

CPC COOPERATIVE PATENT CLASSIFICATION

A HUMAN NECESSITIES

AGRICULTURE

A01 AGRICULTURE; FORESTRY; ANIMAL HUSBANDRY; HUNTING; TRAPPING; FISHING

A01B SOIL WORKING IN AGRICULTURE OR FORESTRY; PARTS, DETAILS, OR ACCESSORIES OF AGRICULTURAL MACHINES OR IMPLEMENTS, IN GENERAL (making or covering furrows or holes for sowing, planting or manuring [A01C 5/00](#); mowers convertible to soil working apparatus or capable of soil working [A01D 42/04](#); mowers combined with soil working implements [A01D 43/12](#); soil working for engineering purposes [E01](#), [E02](#), [E21](#))

WARNINGS

- The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

A01B 69/04	covered by	A01B 69/008
A01B 69/06	covered by	A01B 69/005
A01B 69/08	covered by	A01B 69/006
- {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	Hand tools (edge trimmers for lawns A01G 3/06)	3/04	. Animal-drawn ploughs
1/02	. Spades; Shovels	3/06	. . without alternating possibility, i.e. incapable of making an adjacent furrow on return journey {, i.e. conventional ploughing}
1/022	. . {Collapsible; extensible; combinations with other tools}		
1/024	. . {Foot protectors attached to the blade}	3/08	. . . Swing ploughs
1/026	. . {with auxiliary handles for facilitating lifting}	3/10	. . . Trussed-beam ploughs; Single-wheel ploughs
1/028	. . {with ground abutment shoes or earth anchors for facilitating lifting}	3/12	. . . Two-wheel beam ploughs
1/04	. . with teeth	3/14	. . . Frame ploughs
1/06	. Hoes; Hand cultivators	3/16	. . Alternating ploughs, i.e. capable of making an adjacent furrow on return journey
1/065	. . {powered}	3/18	. . . Turn-wrest ploughs
1/08	. . with a single blade	3/20	. . . Balance ploughs
1/10	. . with two or more blades	3/22	. . . with parallel plough units used alternately
1/12	. . with blades provided with teeth	3/24	. Tractor-drawn ploughs (A01B 3/04 takes precedence)
1/14	. . with teeth only		
1/16	. Tools for uprooting weeds	3/26	. . without alternating possibility
1/165	. . {adapted for extracting a substantially cylindrical plug out of the earth}	3/28	. . Alternating ploughs
1/18	. . Tong-like tools	3/30	. . . Turn-wrest ploughs
1/20	. Combinations of different kinds of hand tools	3/32	. . . Balance ploughs
1/22	. Attaching the blades or the like to handles; Interchangeable or adjustable blades	3/34	. . . with parallel plough units used alternately
1/222	. . {Adjustable blades}	3/36	. Ploughs mounted on tractors
1/225	. . . {around a substantially horizontal axis}	3/38	. . without alternating possibility
1/227	. . {Interchangeable blades}	3/40	. . Alternating ploughs
1/24	. for treating meadows or lawns	3/42	. . . Turn-wrest ploughs
1/243	. . {for aerating}	3/421	. . . . with a headstock frame made in one piece
1/246	. . {for cutting sods or turves}	3/4215	. . . . . {the headstock being provided with two or more hydraulic cylinders}
		3/426	. . . . with a headstock frame made of two or more parts
Ploughs		3/44	. . . with parallel plough units used alternately
3/00	Ploughs with fixed plough-shares	3/46	. Ploughs supported partly by tractor and partly by their own wheels
3/02	. Man-driven ploughs		

