Symbol	Typ	Titel
E	**Sektion**	**SECTION E — FIXED CONSTRUCTIONS**
E21	**Untersektion**	**EARTH OR ROCK DRILLING; MINING**
E21	**Klasse**	**EARTH OR ROCK DRILLING; MINING**
E21C	**Unterklasse**	**MINING OR QUARRYING**
		Cutting; Slitting; Dislodging
E21C 25/00	**Hauptgruppe**	**Cutting machines, i.e. for making slits approximately parallel or perpendicular to the seam (dislodging machines with slitting means E21C 27/02, E21C 27/10, E21C 27/18)**
E21C 25/02	1-Punkt Untergruppe	. Machines slitting solely by one or more percussive tools moved through the seam
E21C 25/04	2-Punkt Untergruppe	. . Cutting crowns or other tools (percussion drill bits E21B 10/36)
E21C 25/06	1-Punkt Untergruppe	. Machines slitting solely by one or more cutting rods or cutting drums which rotate, move through the seam, and may or may not reciprocate
E21C 25/08	2-Punkt Untergruppe	. . Mountings for the rods or drums
E21C 25/10	2-Punkt Untergruppe	. . Rods; Drums [6]
E21C 25/14	2-Punkt Untergruppe	. . with equipment for cleaning the slit (associated with cutter chain machines E21C 25/50)
E21C 25/16	1-Punkt Untergruppe	. Machines slitting solely by one or more rotating saws, cutting discs, or wheels
E21C 25/18	2-Punkt Untergruppe	. . Saws; Discs; Wheels
E21C 25/20	1-Punkt Untergruppe	. Machines slitting solely by one or more reciprocating sawing implements or reciprocating cutter chains; Shaker conveyers with cutting means
E21C 25/22	1-Punkt Untergruppe	. Machines slitting solely by one or more cutter chains moving unidirectionally along jibs
E21C 25/24	2-Punkt Untergruppe	. . with flat jibs only
E21C 25/26	2-Punkt Untergruppe	. . with curved jibs only
E21C 25/28	2-Punkt Untergruppe	. . Chains or chain guides [6]
E21C 25/30	3-Punkt Untergruppe	. . . Chain guides
E21C 25/32	4-Punkt Untergruppe	. . . . specially adapted for curved jibs
E21C 25/34	3-Punkt Untergruppe	. . . Chains
E21C 25/36	4-Punkt Untergruppe	. . . . Couplings for links
E21C 25/40	4-Punkt Untergruppe	. . . . having links with integrally formed picks
E21C 25/50	2-Punkt Untergruppe	. . with equipment for cleaning the slit (associated with rotary-rod or rotary-drum machines E21C 25/14)
E21C 25/52	1-Punkt Untergruppe	. Machines incorporating two or more of the slitting means according to groups E21C 25/02, E21C 25/06, E21C 25/16, E21C 25/20 and E21C 25/22
E21C 25/54	1-Punkt Untergruppe	. Slitting by unguided cutter cables or cutter chains or by unguided tools drawn along the working face by cables or the like (dislodging by planing means E21C 27/32; propulsion by haulage cables E21C 29/14)
E21C 25/56	1-Punkt Untergruppe	. Slitting by cutter cables or cutter chains or by tools drawn along the working face by cables or the like, in each case guided parallel to the face, e.g. by a conveyer, by a guide parallel to a conveyer (pressing the conveyer equipped with tools toward the working face E21C 35/14)
E21C 25/58	1-Punkt Untergruppe	. Machines slitting by drilling hole on hole

Symbol	Typ	Titel
E21C 25/60	1-Punkt Untergruppe	. Slitting by jets of water or other liquid (picks with arrangement of fluid-spraying nozzles E21C 35/187; distribution of spraying fluids in rotating cutter-heads E21C 35/23) [6]
E21C 25/62	1-Punkt Untergruppe	. Machines for making slits approximately perpendicular to the seams either level with, or above or below the level of, the machine
E21C 25/64	1-Punkt Untergruppe	. Slitting machines guided solely by hand and either carried by hand or mounted on supports (hand-held power-operated tools E21C 37/22)
E21C 25/66	1-Punkt Untergruppe	. Machines for making slits with additional arrangements for drilling
E21C 25/68	1-Punkt Untergruppe	. Machines for making slits combined with equipment for removing, e.g. by loading, material won by other means (slitting machines combined with planing means E21C 27/18; removing chippings E21C 35/20)
