

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](#); 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](#))

References

Limiting references

This place does not cover:

Making or covering furrows or holes for sowing, planting or manuring	A01C 5/00
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

Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Machines for harvesting root crops	A01D 13/00 - A01D 33/00
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Informative references

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

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
Measuring areas for agricultural purposes	G01B

Special rules of classification

In subclass [A01B](#) all relevant details of tools, methods, implements or parts of agricultural machinery which are used for an action that will result in furrowing, ploughing, tilling, moving, opening or smoothing the soil 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 the steering of, to the connection or hitch to the tractor. Double classification in other subclasses, like in subclass [A01C](#), is allowed depending on the details. For instance, a coulter for a seeder which has a seed pipe attached, the coulter having no detail relevant for the soil working classification scheme, will only be classified in group [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, e.g. opening the furrow, may be relevant for subclass [A01B](#).

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](#))

Definition statement

This place covers:

Hand tools for gardening or for agricultural purposes.

References

Limiting references

This place does not cover:

Edge trimmers for lawns	A01G 3/06
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Informative references

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

Machines for working soil	A01B 35/00
Making hand tools	B21D

A01B 1/02

Spades; Shovels

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****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; 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 3/74**Use of electric power for propelling ploughs****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****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

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](#))

Definition statement

This place covers:

Specially designed ploughs that perform, for example, a sideways oscillating movement in addition to its linear displacement or ploughs containing tools or blades which perform some kind of additional discontinuous work on the soil. Further examples include ditch diggers, trench ploughs, forestry ploughs and ploughs for land or marsh reclamation.

References**Limiting references**

This place does not cover:

Drainage device-laying apparatus	E02B 11/02
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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

A01B 13/02

for making or working ridges, e.g. with symmetrically arranged mouldboards

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

Machines specially adapted for working soil in vineyards, orchards or the like on which crops are growing	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****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 15/12

Beams; Handles

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 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; Scrapers for cleaning discs; Sharpening attachments

References

Informative references

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

Bearings of rotating parts, e.g. for soil-working discs	A01B 71/04
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A01B 17/00

Ploughs with special additional arrangements, e.g. means for putting manure under the soil, clod-crushers

References

Informative references

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

Ploughs for working subsoil	A01B 13/08
Combined machines	A01B 49/00

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

References**Informative references**

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

Machines specially adapted for working soil in vineyards, orchards or the like on which crops are growing	A01B 39/16
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A01B 21/00

Harrows with rotary non-driven tools

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; Scrapers for cleaning discs; Sharpening attachments****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Discs for ploughs	A01B 15/16
Bearings of rotating parts, e.g. for soil-working discs	A01B 71/04

A01B 25/00**Harrows with special additional arrangements, e.g. means for distributing fertilisers; Harrows for special purposes ([A01B 39/00](#) takes precedence)****References****Limiting references***This place does not cover:*

Machines specially adapted for working soil on which crops are growing	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 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****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

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 ([A01B 37/00](#), [A01B 39/00](#), [A01B 77/00](#) take precedence)****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****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

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 where plants are not growing	A01B 13/02
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A01B 39/16**for working in vineyards, orchards, or the like****Definition statement***This place covers:*

Also arrangements for preventing damage to vines.

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 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 49/00

Combined machines

Relationships with other classification places

The combination of machines in group [A01B 49/00](#), e.g. for one-pass soil working, is not considered a special additional arrangement in view of groups [A01B 17/00](#), [A01B 25/00](#), [A01B 29/06](#), [A01B 33/16](#), [A01B 35/32](#) and [A01B 39/28](#).

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

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 59/00

Devices specially adapted for connection between animals or tractors and agricultural machines or implements

Definition statement

This place covers:

Specific details of tractor-implement hitches.

Details relating to electrical connectors for supplying electrical power to implements.

References**Informative references**

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

Vehicle connections in general	B60D
Connection of supply lines	B60D 1/62
Draught assemblies for animal drawn vehicles, in general	B62C 5/00

A01B 61/00

Devices for, or parts of, agricultural machines or implements for preventing overstrain

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](#))

Definition statement

This place covers:

Details concerning the implement or the connection between tractor and implement.

Relationships with other classification places

Details related to the tractor or vehicle are covered in subclass [B62D](#).

References

Limiting references

This place does not cover:

Lifting mechanisms for the cutter-bar of a mower	A01D 34/24
Adjusting devices for the cutter-bar of a mower	A01D 34/28

A01B 63/118

Mounting implements on power-lift linkages (preventing or limiting side-play of implements [A01B 59/041](#))

References

Limiting references

This place does not cover:

Preventing or limiting side-play of implements	A01B 59/041
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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 67/00

Devices for controlling the tractor motor by resistance of tools

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 soil to penetration of the tools is measured, and the motor is adjusted to maintain constant speed or 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](#))}

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

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

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 71/06

Special adaptations of coupling means between power take-off and transmission shaft to the implement or machine

References**Informative references**

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

Couplings for transmitting rotation	F16D
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A01B 71/08

Means for protecting against dust or the like, or for cleaning agricultural implements (discs for ploughs [A01B 15/16](#); lifting or cleaning apparatus for harrows [A01B 19/10](#); discs for harrows [A01B 23/06](#); screening of rotary driven tilling tools [A01B 33/12](#))

References

Limiting references

This place does not cover:

Discs for ploughs	A01B 15/16
Lifting or cleaning apparatus for harrows	A01B 19/10
Discs for harrows	A01B 23/06
Screening of rotary driven tilling tools	A01B 33/12

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](#))

Definition statement

This place covers:

For example, telescopic frames or special details about implement's wheels for transportation.

References

Limiting references

This place does not cover:

Arrangements of lifting devices for soil working implements	A01B 63/00
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Informative references

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

Carriers for harvesters or mowers	A01D 75/002
Arrangements to facilitate transportation specially adapted for haymakers with tine-carrying rotary heads or wheels and the tines rotating about a substantially vertical axis	A01D 78/1007
Carriers for the transport of haymakers	A01D 80/005
Vehicles adapted for load transportation or to transport, to carry or to comprise special loads or objects	B60P

Motor vehicles or trailers	B62D
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A01B 77/00

Machines for lifting and treating soil

References

Informative references

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

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

A01B 79/005

{Precision agriculture}

Definition statement

This place covers:

Methods for working soil that involve more complexity and precision than a simple tilling.

Examples are:

- Methods which mention that under certain climatic conditions the soil should be tilled in a particular manner or with a particular schedule.
- Methods for working a specific type of soil in a specific manner.
- Smart farming techniques or methods which cover parts of the agricultural cycle related to soil working.

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