CPC  COOPERATIVE PATENT CLASSIFICATION

E  FIXED CONSTRUCTIONS

BUILDING

E02  HYDRAULIC ENGINEERING; FOUNDATIONS; SOIL SHIFTING

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

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.

1/00  Equipment or apparatus for, or methods of, general hydraulic engineering [(e.g. protection of constructions against ice-loads E02B 17/0021; ice-structures as artificial islands E02B 17/028)]

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 E02B 3/023; for ice breakers B63B 35/08; aerating or circulating water in fish tanks A01K 63/042; purification of waste water with addition of air C02F; distributing gases in liquids in general B01F 3/04)]

1/006  . [Arresting, diverting or chasing away fish in water-courses or water intake ducts, seas or lakes, e.g. fish barrages, deterrent devices (E02B 8/085 takes precedence); Devices for cleaning fish barriers]

1/02  . Hydraulic models [(towing tanks or basins for model vessels B63B 9/02)]

3/00  Engineering works in connection with control or use of streams, rivers, coasts, or other marine sites (barrages or weirs E02B 7/00); Sealing or joints for engineering works in general

3/02  . Stream regulation, e.g. breaking up subaqueous rock, cleaning the beds of waterways, directing the water flow [(harvesting water plants A01D 44/00; underwater loosening of soil or rocks for foundation construction E02D 17/16); dredging or scraping devices E02F 5/28]

3/023  . . [Removing sediments (in barrages or reservoirs E02B 8/02)]

3/026  . . [Removing solid rocks]

3/04  . Structures or apparatus for, or methods of, protecting banks, coasts, or harbours [(E02B 1/003 takes precedence); sealing or joints E02B 3/16]

3/041  . . [using active mechanical means, e.g. fluidizing or pumping]

3/043  . . [Artificial seaweed]

3/046  . . [Artificial reefs]

3/06  . . Moles; Piers; Quay walls; Groynes; Breakwaters [Wave dissipating walls; Quay equipment]

3/062  . . . [Constructions floating in operational condition, e.g. breakwaters or wave dissipating walls (floating oil barriers E02B 15/08; floating stream regulating devices E02B 3/02)]

3/064  . . . . [Floating landing-stages (construction of pontoons B63B 35/34; landing bridges E01D 15/14)]

3/066  . . . . . [Quays (bulkheads E02D 5/00; caissons E02D 23/00; retaining walls E02D 29/00)]

3/068  . . . . . . [Landing stages for vessels (floating landing-stages E02B 3/064; landing bridges E01D 15/14)]

3/08  . . . Structures of loose stones with or without piles (piles E02D 5/00)

3/10  . . . Dams; Dykes; Sluice ways or other structures for dykes, dams, or the like (making embankments or dams in general E02D 17/18)

3/102  . . . . [Permanently installed raisable dykes]

3/104  . . . . . . [with self-activating means]

3/106  . . . . . . . [Temporary dykes]

3/108  . . . . . . . . [with a filling, e.g. filled by water or sand]

3/12  . . . . Revetment of banks, dams, watercourses, or the like, (e.g. the sea-floor) (of slopes in general E02D 17/20)

3/121  . . . . . [Devices for applying linings on banks or the water bottom (for lining canals E02B 5/02)]

3/122  . . . . . . [Flexible prefabricated covering elements, e.g. mats, strips]

3/123  . . . . . . . [mainly consisting of stone, concrete or similar stony material]

3/124  . . . . . . . . [mainly consisting of metal]

3/125  . . . . . . . . . [mainly consisting of vegetable material, e.g. wood, reeds]

3/126  . . . . . . . . . . [mainly consisting of bituminous material or synthetic resins]

3/127  . . . . . . . . . . . [bags filled at the side]

3/128  . . . . . . . . . . . . [Coherent linings made on the spot, e.g. cast in situ, extruded on the spot (for canal linings E02B 5/02)]

3/129  . . . . . . . . . . . . . [Polyhedrons, tetrapods or similar bodies, whether or not threaded on strings]

3/14  . . . . . Preformed blocks [or slabs for forming essentially continuous surfaces]; Arrangements thereof [(preassembled to constitute flexible mats E02B 3/122; pavements E01C 5/00)]
3/16 . Sealings or joints (\textit{E02B 3/12} takes precedence; sealings for specific structural foundation elements, see the relevant groups for those elements; sealings for barrage or lock gates \textit{E02B 7/54}; joints for foundation structures \textit{E02D 29/16}; sealing joints not restricted to hydraulic engineering work \textit{E04B 1/68})

