

CPC COOPERATIVE PATENT CLASSIFICATION

A HUMAN NECESSITIES

AGRICULTURE

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

A01F PROCESSING OF HARVESTED PRODUCE; HAY OR STRAW PRESSES; DEVICES FOR STORING AGRICULTURAL OR HORTICULTURAL PRODUCE (devices for topping or skinning onions or flower bulbs [A23N 15/08](#))

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

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|---------|--|----------|--|
| 1/00 | Stationary apparatus or hand tools for forming or binding straw, hay or the like into bundles (baling apparatus or presses A01F 13/00 , A01F 15/00 ; mobile binders for use in the field A01D 37/00 , A01D 39/00) | 12/14 | . . with band-cutters |
| 1/02 | . Hand-operated tools | 12/16 | . . Safety devices |
| 1/04 | . Fastening or tying devices | 12/18 | . Threshing devices |
| 1/06 | . Ties for bundles | 12/181 | . . {Adjustable threshing mechanisms} |
| 3/00 | Hand-operated implements for cutting-up straw, hay or the like (mechanically-driven straw cutters A01F 29/00) | 12/182 | . . {Stripper beaters after the threshing drum} |
| | | 12/184 | . . {Cleaning means} |
| | | 12/185 | . . {Mounting means} |
| | | 12/187 | . . {Vibratory threshing mechanisms} |
| | | 2012/188 | . . {Rethreshing devices} |
| | | 12/20 | . . Threshing cylinders with ribs |
| | | 12/22 | . . Threshing cylinders with teeth |
| | | 12/24 | . . One-part threshing concaves |
| | | 12/26 | . . Multi-part threshing concaves |
| | | 12/28 | . . Devices for adjusting the concaves |
| | | 12/30 | . Straw separators {, i.e. straw walkers, for separating residual grain from the straw (grain cleaning A01F 12/44)} |
| | | 12/305 | . . {combined with additional grain extracting means} |
| | | 12/32 | . . with shaker screens or sieves |
| | | 12/34 | . . . Sieve elements; Linings for shakers |
| | | 12/36 | Sieve elements specially adapted for handling short straw |
| | | 12/38 | . . with juxtaposed and independently-moved shaker bars or the like |
| | | 12/385 | . . with endless straw-conveying surface |
| | | 12/39 | . . with straw carriers in the form of rotors or drums |
| | | 12/395 | . . Conical or cylindrical straw separators with internal working surface |
| | | 12/40 | . Arrangements of straw crushers or cutters |
| | | 12/42 | . Apparatus for removing awns from the grain |
| | | 12/44 | . Grain cleaners; Grain separators |
| | | 12/442 | . . {Rotary cleaners} |
| | | 12/444 | . . {Fanning means} |
| | | 12/446 | . . {Sieving means} |
| | | 12/448 | . . . {Sieve adjusting means} |
| | | 12/46 | . Mechanical grain conveyors |
| | | 12/48 | . Air conduits or blowers for grain |
| | | 12/50 | . Sack-filling devices; Counting or weighing devices |
| | | 12/52 | . Arrangements for returning unthreshed grain to the threshing device |
| 2009/00 | Threshing machines with flails; Threshing devices with flails for combines | | |
| 11/00 | Threshing apparatus specially adapted for maize; Threshing apparatus specially adapted for particular crops other than cereals | | |
| 11/02 | . for flax | | |
| 11/04 | . for clover or like seeds, e.g. lucerne | | |
| 11/06 | . for maize, e.g. removing kernels from cobs | | |
| 11/08 | . for palm fruit, e.g. releasing the fruit from the stalk | | |
| 12/00 | Parts or details of threshing apparatus (devices, other than safety devices for feeders, for protecting human beings A01D 75/20 , A01F 21/00) | | |
| 12/10 | . Feeders | | |
| 12/12 | . . without band-cutters | | |

- 12/54 . . Arrangements for collecting or removing dust
- 12/56 . . Driving mechanisms for the threshing parts
- 12/58 . . Control devices; Brakes; Bearings
- 12/60 . . Grain tanks [{\(for combines A01D 41/1208\)}](#)

Baling straw or the like (baling presses in general, briquetting presses [B30B](#))

