

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](#)})

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Making or covering furrows or holes for sowing, planting, or manuring	A01C 5/00
Seat constructions	A47C
Wheels	B60B
Shelters for drivers	B60J
Seats specially adapted for vehicles, arrangement or mounting of seats in vehicles	B60N 2/00
Wheel scrapers	B60S 1/68
Soil working for engineering purposes	E01 , E02 , E21
Measuring areas for agricultural purposes	G01B

Special rules of classification

In [A01B](#) all relevant details of tools, method, implements or parts of agricultural machinery which are used for an action that will result in furrowing, ploughing, tilling, moving, opening, smoothing, etc, the soil (soil working) should be classified here. Some of these parts, tools, or methods may not refer directly to a blade for working the soil, but will be however directly related to the soil working action, like guiding the machine to work the soil according to a planned path or at a constant depth (which are related to steering, to the connection/hitch to the tractor, etc). Double classification in other classes, like in [A01C](#), is allowed depending on the precise details (see the lower classification in [A01B](#) and [A01C](#)). For instance, a coulter for a seeder which has a seed pipe attached, the coulter having no specific description (no detail relevant for the soil working classification scheme), will only be classified under [A01C 5/00](#). However, a coulter for a seeder, even if it includes a seed pipe, whose action in the soil is described in detail or has some special feature for working the soil (opening the furrow) is/ may be relevant for [A01B](#). Normally, knowledge of agricultural machines is necessary to determine the relevance. Experience in the field of agricultural machines and general knowledge of the classification in [A01B](#), [A01C](#) and [A01D](#) should be required in order to establish a proper classification. References are not limiting but informative, to make readers aware of the existence of other potential classification for details related to soil working which may not be covered in [A01B](#) or which may be found easier in other groups.

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Plant	Any of a kingdom (Plantae) of multicellular eukaryotic mostly photosynthetic organisms typically lacking locomotive movement or obvious nervous or sensory organs and possessing cellulose cell walls.
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A01B 1/00

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

Definition statement

This place covers:

Hand tools for gardening or for agricultural purposes.

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Machines for working soil	A01B 35/00
Edge trimmers for lawns	A01G 3/06
Making hand tools	B21D

A01B 1/02

Spades; Shovels {(hand-operated dredgers [E02F 3/02](#))}

Definition statement

This place covers:

Hand shovels for gardening or agricultural purposes.

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Shovels for snow	E01H 5/02
Hand held dredgers or shovels	E02F 3/02

A01B 1/06

Hoes; Hand cultivators {(rakes [A01D 7/00](#); forks [A01D 9/00](#); picks [B25D](#))}

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Rakes	A01D 7/00
Forks	A01D 9/00
Percussive tools	B25D

A01B 1/22

Attaching the blades or the like to handles (handles for tools, or their attachment, in general [B25G](#)); Interchangeable or adjustable blades

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Handles for tools, or their attachment, in general	B25G
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A01B 3/24

Tractor-drawn ploughs ([A01B 3/04](#) takes precedence)

References**Limiting references**

This place does not cover:

Animal-drawn ploughs	A01B 3/04
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A01B 3/74

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

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Electric current collectors	B60L 5/00
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A01B 5/00

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

References**Limiting references**

This place does not cover:

Ploughs with rotary driven tools	A01B 9/00
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A01B 9/00

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

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Tilling implements with rotary driven tools	A01B 33/00
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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](#))

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Machines for aerating meadows	A01B 45/02
Making furrows	A01C 5/00
Drainage device-laying apparatus	E02B 11/02
Dredging machines in general	E02F

Special rules of classification

All ploughs dig, but most of them do it in a continuous manner, they have the form of a blade or disk which is pulled under the soil in a straight line until the headland is reached. This group is for special designs, in which the ploughs perform, for example, a sideways oscillating movement in addition to its linear displacement, or for ploughs containing tools/blades which perform some kind of additional discontinuous work on the soil.

A01B 13/02

for making or working ridges, e.g. with symmetrically arranged mouldboards {, e.g. ridging plough}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Machines for planting potatoes or tubers	A01C 9/00
Machines for transplanting seedlings	A01C 11/00

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](#))}

References**Limiting references**

This place does not cover:

Machines specially adapted for working in vineyards	A01B 39/16
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A01B 13/08

for working subsoil

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Details about the subsoiler's or mouldboard's blades	A01B 15/08
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Synonyms and Keywords

In patent documents, the following words/expressions are often used as synonyms:

- "Subsoiler" and "mouldboard"

A01B 15/04

Shares {(making ploughshares by rolling [B21H](#))}

Definition statement

This place covers:

Details about the subsoiler's or mouldboard's blades

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Making ploughshares by rolling	B21H
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A01B 15/08

Mouldboards

Definition statement

This place covers:

Details about the subsoiler's or mouldboard's blades

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Subsoiler, machines for working subsoil	A01B 13/08
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A01B 15/14

Frames (means or arrangements to facilitate transportation [A01B 73/00](#))