3/462	. . {Alternating ploughs with frame rotating about a vertical axis}	15/025	. . {specially adapted for working subsoil}
3/464	. . {Alternating ploughs with frame rotating about a horizontal axis, e.g. turn-wrest ploughs}	15/04	. . Shares
3/466	. . . {the frame comprising an articulated beam}	15/06	. . . Interchangeable or adjustable shares
3/468	. . {the plough wheels being actively driven}	15/08	. . Mouldboards
3/50	. Self-propelled ploughs	15/10	. . . Interchangeable or adjustable mouldboards
3/52	. . with three or more wheels, or endless tracks	15/12	. Beams; Handles
3/54	. . . without alternating possibility	15/125	. . {Articulated beams}
3/56	. . . Alternating ploughs {; Balance ploughs}	15/14	. Frames (means or arrangements to facilitate transportation A01B 73/00)
3/58	. . with two wheels	15/145	. . {the plough blades being connected to the plough beam for unisono adjustment of the furrow width}
3/60	. . . Alternating ploughs	15/16	. Discs; Scrapers for cleaning discs; Sharpening attachments
3/62	. . . . Balance ploughs	15/18	. Coulters
3/64	. Cable ploughs; Indicating or signalling devices for cable plough systems	15/20	. Special adjusting means for tools of ploughs drawn by, or mounted on tractors working on hillsides or slopes
3/66	. . with motor-driven winding apparatus mounted on the plough		
3/68	. . Cable systems with one or two engines {; e.g. electrically-driven or with diesel generating set}	17/00	Ploughs with special additional arrangements, e.g. means for putting manure under the soil, clod-crushers
3/70	. . . Systems with one engine for working uphill	17/002	. {Means for putting manure, debris, straw or the like under the soil (to plough-in weeds A01B 39/18)}
3/72	. . Means for anchoring the cables	17/004	. {Clod-crushers}
3/74	. Use of electric power for propelling ploughs	17/006	. . {with driven tools}
5/00	Ploughs with rolling non-driven tools, e.g. discs	17/008	. . . {rotating about a vertical or steeply inclined axis}
5/02	. drawn by animals		
5/04	. drawn by tractors	Harrows	
5/06	. . without alternating possibility {, e.g. with rotary counters provided with scrapers}	19/00	Harrows with non-rotating tools
5/08	. . Alternating ploughs	19/02	. with tools rigidly or elastically attached to a tool-frame
5/10	. mounted or partly-mounted on tractors	19/04	. . with two or more tool-frames
5/12	. . without alternating possibility	19/06	. . with tools or tool-frames moved to-and-fro mechanically
5/14	. . Alternating ploughs	19/08	. with link network supporting tooth-like tools
5/16	. Self-propelled disc or like ploughs	19/10	. Lifting or cleaning apparatus
7/00	Disc-like soil-working implements usable either as ploughs or as harrows, or the like	21/00	Harrows with rotary non-driven tools
9/00	Ploughs with rotary driven tools (tilling implements with rotary driven tools A01B 33/00)	21/02	. with tooth-like tools
9/003	. {with tools on horizontal shaft transverse to direction of travel}	21/04	. . on horizontally-arranged axles
9/006	. {with tools on horizontal shaft parallel to direction of travel}	21/06	. . on vertically-arranged axles
11/00	Ploughs with oscillating, digging or piercing tools {driven or not}	21/08	. with disc-like tools
13/00	Ploughs or like machines for special purposes (for drainage E02B 11/02)	21/083	. . {of the type comprising four individual disk groups each pivotally connected at fixed locations to a substantially rigid frame}
13/02	. for making or working ridges, e.g. with symmetrically arranged mouldboards	21/086	. . {of the type in which the disc-like tools are individually mounted}
13/025	. . {with passively driven rotating disc-like elements for forming the ridge}	23/00	Elements, tools, or details of harrows
13/04	. for working in vineyards, orchards, or the like	23/02	. Teeth; Fixing the teeth
13/06	. . Arrangements for preventing damage to the vines, or the like	23/04	. Frames (means or arrangements to facilitate transportation A01B 73/00); Drawing-arrangements
13/08	. for working subsoil	23/043	. . {specially adapted for harrows with non-rotating tools}
13/10	. . Special implements for lifting subsoil layers	23/046	. . {Specially adapted for harrows with rotating tools}
13/12	. . . Means for distributing the layers on the surface	23/06	. Discs; Scrapers for cleaning discs; Sharpening attachments
13/14	. for working soil in two or more layers		
13/16	. Machines for combating erosion, e.g. basin-diggers, furrow-dammers	25/00	Harrows with special additional arrangements, e.g. means for distributing fertilisers; Harrows for special purposes (A01B 39/00 takes precedence)
15/00	Elements, tools, or details of ploughs		
15/02	. Plough blades; Fixing the blades		

