

SECTION A — HUMAN NECESSITIES

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

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

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PARTICULAR METHODS FOR WORKING SOIL.....	47/00, 79/00

1/00 Hand tools (edge trimmers for lawns A01G 3/06)

- 1/02 • Spades; Shovels
- 1/04 • • with teeth
- 1/06 • Hoes; Hand cultivators
- 1/08 • • with a single blade
- 1/10 • • with two or more blades
- 1/12 • • with blades provided with teeth
- 1/14 • • with teeth only
- 1/16 • Tools for uprooting weeds
- 1/18 • • Tong-like tools
- 1/20 • Combinations of different kinds of hand tools
- 1/22 • Attaching the blades or the like to handles (handles for tools, or their attachment, in general B25G); Interchangeable or adjustable blades
- 1/24 • for treating meadows or lawns [2]

- 3/20 • • • Balance ploughs
- 3/22 • • • with parallel plough units used alternately
- 3/24 • Tractor-drawn ploughs (A01B 3/04 takes precedence)
- 3/26 • • without alternating possibility
- 3/28 • • Alternating ploughs
- 3/30 • • • Turn-wrest ploughs
- 3/32 • • • Balance ploughs
- 3/34 • • • with parallel plough units used alternately
- 3/36 • Ploughs mounted on tractors
- 3/38 • • without alternating possibility
- 3/40 • • Alternating ploughs
- 3/42 • • • Turn-wrest ploughs
- 3/421 • • • with a headstock frame made in one piece [2]
- 3/426 • • • with a headstock frame made of two or more parts [2]
- 3/44 • • • with parallel plough units used alternately
- 3/46 • Ploughs supported partly by tractor and partly by their own wheels
- 3/50 • Self-propelled ploughs
- 3/52 • • with three or more wheels, or endless tracks
- 3/54 • • • without alternating possibility
- 3/56 • • • Alternating ploughs
- 3/58 • • with two wheels
- 3/60 • • • Alternating ploughs
- 3/62 • • • • Balance ploughs
- 3/64 • Cable ploughs; Indicating or signalling devices for cable plough systems
- 3/66 • • with motor-driven winding apparatus mounted on the plough

Ploughs

3/00 Ploughs with fixed plough-shares

- 3/02 • Man-driven ploughs
- 3/04 • Animal-drawn ploughs
- 3/06 • • without alternating possibility, i.e. incapable of making an adjacent furrow on return journey
- 3/08 • • • Swing ploughs
- 3/10 • • • Trussed-beam ploughs; Single-wheel ploughs
- 3/12 • • • Two-wheel beam ploughs
- 3/14 • • • Frame ploughs
- 3/16 • • Alternating ploughs, i.e. capable of making an adjacent furrow on return journey
- 3/18 • • • Turn-wrest ploughs

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- 3/68 • • Cable systems with one or two engines
- 3/70 • • • Systems with one engine for working uphill
- 3/72 • • Means for anchoring the cables
- 3/74 • Use of electric power for propelling ploughs (electric current collectors B60L 5/00)

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

- 5/02 • drawn by animals
- 5/04 • drawn by tractors
- 5/06 • • without alternating possibility
- 5/08 • • Alternating ploughs
- 5/10 • mounted or partly-mounted on tractors
- 5/12 • • without alternating possibility
- 5/14 • • Alternating ploughs
- 5/16 • Self-propelled disc or like ploughs

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

9/00 **Ploughs with rotary driven tools** (tilling implements with rotary driven tools A01B 33/00)

11/00 **Ploughs with oscillating, digging or piercing tools**

13/00 **Ploughs or like machines for special purposes** (for drainage E02B 11/02)

- 13/02 • for making or working ridges, e.g. with symmetrically arranged mouldboards
- 13/04 • for working in vineyards, orchards, or the like
- 13/06 • • Arrangements for preventing damage to the vines, or the like
- 13/08 • for working subsoil
- 13/10 • • Special implements for lifting subsoil layers
- 13/12 • • • Means for distributing the layers on the surface
- 13/14 • for working soil in two or more layers
- 13/16 • Machines for combating erosion, e.g. basin-diggers, furrow-damers

15/00 **Elements, tools, or details of ploughs**

- 15/02 • Plough blades; Fixing the blades
- 15/04 • • Shares
- 15/06 • • • Interchangeable or adjustable shares
- 15/08 • • Mouldboards
- 15/10 • • • Interchangeable or adjustable mouldboards
- 15/12 • Beams; Handles (handles for tools or their attachment in general B25G)
- 15/14 • Frames (means or arrangements to facilitate transportation A01B 73/00) [4]
- 15/16 • Discs (bearings therefor A01B 71/04); Scrapers for cleaning discs; Sharpening attachments (sharpening in general B24)
- 15/18 • Coulters
- 15/20 • Special adjusting means for tools of ploughs drawn by, or mounted on tractors working on hillsides or slopes

