

# CPC COOPERATIVE PATENT CLASSIFICATION

## E FIXED CONSTRUCTIONS

### BUILDING

## E02 HYDRAULIC ENGINEERING; FOUNDATIONS; SOIL SHIFTING

## E02B HYDRAULIC ENGINEERING ([ship-lifting E02C](#); [dredging E02F](#))

- |   |   |
|---|---|
| <p><b>1/00</b>     <b>Equipment or apparatus for, or methods of, general hydraulic engineering {, e.g. protection of constructions against ice-strains (protection of offshore constructions against ice-loads <a href="#">E02B 17/0021</a>; ice-structures as artificial islands <a href="#">E02B 17/028</a>)}</b></p> <p>1/003     • {Mechanically induced gas or liquid streams in seas, lakes or water-courses for forming weirs or breakwaters; making or keeping water surfaces free from ice, aerating or circulating water, e.g. screens of air-bubbles against sludge formation or salt water entry, pump-assisted water circulation (moving sediments <a href="#">E02B 3/023</a>; for ice breakers <a href="#">B63B 35/08</a>; aerating or circulating water in fish-tanks <a href="#">A01K 63/042</a>; purification of waste water with addition of air <a href="#">C02F</a>; distributing gases in liquids in general <a href="#">B01F 3/04</a>)}</p> <p>1/006     • {Arresting, diverting or chasing away fish in water-courses or water intake ducts, seas or lakes, e.g. fish barrages, deterrent devices (<a href="#">E02B 8/085</a> takes precedence); Devices for cleaning fish barriers}</p> <p>1/02     • Hydraulic models {(towing tanks or basins for model vessels <a href="#">B63B 9/02</a>)}</p> <p><b>3/00</b>     <b>Engineering works in connection with control or use of streams, rivers, coasts, or other marine sites (barrages or weirs <a href="#">E02B 7/00</a>); Sealings or joints for engineering works in general</b></p> <p>3/02     • Stream regulation, e.g. breaking up subaqueous rock, cleaning the beds of waterways, directing the water flow ({harvesting water plants <a href="#">A01D 44/00</a>; underwater loosening of soil or rocks for foundation construction <a href="#">E02D 17/16</a>}; dredging or scraping devices <a href="#">E02F 5/28</a>)</p> <p>3/023     • • {Removing sediments (in barrages or reservoirs <a href="#">E02B 8/02</a>)}</p> <p>3/026     • • {Removing solid rocks}</p> <p>3/04     • Structures or apparatus for, or methods of, protecting banks, coasts, or harbours ({<a href="#">E02B 1/003</a> takes precedence; } sealing or joints <a href="#">E02B 3/16</a> )</p> <p>3/041     • • {using active mechanical means, e.g. fluidizing or pumping}</p> <p>3/043     • • {Artificial seaweed}</p> <p>3/046     • • {Artificial reefs}</p> <p>3/06     • • Moles; Piers; Quay walls; Groynes; Breakwaters {Wave dissipating walls; Quay equipment}</p> <p>3/062     • • • {Constructions floating in operational condition, e.g. breakwaters or wave dissipating walls (floating oil barriers <a href="#">E02B 15/08</a>; floating stream regulating devices <a href="#">E02B 3/02</a>)}</p> | <p>3/064     • • • • {Floating landing-stages (construction of pontoons <a href="#">B63B 35/34</a>; landing bridges <a href="#">E01D 15/14</a>)}</p> <p>3/066     • • • • {Quays (bulkheads <a href="#">E02D 5/00</a>; caissons <a href="#">E02D 23/00</a>; retaining walls <a href="#">E02D 29/00</a>)}</p> <p>3/068     • • • • {Landing stages for vessels (floating landing-stages <a href="#">E02B 3/064</a>; landing bridges <a href="#">E01D 15/14</a>)}</p> <p>3/08     • • • Structures of loose stones with or without piles (piles <a href="#">E02D 5/00</a>)</p> <p>3/10     • • Dams; Dykes; Sluice ways or other structures for dykes, dams, or the like (making embankments or dams in general <a href="#">E02D 17/18</a>)</p> <p>3/102     • • • {Permanently installed raisable dykes}</p> <p>3/104     • • • • {with self-activating means}</p> <p>3/106     • • • {Temporary dykes}</p> <p>3/108     • • • • {with a filling, e.g. filled by water or sand}</p> <p>3/12     • • Revetment of banks, dams, watercourses, or the like, {e.g. the sea-floor} (of slopes in general <a href="#">E02D 17/20</a>)</p> <p>3/121     • • • {Devices for applying linings on banks or the water bottom (for lining canals <a href="#">E02B 5/02</a>)}</p> <p>3/122     • • • {Flexible prefabricated covering elements, e.g. mats, strips}</p> <p>3/123     • • • • {mainly consisting of stone, concrete or similar stony material}</p> <p>3/124     • • • • {mainly consisting of metal}</p> <p>3/125     • • • • {mainly consisting of vegetable material, e.g. wood, reeds}</p> <p>3/126     • • • • {mainly consisting of bituminous material or synthetic resins}</p> <p>3/127     • • • • {bags filled at the side}</p> <p>3/128     • • • {Coherent linings made on the spot, e.g. cast <i>in situ</i>, extruded on the spot (for canal linings <a href="#">E02B 5/02</a>)}</p> <p>3/129     • • • {Polyhedrons, tetrapods or similar bodies, whether or not threaded on strings}</p> <p>3/14     • • • Preformed blocks {or slabs for forming essentially continuous surfaces}; Arrangements thereof {(preassembled to constitute flexible mats <a href="#">E02B 3/122</a>; pavements <a href="#">E01C 5/00</a>)}</p> <p>3/16     • Sealings or joints ({<a href="#">E02B 3/12</a> takes precedence; sealings for specific structural foundation elements, <a href="#">see the relevant groups for those elements</a>; sealings for barrage or lock gates <a href="#">E02B 7/54</a>}; joints for foundation structures <a href="#">E02D 29/16</a>; sealing joints not restricted to hydraulic engineering work <a href="#">E04B 1/68</a>)}</p> <p>3/18     • Reclamation of land from water {or marshes} (drainage of soil <a href="#">E02B 11/00</a>)</p> |
|---|---|