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Means or arrangements to facilitate transportation	A01B 73/00
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A01B 15/16

Discs (bearings therefor [A01B 71/04](#)); Scrapers for cleaning discs; Sharpening attachments (sharpening in general [B24](#))

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Bearings of rotating parts	A01B 71/04
Shaping in general	B24

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}

References

Limiting references

This place does not cover:

Combined machines	A01B 49/00
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A01B 17/002

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

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

To plough-in weeds	A01B 39/18
Liquid manure or sludge injectors	A01C 23/02

A01B 19/00

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

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Harrows for working in vineyards	A01B 39/16
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A01B 21/00

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

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Tilling implements with rotary driven tools	A01B 33/00
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A01B 23/04

Frames (means or arrangements to facilitate transportation [A01B 73/00](#));
Drawing-arrangements

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Means or arrangements to facilitate transportation	A01B 73/00
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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](#))

References

Limiting references

This place does not cover:

Discs; Scrapers for cleaning discs; Sharpening attachments	A01B 15/16
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Bearings of rotating parts	A01B 71/04
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](#)})

References

Limiting references

This place does not cover:

Other machines specially adapted for working soil on which crops are growing, e.g. harrows for special purposes	A01B 39/00
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Fertiliser distributors	A01C 15/00
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A01B 27/00

Clod-crushers

Special rules of classification

There is no clear technical distinction between a harrow and a clod crusher. Here we classify, in order to make a distinction, harrows which are explicitly used for clod crushing and/or stone crushers for agricultural purposes (note that stone crusher is different from stone gatherer/remover, [A01B 43/00](#)). Double classification is possible for other details of the harrow. Clod crushing rollers can be also classified in [A01B 29/00](#) attending to specific features covered there.

A01B 29/00**Rollers {(rollers for roads [E01C](#))}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Rollers for roads	E01C
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A01B 31/00**Drags {graders for field cultivators (graders in general [E02F](#))}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Graders in general	E02F
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A01B 33/028**{of the walk-behind type (walk-type tractors [B62D 51/04](#))}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Walk-type tractors	B62D 51/04
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A01B 33/16**with special additional arrangements ([A01B 49/00](#) takes precedence; for sowing or fertilising [A01B 49/06](#))****References****Limiting references***This place does not cover:*

Combined machines	A01B 49/00
Tilling implements with rotary driven tools 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](#)})

References

Limiting references

This place does not cover:

Devices for loosening soil compacted by wheels or the like	A01B 37/00
Other machines specially adapted for working soil on which crops are growing	A01B 39/00
Machines for lifting and treating soil	A01B 77/00

Informative references

Attention is drawn to the following places, which may be of interest for search:

Hand tools	A01B 1/00
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A01B 35/30

Undercarriages ([A01B 23/04](#) takes precedence)

References

Limiting references

This place does not cover:

Frames; Drawing-arrangements	A01B 23/04
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A01B 39/14

for working ridges {, e.g. for rows of plants and/or furrows}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Making ridges on soil were plants are not growing	A01B 13/02
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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](#))}

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Ploughs adapted for working in vineyards	A01B 13/06
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A01B 39/18

for weeding

Definition statement

This place covers:

Details about mechanical weeding in-between rows of plants are classified, e.g. involving a tool penetrating the soil.

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Mechanical weeding or uprooting of weeds with manual (hand held) means	A01B 1/16
Mechanical or chemical weeding	A01M

A01B 39/24

Undercarriages ([A01B 23/04](#) takes precedence)

References**Limiting references**

This place does not cover:

Frames; Drawing-arrangements	A01B 23/04
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A01B 39/28

with special additional arrangements ([A01B 49/00](#) takes precedence)

References**Limiting references**

This place does not cover:

Combined machines	A01B 49/00
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A01B 43/00

Gatherers for removing stones, undesirable roots or the like from the soil, e.g. tractor-drawn rakes

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

For harvesting root crops	A01D
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A01B 49/04

Combinations of soil-working tools with non-soil-working tools, e.g. planting tools

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Seeding machines	A01C 7/00
Harvesters combined with soil-working implements	A01D 43/12

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](#))

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

General vehicle aspects	B60 , B62
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A01B 51/026

{of the automotive vehicle type, e.g. including driver accommodation ([A01B 51/023](#) takes precedence)}

References**Limiting references**

This place does not cover:

Propelled by a motor of the Gantry-type	A01B 51/023
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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](#))

Definition statement

This place covers:

Specific details of tractor-implement hitches

Details relating to electrical connectors for supplying electrical power to implements

References

Limiting references

This place does not cover:

Tractors, aspects of the tractor	B62D
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Lifting or adjusting devices for agricultural implements	A01B 63/00
Connection of supply lines	B50D1/62
Vehicle connections in general	B60D
Draught assemblies for animal drawn vehicles, in general	B62C 5/00

A01B 59/041

preventing or limiting side-play of implements (preventing overstrain [A01B 61/00](#))