17/00 **Ploughs with special additional arrangements, e.g. means for putting manure under the soil, clod-crushers** (A01B 49/00 takes precedence; ploughs for working subsoil A01B 13/08) [2]

Harrows

19/00 **Harrows with non-rotating tools**

- 19/02 • with tools rigidly or elastically attached to a tool-frame

- 19/04 • • with two or more tool-frames
- 19/06 • • with tools or tool-frames moved to-and-fro mechanically
- 19/08 • with link network supporting tooth-like tools
- 19/10 • Lifting or cleaning apparatus

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

- 21/02 • with tooth-like tools
- 21/04 • • on horizontally-arranged axles
- 21/06 • • on vertically-arranged axles
- 21/08 • with disc-like tools

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

- 23/02 • Teeth; Fixing the teeth
- 23/04 • Frames (means or arrangements to facilitate transportation A01B 73/00); Drawing-arrangements [4]
- 23/06 • Discs (A01B 15/16 takes precedence; bearings therefor A01B 71/04); Scrapers for cleaning discs; Sharpening attachments (sharpening in general B24) [2]

25/00 **Harrows with special additional arrangements, e.g. means for distributing fertilisers; Harrows for special purposes** (A01B 39/00 takes precedence)

Other machines for working soil

27/00 **Clod-crushers**

29/00 **Rollers**

- 29/02 • with smooth surface
- 29/04 • with non-smooth surface formed of rotatably-mounted rings or discs or with projections or ribs on the roller body; Land packers
- 29/06 • with special additional arrangements

31/00 **Drags**

33/00 **Tilling implements with rotary driven tools**

- 33/02 • with tools on horizontal shaft transverse to direction of travel
- 33/04 • with tools on horizontal shaft parallel to direction of travel
- 33/06 • with tools on vertical or steeply-inclined shaft
- 33/08 • Tools; Details, e.g. adaptations of transmissions or gearings
- 33/10 • • Structural or functional features of the tools
- 33/12 • • Arrangement of the tools; Screening of the tools
- 33/14 • • Attaching the tools to the rotating shaft, e.g. resiliently-attached tools
- 33/16 • with special additional arrangements (A01B 49/00 takes precedence; for sowing or fertilising A01B 49/06) [2]

35/00 **Other machines for working soil** (A01B 37/00, A01B 39/00, A01B 77/00 take precedence)

- 35/02 • with non-rotating tools
- 35/04 • • drawn by animal or tractor
- 35/06 • • • with spring tools
- 35/08 • • • with rigid tools
- 35/10 • • mounted on tractors
- 35/12 • • • with spring tools
- 35/14 • • • with rigid tools
- 35/16 • with rotating or circulating non-propelled tools
- 35/18 • with both rotating and non-rotating tools