- 3/20 . Equipment for shipping on coasts, in harbours or on other fixed marine structures, e.g. bollards (tying-up, anchoring [B63B 21/00](#), e.g. bollards for shipping [B63B 21/06](#); buoys [B63B 22/00](#) {; equipment specially adapted for use in locks or dry docks [E02C 1/10](#)))
- 3/24 . . Mooring posts
- 3/26 . . Fenders ({fenders for protecting offshore constructions [E02B 17/003](#); fenders integral with waterborne vessels or specially adapted therefor [B63B 59/02](#))
- 3/28 . . Fender piles
- 5/00 Artificial water canals, {e.g. irrigation canals} (for water-power plants [E02B 9/02](#); irrigation of soil [E02B 13/00](#))**
  - 5/005 . {Canals entirely situated above ground level, e.g. on piers (canal bridges [E01D 18/00](#))}
  - 5/02 . Making or lining canals {(linings in general [E02B 13/02](#); digging canals [E02F](#))}
  - 5/04 . Navigable canals
  - 5/06 . . Operating equipment in connection with canals (ship-lifting devices [E02C](#))
  - 5/08 . Details, e.g. gates, screens
- NOTE**

This subdivision is limited to closures, devices for arresting waterborne materials and divisors
- 5/082 . . {Closures (for irrigation conduits [E02B 13/02](#))}
- 5/085 . . {Arresting devices for waterborne materials, e.g. gratings (fish barrages [E02B 1/006](#); removing sediments [E02B 3/023](#); arresting oil or similar pollutants [E02B 15/08](#); for waste water purification [E02F](#); in sewers [E03F 5/14](#))}
- 5/087 . . {Divisors}
- 7/00 Barrages or weirs; Layout, construction, methods of, or devices for, making same (for protecting banks, coasts, or harbours [E02B 3/04](#); sealings or joints [E02B 3/16](#); handling building or like materials for hydraulic engineering [E02D 15/00](#); foundations in general [E02D 27/00](#))**
  - 7/005 . {Deformable barrages or barrages consisting of permanently deformable elements, e.g. inflatable, with flexible walls (closures [E02B 7/54](#); floating oil barrages [E02B 15/08](#))}
  - 7/02 . Fixed barrages
  - 7/04 . . Dams across valleys
  - 7/06 . . . Earth-fill dams; Rock-fill dams
  - 7/08 . . . Wall dams
  - 7/10 . . . . Gravity dams, i.e. those in which the weight of the structure prevents overturning
  - 7/12 . . . . Arch dams
  - 7/14 . . . . Buttress dams
  - 7/16 . Fixed weirs; Superstructures or flash-boards therefor
  - 7/18 . . Siphon weirs {(syphons in hydraulic engineering in general [E02D 29/08](#))}
  - 7/20 . Movable barrages; Lock {or dry-dock} gates
  - 7/205 . . {Barrages controlled by the variations of the water level; automatically functioning barrages (level regulators [G05D 9/00](#); the documents are filed in this subdivision and the relevant subdivision [E02B 7/26](#) - [E02B 7/50](#))}
  - 7/22 . . Stop log dams; Emergency gates
- 7/24 . . Needle weirs
- 7/26 . . Vertical-lift gates
- 7/28 . . . with sliding gates
- 7/30 . . . with guide wheels or rollers for the gates
- 7/32 . . . Cylindrical or tubular gates
- 7/34 . . . Flash- boards for vertical-lift gates
- 7/36 . . . Elevating mechanisms for vertical-lift gates
- 7/38 . . Rolling gates {or gates moving horizontally in their own plane, e.g. by sliding}
- 7/40 . . Swinging or turning gates
- 7/42 . . . Gates of segmental or sector-like shape with horizontal axis
- 7/44 . . . Hinged-leaf gates
- 7/46 . . . Gates turning round a horizontal axis arranged midway of the flap
- 7/48 . . . Roof or double shutter gates
- 7/50 . . Floating gates
- 7/52 . . Equipment preventing vibration of gates
- 7/54 . . Sealings for gates
- 8/00 Details of barrages or weirs (cleaning or keeping clear the surface of open water [E02B 15/00](#) ) {; Energy dissipating devices carried by lock or dry-dock gates}**
  - 8/02 . Sediment base gates; Sand sluices; Structures for retaining arresting waterborne material
  - 8/023 . . {Arresting devices for waterborne materials ([E02B 1/003](#) takes precedence; in artificial watercourses [E02B 5/085](#); arresting oil or the like [E02B 15/08](#); sieving devices for waste water purification [C02F](#); in sewers [E03F 5/14](#))}
  - 8/026 . . . {Cleaning devices (for fish barrages [E02B 1/006](#))}
  - 8/04 . Valves, slides, or the like; {Arrangements therefor;} Submerged sluice gates
  - 8/045 . . {automatically movable}
  - 8/06 . Spillways; Devices for dissipation of energy, e.g. for reducing eddies {also for lock or dry-dock gates}
  - 8/08 . Fish passes {or other means providing for migration of fish}; Passages for rafts or boats
  - 8/085 . . {Devices allowing fish migration, e.g. fish traps (arresting or diverting fish exclusively [E02B 1/006](#))}
- 9/00 Water-power plants; Layout, construction or equipment, methods of, or apparatus for, making same**
  - 9/02 . Water-ways
  - 9/022 . . {Closures}
  - 9/025 . . . {automatically movable}
  - 9/027 . . . {Sliding closures ([E02B 9/025](#) takes precedence)}
  - 9/04 . . Free-flow canals or flumes; Intakes (gratings or screens therefor [E02B 5/08](#))
  - 9/06 . . Pressure galleries or pressure conduits; Galleries specially adapted to house pressure conduits; Means specially adapted for use therewith, e.g. housings, valves, gates (driving inclined galleries [E21D 9/02](#); valves in general [F16K](#); conduits in general [F16L](#))
  - 9/08 . Tide or wave power plants (water-pressure machines, tide or wave motors [F03B](#))

