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; soil working for engineering purposes E01, E02, E21; {measuring areas for agricultural purposes G01B})

WARNINGS

1. 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

2. 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.

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1/00  Hand tools (edge trimmers for lawns A01G 3/06; machines for working soil A01B 35/00; making hand tools B21D)

| 1/02  | . Spades; Shovels {hand-operated dredgers E02F 3/02} |
| 1/022 | . {Collapsible; extensible; combinations with other tools} |
| 1/024 | . {Foot protectors attached to the blade} |
| 1/026 | . {with auxiliary handles for facilitating lifting} |
| 1/028 | . {with ground abutment shoes or earth anchors for facilitating lifting} |
| 1/04  | . with teeth |
| 1/06  | . Hoes; Hand cultivators {rakes A01D 7/00; forks A01D 9/00; picks B25D} |
| 1/065 | . {powered} |
| 1/08  | . with a single blade |
| 1/10  | . with two or more blades |
| 1/12  | . with blades provided with teeth |
| 1/14  | . with teeth only |
| 1/16  | . Tools for uprooting weeds |
| 1/165 | . {adapted for extracting a substantially cylindrical plug out of the earth} |
| 1/18  | . Tong-like tools |
| 1/20  | . Combinations of different kinds of hand tools |
| 1/22  | . Attaching the blades or the like to handles (handles for tools, or their attachment, in general B25G); Interchangeable or adjustable blades |
| 1/222 | . {Adjustable blades} |
| 1/225 | . {around a substantially horizontal axis} |
| 1/227 | . {Interchangeable blades} |
| 1/24  | . for treating meadows or lawns |
| 1/243 | . {for aerating} |
| 1/246 | . {for cutting sods or turves} |

Ploughs

| 3/00  | Ploughs with fixed plough-shares |
| 3/02  | . Man-driven ploughs |
| 3/04  | . Animal-drawn ploughs |
| 3/06  | . without alternating possibility, i.e. incapable of making an adjacent furrow on return journey {i.e. conventional ploughing} |
| 3/08  | . . Swing ploughs |
| 3/10  | . . Trussed-beam ploughs; Single-wheel ploughs |
| 3/12  | . . Two-wheel beam ploughs |
| 3/14  | . . Frame ploughs |
| 3/16  | . . Alternating ploughs, i.e. capable of making an adjacent furrow on return journey |
| 3/18  | . . Turn-wrest ploughs |
| 3/20  | . . Balance ploughs |
| 3/22  | . . with parallel plough units used alternately |
| 3/24  | . . Tractor-drawn ploughs (A01B 3/04 takes precedence) |
| 3/26  | . . without alternating possibility |
| 3/28  | . . Alternating ploughs |
| 3/30  | . . Turn-wrest ploughs |
| 3/32  | . . Balance ploughs |
| 3/34  | . . with parallel plough units used alternately |
| 3/36  | . . Ploughs mounted on tractors |
| 3/38  | . . without alternating possibility |
| 3/40  | . . Alternating ploughs |
| 3/42  | . . Turn-wrest ploughs |
| 3/421 | . . . with a headstock frame made in one piece |
| 3/4215 | . . . . . . {the headstock being provided with two or more hydraulic cylinders} |
| 3/426 | . . . with a headstock frame made of two or more parts |
| 3/44  | . . with parallel plough units used alternately |
| 3/46  | . . Ploughs supported partly by tractor and partly by their own wheels |
Ploughs

3/42 . . . [Alternating ploughs with frame rotating about a vertical axis]
3/44 . . . [Alternating ploughs with frame rotating about a horizontal axis, e.g. turn-wrest ploughs]
3/46 . . . [the frame comprising an articulated beam]
3/48 . . . [the plough wheels being actively driven]
3/50 . Self-propelled ploughs
3/52 . . . with three or more wheels, or endless tracks
3/54 . . . without alternating possibility
3/56 . . . Alternating ploughs [: Balance ploughs]
3/58 . . . with two wheels
3/60 . . . Alternating ploughs
3/62 . . . . Balance ploughs
3/64 . . . Cable ploughs; Indicating or signalling devices for cable plough systems {(vehicles towed by cable B60D)}
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]
3/70 . . . Systems with one engine for working uphill
3/72 . . . Means for anchoring the cables
3/74 . . . Use of electric power for propelling ploughs {for rotary cultivators or the like (electric current collectors B60L 5/00)}

5/00 Ploughs with rolling non-driven tools, e.g. discs
(with rotary driven tools A01B 9/00)
5/02 . . drawn by animals
5/04 . . drawn by tractors
5/06 . . without alternating possibility, e.g. with rotary counters provided with scrapers
5/08 . . Alternating ploughs
5/10 . mounted or partly-mounted on tractors
5/12 . . without alternating possibility
5/14 . . Alternating ploughs
5/16 . . Self-propelled disc or like ploughs

