

A01C

PLANTING; SOWING; FERTILISING (parts, details or accessories of agricultural machines or implements, in general [A01B 51/00](#) - [A01B 75/00](#))

References

Limiting references

This place does not cover:

Parts, details or accessories of agricultural machines or implements, in general	A01B 51/00 - A01B 75/00
--	---

Informative references

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

Combined with general working of soil	A01B 49/04
Horticulture and cultivation in controlled environments or containers	A01G
Sowing and fertilizing with aircraft	B64D 1/16 - B64D 1/20
Apparatus for spreading sand or salt	E01C

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.
Planting	Placement of seed, bulbs or plants into the ground for growth.
Sowing	Placement of seed into or onto the ground for growth.
Fertilising	Application of fertiliser into or onto the ground near seed, bulb or plants to stimulate growth.

A01C 1/00

Apparatus, or methods of use thereof, for testing or treating seed, roots, or the like, prior to sowing or planting

Definition statement

This place covers:

General methods and apparatuses for treating seeds, involving mechanical means.

Relationships with other classification places

Aspects relating directly to chemical treatments or chemical formulations are classified in the appropriate chemical groups.

References

Informative references

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

Chemicals for testing or treating seed, roots	A01N 25/00 - A01N 65/00
Irradiation in general	B01J 19/08
Sampling of (parts of) seeds for testing	G01N

A01C 1/02

Germinating apparatus; Determining germination capacity of seeds or the like

References

Informative references

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

Germinating in preparation of malt	C12C 1/027
------------------------------------	----------------------------

A01C 1/025

{Testing seeds for determining their viability or germination capacity}

Definition statement

This place covers:

Testing, but not obtaining samples for testing, whereby the testing for viability is non-destructive.

References

Informative references

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

Sampling of (parts of) seeds for testing	G01N
--	----------------------

A01C 1/046

{Carrier compositions}

References

Limiting references

This place does not cover:

No chemical compositions or formulas classified in this group. Only the composition in respect of disposition of layers and similar, or materials used.

A01C 1/06

Coating or dressing seed

Definition statement

This place covers:

Mechanical means/machines, e.g. nozzles, used for coating seeds or mechanical aspects of the coating.

References

Informative references

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

Artificial seeds	A01H 4/006
Chemical coating compositions for seeds	C09D 133/00

A01C 1/08

Immunising seed

Relationships with other classification places

[A01C 1/08](#) relates to mechanical aspects, such as machines or mechanical means for immunising, using electricity, magnetism, temperature treatments, etc., or the mechanical means for administering a chemical composition. No chemical formulas or compositions are classified in this group.

A01C 3/00

Treating manure; Manuring

Definition statement

This place covers:

General methods for treating manure for its specific use as an agricultural input.

References

Informative references

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

Liquid manure	A01C 23/00
Ploughs with additional arrangements for putting manure under the soil	A01B 17/002
Dung forks	A01D 9/00
Treating of waste water, sewage or sludge	C02F
Organic fertilisers from waste or refuse	C05F

A01C 3/02

Storage places for manure, e.g. cisterns for liquid manure; Installations for fermenting manure

References**Informative references**

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

Sewerage structures	E03F 5/00
Silos, bunkers	E04H 7/22

A01C 3/023

{Digesters}

References**Informative references**

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

Bioreactors and fermenters in general	C12M 21/00 - C12M 99/00
---------------------------------------	--

A01C 3/025

{with heat recuperation means}

References**Informative references**

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

Bioreactors and fermenters with heat exchange systems	C12M 21/04
---	----------------------------

A01C 3/026

{with mixing or agitating devices}

References**Informative references**

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

Bioreactors and fermenters with mixing means	C12M 27/00
--	----------------------------

A01C 3/028

{Covers, roofs or other structures for covering manure storage places}

References

Informative references

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

Production of methane or biogas	C02F 11/04
Bioreactors and fermenters with production of methane or biogas	C12M 21/04
Coverings for swimming or splash baths or pools	E04H 4/10

A01C 3/04

Manure loaders

References

Informative references

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

Loaders in general	B65G
--------------------	----------------------

A01C 5/00

Making or covering furrows or holes for sowing, planting or manuring (ploughs for making ridges [A01B 13/02](#))

References

Limiting references

This place does not cover:

Ploughs for making ridges	A01B 13/02
---------------------------	----------------------------

Informative references

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

Agricultural soil working not specifically for these purposes	A01B
---	----------------------

A01C 5/02

Hand tools for making holes for sowing, planting or manuring

References

Informative references

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

Transplanting devices for trees	A01G 23/02
---------------------------------	----------------------------

A01C 5/045**{with piercing buckets}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Devices for laying-out or removing protective coverings for plants	A01G 13/02
--	----------------------------

A01C 5/06**Machines for making or covering drills or furrows for sowing or planting****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Seeders depositing seeds in rows	A01C 7/08
Lifting devices for agricultural machines	A01B 63/00

Special rules of classification

All aspects not covered in subgroups of [A01C 5/06](#) are classified here. A single document can have a group symbol in more than one of the subgroups, if the respective relevant information is covered by them.

A01C 5/068**{Furrow packing devices, e.g. press wheels}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Depth regulating wheels	A01C 7/203
-------------------------	----------------------------

A01C 7/00**Sowing****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Sowing with centrifugal wheels	A01C 17/00
Arrangement for driving working parts of seeders	A01C 19/00

A01C 7/006

{Minimum till seeding}

Definition statement

This place covers:

Tool or combinations of tools minimum till sowing techniques.

References

Informative references

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

Combination of soil working tools for planting	A01B 49/06
--	----------------------------

Special rules of classification

Specific details about the soil cutting or furrowing tools are additionally classified in the corresponding group under the subclass [A01B](#).