11/00	<b>Drainage of soil, e.g. for agricultural purposes</b> <a href="#">{(draining sports grounds E01C 13/083; for consolidating foundation soil, e.g. sand drain piles E02D 3/10)}</a>	15/08	. . Devices for reducing the polluted area <a href="#">{with or without {additional devices for} removing the material}</a>
11/005	. {Drainage conduits}	15/0807	. . . {with stabilising elements}
11/02	. Drainage device- laying apparatus, e.g. drainage ploughs	15/0814	. . . {with underwater curtains}
	<b>WARNING</b>	15/0821	. . . {adapted for protection against fire or extreme heat}
	Group <a href="#">E02B 11/02</a> is incomplete, see also <a href="#">E02F 3/00</a> and <a href="#">E02F 5/00</a> , dredgers and soil-shifting machines	15/0828	. . . {fixed to the side of a boat for containing small leaks in the hull}
13/00	<b>Irrigation ditches, i.e. gravity flow, open channel water distribution systems</b> <a href="#">({retaining waterborne material in irrigation canals E02B 5/085}; other distribution systems for watering or spraying gardens, fields, sports grounds, or the like, A01G 25/00; {built-in irrigation means for sports grounds E01C 13/083})</a>	15/0835	. . . {fixed to permanent structure, e.g. harbour wall or river bank}
13/02	. Closures for irrigation conduits	15/0842	. . . {adapted to be towed for operation}
15/00	<b>Cleaning or keeping clear the surface of open water; Apparatus therefor</b> <a href="#">(construction of ships or other waterborne vessels B63B, e.g. vessels specially adapted for collecting pollution from open water B63B 35/32; in swimming or splash baths or pools E04H 4/16)</a>	15/085	. . . {Details of connectors}
2015/005	. {Tent-like structures for dealing with pollutant emissions below the water surface}	15/0857	. . . {Buoyancy material}
15/02	. from ice <a href="#">{otherwise than according to E02B 1/003}</a> <a href="#">(construction of ships B63B; {ice-breakers or amphibious vehicles B63B 35/08; protecting hydraulic engineering structures against ice-load E02B 1/00})</a>	15/0864	. . . . {Air <a href="#">(E02B 15/0878 takes precedence)</a> }
15/04	. Devices for cleaning or keeping clear the surface of open water from oil or like floating materials by separating or removing these materials <a href="#">({stopping water-borne material in artificial water canals E02B 5/085; stopping water-borne material at barrages or weirs E02B 8/023}; other treatment of water, waste water or sewage C02F; materials for treating liquid pollutants, e.g. oil, gasoline, fat, C09K 3/32 ; separation of oil in sewage conduits E03F 5/16)}</a>	15/0871	. . . . . {self-inflating barriers}
15/041	. . {Devices for distributing materials, e.g. absorbed or magnetic particles over a surface of open water to remove the oil, with or without means for picking up the treated oil <a href="#">(E02B 15/042 takes precedence)</a> }	15/0878	. . . . . {Air and water}
15/042	. . {Devices for removing the oil by combustion with or without means for picking up the oil}	15/0885	. . . . . {Foam}
15/043	. . {Devices or methods for removing oil by means of freezing}	15/0892	. . . . . {using expanded polystyrene foam}
15/045	. . {Separating means for recovering oil floating on a surface of open water <a href="#">(E02B 15/048 takes precedence; separation in general B01D)</a> }	15/10	. . Devices for removing the material from the surface <a href="#">{(E02B 15/041, E02B 15/042, E02B 15/06 take precedence)}</a>
15/046	. . {Collection of oil using vessels, i.e. boats, barges}	15/101	. . . {Means floating loosely on the water absorbing the oil <a href="#">(absorbing materials C02F)</a> }
15/047	. . . {provided with an oil collecting boom arranged on at least one side of the hull}	15/102	. . . {Discs}
15/048	. . {Oil collectors moved over the water skimming the water surface}	15/103	. . . {Rotary drums}
15/06	. . Barriers therefor <a href="#">(E02B 15/08 takes precedence)</a> <a href="#">{construed for applying processing agents or for collecting pollutants, e.g. absorbent}</a>	15/104	. . . {Conveyors; Paddle wheels; Endless belts <a href="#">(E02B 15/101 takes precedence)</a> }
		15/105	. . . {Archimedian screws}
		15/106	. . . {Overflow skimmers with suction heads; suction heads}
		15/107	. . . {Whirling means forming a vortex in the water; cyclones}
		15/108	. . . {Ejection means}
		17/00	<b>Artificial islands mounted on piles or like supports, e.g. platforms on raisable legs {or offshore constructions}; Construction methods therefor</b> <a href="#">({construction methods for floating platforms B63B 9/065}; anchoring floating platforms B63B 21/00; floating platforms, e.g. anchored, B63B 35/44; {underwater reservoirs B65D 88/78})</a>
		17/0004	. {Nodal points}
		17/0008	. {Methods for grouting offshore structures; apparatus therefor <a href="#">(cementing boreholes E21B 33/13)</a> }
		17/0013	. {Tube closures for releasable sealing hollow tubes}
		17/0017	. {Means for protecting offshore constructions}
		17/0021	. . {against ice-loads}
		17/0026	. . {against corrosion}
		17/003	. . {Fenders}
		17/0034	. {Maintenance, repair or inspection of offshore constructions}
		2017/0039	. {Methods for placing the offshore structure}
		2017/0043	. . {Placing the offshore structure on a pre-installed foundation structure}
		2017/0047	. . . {using a barge}
		2017/0052	. {Removal or dismantling of offshore structures from their offshore location}
		2017/0056	. {Platforms with supporting legs}
		2017/006	. . {with lattice style supporting legs}
		2017/0065	. . {Monopile structures}
		2017/0069	. . {Gravity structures}
		2017/0073	. . {Details of sea bottom engaging footing}

