

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}

Ploughs

A01B 3/00

A01B 3/02

A01B 3/04

A01B 3/06

A01B 3/08

A01B 3/10

A01B 3/12

A01B 3/14

A01B 3/16

A01B 3/18

A01B 3/20

A01B 3/22

A01B 3/24

A01B 3/26

A01B 3/28

A01B 3/30

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A01B 3/34

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A01B 3/38

A01B 3/40

A01B 3/42

A01B 3/421

A01B 3/4215

A01B 3/426

A01B 3/44

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A01B 3/462

A01B 3/464

A01B 3/466

A01B 3/468

A01B 3/50

A01B 3/52

A01B 3/54

Ploughs with fixed plough-shares

- . Man-driven ploughs
- . Animal-drawn ploughs
 - . . without alternating possibility, i.e. incapable of making an adjacent furrow on return journey, {i.e. conventional ploughing}
- . . . Swing ploughs
- . . . Trussed-beam ploughs; Single-wheel ploughs
- . . . Two-wheel beam ploughs
- . . . Frame ploughs
- . . Alternating ploughs, i.e. capable of making an adjacent furrow on return journey
 - . . . Turn-wrest ploughs
 - . . . Balance ploughs
 - . . . with parallel plough units used alternately
- . Tractor-drawn ploughs (A01B 3/04 takes precedence)
 - . . without alternating possibility
 - . . Alternating ploughs
 - . . . Turn-wrest ploughs
 - . . . Balance ploughs
 - . . . with parallel plough units used alternately
- . Ploughs mounted on tractors
 - . . without alternating possibility
 - . . Alternating ploughs
 - . . . Turn-wrest ploughs
 - with a headstock frame made in one piece
 - {the headstock being provided with two or more hydraulic cylinders}
 - with a headstock frame made of two or more parts
 - . . . with parallel plough units used alternately
- . Ploughs supported partly by tractor and partly by their own wheels
 - . . {Alternating ploughs with frame rotating about a vertical axis}
 - . . {Alternating ploughs with frame rotating about a horizontal axis, e.g. turn-wrest ploughs}
 - . . . {the frame comprising an articulated beam}
 - . . . {the plough wheels being actively driven}
- . Self-propelled ploughs
 - . . with three or more wheels, or endless tracks
 - . . . 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}

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](#)})

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	<ul style="list-style-type: none"> with tools on horizontal shaft transverse to direction of travel
A01B 33/021	<ul style="list-style-type: none"> <ul style="list-style-type: none"> {with rigid tools}
A01B 33/022	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {with helicoidal tools}
A01B 33/024	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {with disk-like tools}
A01B 33/025	<ul style="list-style-type: none"> <ul style="list-style-type: none"> {with spring tools, i.e. resiliently- or flexibly-attached rigid tools}
A01B 33/027	<ul style="list-style-type: none"> <ul style="list-style-type: none"> {Operator supported tools, e.g. using a harness for supporting the tool or power unit}
A01B 33/028	<ul style="list-style-type: none"> <ul style="list-style-type: none"> {of the walk-behind type (walk-type tractors B62D 51/04)}
A01B 33/04	<ul style="list-style-type: none"> with tools on horizontal shaft parallel to direction of travel
A01B 33/06	<ul style="list-style-type: none"> with tools on vertical or steeply-inclined shaft
A01B 33/065	<ul style="list-style-type: none"> <ul style="list-style-type: none"> {comprising a plurality of rotors carried by an elongate, substantially closed transmission casing, transversely connectable to a tractor}
A01B 33/08	<ul style="list-style-type: none"> Tools; Details, e.g. adaptations of transmissions or gearings
A01B 33/082	<ul style="list-style-type: none"> <ul style="list-style-type: none"> {Transmissions; Gearings; Power distribution}
A01B 33/085	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {specially adapted for tools on a vertical shaft}
A01B 33/087	<ul style="list-style-type: none"> <ul style="list-style-type: none"> {Lifting devices; Depth regulation devices; Mountings}
A01B 33/10	<ul style="list-style-type: none"> <ul style="list-style-type: none"> Structural or functional features of the tools; {Theoretical aspects of the cutting action}
A01B 33/103	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {the rotating shaft being oriented horizontally}
A01B 33/106	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {the rotating shaft being oriented vertically or steeply inclined}
A01B 33/12	<ul style="list-style-type: none"> <ul style="list-style-type: none"> Arrangement of the tools; Screening of the tools
A01B 33/125	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {screening of tools rotating about a vertical shaft}
A01B 33/14	<ul style="list-style-type: none"> <ul style="list-style-type: none"> Attaching the tools to the rotating shaft, e.g. resiliently {or flexibly}-attached tools
A01B 33/142	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {the rotating shaft being oriented horizontally}
A01B 33/144	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {with spring tools or resiliently-attached rigid tools}
A01B 33/146	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {the rotating shaft being oriented vertically or steeply inclined}
A01B 33/148	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> {with spring tools or resiliently-attached rigid tools}
A01B 33/16	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> with non-rotating tools
A01B 35/04	<ul style="list-style-type: none"> <ul style="list-style-type: none"> drawn by animal or tractor {or man-power}
A01B 35/06	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> with spring tools {or with resiliently- or flexibly-attached rigid tools}
A01B 35/08	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> with rigid tools
A01B 35/10	<ul style="list-style-type: none"> <ul style="list-style-type: none"> 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}](#)