E21C 27/00	**Hauptgruppe**	**Machines which completely free the mineral from the seam**
E21C 27/01	1-Punkt Untergruppe	. specially adapted for removing overhanging coal
E21C 27/02	1-Punkt Untergruppe	. solely by slitting (rods, drums, for same E21C 25/10; saws, discs, wheels E21C 25/18; chains, chain guides, for same E21C 25/28)
E21C 27/04	2-Punkt Untergruppe	. . by a single chain guided on a frame with or without auxiliary slitting means
E21C 27/06	3-Punkt Untergruppe	. . . with a slewing frame
E21C 27/08	2-Punkt Untergruppe	. . with additional means for cutting the mineral into blocks
E21C 27/10	1-Punkt Untergruppe	. by both slitting and breaking-down
E21C 27/12	2-Punkt Untergruppe	. . breaking-down effected by acting on the vertical face of the mineral, e.g. by percussive tools
E21C 27/14	2-Punkt Untergruppe	. . breaking-down effected by force or pressure applied to side of slit, e.g. by wedges (breaking-down by means inserted in boreholes E21C 37/00)
E21C 27/16	3-Punkt Untergruppe	. . . with means for both slitting and breaking-down
E21C 27/18	1-Punkt Untergruppe	. by both slitting and planing
E21C 27/20	1-Punkt Untergruppe	. Mineral freed by means not involving slitting
E21C 27/22	2-Punkt Untergruppe	. . by rotary drills with breaking-down means, e.g. wedge-shaped drills
E21C 27/24	2-Punkt Untergruppe	. . by milling means acting on the full working face
E21C 27/26	2-Punkt Untergruppe	. . by closely adjacent cutter chains acting on the full working face
E21C 27/28	2-Punkt Untergruppe	. . by percussive drills with breaking-down means, e.g. wedge-shaped tools
E21C 27/30	2-Punkt Untergruppe	. . by jaws, buckets, or scoops that scoop-out the mineral
E21C 27/32	2-Punkt Untergruppe	. . by adjustable or non-adjustable planing means with or without loading arrangements (by percussed planing means E21C 27/46)
E21C 27/34	3-Punkt Untergruppe	. . . Machine propelled along the working face by cable or chain
E21C 27/35	4-Punkt Untergruppe	. . . . Ram-ploughs
E21C 27/36	3-Punkt Untergruppe	. . . Machine self-propelled along the working face
E21C 27/38	3-Punkt Untergruppe	. . . Machine stationary while planing in an arc
E21C 27/40	3-Punkt Untergruppe	. . . Machine and its planing tool making alternative step-wise movements along the working face
E21C 27/42	3-Punkt Untergruppe	. . . combined with scraper or collector box

Symbol	Typ	Titel
E21C 27/44	3-Punkt Untergruppe	. . . Planing knives (mining picks E21C 35/18)
E21C 27/46	2-Punkt Untergruppe	. . by percussed planing means
E21C 29/00	**Hauptgruppe**	**Propulsion of machines for slitting or completely freeing the mineral from the seam**
E21C 29/02	1-Punkt Untergruppe	. by means on the machine exerting a thrust against fixed supports
E21C 29/04	1-Punkt Untergruppe	. by cable or chains
E21C 29/06	2-Punkt Untergruppe	. . anchored at one or both ends to the mine working face
E21C 29/08	3-Punkt Untergruppe	. . . Anchoring arrangements (for anchoring of conveyers only E21F 13/00)
E21C 29/10	3-Punkt Untergruppe	. . . Cable or chain co-operating with a winch or the like on the machine
E21C 29/12	3-Punkt Untergruppe	. . . Machines propelled by thrust or pull against a part alternately anchored to, and released from, a cable or chain
E21C 29/14	2-Punkt Untergruppe	. . by haulage cable or chain pulling the machine along the working face
E21C 29/16	3-Punkt Untergruppe	. . . Winches or other means for pulling cable or chain (winches in general B66D)
E21C 29/18	3-Punkt Untergruppe	. . . Coupling and uncoupling machine to cable or chain
E21C 29/20	2-Punkt Untergruppe	. . with safety devices operating in the event of breakage of the cable or chain
E21C 29/22	1-Punkt Untergruppe	. by wheels, endless tracks, or the like
E21C 29/24	2-Punkt Untergruppe	. . Trucks carrying the machine while working
E21C 29/26	3-Punkt Untergruppe	. . . with means for adjustably positioning the machine on the truck
