

# CPC COOPERATIVE PATENT CLASSIFICATION

## B PERFORMING OPERATIONS; TRANSPORTING (NOTES omitted)

### TRANSPORTING

#### B63 SHIPS OR OTHER WATERBORNE VESSELS; RELATED EQUIPMENT

#### B63H MARINE PROPULSION OR STEERING (propulsion of air-cushion vehicles [B60V 1/14](#); specially adapted for submarines, other than nuclear propulsion, [B63G](#); specially adapted for torpedoes [F42B 19/00](#))

##### NOTE

In this subclass, the indexing codes [B63B 2201/00](#) - [B63B 2241/00](#) are to be used for relevant technical information concerning particular or unusual use, materials, design, methods or means

##### WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

|                 |   |                 |   |
|-----------------|---|-----------------|---|
| <b>1/00</b>     | <b>Propulsive elements directly acting on water (jet propulsion <a href="#">B63H 11/00</a>)</b>   | <b>2001/185</b> | . . . . . {Surfacing propellers, i.e. propellers specially adapted for operation at the water surface, with blades incompletely submerged, or piercing the water surface from above in the course of each revolution} |
| <b>2001/005</b> | . {using Magnus effect}   |                 |   |
| 1/02            | . of rotary type  |                 |   |
| 1/04            | . . with rotation axis substantially at right angles to propulsive direction  |                 |   |
| <b>2001/045</b> | . . . {with partially immersed nutating or undulated disks, e.g. wobble plates}   | 1/20            | . . . . Hubs; Blade connections   |
| 1/06            | . . . with adjustable vanes or blades   | 1/22            | . . . . . the blades being foldable   |
| 1/08            | . . . . with cyclic adjustment  | 1/24            | . . . . . automatically foldable or unfoldable  |
| 1/10            | . . . . . of Voith Schneider type, i.e. with blades extending axially from a disc-shaped rotary body  | 1/26            | . . . . Blades  |
| <b>2001/105</b> | . . . . . {with non-mechanical control of individual blades, e.g. electric or hydraulic control}  | 1/265           | . . . . . {each blade being constituted by a surface enclosing an empty space, e.g. forming a closed loop}  |
| 1/12            | . . with rotation axis substantially in propulsive direction  | 1/28            | . . . . Other means for improving propeller efficiency  |
| <b>2001/122</b> | . . . {Single or multiple threaded helicoidal screws, or the like, comprising foils extending over a substantial angle; Archimedean screws} | <b>2001/283</b> | . . . . . {Propeller hub caps with fins having a pitch different from pitch of propeller blades, or a helix hand opposed to the propellers' helix hand}   |
| <b>2001/125</b> | . . . . {with helicoidal foils projecting from outside surfaces of floating rotatable bodies, e.g. rotatable, cylindrical bodies}           | <b>2001/286</b> | . . . . . {Injection of gas into fluid flow to propellers, or around propeller blades}  |
| <b>2001/127</b> | . . . . {with helicoidal foils projecting from inside surfaces of rotating shrouds; Archimedean screws}                                     | 1/30            | . of non-rotary type  |
| 1/14            | . . . Propellers ( <a href="#">pitch changing B63H 3/00</a> )   | 1/32            | . . Flaps, pistons, or the like, reciprocating in propulsive direction  |
| <b>2001/145</b> | . . . . {comprising blades of two or more different types, e.g. different lengths}  | 1/34            | . . of endless-track type   |
| 1/15            | . . . . having vibration damping means  | <b>2001/342</b> | . . . {with tracks substantially parallel to propulsive direction}  |
| 1/16            | . . . . having a shrouding ring attached to blades  | <b>2001/344</b> | . . . . {having paddles mounted in fixed relation to tracks, or to track members}   |
| <b>2001/165</b> | . . . . . {Hubless propellers, e.g. peripherally driven shrouds with blades projecting from the shrouds' inside surfaces}                   | <b>2001/346</b> | . . . . {having paddles movably mounted on the track or on track members, e.g. articulated, or with means for cyclically controlling the paddles' angular position or orientation}                                    |
| 1/18            | . . . . with means for diminishing cavitation, e.g. supercavitation   | <b>2001/348</b> | . . . {with tracks oriented transverse to propulsive direction}   |
|                 |   | 1/36            | . . swinging sideways, e.g. fishtail type   |
|                 |   | 1/37            | . . Moving-wave propellers, i.e. wherein the propelling means comprise a flexible undulating structure  |

