

# 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	Stationary apparatus or hand tools for forming or binding straw, hay or the like into bundles (baling apparatus or presses <a href="#">A01F 13/00</a> , <a href="#">A01F 15/00</a> ; mobile binders for use in the field <a href="#">A01D 37/00</a> , <a href="#">A01D 39/00</a> )	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 <a href="#">A01F 29/00</a> )	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 <a href="#">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
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 <a href="#">A01D 75/20</a> , <a href="#">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 [\(the rotating arm itself A01F 2015/073\)](#)}
- 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** [\(in combines A01D 75/20; for feeders for threshing apparatus A01F 12/16\)](#)

<b>25/00</b>	<b>Storing agricultural or horticultural produce; Hanging-up harvested fruit (maturing fruit <a href="#">A23N 15/06</a>; arrangements in barns for preparatory treatment of tobacco <a href="#">A24B 1/02</a>; packing or storing hops <a href="#">C12C 3/04</a>)</b>	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 <a href="#">A01D 87/10</a> )
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 ( <a href="#">A01F 25/14</a> 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 <a href="#">A01F 2025/145</a> )}		
2025/145	• • {Bagging machines for loose materials making some kind of "sausage" on the field (making sausage-like groups of bales <a href="#">A01F 2025/142</a> )}		
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 <a href="#">A01F 25/045</a> )}		
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 <a href="#">A01F 2025/2063</a> )}		
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		
<b>29/00</b>	<b>Cutting apparatus specially adapted for cutting hay, straw or the like (mowers combined with means for cutting up the mown crop <a href="#">A01D 43/08</a>)</b>		
29/005	• {for disintegrating and cutting up bales of hay, straw or fodder (for unrolling round bales <a href="#">A01D 87/127</a> )}		
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		