

CPC**COOPERATIVE PATENT CLASSIFICATION****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](#) })

WARNING

The following IPC groups are not used in the CPC system. Subject matter covered by these 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](#)

A01B 1/00

Hand tools (edge trimmers for lawns [A01G 3/06](#) ; { machines for working soil [A01B 35/00](#) ; making hand tools [B21D](#) })

- [A01B 1/02](#) . Spades; Shovels { hand-operated dredgers [E02F 3/02](#) }
- [A01B 1/022](#) .. { Collapsible; extensible; combinations with other tools }
- [A01B 1/024](#) .. { Foot protectors attached to the blade }
- [A01B 1/026](#) .. { with auxiliary handles for facilitating lifting }
- [A01B 1/028](#) .. { with ground abutment shoes or earth anchors for facilitating lifting }
- [A01B 1/04](#) .. with teeth
- [A01B 1/06](#) . Hoes; Hand cultivators { rakes [A01D 7/00](#) ; forks [A01D 9/00](#) ; picks [B25D](#) }
- [A01B 1/065](#) .. { powered }
- [A01B 1/08](#) .. with a single blade
- [A01B 1/10](#) .. with two or more blades
- [A01B 1/12](#) .. with blades provided with teeth
- [A01B 1/14](#) .. with teeth only
- [A01B 1/16](#) . Tools for uprooting weeds
- [A01B 1/165](#) .. { adapted for extracting a substantially cylindrical plug out of the earth }
- [A01B 1/18](#) .. Tong-like tools
- [A01B 1/20](#) . Combinations of different kinds of hand tools
- [A01B 1/22](#) . Attaching the blades or the like to handles (handles for tools, or their attachment, in general [B25G](#)); Interchangeable or adjustable blades
- [A01B 1/222](#) .. { Adjustable blades }
- [A01B 1/225](#) ... { around a substantially horizontal axis }
- [A01B 1/227](#) .. { Interchangeable blades }

- A01B 1/24 . for treating meadows or lawns
- A01B 1/243 .. { for aerating }
- A01B 1/246 .. { for cutting sods or turves }

Guidance heading: Ploughs

A01B 3/00 Ploughs with fixed plough-shares

- A01B 3/02 . Man-driven ploughs
- A01B 3/04 . Animal-drawn ploughs
- A01B 3/06 .. without alternating possibility, i.e. incapable of making an adjacent furrow on return journey, { i.e. conventional ploughing }
- A01B 3/08 ... Swing ploughs
- A01B 3/10 ... Trussed-beam ploughs; Single-wheel ploughs
- A01B 3/12 ... Two-wheel beam ploughs
- A01B 3/14 ... Frame ploughs
- A01B 3/16 .. Alternating ploughs, i.e. capable of making an adjacent furrow on return journey
- A01B 3/18 ... Turn-wrest ploughs
- A01B 3/20 ... Balance ploughs
- A01B 3/22 ... with parallel plough units used alternately
- A01B 3/24 . Tractor-drawn ploughs (A01B 3/04 takes precedence)
- A01B 3/26 .. without alternating possibility
- A01B 3/28 .. Alternating ploughs
- A01B 3/30 ... Turn-wrest ploughs
- A01B 3/32 ... Balance ploughs
- A01B 3/34 ... with parallel plough units used alternately
- A01B 3/36 . Ploughs mounted on tractors
- A01B 3/38 .. without alternating possibility
- A01B 3/40 .. Alternating ploughs
- A01B 3/42 ... Turn-wrest ploughs
- A01B 3/421 with a headstock frame made in one piece
- A01B 3/4215 { the headstock being provided with two or more hydraulic cylinders }
- A01B 3/426 with a headstock frame made of two or more parts
- A01B 3/44 ... with parallel plough units used alternately
- A01B 3/46 . Ploughs supported partly by tractor and partly by their own wheels
- A01B 3/462 .. { Alternating ploughs with frame rotating about a vertical axis }
- A01B 3/464 .. { Alternating ploughs with frame rotating about a horizontal axis, e.g. turn-wrest ploughs }