|             |   |                                     |  |
|-------------|---|-------------------------------------|--|
| 1/38        | characterised solely by flotation properties, e.g. drums  | 5/125                               | movably mounted with respect to hull, e.g. adjustable in direction {, e.g. podded azimuthing thrusters}({outboard units or Z-drives B63H 20/00; } movably mounted for steering purposes only, {rudders carrying propellers} B63H 25/42)  |
| <b>3/00</b> | <b>Propeller-blade pitch changing</b> {(aircraft propellers B64C 11/30; rotors of turbines F01D 7/00; axial wind motors F03D 7/022; axial-flow pumps F04D 29/00)}         | 5/1252                              | {the ability to move being conferred by gearing in transmission between prime mover and propeller and the propulsion unit being other than in a "Z" configuration}   |
| 3/002       | {with individually adjustable blades}   | 2005/1254                           | {Podded azimuthing thrusters, i.e. podded thruster units arranged inboard for rotation about vertical axis}  |
| 2003/004    | {comprising means for locking blades in position}   | 2005/1256                           | {with mechanical power transmission to propellers}   |
| 2003/006    | {Detecting or transmitting propeller-blade pitch angle}   | 2005/1258                           | {with electric power transmission to propellers, i.e. with integrated electric propeller motors}   |
| 3/008       | {characterised by self-adjusting pitch, e.g. by means of springs, centrifugal forces, hydrodynamic forces}  | 5/14                                | characterised by being mounted in non-rotating ducts or rings, e.g. adjustable for steering purpose (shrouding ring attached to blades B63H 1/16; jet propulsion B63H 11/00)   |
| 3/02        | actuated by control element coaxial with propeller shaft, e.g. the control element being rotary {(B63H 3/002 takes precedence, fluid actuated B63H 3/081)}                | 5/15                                | Nozzles, e.g. Kort-type  |
| 3/04        | the control element being reciprocable  | 5/16                                | characterised by being mounted in recesses; with stationary water-guiding elements; Means to prevent fouling of the propeller, e.g. guards, cages or screens   |
| 3/06        | characterised by use of non-mechanical actuating means, e.g. electrical (B63H 3/002 takes precedence)   | 5/165                               | {Propeller guards, line cutters or other means for protecting propellers or rudders}   |
| 3/08        | fluid   | 5/18                                | of emergency propellers, e.g. arranged at the side of the vessel   |
| 3/081       | {actuated by control element coaxial with the propeller shaft}  | 5/20                                | movable from a working position to a non-working position {(movable arrangements of propellers in general B63H 5/125; outboard propulsion units in general B63H 20/00; steering or dynamic anchoring by propellers used therefore only, or by rudders carrying propellers B63H 25/42)} |
| 3/082       | {the control element being axially reciprocable}  |                                     |  |
| 2003/084    | {with annular cylinder and piston}  |                                     |  |
| 2003/085    | {the control element having means for preventing rotation together with the propeller}  |                                     |  |
| 2003/087    | {using gaseous fluids, e.g. steam or air}   |                                     |  |
| 2003/088    | {characterised by supply of fluid actuating medium to control element, e.g. of hydraulic fluid to actuator co-rotating with the propeller}                                |                                     |  |
| 3/10        | characterised by having pitch control conjoint with propulsion plant control  |                                     |  |
| 3/12        | the pitch being adjustable only when propeller is stationary (B63H 3/002 takes precedence)  |                                     |  |
| <b>5/00</b> | <b>Arrangements on vessels of propulsion elements directly acting on water</b>  | <b>Propulsion using air or wind</b> |  |
| 2005/005    | {Front propulsors, i.e. propellers, paddle wheels, or the like substantially arranged ahead of the vessels' midship section}  | <b>7/00</b>                         | <b>Propulsion directly actuated on air</b> (jet propulsion B63H 11/00)   |
| 5/02        | of paddle wheels, e.g. of stern wheels  | 7/02                                | using propellers   |
| 2005/025    | {of Voith Schneider type}   | <b>8/00</b>                         | <b>Sail or rigging arrangements specially adapted for water sports boards, e.g. for windsurfing or kitesurfing</b>   |
| 5/03        | movably mounted with respect to the hull, e.g. having means to reposition paddle wheel assembly, or to retract paddle or to change paddle attitude                        | 8/10                                | Kite-sails; Kite-wings; Control thereof; Safety means therefor   |
| 5/04        | with stationary water-guiding elements  | 8/12                                | Kites with inflatable closed compartments  |
| 5/07        | of propellers (forming part of outboard units {or Z-drives} B63H 20/00)   | 8/14                                | Ram-air kites, i.e. kites at least partly inflated by air entering their leading edges during use  |
| 2005/075    | {using non-azimuthing podded propulsor units, i.e. podded units without means for rotation about a vertical axis, e.g. rigidly connected to the hull}                     | 8/16                                | Control arrangements, e.g. control bars or control lines   |
| 5/08        | of more than one propeller  | 8/18                                | Arrangements for connecting the user to a kite-sail; Kite-safety means, e.g. chicken loops, safety leashes or quick release mechanisms   |
| 5/10        | of coaxial type, e.g. of counter-rotative type  | 8/20                                | Rigging arrangements involving masts, e.g. for windsurfing   |
| 2005/103    | {of co-rotative type, i.e. rotating in the same direction, e.g. twin propellers}  | 8/21                                | Wishbones  |
| 2005/106    | {with drive shafts of second or further propellers co-axially passing through hub of first propeller, e.g. counter-rotating tandem propellers with co-axial drive shafts} | 8/22                                | for connecting wishbones to the mast   |
|             |   | 8/23                                | for tensioning or trimming the clew of the sail, e.g. outhaul trimmers   |
|             |   | 8/24                                | Arrangements for connecting the rigging to a board   |