A01C 7/02

Hand sowing implements

References

Informative references

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

Fertiliser distributors for hand use	A01C 15/02
Tools for cultivation	A01G 20/30 , A01G 20/40

A01C 7/04

Single-grain seeders with or without suction devices

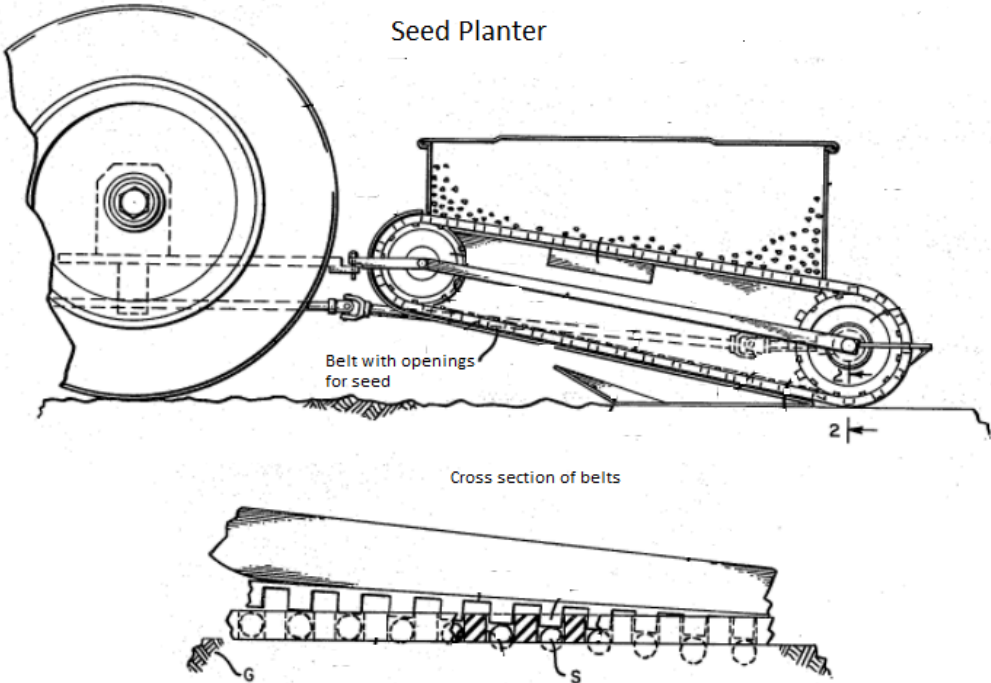
Definition statement

This place covers:

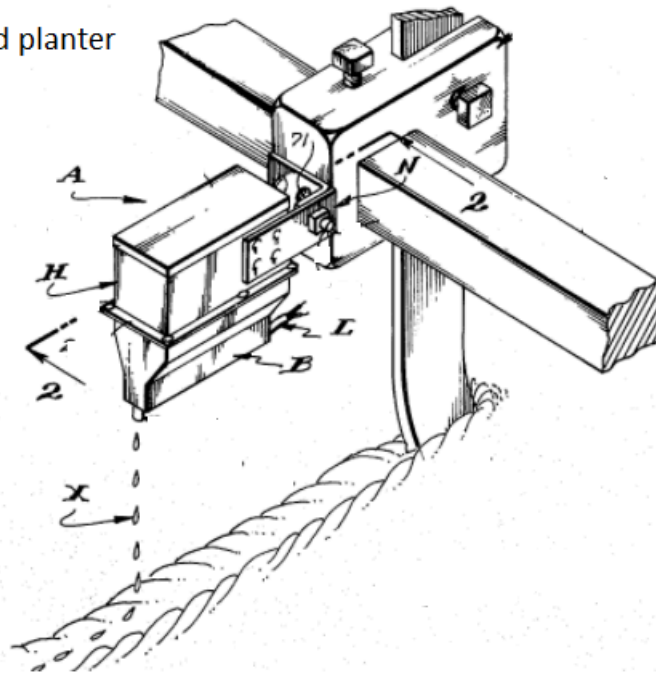
Seeders for planting single seeds at equal intervals typically in laterally spaced rows.

Suction is created by pneumatic means.

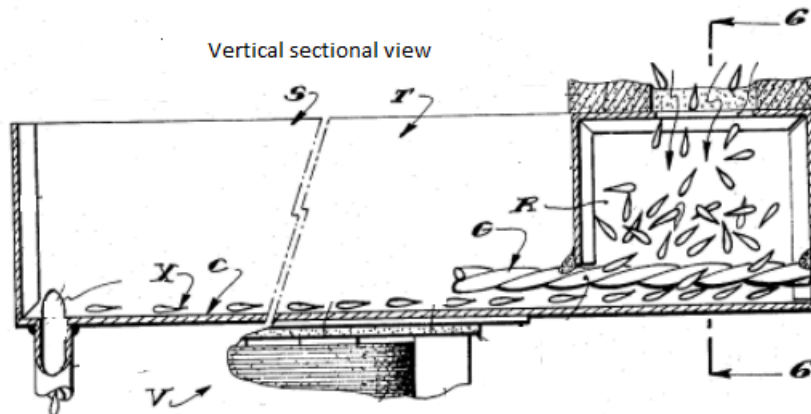
Illustrative example of subject matter classified in this group.



Vibrating seed planter



Vertical sectional view



References

Informative references

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

Devices for adjusting the seed-box; Regulation of machines for depositing quantities at intervals	A01C 7/10
Machines for depositing quantities of seed at intervals	A01C 7/18

A01C 7/042

{using pneumatic means}

Definition statement

This place covers:

Seed singulators operated under pressure of gas or air.