- A01B 3/466 . . . { the frame comprising an articulated beam }
- A01B 3/468 . . { the plough wheels being actively driven }

- A01B 3/50 . Self-propelled ploughs
- A01B 3/52 . . with three or more wheels, or endless tracks
- A01B 3/54 . . . without alternating possibility
- A01B 3/56 . . . Alternating ploughs; { Balance ploughs }
- A01B 3/58 . . with two wheels
- A01B 3/60 . . . Alternating ploughs
- A01B 3/62 Balance ploughs

- A01B 3/64 . Cable ploughs; Indicating or signalling devices for cable plough systems {(vehicles towed by cable [B60D](#))}
- A01B 3/66 . . with motor-driven winding apparatus mounted on the plough
- A01B 3/68 . . Cable systems with one or two engines; { e.g. electrically-driven or with diesel generating set }
- A01B 3/70 . . . Systems with one engine for working uphill
- A01B 3/72 . . Means for anchoring the cables

- A01B 3/74 . Use of electric power for propelling ploughs { for rotary cultivators or the like (electric current collectors [B60L 5/00](#))}

- A01B 5/00 Ploughs with rolling non-driven tools, e.g. discs (with rotary driven tools [A01B 9/00](#))**

- A01B 5/02 . drawn by animals
- A01B 5/04 . drawn by tractors
- A01B 5/06 . . without alternating possibility, { e.g. with rotary counters provided with scrapers }
- A01B 5/08 . . Alternating ploughs

- A01B 5/10 . mounted or partly-mounted on tractors
- A01B 5/12 . . without alternating possibility
- A01B 5/14 . . Alternating ploughs

- A01B 5/16 . Self-propelled disc or like ploughs

- A01B 7/00 Disc-like soil-working implements usable either as ploughs or as harrows, or the like**

- A01B 9/00 Ploughs with rotary driven tools (tilling implements with rotary driven tools [A01B 33/00](#))**

- A01B 9/003 . { with tools on horizontal shaft transverse to direction of travel }

- A01B 9/006 . { with tools on horizontal shaft parallel to direction of travel }
- A01B 11/00 Ploughs with oscillating, digging or piercing tools { driven or not }**
- A01B 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](#))}**
- A01B 13/02 . for making or working ridges, e.g. with symmetrically arranged mouldboards, { e.g. [ridging plough](#) }
- A01B 13/025 . . { with passively driven rotating disc-like elements for forming the ridge }
- A01B 13/04 . for working in vineyards, orchards, or the like
- A01B 13/06 . . Arrangements for preventing damage to the vines, or the like, { e.g. [hydraulic \(machines specially adapted for working in vineyards \[A01B 39/16\]\(#\) \)](#) }
- A01B 13/08 . for working subsoil
- A01B 13/10 . . Special implements for lifting subsoil layers
- A01B 13/12 . . . Means for distributing the layers on the surface
- A01B 13/14 . for working soil in two or more layers
- A01B 13/16 . Machines for combating erosion, e.g. basin-diggers, furrow-dammers
- A01B 15/00 Elements, tools, or details of ploughs**
- A01B 15/02 . Plough blades; Fixing the blades
- A01B 15/025 . . { [specially adapted for working subsoil](#) }
- A01B 15/04 . . Shares { ([making ploughshares by rolling \[B21H\]\(#\)](#)) }
- A01B 15/06 . . . Interchangeable or adjustable shares
- A01B 15/08 . . Mouldboards
- A01B 15/10 . . . Interchangeable or adjustable mouldboards
- A01B 15/12 . Beams; Handles ([handles for tools or their attachment in general \[B25G\]\(#\)](#))
- A01B 15/125 . . { [Articulated beams](#) }
- A01B 15/14 . Frames ([means or arrangements to facilitate transportation \[A01B 73/00\]\(#\)](#))
- A01B 15/145 . . { [the plough blades being connected to the plough beam for unison adjustment of the furrow width](#) }
- A01B 15/16 . Discs ([bearings therefor \[A01B 71/04\]\(#\)](#)); Scrapers for cleaning discs; Sharpening attachments ([sharpening in general \[B24\]\(#\)](#))
- A01B 15/18 . Coulters

