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)

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)

1/02  .  Hand-operated tools

1/04  .  Fastening or tying devices

1/06  .  Ties for bundles

3/00  Hand-operated implements for cutting-up straw, hay or the like (mechanically-driven straw cutters A01F 29/00; cutting in general B26)

Threshing

5/00  Hand-operated implements for threshing

7/00  Threshing apparatus

7/02  .  with rotating tools (threshing cylinders or concaves A01F 12/18)

7/04  .  with axles transverse to the feeding direction

7/06  .  with axles in line with the feeding direction { Axial threshing machines }

7/062 .  .  .  [with a rotating cage]

7/065 .  .  .  [with cage sweep mechanisms]

7/067 .  .  .  [with material-flow influencing means]

7/70  .  .  with flails

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

12/14  .  .  with band-cutters

12/16  .  .  Safety devices

12/18  .  .  Threshing devices

12/19  .  .  Threshing machines with flails

12/20  .  .  Threshing apparatus with flails

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

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

<table>
<thead>
<tr>
<th>15/00</th>
<th>Baling presses for straw, hay or the like</th>
<th>(making compressed stacks A01D 85/00)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15/005</td>
<td>[for conditioning bales, e.g. rebaling]</td>
<td></td>
</tr>
<tr>
<td>15/02</td>
<td>with press-boxes</td>
<td>(A01F 15/046 takes precedence)</td>
</tr>
<tr>
<td>15/04</td>
<td>Plunger presses</td>
<td></td>
</tr>
<tr>
<td>15/042</td>
<td>(Plungers)</td>
<td></td>
</tr>
<tr>
<td>15/044</td>
<td>(with open pressing chambers)</td>
<td></td>
</tr>
<tr>
<td>15/046</td>
<td>(with press-boxes)</td>
<td></td>
</tr>
<tr>
<td>2015/048</td>
<td>Anti-return systems for the material in the pressing chamber when the plunger moves backwards</td>
<td></td>
</tr>
<tr>
<td>15/06</td>
<td>with double-action plunger</td>
<td></td>
</tr>
<tr>
<td>15/07</td>
<td>Rotobalers, i.e. machines for forming cylindrical bales by winding and pressing</td>
<td></td>
</tr>
<tr>
<td>15/0705</td>
<td>(Arrangements for continuous operation)</td>
<td></td>
</tr>
<tr>
<td>15/071</td>
<td>(Wrapping devices (tying devices A01F 15/141))</td>
<td></td>
</tr>
<tr>
<td>15/0715</td>
<td>(Wrapping the bale in the press chamber before opening said chamber)</td>
<td></td>
</tr>
</tbody>
</table>

#### 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
- 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)
- Features related to the horizontal rotating arm of a wrapping device of the satellite type (features of film dispensers A01F 2015/0725)
- 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
- Mechanisms for discharging a bale from the wrapping machine
- Special features of the wrapping material for wrapping the bale
- Opening the pressing chamber before wrapping, and then wrapping by rotating the bale without displacing it out of the open pressing chamber
- Configuration of support surfaces which can move in order to rotate a bale around at least one axis while wrapping
- Wrapping device incorporating sensors
- Rolling bales on the ground
- Pressing chamber formed by belts and rollers
- Pressing chambers with fix volume
- Pressing chamber formed exclusively by flexible elements, e.g. belts
- Latching or locking means for the tailgate of the rotobaler
- Sledge for rollers of the pressing chamber
- Pressing chamber with variable volume

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

<table>
<thead>
<tr>
<th>17/00</th>
<th>Straw conveyors for threshing machines or baling presses</th>
</tr>
</thead>
<tbody>
<tr>
<td>17/02</td>
<td>Mechanical conveyors</td>
</tr>
<tr>
<td>17/04</td>
<td>Pneumatic conveyors</td>
</tr>
<tr>
<td>19/00</td>
<td>Devices for securing threshing machines or baling presses to the ground, e.g. for compensating for unevenness of the ground</td>
</tr>
<tr>
<td>21/00</td>
<td>Devices for protecting human beings for threshing machines or baling presses (in combines A01D 75/20; for feeders for threshing apparatus A01F 12/16)</td>
</tr>
</tbody>
</table>
### Accessories for threshing machines or baling presses

#### Storing agricultural or horticultural produce; Hanging-up harvested fruit

- **A01F 25/00**
- Arrangements in barns for preparatory treatment of tobacco [A24B 1/02](#)
- 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](#))

#### Clamps; Pits

- **A01F 25/02**
- Clamps; Pits

#### Stacks, ricks or the like

- **A01F 25/04**
- Stacks, ricks or the like

#### Ventilating means

- **A01F 25/08**
- Ventilating means

#### Shelters

- **A01F 25/10**
- Shelters (Open sheds or similar structures)

#### Transport devices for hay racks

- **A01F 25/12**
- Racks for drying purposes

#### Coverings

- **A01F 25/14**
- Coverings (A01F 25/14 takes precedence)

#### Containers specially adapted for storing

- **A01F 20-25-142**
- containers are specially adapted for storing or drying the products in vacuum

#### Arrangements in forage silos

- **A01F 25/16**
- Arrangements in forage silos

#### Loading or distributing arrangements

- **A01F 25/18**
- Loading or distributing arrangements

#### Unloading arrangements

- **A01F 25/20**
- Unloading arrangements

#### Cutting apparatus specially adapted for cutting hay, straw or the like

- **A01D 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](#))

#### Cutting apparatus for disintegrating and cutting up bales of hay, straw or fodder

- **A01D 29/005**
- Cutting apparatus for disintegrating and cutting up bales of hay, straw or fodder (for unrolling round bales [A01D 87/127](#))

#### Feeding devices

- **A01F 29/09**
- Feeding devices

#### Discharge means

- **A01D 29/12**
- Discharge means (loaders for hay or like field crop having blowers [A01D 87/10](#))

#### Safety devices, e.g. emergency brake arrangements

- **A01F 29/16**
- Safety devices, e.g. emergency brake arrangements

#### Arrangement of knife sharpening devices

- **A01F 29/22**
- Arrangement of knife sharpening devices