References

Informative references

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

Aspects of pneumatic seeders not related to the singulating of seeds	A01C 7/081
--	----------------------------

A01C 7/0443

{Seed singulators}

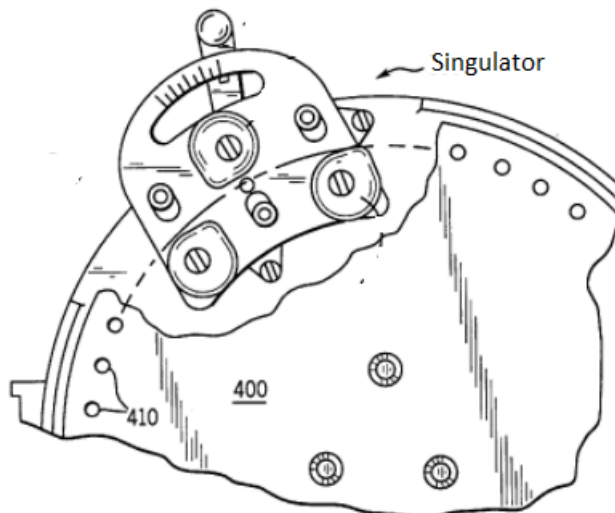
Definition statement

This place covers:

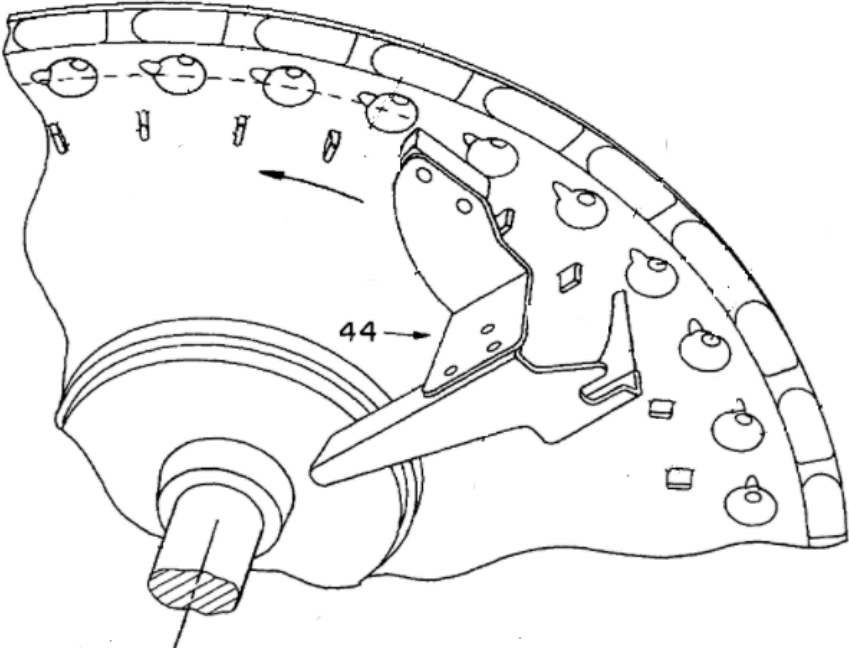
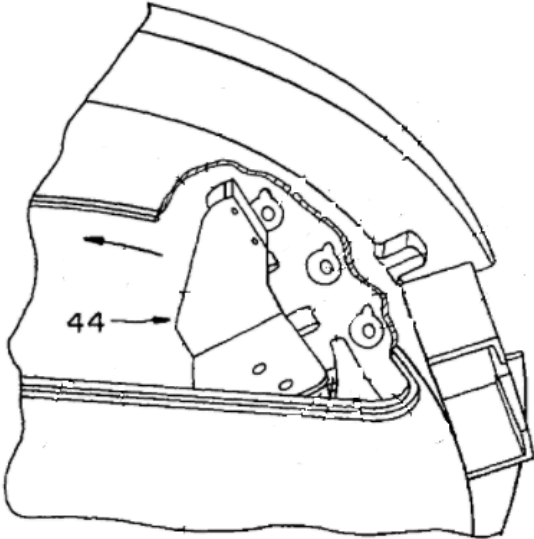
Devices for knocking multiples of seeds from an aperture back into the seed pool such that a single seed remains in the aperture for immediate sowing.

Illustrative example of subject matter classified in this group.