7/00 Disc-like soil-working implements usable either as ploughs or as harrows, or the like

9/00 Ploughs with rotary driven tools (tiling implements with rotary driven tools A01B 33/00)
9/003 . [with tools on horizontal shaft transverse to direction of travel]
9/006 . [with tools on horizontal shaft parallel to direction of travel]

11/00 Ploughs with oscillating, digging or piercing tools
(driven or not)

13/00 Ploughs or like machines for special purposes
(for drainage E02B 11/02) [: Ditch diggers, trench ploughs, forestry ploughs, ploughs for land or marsh reclamation (machines for aerating meadows A01B 45/02; making furrows A01C 5/00; dredging machines in general E02F)]
13/02 . for making or working ridges, e.g. with symmetrically arranged mouldboards, e.g. ridging plough
13/025 . . [with passively driven rotating disc-like elements for forming the ridge]
13/04 . for working in vineyards, orchards, or the like
13/06 . . Arrangements for preventing damage to the vines, or the like, e.g. hydraulic (machines specially adapted for working in vineyards A01B 39/16)]

13/08 . for working subsoil
13/10 . . Special implements for lifting subsoil layers
13/12 . . . Means for distributing the layers on the surface
13/14 . . for working soil in two or more layers
13/16 . . Machines for combating erosion, e.g. basin-diggers, furrow-dammers

15/00 Elements, tools, or details of ploughs
15/02 . Plough blades; Fixing the blades
15/025 . . {specially adapted for working subsoil}
15/04 . . Shares (making ploughshares by rolling B21H)
15/06 . . . Interchangeable or adjustable shares
15/08 . . . Mouldboards
15/10 . . . Interchangeable or adjustable mouldboards
15/12 . . . Beams; Handles (handles for tools or their attachment in general B25G)
15/125 . . . [Articulated beams]
15/14 . . Frames (means or arrangements to facilitate transportation A01B 73/00)
15/145 . . . (the plough blades being connected to the plough beam for unisono adjustment of the furrow width)
15/16 . . Discs (bearings therefor A01B 71/04); Scrapers for cleaning discs; Sharpening attachments (sharpening in general B24)
15/18 . . Coulters
15/20 . . Special adjusting means for tools of ploughs drawn by, or mounted on tractors working on hillsides or slopes

17/00 Ploughs with special additional arrangements, e.g. means for putting manure under the soil, clod-crushers (A01B 49/00 takes precedence); [Means for breaking the subsoil]
17/002 . . (Means for putting manure, debris, straw or the like under the soil (to plough-in weeds A01B 39/18))
17/004 . . [Clod-crushers]
17/006 . . . [with driven tools]
17/008 . . . [rotating about a vertical or steeply inclined axis]

Harrows

19/00 Harrows with non-rotating tools [(harrows for working in vineyards A01B 39/16)]
19/02 . . with tools rigidly or elastically attached to a tool-frame
19/04 . . . with two or more tool-frames
19/06 . . . with tools or tool-frames moved to-and-fro mechanically
19/08 . . with link network supporting tooth-like tools
19/10 . . Lifting or cleaning apparatus

21/00 Harrows with rotary non-driven tools (tiling implements with rotary driven tools A01B 33/00)
21/02 . . with tooth-like tools
21/04 . . . on horizontally-arranged axles
21/06 . . . on vertically-arranged axles
21/08 . . . with disc-like tools
21/083 . . . {of the type comprising four individual disk groups each pivotally connected at fixed locations to a substantially rigid frame}
21/086 . . . {of the type in which the disc-like tools are individually mounted}

23/00 Elements, tools, or details of harrows
23/02 . Teeth; Fixing the teeth
23/04 . Frames (means or arrangements to facilitate transportation A01B 73/00); Drawing-arrangements
23/043 . . [specially adapted for harrows with non-rotating tools]
23/046 . . [Specially adapted for harrows with rotating tools]
23/06 . Discs (A01B 15/16 takes precedence; bearings therefor A01B 71/04); Scrapers for cleaning discs; Sharpening attachments; [Lubrication of bearings] (sharpening in general B24)
25/00 Harrows with special additional arrangements, e.g. means for distributing fertilisers; Harrows for special purposes (A01B 39/00 takes precedence (fertiliser distributors A01C 15/00))