## E02B

- 2017/0078 . . . {Suction piles, suction cans}
- 2017/0082 . . . {Spudcans, skirts or extended feet}
- 2017/0086 . . . {Large footings connecting several legs or serving as a reservoir for the storage of oil or gas}
- 2017/0091 . {Offshore structures for wind turbines}
- 2017/0095 . {Connections of subsea risers, piping or wiring with the offshore structure}
- 17/02 . placed by lowering the supporting construction to the bottom, e.g. with subsequent fixing thereto
- 17/021 . . {with relative movement between supporting construction and platform}
- 17/022 . . . {adapted to travel on the bottom (walking gears moving dredgers forward step-by-step [E02F 9/04](#))}
- 17/024 . . . {shock absorbing means for the supporting construction}
- 17/025 . . {Reinforced concrete structures ([E02B 17/021](#) takes precedence)}
- 17/027 . . {steel structures ([E02B 17/021](#) takes precedence)}
- 17/028 . . {Ice-structures}
- 17/04 . Equipment specially adapted for raising, lowering, or immobilising the working platform relative to the supporting construction (platform lifts in general [B66F 7/00](#))
- 17/06 . . for immobilising, e.g. using wedges or clamping rings {(as elements of the raising or lowering means [E02B 17/08](#))}
- 17/08 . . for raising or lowering
- 17/0809 . . . {the equipment being hydraulically actuated (outriggers for cranes [B66C 23/80](#))}
- 17/0818 . . . {with racks actuated by pinions (lifting jacks [B66F 3/02](#) - [B66F 3/06](#))}
- 17/0827 . . . {with screws and nuts mechanism (climbing jacks with following nut [E02B 17/0881](#); lifting jacks [B66C 3/08](#))}
- 17/0836 . . . {with climbing jacks (climbing cranes [B66C 23/32](#); hydraulic lifting jacks [B66F 3/24](#) and subgroups)}
- 17/0845 . . . . {with inflatable clamping rings}
- 17/0854 . . . . {with clamping wedges, eccentric clamping devices and so on (catch devices for elevators [B66B 5/20](#), [B66B 5/24](#), [B66B 5/26](#))}
- 17/0863 . . . . {with rack and pawl mechanism}
- 17/0872 . . . . {with locking pins engaging holes or cam surfaces}
- 17/0881 . . . . {with following nuts}
- 17/089 . . . . {with subtenation blocks, feet and so on}
- 2201/00** **Devices, constructional details or methods of hydraulic engineering not otherwise provided for**
- 2201/02 . Devices and methods for creating a buffer zone in the water to separate, e.g. salt and sweet water
- 2201/04 . using old tires for hydraulic engineering
- 2201/50 . Devices for sequentially discharging constant liquid quantities, e.g. into different irrigation channels