Seed singulator assembly

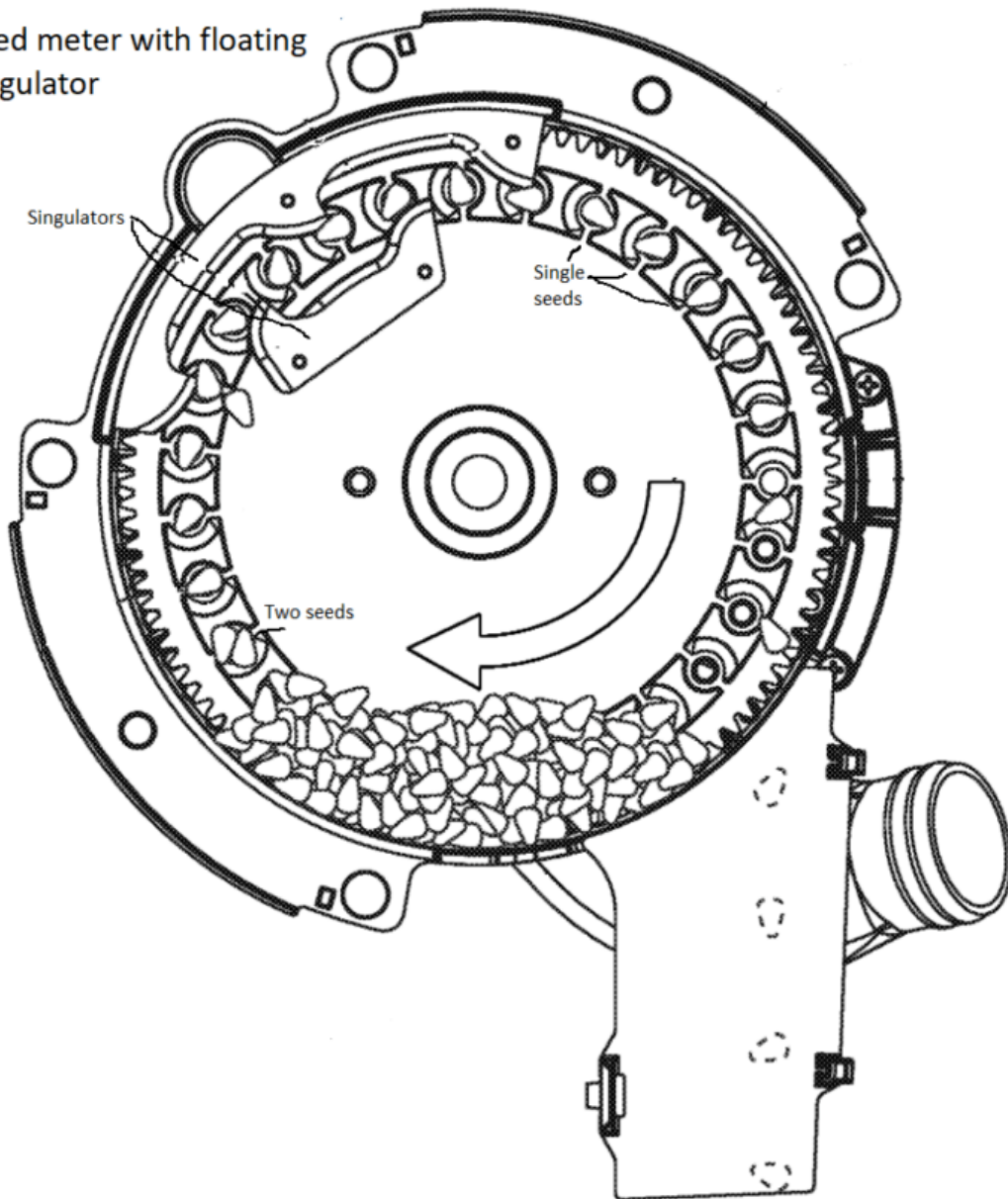


Seed singulator



Singulator = 44

Seed meter with floating
singulator



A01C 7/0445

{Seed ejectors}

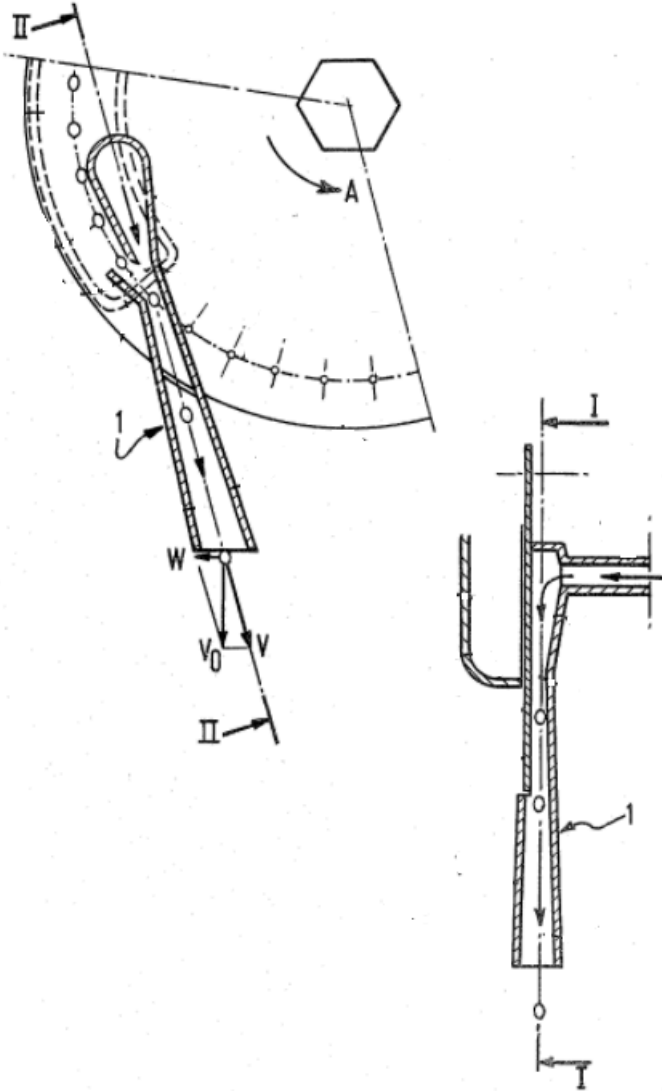
Definition statement

This place covers:

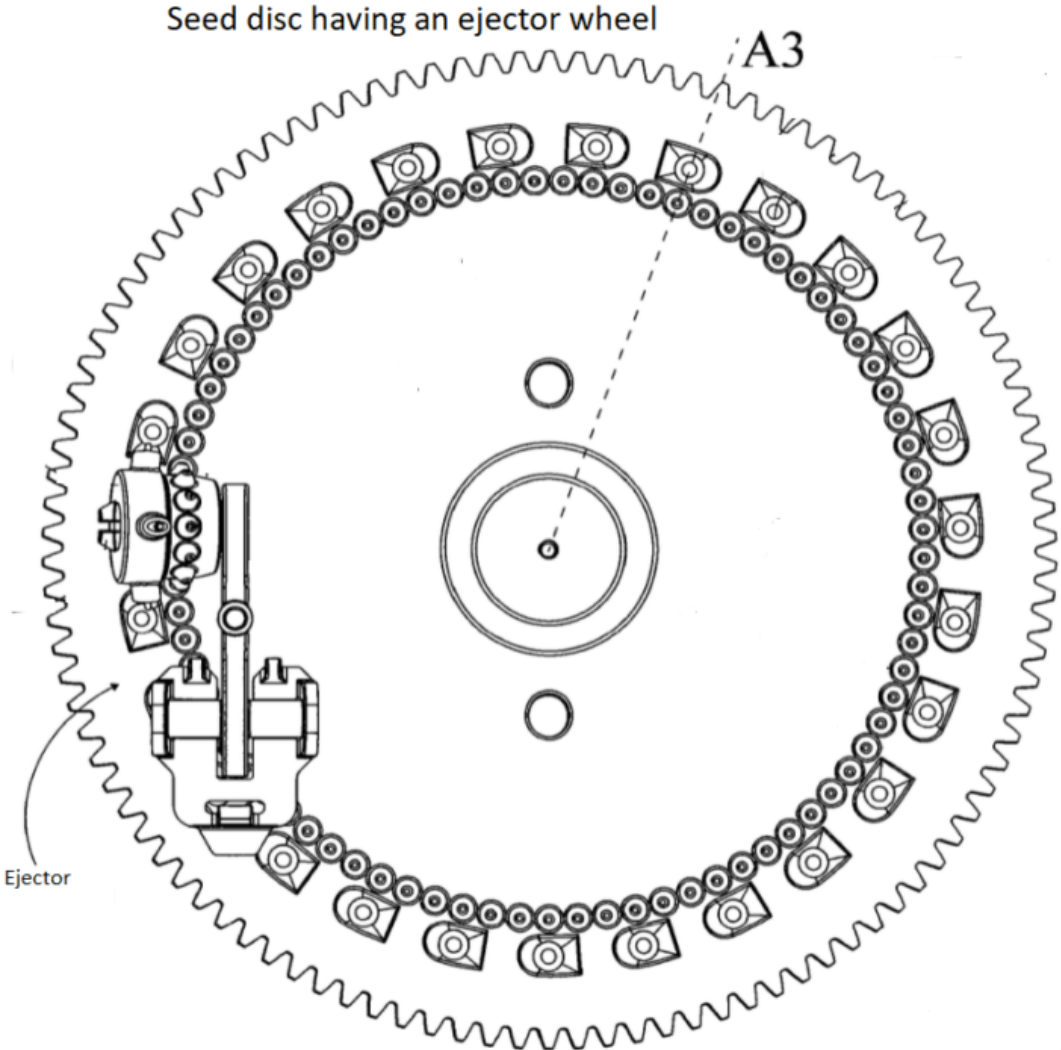
Devices for ejecting seeds from apertures for immediate sowing. This place also includes ejectors for forcefully ejecting seed or debris stuck in apertures.

Illustrative example of subject matter classified in this group.

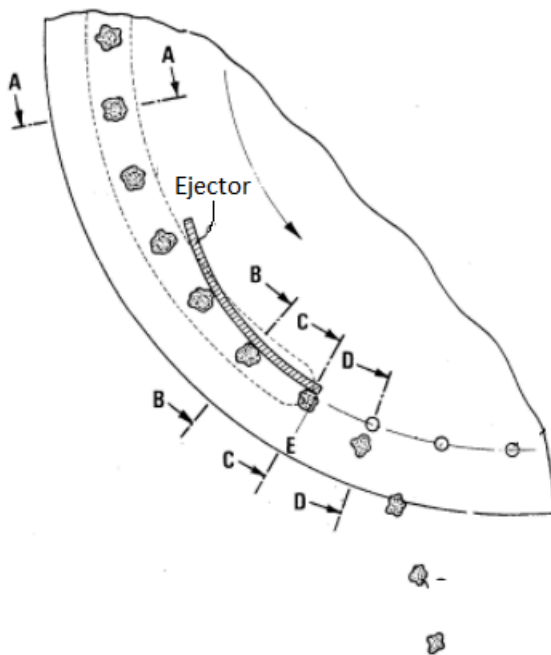
Pneumatic seed ejector



Ejector = 1



Pneumatic seeder



A01C 7/06

Seeders combined with fertilising apparatus

References

Informative references

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

Conducting and depositing seed	A01C 7/20
Apparatus for two kinds of fertiliser	A01C 15/00
Combinations with soil working tools	A01B 49/04

Special rules of classification

General aspects are classified here. This group symbol must always be combined with the relevant group symbol for the particular invention (distributing system, furrowing tools, regulation, etc.)

A01C 7/081

{Seeders depositing seeds in rows using pneumatic means}

References

Informative references

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

Particular aspects of seed singulating systems using pneumatic means	A01C 7/042
--	----------------------------

Specific aspects for fertilizer distribution, i.e. distribution of powder fertilisants	A01C 15/04
--	----------------------------

A01C 7/082

{Ducts, distribution pipes or details thereof for pneumatic seeders}

References

Informative references

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

Non-pneumatic seed pipes	A01C 7/206
--------------------------	----------------------------

Special rules of classification

In this group also the relevant aspects of distribution of granular fertilizer using pneumatic means are classified.

A01C 7/105

{Seed sensors}

Definition statement

This place covers:

Sensors for counting or detecting the passage of seeds.