13/00 Hand-operated baling apparatus

15/00 Baling presses for straw, hay or the like

- 15/005 . . {for conditioning bales, e.g. rebaling}
- 15/02 . . with press-boxes [{\(A01F 15/046 takes precedence\)}](#)
- 15/04 . . Plunger presses
- 15/042 . . {Plungers}
- 15/044 . . {with open pressing chambers}
- 15/046 . . {with press-boxes}
- 2015/048 . . {Anti-return systems for the material in the pressing chamber when the plunger moves backwards}
- 15/06 . . with double-action plunger
- 15/07 . . Rotobalers, i.e. machines for forming cylindrical bales by winding and pressing
- 15/0705 . . {Arrangements for continuous operation}
- 15/071 . . {Wrapping devices [\(tying devices A01F 15/141\)](#)}
- 15/0715 . . . {Wrapping the bale in the press chamber before opening said chamber}
- 2015/072 . . . {Braking means for the film roll in balers which wrap the bale before opening the pressing chamber in order to stretch the film while wrapping}
- 2015/0725 . . . {Film dispensers for film rollers in a satellite type wrapper, e.g. holding and tensioning means for the film roller [\(the rotating arm itself A01F 2015/073\)](#)}
- 2015/073 . . . {Features related to the horizontal rotating arm of a wrapping device of the satellite type [\(features of film dispensers A01F 2015/0725\)](#)}
- 2015/0735 . . . {Combined machines that include a press bale and a wrapping device in a further step, e.g. turning table, not in the same closed pressing chamber}
- 2015/074 . . . {Mechanisms for discharging a bale from the wrapping machine}
- 2015/0745 . . . {Special features of the wrapping material for wrapping the bale}
- 2015/075 . . . {Opening the pressing chamber before wrapping, and then wrapping by rotating the bale without displacing it out of the open pressing chamber}
- 2015/0755 . . . {Configuration of support surfaces which can move in order to rotate a bale around at least one axis while wrapping}
- 2015/076 . . . {Wrapping device incorporating sensors}
- 15/0765 . . {Rolling bales on the ground}
- 2015/077 . . {Pressing chamber formed by belts and rollers}
- 2015/0775 . . {Pressing chambers with fix volume}
- 2015/078 . . {Pressing chamber formed exclusively by flexible elements, e.g. belts}
- 2015/0785 . . {Latching or locking means for the tailgate of the rotobaler}
- 2015/079 . . {Sledge for rollers of the pressing chamber}
- 2015/0795 . . {Pressing chamber with variable volume}
- 15/08 . . Details
- 2015/0808 . . {Balers incorporate an inclinometer}
- 15/0816 . . {Devices for dispensing chemicals in bales during formation}
- 15/0825 . . {Regulating or controlling density or shape of the bale}
- 15/0833 . . . {for round balers}
- 15/0841 . . {Drives for balers}
- 15/085 . . . {for round balers}
- 15/0858 . . . {for the tying devices or needles}
- 2015/0866 . . . {Clutching means for the knotting process; Bale length measuring means for triggering the clutching mean}
- 15/0875 . . {Discharge devices}
- 15/0883 . . . {for round balers}
- 2015/0891 . . . {Weighing the finished bale before falling to ground}
- 15/10 . . Feeding devices for the crop material {e.g. precompression devices}
- 15/101 . . . {Feeding at right angles to the compression stroke [\(A01F 15/106 takes precedence\)](#)}
- 2015/102 . . . {the pressing chamber is fed from the bottom side}
- 2015/103 . . . {the pressing chamber is fed from a lateral side}
- 2015/105 . . . {the pressing chamber is fed from the top side}
- 15/106 . . . {for round balers}
- 2015/107 . . . {Means for withdrawing knives, rotor or walls of the feeding chamber in case of plugging or congestion}
- 2015/108 . . . {Cutting devices comprising cutter and counter-cutter}
- 15/12 . . Feeding devices for the ties
- 15/14 . . Tying devices specially adapted for baling presses
- 15/141 . . . {for round balers [\(wrapping devices A01F 15/071\)](#)}
- 2015/143 . . . {Guiding fingers for twines in order to avoid the slippage of twines to the sides of the bale when tying it}
- 15/145 . . . {Twine knotters}
- 15/146 . . . {Wire twisters}
- 15/148 . . . {Monitoring the tying, e.g. mistie detectors}
- 15/16 . . Division blocks
- 15/18 . . Endless belts, rolls or the like
- 2015/183 . . . {Constructional details of belts of the press chamber}
- 2015/186 . . . {Constructional details of rollers or the bearings of the rollers of the press chamber}