- A01B 15/20
 - . Special adjusting means for tools of ploughs drawn by, or mounted on tractors working on hillsides or slopes

A01B 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 }**

- A01B 17/002
 - . { Means for putting manure, debris, straw or the like under the soil (to plough-in weeds [A01B 39/18](#))}

- A01B 17/004
 - . { Clod-crushers }

- A01B 17/006
 - . . { with driven tools }

- A01B 17/008
 - . . . { rotating about a vertical or steeply inclined axis }

Guidance heading: Harrows

A01B 19/00 **Harrows with non-rotating tools {(harrows for working in vineyards [A01B 39/16](#))}**

- A01B 19/02
 - . with tools rigidly or elastically attached to a tool-frame
- A01B 19/04
 - . . with two or more tool-frames
- A01B 19/06
 - . . with tools or tool-frames moved to-and-fro mechanically
- A01B 19/08
 - . with link network supporting tooth-like tools
- A01B 19/10
 - . Lifting or cleaning apparatus

A01B 21/00 **Harrows with rotary non-driven tools (tilling implements with rotary driven tools [A01B 33/00](#))**

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

A01B 23/00 **Elements, tools, or details of harrows**

- A01B 23/02
 - . Teeth; Fixing the teeth
- A01B 23/04
 - . Frames (means or arrangements to facilitate transportation [A01B 73/00](#)); Drawing-arrangements

- A01B 23/043 . . { specially adapted for harrows with non-rotating tools }
- A01B 23/046 . . { Specially adapted for harrows with rotating tools }
- A01B 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](#))
- A01B 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](#) })**

Guidance heading: Other machines for working soil

A01B 27/00 **Clod-crushers**

- A01B 27/005 . { comprising roller-type tools moving on the ground }

A01B 29/00 **Rollers {([rollers for roads E01C](#))}**

- A01B 29/02 . with smooth surface
- A01B 29/04 . with non-smooth surface formed of rotatably-mounted rings or discs or with projections or ribs on the roller body; Land packers
- A01B 29/041 . . { of "Cambridge"-type, i.e. the soil-pressing rings being stacked on a shaft }
- A01B 29/043 . . . { Tire-packers }
- A01B 29/045 . . { the soil-pressing body being a drum }
- A01B 29/046 . . { the soil-pressing body being a helical coil }
- A01B 29/048 . . { Bar cage rollers }
- A01B 29/06 . with special additional arrangements

A01B 31/00 **Drags { [graders for field cultivators](#) ([graders in general E02F](#))}**

A01B 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](#) }**

- A01B 33/02 . with tools on horizontal shaft transverse to direction of travel
- A01B 33/021 . . { with rigid tools }
- A01B 33/022 . . . { with helicoidal tools }
- A01B 33/024 . . . { with disk-like tools }
- A01B 33/025 . . { with spring tools, i.e. resiliently- or flexibly-attached rigid tools }
- A01B 33/027 . . { Operator supported tools, e.g. using a harness for supporting the tool or power unit }