A01C 7/16

Seeders with other distributing devices, e.g. brushes, discs, screws or slides

References

Informative references

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

Fertilisers with distributing slots	A01C 15/06
Fertilisers with adjustable shutters or slits	A01C 15/124
Fertilisers with endless chains	A01C 15/18
Centrifugal fertiliser or seed spreaders	A01C 17/00

A01C 7/163

{Gravity distributors}

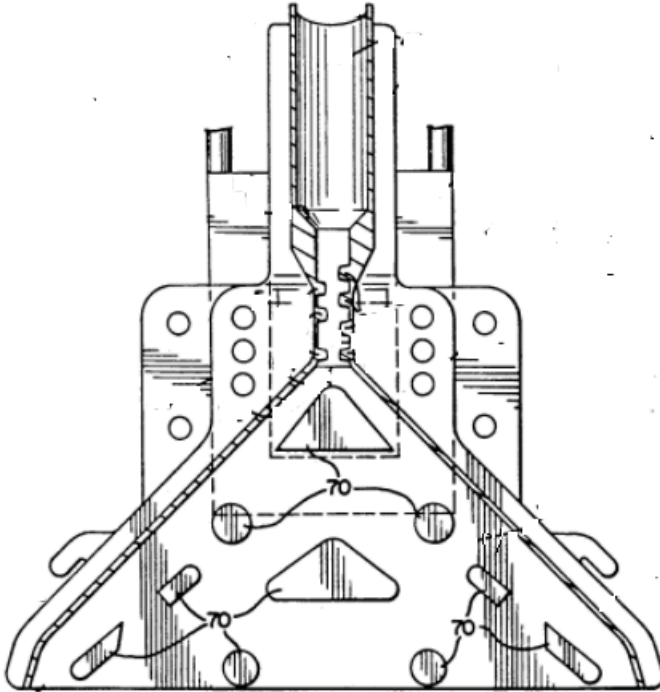
Definition statement

This place covers:

Seeders in which the seeds are downwardly driven only by gravity to the ground.

Illustrative example of subject matter classified in this group.

Bander assembly



Deflectors = 70

A01C 7/166 (Frozen)

{Centrifugal distributors}

References

Informative references

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

Pneumatic distributors	A01C 15/04
------------------------	----------------------------

A01C 7/18

Machines for depositing quantities of seed at intervals

References

Informative references

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

Dibble seeders	A01C 7/002
Single-grain seeders	A01C 7/04
Regulation	A01C 7/102

Ridge marking	A01B 69/02
---------------	----------------------------

A01C 7/20

Parts of seeders for conducting and depositing seed

References

Informative references

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

Parts combined with fertilising apparatus	A01C 7/06
---	---------------------------

A01C 7/205

{comprising pressure regulation means}

Definition statement

This place covers:

Means for adjusting or maintaining a uniform pressure, even if they have an effect on the depth regulation.

References

Informative references

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

Press wheels	A01C 5/068
--------------	----------------------------

A01C 7/208

{Chassis; Coupling means to a tractor or the like; Lifting means; Side markers}

References

Informative references

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

Hoppers for seeders or spreaders	A01C 15/006
----------------------------------	-----------------------------

A01C 9/00

Potato planters

Definition statement

This place covers:

Planting of all types of tubers, bulbs and similar big, round shaped reproductive material.

References

Informative references

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

Planting by hand	A01C 7/02
Ridge forming tools	A01B 13/02 and A01B 39/14
Combinations with soil working tools	A01B 49/04

A01C 9/04

with bucket wheels

References

Informative references

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

Potato planters with other distributing devices	A01C 9/08
---	---------------------------

A01C 9/08

with other distributing devices, e.g. flaps, screws, horizontal turning plates

References

Informative references

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

Potato planters with bucket wheels	A01C 9/04
------------------------------------	---------------------------

A01C 11/00

Transplanting machines

References

Limiting references

This place does not cover:

Machines or means for transplanting of plants or seedlings into the field, not into pots.

Planting of elongated parts of plants (like sugar cane buds).

Informative references

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

Hand sowing	A01C 7/02
Carriers for supporting persons	A01B 75/00
Transplanting seedlings or plants into pots	A01G
Transplanting devices for trees	A01G 23/02

A01C 11/006

{Other parts or details or planting machines}

Special rules of classification

Specific aspects of transplanting machines not covered in the other subgroups, like pivoting frames, wheels, furrowing tools, etc. are classified in this group. When appropriate, documents are additionally classified in [A01C 5/00](#) and in [A01B](#).

A01C 15/00

Fertiliser distributors ({combined with seeders} [A01C 7/06](#))

References

Limiting references

This place does not cover:

Fertiliser distributors combined with seeders	A01C 7/06
---	---------------------------

Informative references

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

Fertilisers or seeders with centrifugal wheels	A01C 17/00
Arrangements for driving working parts	A01C 19/00
Liquid fertilizers	A01C 23/00
Harrows with special additional arrangements	A01B 19/00
Sand, gravel or salt spreaders for roads	E01C 19/20

Special rules of classification

Control of the distribution rate, elements for pneumatic distribution of granular fertilizers, etc. are identical to the seed regulating or distributing means, and are additionally classified under [A01C 7/00](#), when appropriate.

A01C 15/006

{Hoppers}

Definition statement

This place covers:

Both this group and [A01C 15/007](#) cover also hoppers for seed.

A01C 15/02**for hand use****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Hand sowing	A01C 7/02
-------------	---------------------------

A01C 15/04**using blowers****Definition statement***This place covers:*

Only powder fertilizers, or specific aspects different or not suitable for seeds.

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

Aspects of the pneumatic distribution of granular fertilizer	A01C 7/081
--	----------------------------

A01C 15/10**with reciprocating pushers {or stirrers in front of the slots}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Distributors with endless chains	A01C 15/18
----------------------------------	----------------------------

A01C 15/122**{with moving floor parts}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Distributors with endless chains	A01C 15/18
----------------------------------	----------------------------

A01C 15/128

{with pushers or stirrers in front of the slits (with endless chains [A01C 15/18](#))}

References

Informative references

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

Distributors with endless chains	A01C 15/18
----------------------------------	----------------------------

A01C 15/14

with means for lifting out the fertiliser

References

Informative references

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

Feeding wheels, cell wheels, discs	A01C 7/12
Bucket wheels	A01C 7/14

A01C 17/00

Fertilisers or seeders with centrifugal wheels

Definition statement

This place covers:

Devices using the outward force of a spinning distributor to spread fertiliser or seed across a generally broad area of ground.