Accessories for threshing machines or baling presses (loaders for sheaves, stacks or bales [A01D 87/12](#); trailers [B62D 63/06](#))

17/00 Straw conveyors for threshing machines or baling presses

- 17/02 . . Mechanical conveyors
- 17/04 . . Pneumatic conveyors

19/00 Devices for securing threshing machines or baling presses to the ground, e.g. for compensating for unevenness of the ground

21/00 Devices for protecting human beings for threshing machines or baling presses (in combines [A01D 75/20](#); for feeders for threshing apparatus [A01F 12/16](#))

| | | | |
|--------------|---|--------|---|
| 25/00 | Storing agricultural or horticultural produce; Hanging-up harvested fruit (maturing fruit A23N 15/06; arrangements in barns for preparatory treatment of tobacco A24B 1/02; packing or storing hops C12C 3/04) | 29/06 | • having rotating knives with their cutting edges on a cylinder surface, e.g. of the helical-type |
| 25/02 | • Clamps; Pits | 29/08 | • having reciprocating knives |
| 25/04 | • Stacks, ricks or the like | 29/09 | • Details |
| 25/045 | • • {Distributing arrangements in haystacks} | 29/095 | • • {Mounting or adjusting of knives} |
| 25/08 | • • Ventilating means | 29/10 | • • Feeding devices |
| 25/10 | • • Shelters {; Open sheds or similar structures} | 29/12 | • • Discharge means (loaders for hay or like field crop having blowers A01D 87/10) |
| 25/12 | • Racks for drying purposes | 29/14 | • • Drives |
| 25/125 | • • {Transport devices for hay racks} | 29/16 | • • Safety devices, e.g. emergency brake arrangements |
| 25/13 | • Coverings (A01F 25/14 takes precedence) | 29/18 | • • • for protecting human beings |
| 25/14 | • Containers specially adapted for storing | 29/22 | • • Arrangement of knife sharpening devices |
| 2025/142 | • • {Machinery for making sausage-like groups of bales by wrapping or bagging (for bagging of loose material A01F 2025/145)} | | |
| 2025/145 | • • {Bagging machines for loose materials making some kind of "sausage" on the field (making sausage-like groups of bales A01F 2025/142)} | | |
| 2025/147 | • • {the containers are specially adapted for storing or drying the products in vacuum} | | |
| 25/16 | • Arrangements in forage silos | | |
| 25/163 | • • {in tower silos} | | |
| 25/166 | • • {in trench silos} | | |
| 25/18 | • • Loading or distributing arrangements | | |
| 25/183 | • • • {Loading arrangements} | | |
| 25/186 | • • • {Distributing arrangements (for haystacks A01F 25/045)} | | |
| 25/20 | • • Unloading arrangements | | |
| 25/2009 | • • • {Top unloading units for tower silos} | | |
| 25/2018 | • • • {Bottom unloading units for tower silos} | | |
| 25/2027 | • • • {for trench silos} | | |
| 25/2036 | • • • • {Cutting or handling arrangements for silage blocks} | | |
| 2025/2045 | • • • • {Unloading arrangements including a conveyor belt for transferring the material to a hopper} | | |
| 2025/2054 | • • • • {Machinery for cutting successive parallel layers of material in a trench silo (for shredding A01F 2025/2063)} | | |
| 2025/2063 | • • • • {Machinery for shredding successive parallel layers of material in a trench silo} | | |
| 2025/2072 | • • • • {Scoops with an extracting tool mounted inside or in the vicinity of said scoop} | | |
| 2025/2081 | • • • • {Hydraulic features of the trench silos unloading devices, e.g. hydraulic circuits} | | |
| 2025/209 | • • • • {Manual portable tools for unloading a silo, e.g. for cutting out a block} | | |
| 25/22 | • • Ventilating arrangements | | |
| 29/00 | Cutting apparatus specially adapted for cutting hay, straw or the like (mowers combined with means for cutting up the mown crop A01D 43/08) | | |
| 29/005 | • {for disintegrating and cutting up bales of hay, straw or fodder (for unrolling round bales A01D 87/127)} | | |
| 29/01 | • specially adapted for being mounted on or drawn by a tractor, e.g. field choppers | | |
| 29/02 | • having rotating knives with their cutting edges in a plane perpendicular to their rotational axis | | |
| 29/025 | • • {with feeding direction parallel to axis} | | |
| 29/04 | • • with feeding direction transverse to axis | | |