Other machines for working soil
27/00 Clod-crushers
27/005 . [comprising roller-type tools moving on the ground]
29/00 Rollers ([rollers for roads E01C])
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 . . . [Tire-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 (graders for field cultivators (graders in general E02D))
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 . with special additional arrangements (A01B 49/00 takes precedence; for sowing or fertilising A01B 49/06)
35/00 Other machines for working soil [not specially adapted for working soil on which crops are growing] (A01B 37/00, A01B 39/00, A01B 77/00 take precedence (; hand tools A01B 1/00))
35/02 . with non-rotating tools
35/04 . . drawn by animal or tractor {or man-power}
35/06 . . . with spring tools {or with resiliently- or flexibly-attached rigid tools}
35/08 . . . with rigid tools
35/10 . . . mounted on tractors
35/12 . . . with spring tools {or with resiliently-or flexibly-attached rigid tools}
35/14 . . . with rigid tools
35/16 . with rotating or circulating non-propelled tools
35/18 . with both rotating and non-rotating tools
35/20 . Tools; Details
35/22 . . Non-rotating tools; [Resilient or flexible mounting of rigid tools]
35/225 . . . . . [the tools being adapted to allow the chisel point to be easily fitted or removed from the shank]
35/24 . . . Spring tools
35/26 . . . Rigid tools
35/28 . . Rotating tools; Mounting rotating tools
35/30 . . Undercarriages (A01B 23/04 takes precedence)
35/32 . . with special additional arrangements
37/00 Devices for loosening soil compacted by wheels or the like
39/00 Other machines specially adapted for working soil on which crops are growing
39/02 . with non-rotating tools
39/04 . . drawn by animal or tractor
39/06 . . Self-propelled machines
39/08 . . with rotating tools {such as weeding machines}
39/085 . . . . . [the rotating tools being actively driven]
39/10 . . with oscillating tools {driven or not}
39/12 . . for special purposes {, e.g. for special culture}
39/14 . . for working ridges {, e.g. for rows of plants and/or furrows}
Other machines for working soil

51/00 Undercarriages specially adapted for mounting on various kinds of agricultural tools or apparatus (general vehicle aspects, see the relevant subclass of class B60 or B62)

51/02 . propelled by a motor
51/023 . [of the Gantry-type]
51/026 . [of the automotive vehicle type, e.g. including driver accommodation (A01B 51/023 takes precedence)]

51/04 . [drawn by animal or tractor]
51/045 . [drawn by animals]

59/00 Devices specially adapted for connection between animals or tractors and agricultural machines or implements (A01B 63/00 takes precedence; vehicle connections in general B60D; draught assemblies for animal drawn vehicles, in general B62C 5/00)

59/002 . [Details, component parts]
59/004 . [Length-adjustable links]
59/006 . [Latched hooks]
59/008 . [Link connectors with spherical surfaces]
59/02 . for animal-drawn machines
59/04 . for machines pulled or pushed by a tractor
59/041 . preventing or limiting side-play of implements (preventing overstrain A01B 61/00)
59/0415 . [by hydraulic or pneumatic means acting on the lower draft links]
59/042 . having pulling means arranged on the rear part of the tractor
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
59/048 . having pulling or pushing means arranged on the front part of the tractor
59/06 . for machines mounted on tractors
59/061 . specially adapted for enabling connection or disconnection controlled from the driver’s seat (not used, see subgroups)
59/062 . [the connection comprising a rigid interface frame on the tractor]
59/063 . [the connection comprising longitudinally oriented tang-and-sheath elements]
59/064 . [for connection to the front of the tractor]
59/065 . [for ploughs or like implements (A01B 59/061 and subgroups take precedence)]
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)]
59/067 . [the lower arms being lifted or lowered by power actuator means internally incorporated in the tractor]
59/068 . [the lower arms being lifted or lowered by power actuator means provided externally on the tractor]
59/069 . [with means for weighing the implement]

61/00 Devices for, or parts of, agricultural machines or implements for preventing overstrain (preventing overstrain in vehicle connections, in general B60D; preventing overstrain in couplings per se E16D)

61/02 . of the coupling devices between tractor and machine
61/025 . [the driving connections]
61/04 . of the connection between tools and carrier beam or frame
61/042 . [with shearing devices]
61/044 . [the connection enabling a yielding pivoting movement around a substantially horizontal and transverse axis]
61/046 . [the device including an energy accumulator for restoring the tool to its working position]
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; constructional features of lifting devices per se B66E)

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)

63/004 (Lateral adjustment of tools)
63/006 (Lateral adjustment of wheels)
63/008 (Vertical adjustment of tools (A01B 63/10 takes precedence))