References

Informative references

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

Hand-used implements	A01C 7/02 , A01C 15/02
Fertilizer distributors	A01C 15/00
Mechanical throwing machines for articles or solid bulk materials, in general	B65G 31/00
Sand, gravel or salt spreaders for roads	E01C 19/20

A01C 17/006

{Regulating or dosing devices}

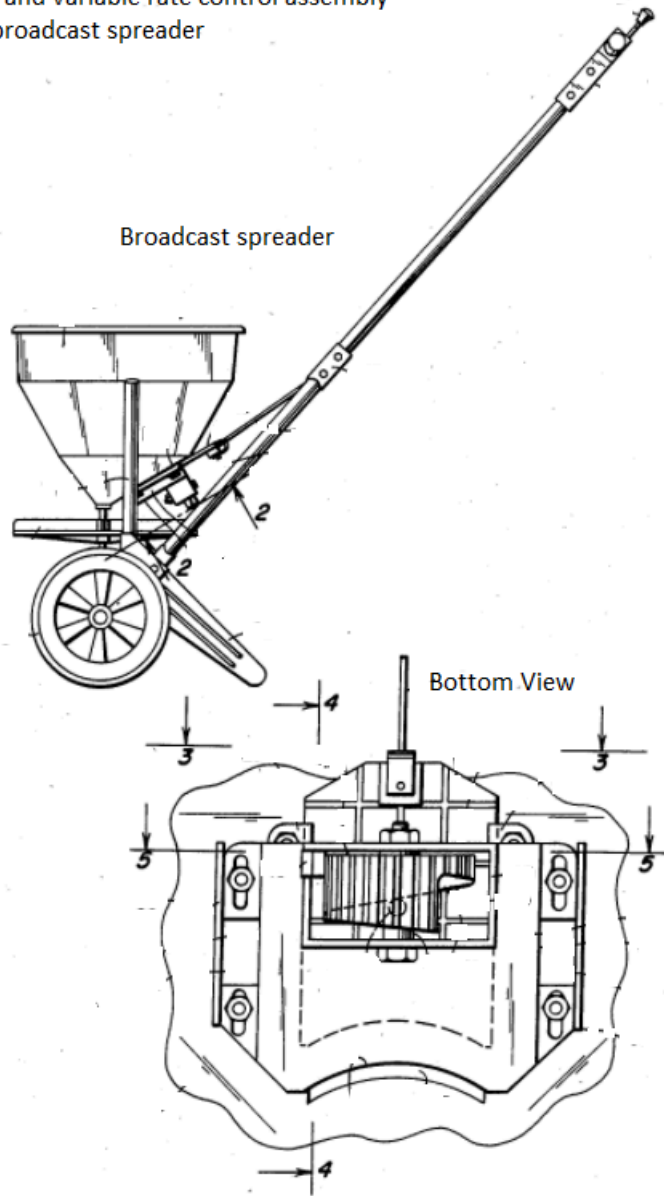
Definition statement

This place covers:

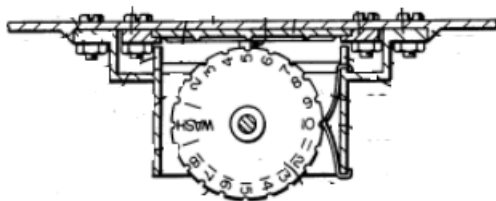
Dosing or regulation of the fertiliser or seed before reaching the rotating disks, i.e. dosing shutters and devices controlling the quantity and location of fertiliser or seed falling onto the rotating disks.

Illustrative example of subject matter classified in this group.

Chute and variable rate control assembly
for a broadcast spreader



Vertical sectional view taken along line 5



A01C 17/008

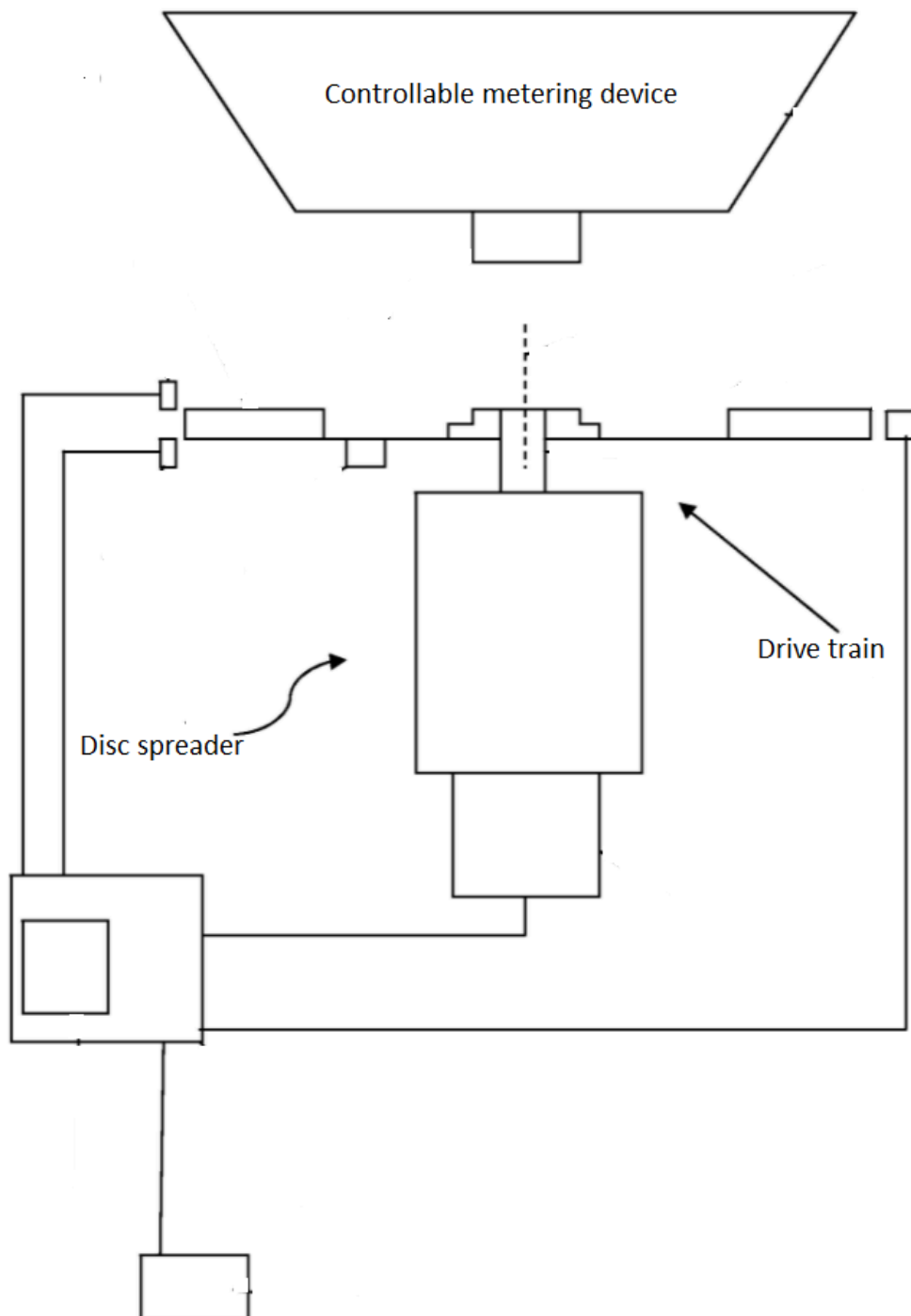
{Devices controlling the quantity or the distribution pattern}

