

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 unisono 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: <u>Other machines for working soil</u>	
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 furrow 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