E21C 29/28	4-Punkt Untergruppe	. . . . adjusting the height of the whole machine
E21C 31/00	**Hauptgruppe**	**Driving means incorporated in machines for slitting or completely freeing the mineral from the seam**
E21C 31/02	1-Punkt Untergruppe	. for cutting or breaking-down devices
E21C 31/04	2-Punkt Untergruppe	. . imparting both a rotary and reciprocating motion
E21C 31/06	2-Punkt Untergruppe	. . actuated by an endless cable or chain
E21C 31/08	1-Punkt Untergruppe	. for adjusting parts of the machines
E21C 31/10	1-Punkt Untergruppe	. for slewing parts of the machines
E21C 31/12	1-Punkt Untergruppe	. Component parts
E21C 33/00	**Hauptgruppe**	**Trucks or other devices for transporting machines for slitting or completely freeing the mineral from the seam**
E21C 33/02	1-Punkt Untergruppe	. with equipment for loading or unloading the machine on to, or from, the truck
E21C 35/00	**Hauptgruppe**	**Details of, or accessories for, machines for slitting or completely freeing the mineral from the seam, not provided for in groups E21C 25/00-E21C 33/00, E21C 37/00 or E21C 39/00**
E21C 35/02	1-Punkt Untergruppe	. Locking equipment for slewable parts
E21C 35/04	1-Punkt Untergruppe	. Safety devices (operating in the event of breakage of a haulage cable or chain E21C 29/20)
E21C 35/06	1-Punkt Untergruppe	. Equipment for positioning the whole machine in relation to its sub-structure
E21C 35/08	1-Punkt Untergruppe	. Guiding the machine

Symbol	Typ	Titel
E21C 35/10	2-Punkt Untergruppe	. . by feelers contacting the working face
E21C 35/12	2-Punkt Untergruppe	. . along a conveyer for the cut material
E21C 35/14	3-Punkt Untergruppe	. . . Equipment for pressing the conveyer towards the working face
E21C 35/16	2-Punkt Untergruppe	. . by making use of the timbering, filling, or other supports
E21C 35/18	1-Punkt Untergruppe	. Mining picks; Holders therefor (planing knives E21C 27/44) [6]
E21C 35/183	2-Punkt Untergruppe	. . with inserts or layers of wear-resisting material [6]
E21C 35/187	2-Punkt Untergruppe	. . with arrangement of fluid-spraying nozzles (supply of fluid to the nozzles E21C 35/22) [6]
E21C 35/19	2-Punkt Untergruppe	. . Means for fixing picks or holders [6]
E21C 35/193	3-Punkt Untergruppe	. . . using bolts as main fixing elements [6]
E21C 35/197	3-Punkt Untergruppe	. . . using sleeves, rings or the like, as main fixing elements [6]
E21C 35/20	1-Punkt Untergruppe	. General features of equipment for removal of chippings, e.g. for loading on conveyer
E21C 35/22	1-Punkt Untergruppe	. Equipment for preventing the formation of, or for removal of, dust (picks with arrangement of fluid-spraying nozzles E21C 35/187; methods or apparatus for flushing boreholes E21B 21/00)
E21C 35/23	2-Punkt Untergruppe	. . Distribution of spraying-fluids in rotating cutter-heads [6]
E21C 35/24	1-Punkt Untergruppe	. Remote control specially adapted for machines for slitting or completely freeing the mineral (control in general G05)
E21C 37/00	**Hauptgruppe**	**Other methods or devices for dislodging with or without loading (breaking-down by means inserted in slits E21C 27/14)**
E21C 37/02	1-Punkt Untergruppe	. by wedges
E21C 37/04	1-Punkt Untergruppe	. by devices with parts pressed mechanically against the wall of a borehole
E21C 37/06	1-Punkt Untergruppe	. by making use of hydraulic or pneumatic pressure in a borehole
E21C 37/08	2-Punkt Untergruppe	. . Devices with pistons, plungers, or the like pressed locally against the wall of the borehole
E21C 37/10	2-Punkt Untergruppe	. . Devices with expanding elastic casings
E21C 37/12	2-Punkt Untergruppe	. . by injecting into the borehole a liquid, either initially at high pressure or subsequently subjected to high pressure, e.g. by pulses, by explosive cartridges acting on the liquid (slitting by jets of water E21C 25/60; blasting by explosives F42D)
E21C 37/14	2-Punkt Untergruppe	. . by compressed air; by gas blast; by gasifying liquids