3/18 . Reclamation of land from water (or marshes) (drainage of soil \textit{E02B 11/00})

3/20 . Equipment for shipping on coasts, in harbours or on other fixed marine structures, e.g. bollards (tying-up, anchoring \textit{B63B 21/00}; e.g. bollards for shipping \textit{B63B 21/06}; buoys \textit{B63B 22/00} (equipment specially adapted for use in locks or dry docks \textit{E02C 1/10}))

3/24 . Mooring posts

3/26 . Fenders (fenders for protecting offshore constructions \textit{E02B 17/003}; fenders integral with waterborne vessels or specially adapted thereto \textit{B63B 59/02})

3/28 . Fender piles

5/00 \textbf{Artificial water canals, [e.g. irrigation canals] (for water-power plants \textit{E02B 9/002}; irrigation of soil \textit{E02B 13/00})}

5/005 . (Canals entirely situated above ground level, e.g. on piers (canal bridges \textit{E01D 18/00}))

5/02 . Making or lining canals (lining in general \textit{E02B 13/02}; digging canals \textit{E02F})

5/04 . Navigable canals

5/06 . Operating equipment in connection with canals (ship-lifting devices \textit{E02C})

5/08 . Details, e.g. gates, screens

\textbf{NOTE} This subdivision is limited to closures, devices for arresting waterborne materials and divers

5/082 . (Closures (for irrigation conduits \textit{E02B 13/02}))

5/085 . ( Arresting devices for waterborne materials, e.g. gratings (fish barrages \textit{E02B 1/006}; removing sediments \textit{E02B 3/023}; arresting oil or similar pollutants \textit{E02B 15/08}; for waste water purification \textit{E02F}; in sewers \textit{E03F 5/14}))

5/087 . (Divisors)

7/00 \textbf{Barrages or weirs; Layout, construction, methods of, or devices for, making same (for protecting banks, coasts, or harbours \textit{E02B 3/04}; sealings or joints \textit{E02B 3/16}; handling building or like materials for hydraulic engineering \textit{E02D 15/00}; foundations in general \textit{E02D 27/00})}

7/005 . (Defeatable barrages or barrages consisting of permanently defeatable elements, e.g. inflatable, with flexible walls (closures \textit{E02B 7/54}; floating oil barrages \textit{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 \textit{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 \textit{G05D 9/00}; the documents are filed in this subdivision and the relevant subdivision \textit{E02B 7/26} - \textit{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 \textbf{Details of barrages or weirs (cleaning or keeping clear the surface of open water \textit{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 (\textit{E02B 1/002} takes precedence; in artificial watercourses \textit{E02B 5/085}; arresting oil or the like \textit{E02B 15/08}; sieving devices for waste water purification \textit{E02F}; in sewers \textit{E03F 5/14})

8/026 . \{Cleaning devices (for fish barrages \textit{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 \textit{E02B 1/006})

9/00 \textbf{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 \textit{(E02B 9/025 takes precedence)}

9/04 . Free-flow canals or flumes; Intakes \{gratings or screens therefor \textit{E02B 5/08}\)
11/00 Drainage of soil, e.g. for agricultural purposes
[(draining sports grounds E01C 13/083; for consolidating foundation soil, e.g. sand drain piles E21D 9/02); valves in general F16K; conduits in general F16L]

15/00 Cleaning or keeping clear the surface of open water; Apparatus therefor (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]

2015/005 . . . (Tent-like structures for dealing with pollutant emissions below the water surface)

15/02 . . . from ice (otherwise than according to E02B 1/003) (construction of ships B63B; ice-breakers or amphibious vehicles B63B 35/08; protecting hydraulic engineering structures against ice E02B 1/001)

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 (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])

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 (E02B 15/042 takes precedence))

15/042 . . . (Devices for removing the oil by combustion with or without means for picking up the oil)

15/043 . . . (Devices or methods for removing oil by means of freezing)

15/045 . . . (Separating means for recovering oil floating on a surface of open water (E02B 15/048 takes precedence; separation in general B01D))

15/046 . . . (Collection of oil using vessels, i.e. boats, barges)
E02B

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}
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 subtentation 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