

CPC**COOPERATIVE PATENT CLASSIFICATION****A01C**

PLANTING; SOWING; FERTILISING (combined with general working of soil [A01B 49/04](#); parts, details or accessories of agricultural machines or implements, in general [A01B 51/00](#) to [A01B 75/00](#); { apparatus for spreading sand or salt [E01C](#); sowing and fertilising with aircraft [B64D 1/16](#) to [B64D 1/20](#) })

A01C 1/00

Apparatus, or methods of use thereof, for testing or treating seed, roots, or the like, prior to sowing or planting (chemicals therefor [A01N 25/00](#) to [A01N 65/00](#) { irradiation in general [B01J 19/08](#) })

A01C 1/005

. { Potato seed cutters }

A01C 1/02

. Germinating apparatus; Determining germination capacity of seeds or the like ([germinating in preparation of malt C12C 1/027](#))

A01C 1/025

.. { Testing seeds for determining their viability or germination capacity }

A01C 1/04

. Arranging seeds on carriers, e.g. on tapes, on cords { Carrier compositions }

A01C 1/042

.. { Tapes, bands or cords }

A01C 1/044

.. { Sheets, multiple sheets or mats }

A01C 1/046

.. { Carrier compositions }

A01C 2001/048

.. { Machines }

A01C 1/06

. Coating or dressing seed {(encapsulated embryos or artificial seeds [A01H 4/006](#); Seed coating compositions [C09D](#))}

A01C 1/08

. Immunising seed

A01C 3/00

Treating manure; Manuring ({ 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 ([sewerage structures E03F 5/00](#); silos, bunkers [E04H 7/22](#))

A01C 3/021

.. { for composted manure }

A01C 3/023

.. { Digesters }

A01C 3/025

.. { with heat recuperation means }

A01C 3/026

.. { with mixing or agitating devices }

A01C 3/028

.. { Covers, roofs or other structures for covering manure storage places (production of methane or biogas [C02F 11/04](#); coverings for swimming or splash baths or pools [E04H 4/10](#))}

A01C 3/04

. Manure loaders ([loaders in general B65G](#))

A01C 3/06

. Manure distributors, e.g. dung distributors

- A01C 3/063 . . { Side-spreaders }
- A01C 3/066 . . { Spreading by using worm or screw conveyors }
- A01C 3/08 . . for manure already laying on the soil

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

- A01C 5/02 . Hand tools for making holes for sowing, planting or manuring (transplanting devices for trees [A01G 23/02](#))
- A01C 5/04 . Machines for making or covering holes for sowing or planting
- A01C 5/045 . . { with piercing buckets (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 ({ seeders depositing seeds in rows [A01C 7/08](#) }; ploughs for making ridges [A01B 13/02](#); { lifting devices for agricultural machines [A01B 63/00](#) })
- A01C 5/062 . . { Devices for making drills or furrows }
- A01C 5/064 . . . { with rotating tools }
- A01C 5/066 . . { Devices for covering drills or furrows }
- A01C 5/068 . . . { Furrow packing devices, e.g. press wheels }
- A01C 5/08 . Machines for both manuring and sowing or both manuring and planting

A01C 7/00 Sowing ({ with centrifugal wheels [A01C 17/00](#) } arrangements for driving working parts [A01C 19/00](#))

- A01C 7/002 . { Dibble seeders }
- A01C 7/004 . { using liquid seeding techniques }
- A01C 7/006 . { Minimum till seeding }
- A01C 7/008 . { Sod or grassland seeding ([A01C 7/08](#) takes precedence)}
- A01C 7/02 . Hand sowing implements {(fertiliser distributors for hand use [A01C 15/02](#); tools for cultivation [A01G 1/12](#))}
- A01C 7/04 . Single-grain seeders with or without suction devices {(regulation [A01C 7/10](#); for quantities of seed [A01C 7/18](#))}
- A01C 7/042 . . { using pneumatic means }
- A01C 7/044 . . . { Pneumatic seed wheels }
- A01C 7/046 { with perforated seeding discs }
- A01C 7/048 . . { Seed tape planters }
- A01C 7/06 . Seeders combined with fertilising apparatus ({ conducting and depositing seed [A01C 7/20](#); apparatus for two kinds of fertiliser [A01C 15/00](#) }; combinations with soil working tools [A01B 49/04](#))