E21C 37/16	1-Punkt Untergruppe	. by fire-setting or by similar methods based on a heat effect (drilling by use of heat E21B 7/14)
E21C 37/18	1-Punkt Untergruppe	. by electricity
E21C 37/20	1-Punkt Untergruppe	. by ultrasonics
E21C 37/22	1-Punkt Untergruppe	. Hand tools or hand-held power-operated tools specially adapted for dislodging minerals (slitting machines guided solely by hand E21C 25/64)
E21C 37/24	2-Punkt Untergruppe	. . Pick hammers (pneumatic hammers in general B25D; percussion drilling E21B 1/00)
E21C 37/26	1-Punkt Untergruppe	. Chisels or other cutting tools not mentioned before
E21C 39/00	**Hauptgruppe**	**Devices for testing <u>in situ</u> the hardness or other properties of minerals, e.g. for giving information as to the selection of suitable mining tools**

Symbol	Typ	Titel
		Methods of mining or quarrying; Open-pit mining; Layouts therefor (methods or apparatus for obtaining oil, gas, water, soluble or meltable materials or a slurry of minerals from wells E21B 43/00)
E21C 41/00	**Hauptgruppe**	**Methods of underground or surface mining (E21C 45/00 takes precedence); Layouts therefor (for peat E21C 49/00) [5]**
E21C 41/16	1-Punkt Untergruppe	. Methods of underground mining (winning machines therefor E21C 25/00-E21C 39/00); Layouts therefor [5]
E21C 41/18	2-Punkt Untergruppe	. . for brown or hard coal [5]
E21C 41/20	2-Punkt Untergruppe	. . for rock salt or potash salt [5]
E21C 41/22	2-Punkt Untergruppe	. . for ores, e.g. mining placers [5]
E21C 41/24	2-Punkt Untergruppe	. . for oil-bearing deposits [5]
E21C 41/26	1-Punkt Untergruppe	. Methods of surface mining (machines for obtaining, or the removal of, materials in open-pit mines E21C 47/00); Layouts therefor [5]
E21C 41/28	2-Punkt Untergruppe	. . for brown or hard coal [5]
E21C 41/30	2-Punkt Untergruppe	. . for ores, e.g. mining placers [5]
E21C 41/32	1-Punkt Untergruppe	. Reclamation of surface-mined areas (machines or methods for treating or working soil for agricultural purposes A01B 77/00, A01B 79/00; machines for back-filling E02F 5/22) [5]
E21C 45/00	**Hauptgruppe**	**Methods of hydraulic mining; Hydraulic monitors (E21C 25/60 takes precedence) [5]**
E21C 45/02	1-Punkt Untergruppe	. Means for generating pulsating fluid jets [5]
E21C 45/04	2-Punkt Untergruppe	. . by use of highly pressurised liquid [5]
E21C 45/06	2-Punkt Untergruppe	. . by use of compressed gases [5]
E21C 45/08	1-Punkt Untergruppe	. Automatic or remote control of hydraulic monitors [5]
E21C 47/00	**Hauptgruppe**	**Machines for obtaining, or the removal of, materials in open-pit mines (obtaining peat E21C 49/00)**
E21C 47/02	1-Punkt Untergruppe	. for coal, brown coal, or the like (dredgers or soil-shifting machines in general E02F) [3]
E21C 47/04	2-Punkt Untergruppe	. . Conveyer bridges used in co-operation with the winning apparatus [3]
E21C 47/06	2-Punkt Untergruppe	. . Cableway conveyers used in co-operation with the winning apparatus (underground hauling E21F 13/00)
E21C 47/08	2-Punkt Untergruppe	. . Devices for cutting-out partings, e.g. layers of sand between seams of coal
E21C 47/10	1-Punkt Untergruppe	. for quarrying stone, sand, gravel, or clay
E21C 49/00	**Hauptgruppe**	**Obtaining peat; Machines therefor (treating peat C10F)**
E21C 49/02	1-Punkt Untergruppe	. by excavating
E21C 49/04	1-Punkt Untergruppe	. by digging in the form of peat sods
E21C 50/00	**Hauptgruppe**	**Obtaining minerals from underwater, not otherwise provided for (suction dredgers or component parts thereof E02F 3/88; equipment for conveying or separating excavated material E02F 7/00; dippers G01N 1/12) [5]**
E21C 50/02	1-Punkt Untergruppe	. dependent on the ship movements (vessels or floating structures adapted for special purposes B63B 35/00) [5]
E21C 51/00	**Hauptgruppe**	**Apparatus for, or methods of, winning materials from extraterrestrial sources (cosmonautics B64G) [2]**