- A01B 33/028 .. { of the walk-behind type (walk-type tractors [B62D 51/04](#))}
- A01B 33/04 . with tools on horizontal shaft parallel to direction of travel
- A01B 33/06 . with tools on vertical or steeply-inclined shaft
- A01B 33/065 .. { comprising a plurality of rotors carried by an elongate, substantially closed transmission casing, transversely connectable to a tractor }
- A01B 33/08 . Tools; Details, e.g. adaptations of transmissions or gearings
- A01B 33/082 .. { Transmissions; Gearings; Power distribution }
- A01B 33/085 ... { specially adapted for tools on a vertical shaft }
- A01B 33/087 .. { Lifting devices; Depth regulation devices; Mountings }
- A01B 33/10 .. Structural or functional features of the tools; { Theoretical aspects of the cutting action }
- A01B 33/103 ... { the rotating shaft being oriented horizontally }
- A01B 33/106 ... { the rotating shaft being oriented vertically or steeply inclined }
- A01B 33/12 .. Arrangement of the tools; Screening of the tools
- A01B 33/125 ... { screening of tools rotating about a vertical shaft }
- A01B 33/14 .. Attaching the tools to the rotating shaft, e.g. resiliently { or flexibly }-attached tools
- A01B 33/142 ... { the rotating shaft being oriented horizontally }
- A01B 33/144 { with spring tools or resiliently-attached rigid tools }
- A01B 33/146 ... { the rotating shaft being oriented vertically or steeply inclined }
- A01B 33/148 { with spring tools or resiliently-attached rigid tools }
- A01B 33/16 . with special additional arrangements ([A01B 49/00](#) takes precedence; for sowing or fertilising [A01B 49/06](#))
- A01B 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](#) })
- A01B 35/02 . with non-rotating tools
- A01B 35/04 .. drawn by animal or tractor { or man-power }
- A01B 35/06 ... with spring tools { or with resiliently- or flexibly-attached rigid tools }
- A01B 35/08 ... with rigid tools
- A01B 35/10 .. mounted on tractors
- A01B 35/12 ... with spring tools { or with resiliently-or flexibly-attached rigid tools }
- A01B 35/14 ... with rigid tools
- A01B 35/16 . with rotating or circulating non-propelled tools
- A01B 35/18 . with both rotating and non-rotating tools
- A01B 35/20 . Tools; Details

- A01B 35/22 . . non-rotating tools; { Resilient or flexible mounting of rigid tools }
- A01B 35/225 . . . { the tools being adapted to allow the chisel point to be easily fitted or removed from the shank }
- A01B 35/24 . . . Spring tools
- A01B 35/26 . . . Rigid tools
- A01B 35/28 . . Rotating tools; Mounting rotating tools
- A01B 35/30 . . Undercarriages ([A01B 23/04 takes precedence](#))
- A01B 35/32 . with special additional arrangements

A01B 37/00 Devices for loosening soil compacted by wheels or the like

A01B 39/00 Other machines specially adapted for working soil on which crops are growing

- A01B 39/02 . with non-rotating tools
- A01B 39/04 . . drawn by animal or tractor
- A01B 39/06 . . Self-propelled machines
- A01B 39/08 . with rotating tools { such as weeding machines }
- A01B 39/085 . . { the rotating tools being actively driven }
- A01B 39/10 . with oscillating tools { driven or not }
- A01B 39/12 . for special purposes, { e.g. for special culture }
- A01B 39/14 . . for working ridges, { e.g. for rows of plants and/or furrows }
- A01B 39/16 . . for working in vineyards, orchards, or the like; { Arrangements for preventing damage to vines (ploughs adapted for working in vineyards [A01B 13/06](#)) }
- A01B 39/163 . . . { comprising rotating tools }
- A01B 39/166 { actively driven }
- A01B 39/18 . . for weeding
- A01B 39/19 . . . Rod weeders, i.e. weeder with rotary rods propelled beneath the soil surface
- A01B 39/20 . Tools; Details
- A01B 39/22 . . Tools; Mounting tools
- A01B 39/24 . . Undercarriages ([A01B 23/04 takes precedence](#))
- A01B 39/26 . . Arrangements for protecting plants, { e.g. fenders }
- A01B 39/28 . with special additional arrangements ([A01B 49/00 takes precedence](#))