|             |   |              |   |
|-------------|---|--------------|---|
| 8/25        | . . Arrangements for connecting the sail to a mast foot, e.g. downhaul tensioners or mast foot extensions   | 9/1007       | . . . . {Trapeze systems (harnesses for windsurfers <a href="#">B63H 8/54</a> , <a href="#">B63H 8/56</a> )}  |
| 8/40        | . Arrangements for improving or maintaining the aerodynamic profile of sails, e.g. cambers, battens or foil profiles  | 9/1014       | . . . . . {with elastic connection to harnesses}  |
| 8/50        | . Accessories, e.g. repair kits or kite launching aids  | 9/1021       | . . . . . {Reefing}   |
| 8/52        | . . Handheld cleats, cams or hooks for tensioning the downhaul or outhaul of a windsurfing sail   | 9/1028       | . . . . . {by furling around stays}   |
| 8/54        | . . Arrangements for connecting the user or the harness to the wishbone, e.g. trapeze lines or handgrips  | 9/1035       | . . . . . {by furling around or inside the mast}  |
| 8/56        | . . Devices to distribute the user's load, e.g. harnesses   | 9/1042       | . . . . . {by furling around or inside the boom}  |
| 8/58        | . . . Spreader bars; Hook connection arrangements   | 2009/105     | . . . . . {using drives for actuating reefing mechanism, e.g. roll reefing drives}  |
| 8/70        | . Arrangements for handling, stowing or transport thereof   | 2009/1057    | . . . . . {using sheaves being friction driven by endless ropes or by ropes having two free ends}   |
| <b>9/00</b> | <b>Marine propulsion provided directly by wind power (wind-motors driving underwater propulsive elements <a href="#">B63H 13/00</a>)</b>  | 2009/1064    | . . . . . {using drums driven by winding or unwinding single ropes onto or from the drums}  |
| 9/02        | . using Magnus effect   | 9/1071       | . . . . . {Spinnaker poles or rigging, e.g. combined with spinnaker handling}   |
| 9/04        | . using sails or like wind-catching surfaces (sail or rigging arrangements specially adapted for water sports boards, e.g. for windsurfing or kitesurfing <a href="#">B63H 8/00</a> ) | 9/1078       | . . . . . {Boom brakes}   |
| 9/06        | . . Types of sail; Constructional features of sails; Arrangements thereof on vessels  | 9/1085       | . . . . . {Boom vang}   |
| 9/061       | . . . Rigid sails; Aerofoil sails   | 9/1092       | . . . . . {Means for stowing, or securing sails when not in use ( <a href="#">B63H 9/1021</a> takes precedence)}  |
| 9/0615      | . . . . {Inflatable aerofoil sails}   | <b>11/00</b> | <b>Marine propulsion by water jets</b>  |
| 9/0621      | . . . . {Rigid sails comprising one or more pivotally supported panels}   | 2011/002     | . {using Coanda effect, i.e. the tendency of fluid jets to be attracted to nearby surfaces}   |
| 9/0628      | . . . . . {the panels being pivotable about horizontal axes}  | 2011/004     | . {using the eductor or injector pump principle, e.g. jets with by-pass fluid paths}  |
| 9/0635      | . . . . . {the panels being pivotable about vertical axes}  | 2011/006     | . {with propulsive medium supplied from sources external to propelled vessel, e.g. water from public water supply}  |
| 9/065       | . . . Battens (for water sports board sails <a href="#">B63H 8/40</a> )   | 2011/008     | . {Arrangements of two or more jet units}   |
| 9/067       | . . . Sails characterised by their construction or manufacturing process  | 11/01        | . having means to prevent foreign material from clogging fluid passage way  |
| 9/0671      | . . . . {Moulded sails}   | 11/02        | . the propulsive medium being ambient water   |
| 9/0673      | . . . . {Flying sails, e.g. spinnakers or gennakers}  | 11/025       | . . {by means of magneto-hydro-dynamic forces}  |
| 9/0678      | . . . . {Laminated sails}   | 11/04        | . . by means of pumps   |
| 9/068       | . . . Sails pivotally mounted at mast tip   | 2011/043     | . . . {with means for adjusting or varying pump inlets, e.g. means for varying inlet cross section area}  |
| 9/069       | . . . Kite-sails for vessels  | 2011/046     | . . . {comprising means for varying pump characteristics, e.g. rotary pumps with variable pitch impellers, or adjustable stators}                               |
| 9/071       | . . . . for use in combination with other propulsion means, e.g. for improved fuel economy  | 11/06        | . . . of reciprocating type   |
| 9/072       | . . . . Control arrangements, e.g. for launching or recovery  | 11/08        | . . . of rotary type  |
| 9/08        | . . Connections of sails to masts, spars, or the like   | 2011/081     | . . . . {with axial flow, i.e. the axis of rotation being parallel to the flow direction}   |
| 2009/082    | . . . {Booms, or the like}  | 2011/082     | . . . . {with combined or mixed flow, i.e. the flow direction being a combination of centrifugal flow and non-centrifugal flow, e.g. centripetal or axial flow} |
| 2009/084    | . . . {Gooseneck bearings, i.e. bearings for pivotal support of booms on masts}   | 2011/084     | . . . . {with two or more pump stages}  |
| 2009/086    | . . . {by sliders, i.e. by shoes sliding in, or guided by channels, tracks or rails; for connecting luffs, leeches, battens, or the like to masts, spars or booms}                    | 2011/085     | . . . . . {having counter-rotating impellers}   |
| 2009/088    | . . . {Means for tensioning sheets, or other running rigging, adapted for being guided on rails, or the like mounted on deck, e.g. travellers or carriages with pulleys}              | 2011/087     | . . . . . {with radial flow}  |
| 9/10        | . . . Running rigging, e.g. reefing equipment (staying of masts <a href="#">B63B 15/02</a> )  | 2011/088     | . . . . . {using shear forces, e.g. disc pumps or Tesla pumps}  |
|             |   | 11/09        | . . . by means of pressure pulses applied to a column of liquid, e.g. by ignition of an air/gas or vapour mixture   |
|             |   | 11/10        | . . having means for deflecting jet or influencing cross-section thereof  |
|             |   | 11/101       | . . . {having means for deflecting jet into a propulsive direction substantially parallel to the plane of the pump outlet opening}                              |