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	<ul style="list-style-type: none"> • {Details, component parts}
A01B 59/004	<ul style="list-style-type: none"> • • {Length-adjustable links}
A01B 59/006	<ul style="list-style-type: none"> • • {Latched hooks}
A01B 59/008	<ul style="list-style-type: none"> • • {Link connectors with spherical surfaces}
A01B 59/02	<ul style="list-style-type: none"> • for animal-drawn machines
A01B 59/04	<ul style="list-style-type: none"> • for machines pulled or pushed by a tractor
A01B 59/041	<ul style="list-style-type: none"> • • preventing or limiting side-play of implements (preventing overstrain A01B 61/00)
A01B 59/0415	<ul style="list-style-type: none"> • • • {by hydraulic or pneumatic means acting on the lower draft links}
A01B 59/042	<ul style="list-style-type: none"> • • having pulling means arranged on the rear part of the tractor
A01B 59/043	<ul style="list-style-type: none"> • • • supported at three points, e.g. by quick-release couplings (A01B 59/06 takes precedence)
A01B 59/044	<ul style="list-style-type: none"> • • having pulling means arranged on the middle part of the tractor
A01B 59/046	<ul style="list-style-type: none"> • • having pulling or pushing means arranged on the side of the tractor
A01B 59/048	<ul style="list-style-type: none"> • • having pulling or pushing means arranged on the front part of the tractor
A01B 59/06	<ul style="list-style-type: none"> • for machines mounted on tractors
A01B 59/061	<ul style="list-style-type: none"> • • {specially adapted for enabling connection or disconnection controlled from the driver's seat (not used, see subgroups)}
A01B 59/062	<ul style="list-style-type: none"> • • • {the connection comprising a rigid interface frame on the tractor}
A01B 59/063	<ul style="list-style-type: none"> • • • {the connection comprising longitudinally oriented tang-and-sheath elements}
A01B 59/064	<ul style="list-style-type: none"> • • {for connection to the front of the tractor}
A01B 59/065	<ul style="list-style-type: none"> • • {for ploughs or like implements (A01B 59/061 and subgroups take precedence)}
A01B 59/066	<ul style="list-style-type: none"> • • {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	<ul style="list-style-type: none"> • • • {the lower arms being lifted or lowered by power actuator means internally incorporated in the tractor}
A01B 59/068	<ul style="list-style-type: none"> • • • {the lower arms being lifted or lowered by power actuator means provided externally on the tractor}
A01B 59/069	<ul style="list-style-type: none"> • • {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	<ul style="list-style-type: none"> • of the coupling devices between tractor and machine
A01B 61/025	<ul style="list-style-type: none"> • • {the driving connections}
A01B 61/04	<ul style="list-style-type: none"> • of the connection between tools and carrier beam or frame
A01B 61/042	<ul style="list-style-type: none"> • • {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