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Preventing overstrain	A01B 61/00
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A01B 59/043

supported at three points, e.g. by quick-release couplings ([A01B 59/06](#) takes precedence)

References

Limiting references

This place does not cover:

Devices for machines mounted on tractors	A01B 59/06
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A01B 59/065

{for ploughs or like implements ([A01B 59/061](#) and subgroups take precedence)}

References**Limiting references**

This place does not cover:

Devices specially adapted for enabling connection or disconnection controlled from the driver's seat	A01B 59/061
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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](#))

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Preventing overstrain in vehicle connections in general	B60D
Preventing overstrain in couplings per se	F16D

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](#))

Definition statement

This place covers:

Details concerning the implement or the connection between tractor and implement

References**Limiting references**

This place does not cover:

Hydraulic pressure and supply systems inside the tractor	B62D and B60D
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Informative references

Attention is drawn to the following places, which may be of interest for search:

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

Special rules of classification

Classification here covers only details related to the implement, and not to the tractor or vehicle, which have their own classification under [B62D](#).

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](#))

References

Limiting references

This place does not cover:

Pulling means arranged on the rear part of the tractor supported at three points	A01B 59/043
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Preventing or limiting side-play of implements	A01B 59/041
Preventing overstrain	A01B 61/00

A01B 67/00

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

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Preventing overstrain	A01B 61/00
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Special rules of classification

When pulling soil working elements, like ploughs or subsoilers, the tractor must provide a certain tractive force while maintaining constant speed. This may be important for some soil working actions in which soil working tools rotate at a speed which is dependent on the forward speed of the tractor. Also for achieving a homogeneous soil working with certain tools when soil compaction or resistance conditions change from one area of the field to the next. Here the resistance of the spoil to penetration of the tools is measured, and the motor is adjusted to maintain constant speed/power.

A01B 69/00

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

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Precision agriculture	A01B 79/005
Methods for planting or sowing in patterns	A01C 21/00
Control of position or course in two dimensions	G05D 1/43

A01B 69/001

{Steering by means of optical assistance, e.g. television cameras (steering devices for road marking vehicles [E01C 23/163](#))}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Steering devices for road marking vehicles	E01C 23/163
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Special rules of classification

The steering referred to here is normally either automatic or semiautomatic (assisted guiding), so that the soil working follows a more precise path (following marks, or trenches created beforehand, so that soil working takes place in precisely parallel tracks, or follows a desired pattern).

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](#))}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Adjusting mechanisms in general	G05G
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A01B 71/04

Bearings of rotating parts, e.g. for soil-working discs (discs [A01B 15/16](#), [A01B 23/06](#)); bearings in general [F16C](#))

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Discs	A01B 15/16 , A01B 23/06
Bearings in general	F16C

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](#))

References

Limiting references

This place does not cover:

Discs; Scrapers for cleaning discs; Sharpening attachments	A01B 15/16
Lifting or cleaning apparatus	A01B 19/10
Discs; Scrapers for cleaning discs; Sharpening attachments	A01B 23/06

Informative references

Attention is drawn to the following places, which may be of interest for search:

Screening of rotary parts in general	F16P 1/00
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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](#))

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

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

Special rules of classification

In the main group ([A01B 73/00](#)) also special details about implement's wheels for transportation are classified. Telescopic frames are also classified here. Documents classified here may have extra classes depending on the type of implement.

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)}

References

Limiting references

This place does not cover:

Folding frames	A01B 73/02
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A01B 73/044

{the axis being oriented in a longitudinal direction ([A01B 73/042](#) takes precedence)}

References

Limiting references

This place does not cover:

Folding frames specially adapted for actively driven implements	A01B 73/042
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A01B 73/048

{the axis being oriented in transverse direction ([A01B 73/042](#) takes precedence)}

References

Limiting references

This place does not cover:

Folding frames specially adapted for actively driven implements	A01B 73/042
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A01B 76/00

Parts, details or accessories of agricultural machines or implements, not provided for in groups [A01B 51/00](#) - [A01B 75/00](#)

References

Limiting references

This place does not cover:

Machines covered in groups	A01B 51/00 - A01B 75/00
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A01B 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](#))

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Biocides, pest repellents or attractants, plant growth regulators	A01N 25/00 - A01N 65/00
Fertilizers	C05
Soil-conditioning or soil-stabilising materials	C09K 17/00

A01B 79/005

{Precision agriculture}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Guiding agricultural machines or implements	A01B 69/00
Methods for calculating the fertilizer's needs or for sowing in patterns	A01C 21/00

Special rules of classification

Here documents which disclose methods for working soil that do not fit within the usual and common soil working techniques, or that involve more complexity and precision than a simple tilling. For example, a method which mentions that under certain climatic conditions the soil should be tilled in a particular manner or with a particular schedule. Or a method for working a specific type of soil in a specific manner. Or smart farming techniques and methods which cover parts of the agricultural cycle related to soil working, etc.