Other machines for working soil**27/00 Clod-crushers**

- 27/005 . {comprising roller-type tools moving on the ground}

29/00 Rollers

- 29/02 . with smooth surface
- 29/04 . with non-smooth surface formed of rotatably-mounted rings or discs or with projections or ribs on the roller body; Land packers
- 29/041 . . {of "Cambridge"-type, i.e. the soil-pressing rings being stacked on a shaft}
- 29/043 . . . {Tyre-packers}
- 29/045 . . {the soil-pressing body being a drum}
- 29/046 . . {the soil-pressing body being a helical coil}
- 29/048 . . {Bar cage rollers}
- 29/06 . with special additional arrangements

31/00 Drags**33/00 Tilling implements with rotary driven tools {, e.g. in combination with fertiliser distributors or seeders, with grubbing chains, with sloping axles, with driven discs}**

- 33/02 . with tools on horizontal shaft transverse to direction of travel
- 33/021 . . {with rigid tools}
- 33/022 . . . {with helicoidal tools}
- 33/024 . . . {with disk-like tools}
- 33/025 . . {with spring tools, i.e. resiliently- or flexibly-attached rigid tools}
- 33/027 . . {Operator supported tools, e.g. using a harness for supporting the tool or power unit}
- 33/028 . . {of the walk-behind type (walk-type tractors [B62D 51/04](#))}
- 33/04 . with tools on horizontal shaft parallel to direction of travel
- 33/06 . with tools on vertical or steeply-inclined shaft
- 33/065 . . {comprising a plurality of rotors carried by an elongate, substantially closed transmission casing, transversely connectable to a tractor}
- 33/08 . Tools; Details, e.g. adaptations of transmissions or gearings
- 33/082 . . {Transmissions; Gearings; Power distribution}
- 33/085 . . . {specially adapted for tools on a vertical shaft}
- 33/087 . . {Lifting devices; Depth regulation devices; Mountings}
- 33/10 . . Structural or functional features of the tools {; Theoretical aspects of the cutting action}
- 33/103 . . . {the rotating shaft being oriented horizontally}
- 33/106 . . . {the rotating shaft being oriented vertically or steeply inclined}
- 33/12 . . Arrangement of the tools; Screening of the tools
- 33/125 . . . {screening of tools rotating about a vertical shaft}
- 33/14 . . Attaching the tools to the rotating shaft, e.g. resiliently {or flexibly}-attached tools
- 33/142 . . . {the rotating shaft being oriented horizontally}
- 33/144 {with spring tools or resiliently-attached rigid tools}
- 33/146 . . . {the rotating shaft being oriented vertically or steeply inclined}
- 33/148 {with spring tools or resiliently-attached rigid tools}

33/16

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43/005

- . with special additional arrangements

Other machines for working soil ([A01B 37/00](#), [A01B 39/00](#), [A01B 77/00](#) take precedence)