|              |  |              |   |
|--------------|--|--------------|---|
| 11/102       | . . . . {the inlet opening and the outlet opening of the pump being substantially coplanar}  | 16/12        | . . {using hand levers, cranks, pedals, or the like, e.g. water cycles, boats propelled by boat-mounted pedal cycles}   |
| 11/103       | . . . having means to increase efficiency of propulsive fluid, e.g. discharge pipe provided with means to improve the fluid flow   |              | <b>WARNING</b>  |
| 11/107       | . . . Direction control of propulsive fluid { <a href="#">(B63H 11/101 takes precedence)</a> }   |              | This group is no longer used for classification of new documents as from 01.01.2012. The backlog of this group is being continuously reclassified to groups <a href="#">B63H 16/16</a> - <a href="#">B63H 16/20</a>   |
| 11/11        | . . . . with bucket or clamshell-type reversing means  |              |   |
| 11/113       | . . . . Pivoted outlet   | 16/14        | . . . {for propelled drive}   |
| 11/117       | . . . . Pivoted vane   |              | <b>WARNING</b>  |
| 11/12        | . the propulsive medium being steam or other gas   |              | This group is no longer used for classification of new documents as from 01.01.2012. The backlog of this group is being continuously reclassified to groups <a href="#">B63H 16/16</a> - <a href="#">B63H 16/20</a>   |
| 11/14        | . . the gas being produced by combustion   |              |   |
| 11/16        | . . the gas being produced by other chemical processes   |              |   |
| <b>13/00</b> | <b>Marine propulsion by wind motors driving water-engaging propulsive elements</b>   |              |   |
| <hr/>        |  |              |   |
| <b>15/00</b> | <b>Marine propulsion by use of vessel-mounted driving mechanisms co-operating with anchored chains or the like</b>   | 16/16        | . . using reciprocating pull cable, i.e. a strand-like member movable alternately backward and forward  |
| <b>16/00</b> | <b>Marine propulsion by muscle power</b>   | 2016/165     | . . . {comprising means for transforming oscillating movement into rotary movement, e.g. for driving propeller shafts}  |
| 2016/005     | . {used on vessels dynamically supported, or lifted out of the water by hydrofoils}  | 16/18        | . . using sliding {or pivoting} handle or pedal, i.e. the motive force being transmitted to a propelling means by means of a lever operated by the hand or foot of the occupant   |
| 16/02        | . Movable thwarts; Footrests   | 2016/185     | . . . {comprising means for transforming oscillating movement into rotary movement, e.g. for driving propeller shafts}  |
| 16/04        | . Oars; Sculls; Paddles; Poles   | 16/20        | . . using rotary cranking arm   |
| 2016/043     | . . {Stop sleeves or collars for positioning oars in rowlocks, e.g. adjustable}  | 2016/202     | . . . {specially adapted or arranged for being actuated by the feet of the user, e.g. using bicycle-like pedals}  |
| 2016/046     | . . {Oars for single-oar sculling, i.e. for propelling boats by swinging single stern-mounted oars from side to side; Use or arrangements thereof on boats}  | 2016/205     | . . . . {making use of standard bicycles}   |
| 16/06        | . Rowlocks; Mountings therefor   | 2016/207     | . . . . . {without wheels}  |
| 2016/063     | . . {Rowlocks mounted on movable support structures}   | <b>19/00</b> | <b>Marine propulsion not otherwise provided for</b>   |
| 16/067       | . . Rowlocks mounted on a structure extending beyond the gunwale of the vessel   | 19/02        | . by using energy derived from movement of ambient water, e.g. from rolling or pitching of vessels  |
| 16/073       | . . having oar shaft restraining means   | 19/04        | . . propelled by water current  |
| 16/08        | . Other apparatus for converting muscle power into propulsive effort   | 19/06        | . by discharging gas into ambient water   |
| 2016/085     | . . {comprising means for transmitting muscular power applied in oscillatory or rotary manner to a rotary input shaft of a reversing transmission, e.g. alternatively allowing for ahead or astern propulsion} | 19/08        | . by direct engagement with water-bed or ground   |
| 16/10        | . . for bow-facing rowing  | <b>20/00</b> | <b>Outboard propulsion units, e.g. outboard motors or Z-drives; Arrangements thereof on vessels</b>   |
| 16/102       | . . . {by using an inverting mechanism between the handgrip and the blade, e.g. a toothed transmission}  | 20/001       | . {Arrangements, apparatus and methods for handling fluids used in outboard drives (for handling exhaust gas <a href="#">B63H 20/24</a> ; for handling cooling-water <a href="#">B63H 20/28</a> ; cooling outboard marine engines <a href="#">F01P 3/202</a> ; air intakes for outboard marine engines <a href="#">F02M 35/167</a> )} |
| 16/105       | . . . . {the mechanism having articulated rods}  | 20/002       | . . {for handling lubrication liquids (in engines, e.g. outboard marine engines, <a href="#">F01M</a> )}  |
| 16/107       | . . . {by placing the fulcrum outside the segment defined by handgrip and blade}   | 2020/003     | . {Arrangements of two, or more outboard propulsion units}  |
|              |  | 2020/005     | . {Arrangements of two or more propellers, or the like on single outboard propulsion units}   |
|              |  | 2020/006     | . . {of coaxial type, e.g. of counter-rotative type}  |
|              |  | 20/007       | . {Trolling propulsion units (trolling plates for slowing down <a href="#">B63H 25/50</a> ; dynamo-electric machines of trolling units <a href="#">H02K</a> )}  |



