engager for load:
This subclass is indented under subclass 312. Subject matter wherein significance is attributed to the particular structure for carrying the load.

SEE OR SEARCH THIS CLASS, SUBCLASS:
242, for a specific type load handler suspended from a horizontally and vertically swinging boom.
251, for a specific type load handler suspended from a horizontally swinging boom.
259, for a specific type load handler suspended from a vertical swinging boom.
326, for a specific type load handler for a gantry.

SEE OR SEARCH CLASS:
294, Handling: Hand and Hoist-line Implements, appropriate subclasses for a specific load engager, per se.
414, Material or Article Handling, appropriate subclasses for handlers having specific types of load engagers; particularly subclass 186, 225.01+, 618+, 729+, 751.1, and 792.9 for grippers or grabs; and subclasses 444+ and 785 for load engager structure in general.

328 Self-propelled trolley:
This subclass is indented under subclass 71. Subject matter comprising a carriage provided with means for moving itself along a track.

SEE OR SEARCH CLASS:
186, Merchandising, subclass 29 for similar devices specially adapted for store service use.

329 Automatic traversing stop:
This subclass is indented under subclass 328. Subject matter comprising a means for automatically stopping the trolley when a predetermined point on the track is reached.

SEE OR SEARCH THIS CLASS, SUBCLASS:
281, for an automatic stop for hoisting means.

330 Load-handling:
This subclass is indented under subclass 328. Subject matter comprising some special means for receiving, engaging, gripping, discharging, or releasing a load.

331 Electric:
This subclass is indented under subclass 330. Subject matter comprising an electric power means for traversing and for hoisting the load.

332 With grab:
This subclass is indented under subclass 331. Subject matter including gripping means.

SEE OR SEARCH THIS CLASS, SUBCLASS:
243, for a grab suspended from a horizontally and vertically swinging boom.
334, for a self-propelled overhead hoist equipped with a grab.

333 With guide bar:
This subclass is indented under subclass 331. Subject matter which comprises some form of rigid or semirigid linkage or similar device for connecting the hoisting trolley with the load.

SEE OR SEARCH THIS CLASS, SUBCLASS:
318, for similar devices using a trolley on a traveling bridge.

334 With grab:
This subclass is indented under subclass 333. Subject matter including gripping means.

335 With ladle:
This subclass is indented under subclass 333. Subject matter including a scoop or similar container.

336 Nonmotor traverse:
This subclass is indented under subclass 71. Subject matter in which the carriage is moved along the track by gravity or by an attendant.

337 Nonmotor hoisting:
This subclass is indented under subclass 336. Subject matter in which the load is raised or lowered by an attendant.

338 With load handler:
This subclass is indented under subclass 336. Subject matter comprising some special means for receiving, engaging, gripping, discharging or releasing a load.

339 Discharging:
This subclass is indented under subclass 338. Subject matter comprising a carrier and means for discharging the carrier as by releasing or dumping the load.

340 Automatic:
This subclass is indented under subclass 339. Subject matter comprising a carrier and means for discharging a load when the carrier reaches a predetermined point.

341 Fluid Hoist:
This subclass is indented under subclass 336. Subject matter comprising a fluid cylinder hoist.

SEE OR SEARCH THIS CLASS, SUBCLASS:
319, for similar devices in combination with a traveling bridge.

342 Lever Hoist:
This subclass is indented under subclass 336. Subject matter comprising a single fulcrum for lifting the load.

SEE OR SEARCH THIS CLASS, SUBCLASS:
224, and 317, for booms mounted on trolleys.

343 Surface vehicle:
This subclass is indented under subclass 71. Subject matter comprising an ambulant carriage having an elevated support portion including a flexible hoist attached to the elevated support portion and means to shift the load horizontally with respect to the support portion.

SEE OR SEARCH THIS CLASS, SUBCLASS:
312+, for supports designed to travel laterally on rails.

SEE OR SEARCH CLASS:
242, Winding, Tensioning, or Guiding, for reels mounted on vehicles.
254, Implements or Apparatus for Applying Pushing or Pulling Force, subclasses 323+ for vehicles with hoists which do not include horizontal shifting of the load with respect to the support.
414, Material or Article Handling, subclasses 542+ for devices on self-loading vehicles.

344 Self-propelled:
This subclass is indented under subclass 343. Subject matter comprising means for moving the vehicle from place to place.

SEE OR SEARCH CLASS:
180, Motor Vehicles, subclass 6.2 and 6.28 for driving and steering means for similar vehicles.

345 Drum:
This subclass is indented under subclass 343. Subject matter comprising a hoisting winch.

346 Trolley having wheels which contact different sides or planes of abeam:
This subclass is indented under subclass 71. Subject matter wherein the trolley includes plural wheels arranged in non-parallel axes for contacting off-set surfaces on the beam.

SEE OR SEARCH THIS CLASS, SUBCLASS:
198, for apparatus having a counterweight mounted on a wheeled carriage for rectilinear movement relative to the support above the load.
225+, for a boom* mounted for movement about a vertical axis and having a trolley thereon.
257, for a boom mounted for movement about a horizontal axis only and having a trolley thereon.
312+, for a traveling bridge* having a trolley* thereon.

SEE OR SEARCH CLASS:
104, Railways, subclasses 89+ for suspended trolley railways and subclasses 188+ monorail railways (no hoisting feature claimed).
105, Railway Rolling Stock, subclass 163 for overhead crane trucks (trolleys) where no hoisting structure is claimed.

347 BOOM OR MAST:
This subclass is indented under the class definition. Subcombination comprising an elongated structural member disclosed as being part of a traversing hoist and which serves to either support the load, a boom*, or boom rigging.

(1) Note. To be proper for original placement in Class 212, a claim to a boom or mast as defined above must include structural limitations peculiar to a traversing hoist. (See search note to Class 52 in main definition.)

SEE OR SEARCH THIS CLASS, SUBCLASS:
177, for a boom having means to facilitate assembly or disassembly of plural longitudinal segments of the boom to one another.

348 Extensible by sliding sections:
This subclass is indented under subclass 347. Subject matter wherein the elongated structural member comprises telescoping segments whereby the overall length of the member can be changed.

SEE OR SEARCH THIS CLASS, SUBCLASS:
177, for a boom* whose length is changed by assembling or disassembling boom sections.
204, for a boom supported on an extensible mast.
230+, for extensible booms which are mounted for horizontal swinging movement.
264, for extensible booms which are mounted for vertical swinging movement only.
294+, for a boom or mast having an extending and collapsing feature for transport only.
296, for an extensible tower which collapses to a nonuseposition.

SEE OR SEARCH CLASS:
52, Static Structures (e.g., Buildings), subclasses 118+ for a miscellaneous elongated structural member which is comprised of telescoping segments and is mounted to a base for tilting movement relative thereto.

349 By fluid pressure:
This subclass is indented under subclass 348. Subject matter wherein the overall length of the member can be changed by application of a

working fluid under pressure to the member or an associated motor.

350 Having bearing means between extensible sections:

This subclass is indented under subclass 348. Subject matter wherein significance is attributed to specific structure of the areas of contact between respective relatively sliding sections of the structural member.

CROSS-REFERENCE ART COLLECTIONS

901 Dolley-type cranes:

This subclass is indented under the class definition. A collection of art comprising a wheeled base supporting a mast, a boom, and a hoist means whereby the apparatus is sized to be pushed by the operator.

END