- . with non-rotating tools
- . . drawn by animal or tractor {or man-power}
- . . . with spring tools {or with resiliently- or flexibly-attached rigid tools}
- . . . with rigid tools
- . . mounted on tractors
- . . . with spring tools {or with resiliently- or flexibly-attached rigid tools}
- . . . with rigid tools
- . with rotating or circulating non-propelled tools
- . with both rotating and non-rotating tools
- . Tools; Details
- . . Non-rotating tools; {Resilient or flexible mounting of rigid tools}
- . . . {the tools being adapted to allow the chisel point to be easily fitted or removed from the shank}
- . . . Spring tools
- . . . Rigid tools
- . . Rotating tools; Mounting rotating tools
- . . Undercarriages
- . with special additional arrangements

Devices for loosening soil compacted by wheels or the like**Machines specially adapted for working soil on which crops are growing**

- . with non-rotating tools
- . . drawn by animal or tractor
- . . Self-propelled machines
- . with rotating tools {such as weeding machines}
- . . {the rotating tools being actively driven}
- . with oscillating tools {driven or not}
- . for special purposes {, e.g. for special culture}
- . . for working ridges {, e.g. for rows of plants and/or furrows}
- . . for working in vineyards, orchards, or the like
- . . . {comprising rotating tools}
- {actively driven}
- . . for weeding
- . . . Rod weeders, i.e. weeder with rotary rods propelled beneath the soil surface
- . Tools; Details
- . . Tools; Mounting tools
- . . Undercarriages
- . . Arrangements for protecting plants {, e.g. fenders}
- . with special additional arrangements

Thinning machines

- . with oscillating tools
- . with rotating tools
- . with electric, e.g. photo-electric control of thinning operations

Gatherers for removing stones, undesirable roots or the like from the soil, e.g. tractor-drawn rakes