|          |  |          |   |
|----------|--|----------|---|
| 2020/008 | <ul style="list-style-type: none"> <li>• {Tools, specially adapted for maintenance, mounting, repair, or the like of outboard propulsion units, e.g. of outboard motors or Z-drives}</li> </ul>  | 20/36    | <ul style="list-style-type: none"> <li>• Transporting or testing stands {<a href="#">hand carts for transporting outboard units B62B</a>; measuring torque <a href="#">G01L 3/00</a>, measuring thrust of propellers <a href="#">G01L 5/133</a>, testing in general <a href="#">G01M</a>}; Use of outboard propulsion units as pumps}; Protection of power legs {, e.g. when not in use}</li> </ul> |
| 20/02    | <ul style="list-style-type: none"> <li>• Mounting of propulsion units (<a href="#">B63H 20/08</a> takes precedence)</li> </ul>   |          |   |
| 2020/025 | <ul style="list-style-type: none"> <li>• . {Sealings specially adapted for mountings of outboard drive units; Arrangements thereof, e.g. for transom penetrations}</li> </ul>  | 21/00    | <b>Use of propulsion power plant or units on vessels</b>  |
| 20/04    | <ul style="list-style-type: none"> <li>• . in a well</li> </ul>  |          | <b>NOTE</b>   |
| 20/06    | <ul style="list-style-type: none"> <li>• . on an intermediate support</li> </ul>   |          | This group comprises arrangements of propulsion power plant or units on vessels and to some extent it includes adaptations of such plant or units to facilitate such arrangements   |
| 20/08    | <ul style="list-style-type: none"> <li>• Means enabling movement of the position of the propulsion element, e.g. for trim, tilt or steering; Control of trim or tilt (<a href="#">initiating means for steering B63H 25/02</a>)</li> </ul>               | 2021/003 | <ul style="list-style-type: none"> <li>• {the power plant using fuel cells for energy supply or accumulation, e.g. for buffering photovoltaic energy}</li> </ul>  |
| 20/10    | <ul style="list-style-type: none"> <li>• . Means enabling trim or tilt, or lifting of the propulsion element when an obstruction is hit; Control of trim or tilt</li> </ul>  | 2021/006 | <ul style="list-style-type: none"> <li>• {the vessel being driven by hot gas positive-displacement engine plants of closed-cycle type, e.g. Stirling engines}</li> </ul>  |
| 2020/103 | <ul style="list-style-type: none"> <li>• . . {using a flexible member for enabling or controlling tilt or lifting, e.g. a cable}</li> </ul>  | 21/02    | <ul style="list-style-type: none"> <li>• the vessels being steam-driven (<a href="#">B63H 21/18</a> takes precedence)</li> </ul>  |
| 20/106   | <ul style="list-style-type: none"> <li>• . . {Means enabling lifting of the propulsion element in a substantially vertical, linearly sliding movement}</li> </ul>  | 21/04    | <ul style="list-style-type: none"> <li>• . relating to positive-displacement steam engines</li> </ul>   |
| 20/12    | <ul style="list-style-type: none"> <li>• . Means enabling steering</li> </ul>  | 21/06    | <ul style="list-style-type: none"> <li>• . relating to steam turbines</li> </ul>  |
| 20/14    | <ul style="list-style-type: none"> <li>• Transmission between propulsion power unit and propulsion element</li> </ul>  | 21/08    | <ul style="list-style-type: none"> <li>• . relating to steam boilers</li> </ul>   |
| 2020/145 | <ul style="list-style-type: none"> <li>• . {comprising means for permitting telescoping movement of components of the outboard propulsion unit, e.g. telescoping movement of power leg}</li> </ul>   | 21/10    | <ul style="list-style-type: none"> <li>• . relating to condensers or engine-cooling fluid heat-exchangers</li> </ul>  |
| 20/16    | <ul style="list-style-type: none"> <li>• . allowing movement of the propulsion element in a horizontal plane only, e.g. for steering</li> </ul>  | 21/12    | <ul style="list-style-type: none"> <li>• the vessels being motor-driven (<a href="#">B63H 21/175</a>, <a href="#">B63H 21/18</a> take precedence; {cooling circuits with liquid-to-liquid heat-exchange relative to marine vessels <a href="#">F01P 3/207</a>})</li> </ul>  |
| 20/18    | <ul style="list-style-type: none"> <li>• . allowing movement of the propulsion element about a longitudinal axis, e.g. the through transom shaft (<a href="#">B63H 20/22</a> takes precedence)</li> </ul>  | 21/14    | <ul style="list-style-type: none"> <li>• . relating to internal-combustion engines {(of outboard type <a href="#">B63H 20/00</a>)}</li> </ul>   |