Definition statement

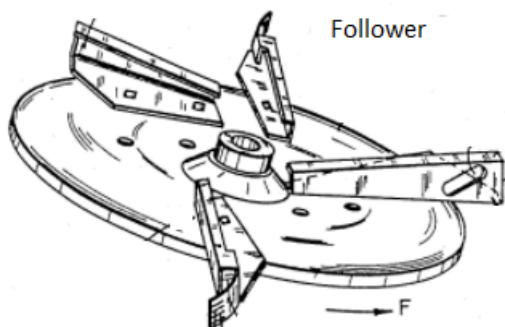
This place covers:

Regulation of the fertiliser or seed on or after the rotating disks, i.e. blades, chutes, plates for directing the flux of fertiliser or seed to the ground in a particular quantity or pattern.

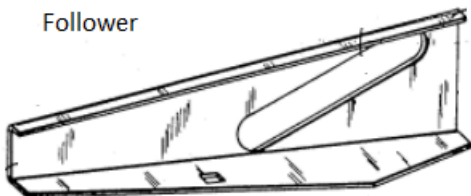
Illustrative example of subject matter classified in this group.



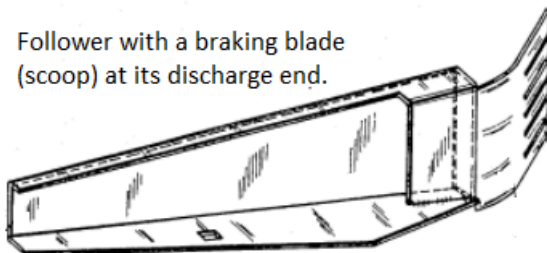
Dual-disk fertiliser



Follower



Follower with a braking blade (scoop) at its discharge end.



A01C 19/00

Arrangements for driving working parts of fertilisers or seeders {([A01C 17/005](#) takes precedence)}

References

Limiting references

This place does not cover:

Driving mechanisms for centrifugal spreaders	A01C 17/005
--	-----------------------------

A01C 19/04**by a ground-engaging wheel****Special rules of classification**

Also when the driving depends on the forward speed of the machine in general, even if this is not derived from a ground engaging wheel.

A01C 21/00**Methods of fertilising {, sowing or planting}****Definition statement**

This place covers:

Special methods for fertilizing or sowing (like planting patterns or designs), as well as the methods for calculating fertilization requirements.

References**Informative references**

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

Automatic guiding of agricultural machines	A01B 69/00
Precision agriculture	A01B 79/005
Fertilizers	C05
Soil-conditioning or soil-stabilising materials	C09K 17/00

A01C 23/00**Distributing devices specially adapted for liquid manure or other fertilising liquid, including ammonia, e.g. transport tanks or sprinkling wagons****References****Informative references**

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

Watering fields in general	A01G 25/00
Pulverizers for liquid pesticides	A01M 7/00
Spraying or applying liquids or other fluent materials in general	B05

A01C 23/006**{Distribution of liquid fertilisers by gravity flow}****References****Informative references**

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

Distribution of liquid ammonia in or on the soil	A01C 23/024
--	-----------------------------

Distribution of liquid fertilisers under pressure	A01C 23/04
---	----------------------------

A01C 23/022

{Continuous injection tools}

References

Informative references

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

Devices for making drill or furrows	A01C 5/066
-------------------------------------	----------------------------

A01C 23/027

{Other methods for delivering fertiliser into the soil}

References

Informative references

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

Sowing granular fertiliser	A01C 21/002
Subirrigation	A01G 25/06

A01C 23/042

{Adding fertiliser to watering systems}

References

Informative references

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

Adding insecticides or herbicides	A01M 7/00
-----------------------------------	---------------------------

A01C 23/045

{Filling devices for liquid manure or slurry tanks}

References

Informative references

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

Arrangements for connecting hoses of the quick-acting type	F16L 37/00
--	----------------------------

A01C 23/047**{Spraying of liquid fertilisers}****References*****Informative references****Attention is drawn to the following places, which may be of interest for search:*

Gravity flow	A01C 23/006
W watering gardens, fields, sports grounds or the like	A01G 25/00