- A01C 7/08 . Broadcast seeders; Seeders depositing seeds in rows {(machines for making furrows [A01C 5/06](#); combination of seed machines with other soil-working tools [A01B 49/06](#); foldable apparatus [A01B 73/00](#))}
- A01C 7/081 .. { Seeders depositing seeds in rows using pneumatic means }
- A01C 7/082 ... { Ducts, distribution pipes or details thereof for pneumatic seeders (non-pneumatic seed pipes [A01C 7/206](#)) }
- A01C 7/084 ... { Pneumatic distribution heads for seeders }
- A01C 7/085 .. { Broadcast seeders }
- A01C 7/087 .. { Tramlining }
- A01C 7/088 .. { Sectional seeding }
- A01C 7/10 .. Devices for adjusting the seed-box { Regulation of machines for depositing quantities at intervals }
- A01C 7/102 ... { Regulating or controlling the seed rate }
- A01C 7/105 { Seed sensors }
- A01C 7/107 ... { Calibration of the seed rate }
- A01C 7/12 .. Seeders with feeding wheels
- A01C 7/121 ... { for sowing seeds of different sizes }
- A01C 7/122 { using more than one feeding wheel; using double-run feeding wheels }
- A01C 7/123 ... { Housings for feed rollers or wheels }
- A01C 7/124 { with top delivery of the seeds }
- A01C 7/125 { with bottom delivery of the seeds }
- A01C 7/126 ... { Stubbed rollers or wheels }
- A01C 7/127 ... { Cell rollers, wheels, discs or belts }
- A01C 7/128 { Cell discs }
- A01C 7/14 ... Seeders with spoon or bucket wheels
- A01C 7/16 .. Seeders with other distributing devices, e.g. brushes, discs, screws, slides ({ with distributing slots [A01C 15/06](#); with slides [A01C 15/124](#) }; with chains [A01C 15/18](#)) }
- A01C 7/163 ... { Gravity distributors }
- A01C 7/166 ... { Centrifugal distributors (pneumatic distributors [A01C 15/04](#)) }
- A01C 7/18 . Machines for depositing quantities of seed at intervals {(dibble seeders [A01C 7/002](#); single-grain seeders [A01C 7/04](#); regulation [A01C 7/102](#); ridge marking [A01B 69/02](#))}
- A01C 7/185 .. { Foot valves }
- A01C 7/20 . Parts of seeders for conducting and depositing seed {(combined with fertilising apparatus [A01C 7/06](#))}
- A01C 7/201 .. { Mounting of the seeding tools }
- A01C 7/203 ... { comprising depth regulation means }
- A01C 7/205 ... { comprising pressure regulation means }
- A01C 7/206 .. { Seed pipes }
- A01C 7/208 .. { Chassis; Coupling means to a tractor or the like; Lifting means; Side markers (hoppers for seeders or spreaders [A01C 15/006](#)) }

A01C 9/00	Potato planters ({ planting by hand A01C 7/02 }; combinations with soil working tools A01B 49/04)
A01C 9/02	. with conveyer belts
A01C 9/04	. with bucket wheels ({with other distributing devices A01C 9/08 })
A01C 9/06	. with piercing or grasping devices
A01C 9/08	. with other distributing devices e.g. flaps, screws, horizontal turning plates ({with bucket wheels A01C 9/04 })
A01C 11/00	Transplanting machines ({ hand sowing A01C 7/02 }; carriers for supporting persons A01B 75/00 ; transplanting devices for trees A01G 23/02)
A01C 11/003	. { for aquatic plants; for planting underwater, e.g. rice }
A01C 11/006	. { Other parts or details or planting machines }
A01C 11/02	. for seedlings
A01C 11/025	. . { Transplanting machines using seedling trays; Devices for removing the seedlings from the trays }
A01C 11/04	. for deeper setting or shifting of plants
A01C 13/00	Machines or apparatus for consolidating soil around plants
A01C 14/00	Methods or apparatus for planting not provided for in other groups of this subclass
A01C 15/00	Fertiliser distributors (A01C 7/06 takes precedence; { combined with seeders A01C 7/06 }; arrangements for driving working parts A01C 19/00 ; { harrows with special additional arrangements A01B 19/00 }; sand, gravel or salt spreaders for roads E01C 19/20)
A01C 15/001	. { with slowly turning wheels }
A01C 15/002	. { with oscillating distributing spouts }
A01C 15/003	. { Bulk fertiliser or grain handling in the field or on the farm }
A01C 15/005	. { Undercarriages, tanks, hoppers, stirrers specially adapted for seeders or fertiliser distributors }
A01C 15/006	. . { Hoppers }
A01C 15/007	. . . { with agitators in the hopper }
A01C 15/008	. . { Aprons; Deflecting plates; Band-spreading attachments }

