

# 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.

1/00	<b>Stationary apparatus or hand tools for forming or binding straw, hay or the like into bundles</b> ( <a href="#">baling apparatus or presses A01F 13/00, A01F 15/00; mobile binders for use in the field A01D 37/00, A01D 39/00</a> )	12/14	. . with band-cutters
		12/16	. . Safety devices
		12/18	. Threshing devices
1/02	. Hand-operated tools	12/181	. . {Adjustable threshing mechanisms}
1/04	. Fastening or tying devices	12/182	. . {Stripper beaters after the threshing drum}
1/06	. Ties for bundles	12/184	. . {Cleaning means}
		12/185	. . {Mounting means}
3/00	<b>Hand-operated implements for cutting-up straw, hay or the like</b> ( <a href="#">mechanically-driven straw cutters A01F 29/00</a> )	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 ( <a href="#">grain cleaning A01F 12/44</a> )}
		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
<b>2009/00</b>	<b>Threshing machines with flails; Threshing devices with flails for combines</b>		
11/00	<b>Threshing apparatus specially adapted for maize; Threshing apparatus specially adapted for particular crops other than cereals</b>		
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	<b>Parts or details of threshing apparatus</b> ( <a href="#">devices, other than safety devices for feeders, for protecting human beings A01D 75/20, A01F 21/00</a> )		
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}
- 2015/073 . . . . {Features related to the horizontal rotating arm of a wrapping device of the satellite type}
- 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](#))**
- 25/02 . Clamps; Pits
  - 25/04 . Stacks, ricks or the like
  - 25/045 . . {Distributing arrangements in haystacks}
  - 25/08 . . Ventilating means
  - 25/10 . . Shelters {; Open sheds or similar structures}
  - 25/12 . Racks for drying purposes
  - 25/125 . . {Transport devices for hay racks}
  - 25/13 . Coverings ([A01F 25/14](#) takes precedence)
  - 25/14 . Containers specially adapted for storing
  - 2025/142 . . {Machinery for making sausage-like groups of bales by wrapping or bagging}
  - 2025/145 . . {Bagging machines for loose materials making some kind of "sausage" on the field}
  - 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}
  - 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
  - 29/06 . having rotating knives with their cutting edges on a cylinder surface, e.g. of the helical-type
  - 29/08 . having reciprocating knives
  - 29/09 . Details
  - 29/095 . . {Mounting or adjusting of knives}
  - 29/10 . . Feeding devices
  - 29/12 . . Discharge means (loaders for hay or like field crop having blowers [A01D 87/10](#))
  - 29/14 . . Drives
  - 29/16 . . Safety devices, e.g. emergency brake arrangements
  - 29/18 . . . for protecting human beings
  - 29/22 . . Arrangement of knife sharpening devices