A01B 41/00 Thinning machines

- A01B 41/02 . with oscillating tools
- A01B 41/04 . with rotating tools

- A01B 41/06
 - . with electric, e.g. photo-electric control of thinning operations
- A01B 43/00** **Gatherers for removing stones, undesirable roots of the like from the soil, e.g. tractor-drawn rakes { for harvesting root crops [A01D](#) }**
- A01B 43/005
 - . { Windrower-type machines }
- A01B 45/00** **Machines for treating meadows or lawns, { e.g. for sports grounds }**
- A01B 45/02
 - . for aerating
- A01B 45/023
 - .. { Perforators comprising spiking tools actively driven in a reciprocating movement through a crankshaft or eccentric mechanism }
- A01B 45/026
 - .. { Scarifiers comprising a knife reel actively driven around a substantially horizontal shaft }
- A01B 45/04
 - . for cutting sods or turves { machines for lifting and treating soil [A01B 77/00](#) }
- A01B 45/045
 - .. { the machine being adapted for stacking sods or sod rolls }
- A01B 47/00** **Soil-working with electric potential applied between tools and soil**
- A01B 49/00** **Combined machines (auxiliary devices attached to machines of a different kind, e.g. harrows attached to ploughs, see the relevant groups for the machines)**
- A01B 49/02
 - . with two or more soil-working tools of different kind
- A01B 49/022
 - .. { at least one tool being actively driven }
- A01B 49/025
 - ... { about a substantially vertical axis }
- A01B 49/027
 - .. { with a rotating, soil working support element, e.g. a roller }
- A01B 49/04
 - . Combinations of soil-working tools with non-soil-working tools, e.g. planting tools { seeding machines [A01C 7/00](#) ; harvesters combined with soil-working implements [A01D 43/12](#) }
- A01B 49/06
 - .. for sowing or fertilising
- A01B 49/065
 - ... { the soil-working tools being actively driven }
- Guidance heading:** **Parts, details or accessories of agricultural machines or implements, in general**
(seat constructions [A47C](#) ; wheels [B60B](#) ; shelters for drivers [B60J](#) ; seats specially adapted for vehicles [B60N 2/00](#) ; wheel scrapers [B60S 1/68](#))
- A01B 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](#))**
- A01B 51/02
 - . propelled by a motor
- A01B 51/023
 - .. { of the Gantry-type }

- A01B 51/026 .. { of the automotive vehicle type, e.g. including driver accommodation ([A01B 51/023](#) takes precedence) }
- A01B 51/04 . drawn by animal or tractor
- A01B 51/045 .. { drawn by animals }
- A01B 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](#))
- A01B 59/002 . { Details, component parts }
- A01B 59/004 .. { Length-adjustable links }
- A01B 59/006 .. { Latched hooks }
- A01B 59/008 .. { Link connectors with spherical surfaces }
- A01B 59/02 . for animal-drawn machines
- A01B 59/04 . for machines pulled or pushed by a tractor
- A01B 59/041 .. preventing or limiting side-play of implements (preventing overstrain [A01B 61/00](#))
- A01B 59/0415 ... { by hydraulic or pneumatic means acting on the lower draft links }
- A01B 59/042 .. having pulling means arranged on the rear part of the tractor
- A01B 59/043 ... supported at three points, e.g. by quick-release couplings ([A01B 59/06](#) takes precedence)
- A01B 59/044 .. having pulling means arranged on the middle part of the tractor
- A01B 59/046 .. having pulling or pushing means arranged on the side of the tractor
- A01B 59/048 .. having pulling or pushing means arranged on the front part of the tractor
- A01B 59/06 . for machines mounted on tractors
- A01B 59/061 .. { specially adapted for enabling connection or disconnection controlled from the driver's seat (not used, see subgroups)}
- A01B 59/062 ... { the connection comprising a rigid interface frame on the tractor }
- A01B 59/063 ... { the connection comprising longitudinally oriented tang-and-sheath elements }
- A01B 59/064 .. { for connection to the front of the tractor }
- A01B 59/065 .. { for ploughs or like implements ([A01B 59/061](#) and subgroups take precedence) }
- A01B 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)}
- A01B 59/067 ... { the lower arms being lifted or lowered by power actuator means internally incorporated in the tractor }
- A01B 59/068 ... { the lower arms being lifted or lowered by power actuator means provided externally on the tractor }
- A01B 59/069 .. { with means for weighing the implement }