63/02 . . for implements mounted on tractors
63/023 (Lateral adjustment of their tools)
63/026 (Lateral adjustment of their wheels)
63/04 . . Hand devices; Hand devices with mechanical accumulators, e.g. springs
63/045 . . (for vertically adjusting wheels or similar rotary supporting elements)
63/06 . . operated mechanically by tractor motor
63/08 . . operated by the movement of the tractor
63/10 . . operated by hydraulic or pneumatic means
63/1006 . . [the hydraulic or pneumatic means structurally belonging to the tractor]
63/1013 . . [and being located inside the tractor body]
63/102 . . characterised by the location of the mounting on the tractor, e.g. on the rear part
63/104 . . on the middle part, i.e. between front and rear wheels
63/106 . . on the side
63/108 . . on the front part
63/11 . . for controlling weight transfer between implements and tractor wheels
63/111 . . regulating working depth of implements
63/1112 . . [using a non-tactile ground distance measurement, e.g. using reflection of waves]
63/1115 . . [using a mechanical ground contact sensor]
63/1117 . . [using a hitch position sensor]
63/112 . . to control draught load, i.e. tractive force
63/114 . . to achieve a constant working depth
63/1145 . . . . (for controlling weight transfer between implements and tractor wheels)
63/118 . . Mounting implements on power-lift linkages (A01B 59/043 takes precedence; preventing or limiting side-play of implements A01B 59/041; preventing overstrain A01B 61/00)
63/12 . . operated by an electric motor
63/14 . . for implements drawn by animals or tractors
63/145 . . (for controlling weight transfer between implements and tractor wheels)
63/16 . . with wheels adjustable relatively to the frame
63/163 . . [laterally adjustable]
63/166 . . [manually adjustable]
63/18 . . with clutch between Z-type axle and wheel
63/20 . . with gear and rack
63/22 . . operated by hydraulic or pneumatic means
63/24 . . Tools or tool-holders adjustable relatively to the frame
63/245 . . (laterally adjustable)
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 (preventing overstrains A01B 61/00)

69/00 Steering of agricultural machines or implements; Guiding agricultural machines or implements on a desired track

NOTE

In this group it is obligatory to classify subject-matter in the first appropriate place. It is however allowed to apply multiple classification where considered useful for search

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 mounted on agricultural vehicles, 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]
69/008 . . [automatic]
69/02 . . Ridge-marking or like devices; Checkrow wires; Accessories therefor
69/022 . . [Ridge marking by deposition of a chemical substance, e.g. foam, on the surface of the soil]
69/024 . . [adapted to cut and form a ridge or furrow in the soil surface, e.g. with a disc]
69/026 . . [Checkrow wires]
69/028 . . [.the wire being located above the ground]

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 {adjusting mechanisms in general G05Q}

71/02 . . Setting or adjusting mechanisms
71/04 . . Bearings of rotating parts, e.g. for soil-working discs ({discs A01B 15/16, A01B 23/06); bearings in general F16C}
71/06 . . Special adaptations of coupling means between power take-off and transmission shaft to the implement or machine (couplings for transmitting rotation F16D)
71/063 . . [for enabling transmission coupling and connection between tractor and implements to be controlled from the driver's seat]
Parts, details or accessories of agricultural machines or implements, in general

71/066 . . . (for enabling pitch, roll or yaw movements of trailed implements or machines)

71/08 . . Means for protecting against dust, or the like, or for cleaning agricultural implements (A01B 15/16, A01B 19/10 and A01B 23/06 take precedence; screening of rotary driven tilling tools A01B 33/12; screening of rotary parts in general F16P 1/00)

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; carriers for harvesters or mowers A01D 75/002; arrangements or carriers for haymakers A01D 78/1007, A01D 80/005; vehicles adapted for load transportation or to transport, to carry or to comprise special loads or objects B60P; motor vehicles, trailers B62D)

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))

73/02 . . Folding frames

73/04 . . foldable about a horizontal axis

73/042 . . . . (specially adapted for actively driven implements)

73/044 . . . . [the axis being oriented in a longitudinal direction (A01B 73/042 takes precedence)]

73/046 . . . . . (each folding frame part being foldable in itself)

73/048 . . . . . [the axis being oriented in transverse direction (A01B 73/042 takes precedence)]

73/06 . . foldable about a vertical axis

73/062 . . . . (of the type comprising four vertical folding axes each disposed at a substantially fixed location of a supporting frame)

73/065 . . . . . [to a position essentially forward of the axis, in relation to the direction of travel]

73/067 . . . . . [to a position essentially rearward of the axis, in relation to the direction of travel]

75/00 Carriers for supporting persons when working in the field, e.g. while thinning beet

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 (biocides, pest repellants or attractants, plant growth regulators A01N 25/00 - A01N 65/00; fertilisers C05; soil-conditioning or soil-stabilising materials C09K 17/00)

79/00 Methods for working soil (essentially requiring the use of particular machines, see the relevant groups for the machines)

79/005 . . . [Precision agriculture]

79/02 . . combined with other agricultural processing, e.g. fertilising, planting