- A01C 15/02 . for hand use [{\(hand sowing A01C 7/02\)}](#)
- A01C 15/04 . using blowers
- A01C 15/06 . with distributing slots, [{ i.e. for dosing, e.g. adjustable openings }](#)
- A01C 15/08 . . with pushers or stirrers in the slots
- A01C 15/10 . . . with reciprocating pushers [{ or stirrers in front of the slots \(with endless chains A01C 15/18\)}](#)
- A01C 15/12 . with movable parts of the receptacle
- A01C 15/122 . . [{ with moving floor parts \(with endless chains A01C 15/18\)}](#)
- A01C 15/124 . . [{ with adjustable shutters or slits }](#)
- A01C 15/126 . . . [{ with pushers or stirrers in the slits }](#)
- A01C 15/128 . . . [{ with pushers or stirrers in front of the slits \(with endless chains A01C 15/18\)}](#)
- A01C 15/14 . with means for lifting out the fertiliser [{\(feeding wheels, cell wheels, discs A01C 7/12, bucket wheels A01C 7/14\)}](#)
- A01C 15/16 . with means for pushing out the fertiliser, e.g. by a roller
- A01C 15/18 . with endless chains, [{ i.e. side transporting elements, e.g. auger or screw conveyers, swash plates }](#)
- A01C 17/00** **Fertilisers or seeders with centrifugal wheels** [{\(hand-used implements A01C 7/02, A01C 15/02; fertiliser distributors A01C 15/00 \); mechanical throwing machines for articles or solid bulk materials, in general B65G 31/00; sand, gravel or salt spreaders E01C 19/20\)}](#)
- A01C 17/001 . [{ Centrifugal throwing devices with a vertical axis }](#)
- A01C 17/003 . [{ Centrifugal throwing devices with a horizontal axis }](#)
- A01C 17/005 . [{ Driving mechanisms for the throwing devices }](#)
- A01C 17/006 . [{ Regulating or dosing devices }](#)
- A01C 17/008 . . [{ Devices controlling the quantity or the distribution pattern }](#)
- A01C 19/00** **Arrangements for driving working parts of fertilisers or seeders** [{\(A01C 17/005 takes precedence\)}](#)
- A01C 19/02 . by a motor
- A01C 19/04 . by a ground-engaging wheel
- A01C 19/045 . . [{ the drive coupling being controlled by lifting or lowering of the seeding tools }](#)

- A01C 21/00** **Methods of fertilizing, { sowing or planting }** (fertilisers [C05](#); soil-conditioning or soil-stabilising materials [C09K 17/00](#))
- A01C 21/002 . { Apparatus for sowing fertiliser; Fertiliser drill }
- A01C 21/005 . { Following a specific plan, e.g. pattern (precision agriculture in general [A01B 79/005](#); steering or guiding agricultural machines or implements [A01B 69/00](#)) }
- A01C 21/007 . { Determining fertilization requirements }
- A01C 23/00** **Distributing devices specially adapted for liquid manure or other fertilising liquid, including ammonia, e.g. transport tanks, sprinkling wagons** (watering fields in general [A01G 25/00](#); spraying or applying liquids or other fluent materials in general [B05](#))
- A01C 23/001 . { Sludge spreaders, e.g. liquid manure spreaders }
- A01C 23/002 .. { provided with auxiliary arrangements, e.g. pumps, agitators, cutters }
- A01C 23/003 .. { Distributing devices, e.g. for rotating, throwing }
- A01C 23/005 ... { Nozzles, valves, splash plates }
- A01C 23/006 . { Distribution of liquid fertilisers by gravity flow (distribution of liquid ammonia in or on the soil [A01C 23/024](#); under pressure [A01C 23/04](#)) }
- A01C 23/007 . { Metering or regulating systems }
- A01C 23/008 . { Tanks, chassis or related parts }
- A01C 23/02 . Special arrangements for delivering the liquid directly into the soil
- A01C 23/021 .. { Sludge injectors, i.e. liquid manure injectors }
- A01C 23/022 ... { Continuous injection tools (devices for making drill or furrows [A01C 5/066](#)) }
- A01C 23/023 .. { for liquid or gas fertilisers }
- A01C 23/024 ... { for ammonia }
- A01C 23/025 ... { Continuous injection tools }
- A01C 23/026 ... { Localised non-continuous injection tools, e.g. pal injectors, spike wheels }
- A01C 23/027 .. { Other methods for delivering fertiliser into the soil (sowing granular fertiliser [A01C 21/002](#); subirrigation [A01G 25/06](#)) }
- A01C 23/028 ... { Contactless injection into the soil }
- A01C 23/04 . Distributing under pressure; Distributing mud; Adaptation of watering systems for fertilising-liquids
- A01C 23/042 .. { Adding fertiliser to watering systems (adding insecticides or herbicides [A01M 7/00](#)) }
- A01C 23/045 .. { Filling devices for liquid manure or slurry tanks (arrangements for connecting hoses of the quick-acting type [F16L 37/00](#)) }
- A01C 23/047 .. { Spraying of liquid fertilisers (gravity flow [A01C 23/006](#); watering gardens, fields, sports grounds or the like [A01G 25/00](#)) }