- A01B 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 [F16D](#))
- A01B 61/02 . of the coupling devices between tractor and machine
- A01B 61/025 .. { the driving connections }
- A01B 61/04 . of the connection between tools and carrier beam or frame
- A01B 61/042 .. { with shearing devices }
- A01B 61/044 .. { the connection enabling a yielding pivoting movement around a substantially horizontal and transverse axis }
- A01B 61/046 ... { the device including an energy accumulator for restoring the tool to its working position }
- A01B 61/048 { the connection or the energy accumulator being active in two opposite directions, e.g. for reversible plows }
- A01B 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 [B66F](#))
- A01B 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](#)) }
- WARNING**
- Documents of group [A01B 63/002](#) and subgroups are in the process of being reorganised to groups [A01B 63/111](#) , [A01B 63/16](#) , [A01B 63/24](#)
- A01B 63/004 .. { Lateral adjustment of tools }
- A01B 63/006 .. { Lateral adjustment of wheels }
- A01B 63/008 .. { Vertical adjustment of tools ([A01B 63/10](#) takes precedence) }
- A01B 63/02 . for implements mounted on tractors
- A01B 63/023 .. { Lateral adjustment of their tools }
- A01B 63/026 .. { Lateral adjustment of their wheels }
- A01B 63/04 .. Hand devices; Hand devices with mechanical accumulators, e.g. springs
- A01B 63/045 ... { for vertically adjusting wheels or similar rotary supporting elements }
- A01B 63/06 .. operated mechanically by tractor motor
- A01B 63/08 .. operated by the movement of the tractor
- A01B 63/10 .. operated by hydraulic or pneumatic means
- A01B 63/1006 ... { the hydraulic or pneumatic means structurally belonging to the tractor }
- A01B 63/1013 { and being located inside the tractor body }

- A01B 63/102 . . . characterised by the location of the mounting on the tractor, e.g. on the rear part
- A01B 63/104 on the middle part, i.e. between front and rear wheels
- A01B 63/106 on the side
- A01B 63/108 on the front part
- A01B 63/11 . . . for controlling weight transfer between implements and tractor wheels
- A01B 63/111 . . . regulating working depth of implements
- A01B 63/1112 { using a non-tactile ground distance measurement, e.g. using reflection of waves }
- A01B 63/1115 { using a mechanical ground contact sensor }
- A01B 63/1117 { using a hitch position sensor }
- A01B 63/112 to control draught load, i.e. tractive force
- A01B 63/114 to achieve a constant working depth
- A01B 63/1145 { for controlling weight transfer between implements and tractor wheels }
- A01B 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](#))
- A01B 63/12 . . . operated by an electric motor
- A01B 63/14 . . for implements drawn by animals or tractors
- A01B 63/145 . . { for controlling weight transfer between implements and tractor wheels }
- A01B 63/16 . . with wheels adjustable relatively to the frame
- A01B 63/163 . . . { laterally adjustable }
- A01B 63/166 . . . { manually adjustable }
- A01B 63/18 . . . with clutch between Z-type axle and wheel
- A01B 63/20 . . . with gear and rack
- A01B 63/22 . . . operated by hydraulic or pneumatic means
- A01B 63/24 . . Tools or tool-holders adjustable relatively to the frame
- A01B 63/245 . . . { laterally adjustable }
- A01B 63/26 . . . by man-power
- A01B 63/28 . . . operated by the machine or implement
- A01B 63/30 . . . operated by motor power through a mechanical transmission
- A01B 63/32 . . . operated by hydraulic or pneumatic means { without automatic control }