| 20/20    | <ul style="list-style-type: none"> <li>• . with provision for reverse drive</li> </ul>   | 21/16    | <ul style="list-style-type: none"> <li>• . relating to gas turbines</li> </ul>  |
| 20/22    | <ul style="list-style-type: none"> <li>• . allowing movement of the propulsion element about at least a horizontal axis without disconnection of the drive, e.g. using universal joints</li> </ul>   | 21/165   | <ul style="list-style-type: none"> <li>• . by hydraulic fluid motor, i.e. wherein a liquid under pressure is utilised to rotate the propelling means {(transmission from power plant or unit to propeller using fluid gearing <a href="#">per se B63H 23/26</a>)}</li> </ul>  |
| 20/24    | <ul style="list-style-type: none"> <li>• {Arrangements, apparatus and methods for handling exhaust gas in outboard drives, e.g. } exhaust gas outlets {(in engines, e.g. outboard marine engines, <a href="#">F01N</a>)}</li> </ul>                      | 21/17    | <ul style="list-style-type: none"> <li>• . by electric motor</li> </ul>   |
| 20/245   | <ul style="list-style-type: none"> <li>• . {Exhaust gas outlets (<a href="#">B63H 20/26</a> takes precedence)}</li> </ul>  | 2021/171 | <ul style="list-style-type: none"> <li>• . . {making use of photovoltaic energy conversion, e.g. using solar panels}</li> </ul>   |
| 20/26    | <ul style="list-style-type: none"> <li>• . {Exhaust gas outlets} passing through the propeller or its hub</li> </ul>   | 2021/173 | <ul style="list-style-type: none"> <li>• . . {making use of superconductivity}</li> </ul>   |
| 20/28    | <ul style="list-style-type: none"> <li>• {Arrangements, apparatus and methods for handling cooling-water in outboard drives, e.g. } cooling-water intakes {(cooling circuits for outboard marine engines <a href="#">F01P 3/202</a>)}</li> </ul>         | 21/175   | <ul style="list-style-type: none"> <li>• the vessel being powered by land vehicle supported by vessel</li> </ul>  |
| 20/285   | <ul style="list-style-type: none"> <li>• . {Cooling-water intakes}</li> </ul>  | 21/18    | <ul style="list-style-type: none"> <li>• the vessels being powered by nuclear energy</li> </ul>   |
| 20/30    | <ul style="list-style-type: none"> <li>• . {Cooling-water intakes} for flushing {(circuits for flushing outboard marine engines <a href="#">F01P 3/205</a>)}</li> </ul>  | 21/20    | <ul style="list-style-type: none"> <li>• the vessels being powered by combinations of different types of propulsion units</li> </ul>  |
| 20/32    | <ul style="list-style-type: none"> <li>• Housings {(air intakes for outboard engines <a href="#">F02M 35/167</a>)}</li> </ul>  | 2021/202 | <ul style="list-style-type: none"> <li>• . {of hybrid electric type}</li> </ul>   |
| 2020/323 | <ul style="list-style-type: none"> <li>• . {Gear cases}</li> </ul>   | 2021/205 | <ul style="list-style-type: none"> <li>• . . {the second power unit being of the internal combustion engine type, or the like, e.g. a Diesel engine}</li> </ul>   |
| 2020/326 | <ul style="list-style-type: none"> <li>• . . {having a dividing plane substantially in plane with the axes of the transmission shafts}</li> </ul>  | 2021/207 | <ul style="list-style-type: none"> <li>• . . {the second power unit being a gas turbine}</li> </ul>   |
| 20/34    | <ul style="list-style-type: none"> <li>• . comprising stabilising fins {, foils, anticavitation plates, splash plates, or rudders (<a href="#">rudders carrying propellers B63H 25/42</a>; <a href="#">rudders carrying jets B63H 25/46</a>)}</li> </ul> | 21/21    | <ul style="list-style-type: none"> <li>• Control means for engine or transmission, specially adapted for use on marine vessels</li> </ul>   |
|          |  | 21/213   | <ul style="list-style-type: none"> <li>• . {Levers or the like for controlling the engine or the transmission, e.g. single hand control levers}</li> </ul>  |
|          |  | 2021/216 | <ul style="list-style-type: none"> <li>• . {using electric control means}</li> </ul>  |
|          |  | 21/22    | <ul style="list-style-type: none"> <li>• the propulsion power units being controlled from exterior of engine room, e.g. from navigation bridge; Arrangements of order telegraphs</li> </ul>   |
|          |  | 21/24    | <ul style="list-style-type: none"> <li>• {the vessels being small craft, e.g. racing boats}</li> </ul>  |
|          |  | 21/30    | <ul style="list-style-type: none"> <li>• Mounting of propulsion plant or unit, e.g. for anti-vibration purposes (<a href="#">hull reinforcements therefor B63B 3/70</a>)</li> </ul>   |