- . {Windrower-type machines}

45/00	Machines for treating meadows or lawns {, e.g. for sports grounds}	59/048	. . having pulling or pushing means arranged on the front part of the tractor
45/02	. for aerating	59/06	. for machines mounted on tractors
45/023	. . {Perforators comprising spiking tools actively driven in a reciprocating movement through a crankshaft or eccentric mechanism}	59/061	. . {specially adapted for enabling connection or disconnection controlled from the driver's seat (not used, see subgroups)}
45/026	. . {Scarifiers comprising a knife reel actively driven around a substantially horizontal shaft}	59/062	. . . {the connection comprising a rigid interface frame on the tractor}
47/00	Soil-working with electric potential applied between tools and soil	59/063	. . . {the connection comprising longitudinally oriented tang-and-sheath elements}
49/00	Combined machines	59/064	. . {for connection to the front of the tractor}
	NOTE	59/065	. . {for ploughs or like implements (A01B 59/061 takes precedence)}
	Auxiliary devices attached to machines of a different kind, e.g. harrows attached to ploughs, see relevant groups in A01B 3/00 - A01B 47/00 for the machines.	59/066	. . {of the type comprising at least two lower arms and one upper arm generally arranged in a triangle, e.g. three-point hitches}
49/02	. with two or more soil-working tools of different kind	59/067	. . . {the lower arms being lifted or lowered by power actuator means internally incorporated in the tractor}
49/022	. . {at least one tool being actively driven}	59/068	. . . {the lower arms being lifted or lowered by power actuator means provided externally on the tractor}
49/025	. . . {about a substantially vertical axis}	59/069	. . {with means for weighing the implement}
49/027	. . {with a rotating, soil working support element, e.g. a roller}	61/00	Devices for, or parts of, agricultural machines or implements for preventing overstrain
49/04	. Combinations of soil-working tools with non-soil-working tools, e.g. planting tools	61/02	. of the coupling devices between tractor and machine
49/06	. . for sowing or fertilising	61/025	. . {the driving connections}
49/065	. . . {the soil-working tools being actively driven}	61/04	. of the connection between tools and carrier beam or frame
<u>Parts, details or accessories of agricultural machines or implements, in general</u>		61/042	. . {with shearing devices}
51/00	Undercarriages specially adapted for mounting on various kinds of agricultural tools or apparatus	61/044	. . {the connection enabling a yielding pivoting movement around a substantially horizontal and transverse axis}
51/02	. propelled by a motor	61/046	. . . {the device including an energy accumulator for restoring the tool to its working position}
51/023	. . {of the Gantry-type}	61/048	. . . . {the connection or the energy accumulator being active in two opposite directions, e.g. for reversible plows}
51/026	. . {of the automotive vehicle type, e.g. including driver accommodation (A01B 51/023 takes precedence)}	63/00	Lifting or adjusting devices or arrangements for agricultural machines or implements (lifting mechanisms for the cutter-bar of a mower A01D 34/24; adjusting devices for the cutter-bar of a mower A01D 34/28)
51/04	. drawn by animal or tractor	63/002	. {Devices for adjusting or regulating the position of tools or wheels (preventing overstrain A01B 61/00; wheels adjustable relatively to the frame for drawn implements A01B 3/16; tools or tool holders adjustable relatively to the frame for drawn implements A01B 63/24)}
51/045	. . {drawn by animals}	63/004	. . {Lateral adjustment of tools}
59/00	Devices specially adapted for connection between animals or tractors and agricultural machines or implements	63/006	. . {Lateral adjustment of wheels}
59/002	. {Details, component parts}	63/008	. . {Vertical adjustment of tools (A01B 63/10 takes precedence)}
59/004	. . {Length-adjustable links}	63/02	. for implements mounted on tractors
59/006	. . {Latched hooks}	63/023	. . {Lateral adjustment of their tools}
59/008	. . {Link connectors with spherical surfaces}	63/026	. . {Lateral adjustment of their wheels}
59/02	. for animal-drawn machines	63/04	. . Hand devices; Hand devices with mechanical accumulators, e.g. springs
59/04	. for machines pulled or pushed by a tractor	63/045	. . . {for vertically adjusting wheels or similar rotary supporting elements}
59/041	. . preventing or limiting side-play of implements (preventing overstrain A01B 61/00)	63/06	. . operated mechanically by tractor motor
59/0415	. . . {by hydraulic or pneumatic means acting on the lower draft links}	63/08	. . operated by the movement of the tractor
59/042	. . having pulling means arranged on the rear part of the tractor	63/10	. . operated by hydraulic or pneumatic means
59/043	. . . supported at three points, e.g. by quick-release couplings (A01B 59/06 takes precedence)		
59/044	. . having pulling means arranged on the middle part of the tractor		
59/046	. . having pulling or pushing means arranged on the side of the tractor		