35/20	• Tools; Details	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) [3]
35/22	• • Non-rotating tools; Mounting non-rotating tools	59/02	• for animal-drawn machines
35/24	• • • Spring tools	59/04	• for machines pulled or pushed by a tractor
35/26	• • • Rigid tools	59/041	• • preventing or limiting side-play of implements (preventing overstrain A01B 61/00) [2]
35/28	• • Rotating tools; Mounting rotating tools	59/042	• • having pulling means arranged on the rear part of the tractor
35/30	• • Undercarriages (A01B 23/04 takes precedence) [2]	59/043	• • • supported at three points, e.g. by quick-release couplings (A01B 59/06 takes precedence)
35/32	• with special additional arrangements	59/044	• • having pulling means arranged on the middle part of the tractor
37/00	Devices for loosening soil compacted by wheels or the like	59/046	• • having pulling or pushing means arranged on the side of the tractor
39/00	Other machines specially adapted for working soil on which crops are growing	59/048	• • having pulling or pushing means arranged on the front part of the tractor
39/02	• with non-rotating tools	59/06	• for machines mounted on tractors
39/04	• • drawn by animal or tractor	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 <u>per se</u> F16D) [3]
39/06	• • Self-propelled machines	61/02	• of the coupling devices between tractor and machine
39/08	• with rotating tools	61/04	• of the connection between tools and carrier beam or frame
39/10	• with oscillating tools	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 <u>per se</u> B66F) [3]
39/12	• for special purposes	63/02	• for implements mounted on tractors
39/14	• • for working ridges	63/04	• • Hand devices; Hand devices with mechanical accumulators, e.g. springs
39/16	• • for working in vineyards, orchards, or the like	63/06	• • operated mechanically by tractor motor
39/18	• • for weeding	63/08	• • operated by the movement of the tractor
39/19	• • • Rod weeders, i.e. weeder with rotary rods propelled beneath the soil surface	63/10	• • operated by hydraulic or pneumatic means
39/20	• Tools; Details	63/102	• • • characterised by the location of the mounting on the tractor, e.g. on the rear part
39/22	• • Tools; Mounting tools	63/104	• • • • on the middle part, i.e. between front and rear wheels
39/24	• • Undercarriages (A01B 23/04 takes precedence) [2]	63/106	• • • • on the side
39/26	• • Arrangements for protecting plants	63/108	• • • • on the front part
39/28	• with special additional arrangements (A01B 49/00 takes precedence) [2]	63/11	• • • for controlling weight transfer between implements and tractor wheels [2]
41/00	Thinning machines	63/111	• • • regulating working depth of implements
41/02	• with oscillating tools	63/112	• • • • to control draught load, i.e. tractive force [2]
41/04	• with rotating tools	63/114	• • • • to achieve a constant working depth [2]
41/06	• with electric, e.g. photo-electric control of thinning operations	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) [2]
43/00	Gatherers for removing stones, undesirable roots or the like from the soil, e.g. tractor-drawn rakes [4]	63/12	• • operated by an electric motor
45/00	Machines for treating meadows or lawns	63/14	• for implements drawn by animals or tractors
45/02	• for aerating	63/16	• • with wheels adjustable relatively to the frame
45/04	• for cutting sods or turf	63/18	• • • with clutch between Z-type axle and wheel
47/00	Soil-working with electric potential applied between tools and soil	63/20	• • • with gear and rack
49/00	Combined machines (auxiliary devices attached to machines of a different kind, e.g. harrows attached to ploughs, <u>see</u> the relevant groups for the machines)	63/22	• • • operated by hydraulic or pneumatic means
49/02	• with two or more soil-working tools of different kind	63/24	• • Tools or tool-holders adjustable relatively to the frame
49/04	• Combinations of soil-working tools with non-soil-working tools, e.g. planting tools	63/26	• • • by man-power
49/06	• • for sowing or fertilising	63/28	• • • operated by the machine or implement
<u>Parts, details or accessories of agricultural machines or implements, in general</u> [3]			
51/00	Undercarriages specially adapted for mounting-on various kinds of agricultural tools or apparatus (general vehicle aspects, <u>see</u> the relevant subclass of class B60 or B62)		
51/02	• propelled by a motor		
51/04	• drawn by animal or tractor		

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- 63/30 • • • operated by motor power through a mechanical transmission
- 63/32 • • • operated by hydraulic or pneumatic means
- 67/00 Devices for controlling the tractor motor by resistance of tools** (preventing overstrain A01B 61/00)
- 69/00 Steering of agricultural machines or implements; Guiding agricultural machines or implements on a desired track [3]**
- 69/02 • Ridge-marking or like devices; Checkrow wires; Accessories therefor
- 69/04 • Special adaptations of automatic tractor steering, e.g. electric system for contour ploughing
- 69/06 • Lateral steering of machines by an additional operator
- 69/08 • Lateral steering of machines derived from the lateral movement of tractor
- 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**
- 71/02 • Setting or adjusting mechanisms
- 71/04 • Bearings of rotating parts, e.g. for soil-working discs (bearings in general F16C)
- 71/06 • Special adaptations of coupling means between power take-off and transmission shaft to the implement or machine (couplings for transmitting rotation F16D)
- 71/08 • Means for protecting against dust or the like, or for cleaning agricultural implements (A01B 15/16, A01B 19/10, A01B 23/06 take precedence; screening of rotary driven tilling tools A01B 33/12; screening of rotary parts in general F16P 1/00) [2]
- 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; vehicles adapted for load transportation or to transport, to carry or to comprise special loads or objects B60P; motor vehicles, trailers B62D) [4]
- 73/02 • Folding frames [4]
- 73/04 • • foldable about a horizontal axis [4]
- 73/06 • • foldable about a vertical axis [4]
- 75/00 Carriers for supporting persons when working in the field, e.g. while thinning beet**

- 76/00 Parts, details or accessories of agricultural machines or implements, not provided for in groups A01B 51/00-A01B 75/00 [2006.01]**
- 77/00 Machines for lifting and treating soil** (biocides, pest repellants or attractants, plant growth regulators A01N 25/00-A01N 65/00; fertilisers C05; soil-conditioning or soil-stabilising materials C09K 17/00)
- 79/00 Methods for working soil** (essentially requiring the use of particular machines, see the relevant groups for the machines)
- 79/02 • combined with other agricultural processing, e.g. fertilising, planting