|              |  |          |   |
|--------------|--|----------|---|
| 21/302       | . . {with active vibration damping}  | 2023/062 | . . . {comprising means for simultaneously driving two or more main transmitting elements, e.g. drive shafts}   |
| 21/305       | . . {with passive vibration damping}   | 2023/065 | . . . {having means for differentially varying the speed of the main transmitting elements, e.g. of the drive shafts}   |
| 2021/307     | . . {Arrangements, or mountings of propulsion power plant elements in modular propulsion power units, e.g. using containers}   | 2023/067 | . . . {the elements being formed by two or more coaxial shafts, e.g. counter-rotating shafts}   |
| 21/32        | . Arrangements of propulsion power-unit exhaust uptakes; Funnels peculiar to vessels   | 23/08    | . . with provision for reversing drive  |
| 21/34        | . . having exhaust-gas deflecting means  | 23/10    | . . for transmitting drive from more than one propulsion power unit   |
| 21/36        | . Covers or casing arranged to protect plant or unit from marine environment   | 23/12    | . . . allowing combined use of the propulsion power units   |
| 21/38        | . Apparatus or methods specially adapted for use on marine vessels, for handling power plant or unit liquids, e.g. lubricants, coolants, fuels or the like ( <a href="#">in outboard drives B63H 20/001</a> ; ) <a href="#">lubricating or cooling machines or engines in general F01 - F04</a> )  | 23/14    | . . . . with unidirectional drive or where reversal is immaterial   |
| 21/383       | . . {for handling cooling-water ( <a href="#">in outboard drives B63H 20/28</a> ; <a href="#">in machines or engines in general F01P 3/00</a> )}   | 23/16    | . . . . characterised by provision of reverse drive   |
| 21/386       | . . {for handling lubrication liquids ( <a href="#">in machines or engines in general F01M</a> )}  | 23/18    | . . . for alternative use of the propulsion power units   |
| <b>23/00</b> | <b>Transmitting power from propulsion power plant to propulsive elements</b> (adaptation of transmission to allow adjustment in direction of propellers <a href="#">B63H 5/125</a> ; transmission between wind motors and propulsive elements <a href="#">B63H 13/00</a> ; <a href="#">in outboard propulsion units B63H 20/14</a> ; adaptation of transmission to allow adjustment of location of propellers <a href="#">B63H 20/08</a> ) | 23/20    | . . . . with separate forward and astern propulsion power units, e.g. turbines  |
| 2023/005     | . {using a drive acting on the periphery of a rotating propulsive element, e.g. on a dented circumferential ring on a propeller, or a propeller acting as rotor of an electric motor}  | 23/22    | . with non-mechanical gearing   |
| 23/02        | . with mechanical gearing  | 23/24    | . . electric ( <a href="#">dynamo-electric machines H02K</a> )  |
| 2023/0208    | . . {by means of endless flexible members}   | 2023/245 | . . . {with two or more electric motors directly acting on a single drive shaft, e.g. plurality of electric rotors mounted on one common shaft, or plurality of electric motors arranged coaxially one behind the other with rotor shafts coupled together} |
| 2023/0216    | . . . {by means of belts, or the like}   | 23/26    | . . fluid   |
| 2023/0225    | . . . . {of grooved belts, i.e. with one or more grooves in longitudinal direction of the belt}  | 23/28    | . with synchronisation of propulsive elements   |
| 2023/0233    | . . . . {of belts having a toothed contact surface, or regularly spaced bosses, or hollows for slip-less or nearly slip-less meshing with complementary profiled contact surface of a pulley}  | 23/30    | . characterised by use of clutches  |
| 2023/0241    | . . . . {of V-belts, i.e. belts of tapered cross section}  | 2023/305 | . . {using fluid or semifluid as power transmitting means}  |
| 2023/025     | . . . {by means of chains}   | 23/32    | . Other parts   |
| 2023/0258    | . . {comprising gearings with variable gear ratio, other than reversing drives or trolling drives}   | 23/321   | . . {Bearings or seals specially adapted for propeller shafts}  |
| 2023/0266    | . . . {comprising gearings with automatically variable gear ratio, other than continuously variable transmissions or trolling drives}  | 2023/322 | . . . {Intermediate propeller shaft bearings, e.g. with provisions for shaft alignment}   |
| 2023/0275    | . . . {comprising means for conveying rotary motion with continuously variable gear ratio, e.g. continuously variable transmissions using endless flexible members}  | 2023/323 | . . . {Bearings for coaxial propeller shafts, e.g. for driving propellers of the counter-rotative type}   |
| 2023/0283    | . . {using gears having orbital motion}  | 2023/325 | . . . {Thrust bearings, i.e. axial bearings for propeller shafts}   |
| 2023/0291    | . . {Trolling gears, i.e. mechanical power transmissions comprising controlled slip clutches, e.g. for low speed propulsion}   | 23/326   | . . . {Water lubricated bearings}   |
| 23/04        | . . the main transmitting element, e.g. shaft, being substantially vertical  | 2023/327 | . . . {Sealings specially adapted for propeller shafts or stern tubes}  |
| 23/06        | . . for transmitting drive from a single propulsion power unit   | 2023/328 | . . {Marine transmissions characterised by the use of brakes, other than propeller shaft brakes; Brakes therefor}   |
|              |  | 23/34    | . . Propeller shafts; Paddle-wheel shafts; Attachment of propellers on shafts   |
|              |  | 2023/342 | . . . {comprising couplings, e.g. resilient couplings; Couplings therefor}  |
|              |  | 2023/344 | . . . {comprising flexible shafts members}  |
|              |  | 2023/346 | . . . {comprising hollow shaft members}   |
|              |  | 2023/348 | . . . {with turning or inching gear, i.e. with means for slowly rotating, or for angularly positioning of shafts or propulsive elements mounted thereon}  |
|              |  | 23/35    | . . . Shaft braking or locking, i.e. means to slow or stop the rotation of the propeller shaft or to prevent the shaft from initial rotation  |
|              |  | 23/36    | . . Shaft tubes   |