A01B 67/00 **Devices for controlling the tractor motor by resistance of tools ([preventing overstrain A01B 61/00](#))**

A01B 69/00 **Steering of agricultural machines or implements; Guiding agricultural machines or implements on a desired track ([vehicle course control in general G05D 1/02](#))**

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

- A01B 69/001 . { Steering by means of optical assistance, e.g. television cameras (steering devices for road marking vehicles [E01C 23/163](#)) }
- A01B 69/002 . { Steering or guiding on a substantially circular or spiral path }
- A01B 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 }
- A01B 69/004 . . { automatic }
- A01B 69/005 . . { by an additional operator }
- A01B 69/006 . . { derived from the steering of the tractor }
- A01B 69/007 . { Steering or guiding of agricultural vehicles, e.g. steering of the tractor to keep the plough in the furrow }
- A01B 69/008 . . { automatic }
- A01B 69/02 . Ridge-marking or like devices; Checkrow wires; Accessories therefor
- A01B 69/022 . . { Ridge marking by deposition of a chemical substance, e.g. foam, on the surface of the soil }
- A01B 69/024 . . { adapted to cut and form a ridge or forrow in the soil surface, e.g. with a disc }
- A01B 69/026 . . { Checkrow wires }
- A01B 69/028 . . . { the wire being located above the ground }
- A01B 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 [G05G](#)) }**
- A01B 71/02 . Setting or adjusting mechanisms
- A01B 71/04 . Bearings of rotating parts, e.g. for soil-working discs ({ discs [A01B 15/16](#) , [A01B 23/06](#) } ; bearings in general [F16C](#))
- A01B 71/06 . Special adaptations of coupling means between power take-off and transmission shaft to the implement or machine (couplings for transmitting rotation [F16D](#))
- A01B 71/063 . . { for enabling transmission coupling and connection between tractor and implements to be controlled from the driver`s seat }
- A01B 71/066 . . { for enabling pitch, roll or yaw movements of trailed implements or machines }
- A01B 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](#))

- A01B 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](#))
- [A01B 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)}
- [A01B 73/02](#) . Folding frames
- [A01B 73/04](#) . . foldable about a horizontal axis
- [A01B 73/042](#) . . . { specially adapted for actively driven implements }
- [A01B 73/044](#) . . . { the axis being oriented in a longitudinal direction [A01B 73/042](#) takes precedence }
- [A01B 73/046](#) { each folding frame part being foldable in itself }
- [A01B 73/048](#) . . . { the axis being oriented in transverse direction [A01B 73/042](#) takes precedence }
- [A01B 73/06](#) . . foldable about a vertical axis
- [A01B 73/062](#) . . . { of the type comprising four vertical folding axes each disposed at a substantially fixed location of a supporting frame }
- [A01B 73/065](#) . . . { to a position essentially forward of the axis, in relation to the direction of travel }
- [A01B 73/067](#) . . . { to a position essentially rearward of the axis, in relation to the direction of travel }
- A01B 75/00** Carriers for supporting persons when working in the field, e.g. while thinning beet
- A01B 76/00** Parts, details or accessories of agricultural machines or implements, not provided for in groups [A01B 51/00](#) to [A01B 75/00](#)
- A01B 77/00** Machines for lifting and treating soil (biocides, pest repellants or attractants, plant growth regulators [A01N 25/00](#) to [A01N 65/00](#) ; fertilisers [C05](#) ; soil-conditioning or soil-stabilising materials [C09K 17/00](#))
- A01B 79/00** Methods for working soil (essentially requiring the use of particular machines, see the relevant groups for the machines)
- [A01B 79/005](#) . { Precision agriculture }
- [A01B 79/02](#) . combined with other agricultural processing, e.g. fertilising, planting