63/1006	. . . {the hydraulic or pneumatic means structurally belonging to the tractor}	69/008	. . {automatic}
63/1013	. . . . {and being located inside the tractor body}	69/02	. Ridge-marking or like devices; Checkrow wires; Accessories therefor
63/102	. . . characterised by the location of the mounting on the tractor, e.g. on the rear part	69/022	. . {Ridge marking by deposition of a chemical substance, e.g. foam, on the surface of the soil}
63/104	. . . . on the middle part, i.e. between front and rear wheels	69/024	. . {adapted to cut and form a ridge or furrow in the soil surface, e.g. with a disc}
63/106	. . . . on the side	69/026	. . {Checkrow wires}
63/108	. . . . on the front part	69/028	. . . {the wire being located above the ground}
63/11	. . . for controlling weight transfer between implements and tractor wheels	71/00	Construction or arrangement of setting or adjusting mechanisms, of implement or tool drive or of power take-off; Means for protecting parts against dust, or the like; Adapting machine elements to or for agricultural purposes
63/111	. . . regulating working depth of implements	71/02	. Setting or adjusting mechanisms
63/1112	. . . . {using a non-tactile ground distance measurement, e.g. using reflection of waves}	71/04	. Bearings of rotating parts, e.g. for soil-working discs
63/1115	. . . . {using a mechanical ground contact sensor}	71/06	. Special adaptations of coupling means between power take-off and transmission shaft to the implement or machine
63/1117	. . . . {using a hitch position sensor}	71/063	. . {for enabling transmission coupling and connection between tractor and implements to be controlled from the driver's seat}
63/112	. . . . to control draught load, i.e. tractive force	71/066	. . {for enabling pitch, roll or yaw movements of trailed implements or machines}
63/114	. . . . to achieve a constant working depth	71/08	. Means for protecting against dust or the like, or for cleaning agricultural implements (discs for ploughs A01B 15/16 ; lifting or cleaning apparatus for harrows A01B 19/10 ; discs for harrows A01B 23/06 ; screening of rotary driven tilling tools A01B 33/12)
63/1145	. . . . . {for controlling weight transfer between implements and tractor wheels}	73/00	Means or arrangements to facilitate transportation of agricultural machines or implements, e.g. folding frames to reduce overall width (arrangements of lifting devices for soil working implements A01B 63/00)
63/118	. . . Mounting implements on power-lift linkages (preventing or limiting side-play of implements A01B 59/041)	73/005	. {for endwise transportation, i.e. the direction of transport being substantially perpendicular to the direction of agricultural operation (A01B 73/02 takes precedence)}
63/12	. . operated by an electric motor	73/02	. Folding frames
63/14	. for implements drawn by animals or tractors	73/04	. . foldable about a horizontal axis
63/145	. . {for controlling weight transfer between implements and tractor wheels}	73/042	. . . {specially adapted for actively driven implements}
63/16	. . with wheels adjustable relatively to the frame	73/044	. . . {the axis being oriented in a longitudinal direction (A01B 73/042 takes precedence)}
63/163	. . . {laterally adjustable}	73/046	. . . . {each folding frame part being foldable in itself}
63/166	. . . {manually adjustable}	73/048	. . . {the axis being oriented in transverse direction (A01B 73/042 takes precedence)}
63/18	. . . with clutch between Z-type axle and wheel	73/06	. . foldable about a vertical axis
63/20	. . . with gear and rack	73/062	. . . {of the type comprising four vertical folding axes each disposed at a substantially fixed location of a supporting frame}
63/22	. . . operated by hydraulic or pneumatic means	73/065	. . . {to a position essentially forward of the axis, in relation to the direction of travel}
63/24	. . Tools or tool-holders adjustable relatively to the frame	73/067	. . . {to a position essentially rearward of the axis, in relation to the direction of travel}
63/245	. . . {laterally adjustable}	75/00	Carriers for supporting persons when working in the field, e.g. while thinning beet
63/26	. . . by man-power		
63/28	. . . operated by the machine or implement		
63/30	. . . operated by motor power through a mechanical transmission		
63/32	. . . operated by hydraulic or pneumatic means {without automatic control}		
67/00	Devices for controlling the tractor motor by resistance of tools		
69/00	Steering of agricultural machines or implements; Guiding agricultural machines or implements on a desired track		
69/001	. {Steering by means of optical assistance, e.g. television cameras (steering devices for road marking vehicles E01C 23/163)}		
69/002	. {Steering or guiding on a substantially circular or spiral path}		
69/003	. {Steering or guiding of machines or implements pushed or pulled by or mounted on agricultural vehicles such as tractors, e.g. by lateral shifting of the towing connection}		
69/004	. . {automatic}		
69/005	. . {by an additional operator}		
69/006	. . {derived from the steering of the tractor}		
69/007	. {Steering or guiding of agricultural vehicles, e.g. steering of the tractor to keep the plough in the furrow}		

A01B

- 76/00** **Parts, details or accessories of agricultural machines or implements, not provided for in groups [A01B 51/00](#) - [A01B 75/00](#)**
- 77/00** **Machines for lifting and treating soil**
- 79/00** **Methods for working soil**
- 79/005 • {Precision agriculture}
- 79/02 • combined with other agricultural processing, e.g. fertilising, planting