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| <b>25/00</b>    | <b>Steering; Slowing-down otherwise than by use of propulsive elements (using movably-installed outboard propulsion units <a href="#">B63H 20/00</a>); Dynamic anchoring, i.e. positioning vessels by means of main or auxiliary propulsive elements</b> | <b>2025/388</b> | . . . {with varying angle of attack over the height of the rudder blade, e.g. twisted rudders}   |
| <b>2025/005</b> | . {Steering specially adapted for towing trains, tug-barge systems, or the like; Equipment or accessories therefor}  | <b>25/40</b>    | . . . using Magnus effect  |
| <b>25/02</b>    | . Initiating means for steering {, for slowing down, otherwise than by use of propulsive elements, or for dynamic anchoring}   | <b>25/42</b>    | . Steering or dynamic anchoring by propulsive elements (by jets <a href="#">B63H 25/46</a> ); Steering or dynamic anchoring by propellers used therefor only; Steering or dynamic anchoring by rudders carrying propellers |
| <b>2025/022</b> | . . {Steering wheels; Posts for steering wheels}   | <b>2025/425</b> | . . {Propulsive elements, other than jets, substantially used for steering or dynamic anchoring only, with means for retracting, or otherwise moving to a rest position outside the water flow around the hull}            |
| <b>2025/024</b> | . . {Handle-bars; Posts for supporting handle-bars, e.g. adjustable posts}   | <b>25/44</b>    | . Steering or slowing-down by extensible flaps or the like   |
| <b>2025/026</b> | . . {using multi-axis control levers, or the like, e.g. joysticks, wherein at least one degree of freedom is employed for steering, slowing down, or dynamic anchoring}  | <b>25/46</b>    | . Steering or dynamic anchoring by jets {or by rudders carrying jets (steering or dynamic anchoring by deflecting or directing main propulsion jets <a href="#">B63H 11/00</a> )}  |
| <b>2025/028</b> | . . {using remote control means, e.g. wireless control; Equipment or accessories therefor}   | <b>2025/465</b> | . . {Jets or thrusters substantially used for steering or dynamic anchoring only, with means for retracting, or otherwise moving to a rest position outside the water flow around the hull}                                |
| <b>25/04</b>    | . . automatic, e.g. reacting to compass  | <b>25/48</b>    | . Steering or slowing-down by deflection of propeller slipstream otherwise than by rudder  |
| <b>2025/045</b> | . . . {making use of satellite radio beacon positioning systems, e.g. the Global Positioning System [GPS]}   | <b>25/50</b>    | . Slowing-down means not otherwise provided for  |
| <b>25/06</b>    | . Steering by rudders (by rudders carrying propellers <a href="#">B63H 25/42</a> )   | <b>25/52</b>    | . Parts for steering not otherwise provided for  |
| <b>2025/063</b> | . . {Arrangements of rudders forward of the propeller position, e.g. of backing rudders; Arrangements of rudders on the forebody of the hull; Steering gear therefor}  |                 |  |
| <b>2025/066</b> | . . {Arrangements of two or more rudders; Steering gear therefor}  |                 |  |
| <b>25/08</b>    | . . Steering gear  |                 |  |
| <b>25/10</b>    | . . . with mechanical transmission   |                 |  |
| <b>25/12</b>    | . . . with fluid transmission  |                 |  |
| <b>25/14</b>    | . . . power assisted; power driven, i.e. using steering engine   |                 |  |
| <b>25/16</b>    | . . . . with alternative muscle or power operated steering   |                 |  |
| <b>25/18</b>    | . . . . Transmitting of movement of initiating means to steering engine  |                 |  |
| <b>25/20</b>    | . . . . . by mechanical means  |                 |  |
| <b>25/22</b>    | . . . . . by fluid means   |                 |  |
| <b>25/24</b>    | . . . . . by electrical means  |                 |  |
| <b>25/26</b>    | . . . . Steering engines   |                 |  |
| <b>25/28</b>    | . . . . . of fluid type  |                 |  |
| <b>25/30</b>    | . . . . . hydraulic  |                 |  |
| <b>25/32</b>    | . . . . . steam  |                 |  |
| <b>25/34</b>    | . . . . Transmitting of movement of engine to rudder, e.g. using quadrants, brakes   |                 |  |
| <b>25/36</b>    | . . Rudder-position indicators   |                 |  |
| <b>25/38</b>    | . . Rudders  |                 |  |
| <b>25/381</b>   | . . . {with flaps}   |                 |  |
| <b>25/382</b>   | . . . {movable otherwise than for steering purposes; Changing geometry}  |                 |  |
| <b>25/383</b>   | . . . . {with deflecting means able to reverse the water stream direction}   |                 |  |
| <b>2025/384</b> | . . . . {with means for retracting or lifting}   |                 |  |
| <b>2025/385</b> | . . . . . {by pivoting}  |                 |  |
| <b>2025/386</b> | . . . . . {by sliding, e.g. telescopic}  |                 |  |
| <b>2025/387</b> | . . . {comprising two or more rigidly interconnected mutually spaced blades pivotable about a common rudder shaft, e.g. parallel twin blades mounted on a pivotable supporting frame}  |                 |  |