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(54) **Transport frame with columns fot stacking motor vehicle body components**

(57) The present invention relates to a mechanism for activating and/or deactivating a system for blocking the columns (25) that form part of a frame of a container (26) destined for the transportation and storage of parts or components having a generally flat configuration, such as motor vehicle body components or parts, which are disposed at different levels, upheld by the frame columns (25), where the column blockage system forms part of a frame of a container (26) that enables the automated activation or deactivation of one or several column blockage systems through actuation means (20-22) common to the blockage systems of each of the columns.

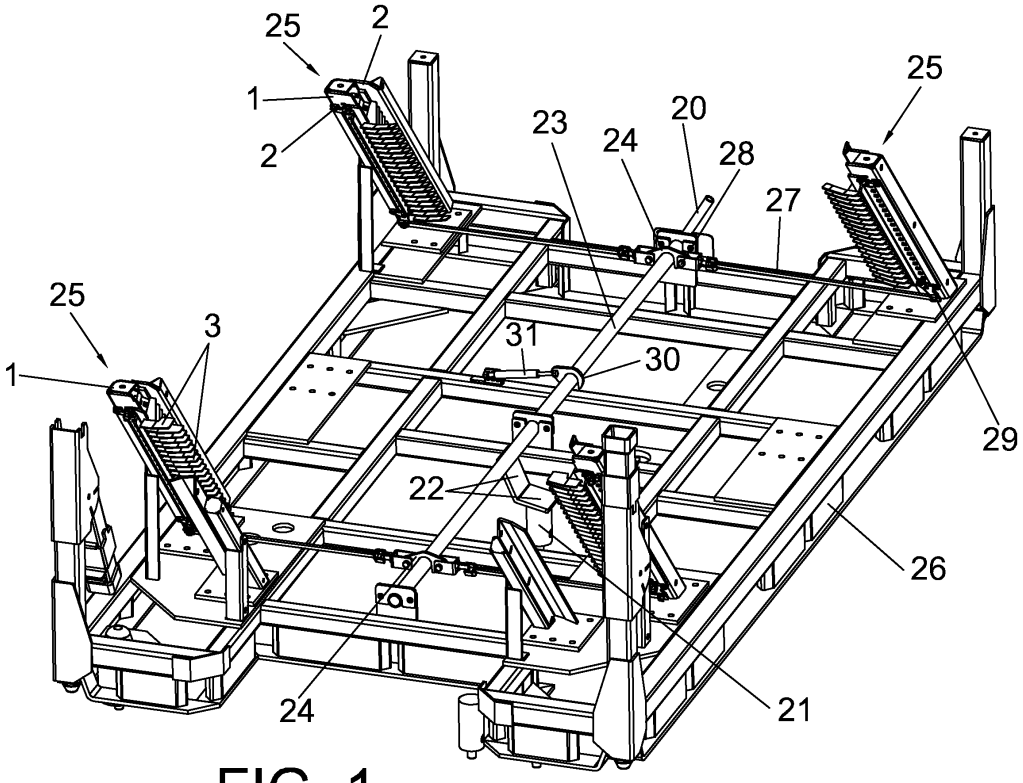

FIG. 1

EP 2 669 209 A2

Description

OBJECT OF THE INVENTION

[0001] The present invention relates to a mechanism for activating and/or deactivating a system for blocking the columns that form part of a frame of a container destined for the transportation and storage of parts or components having a generally flat configuration, such as motor vehicle body components or parts, which are disposed at different levels, upheld by the frame columns.

[0002] The object of the invention consists of a mechanism for activating and/or deactivating a system for blocking the columns that form part of a frame of a container which allows the automated activation or deactivation of one or several column blockage systems using actuation means common to the blockage systems of each of the columns.

BACKGROUND OF THE INVENTION

[0003] Systems for blocking the columns that form part of a frame of a container destined for the transportation and storage of parts or components having a generally flat configuration, such as motor vehicle body components or parts, which are disposed at different levels, upheld by the frame columns, are known in the state of the art.

[0004] These include Spanish validation ES2362299 of the European patent with publication number EP1792853, where the stacking columns comprise a body having vertical slots and a U-shaped cross-section, between the walls of which plates are connected along axes perpendicular to said walls, which project from the body with vertical slots in a segment having greater a width than said body with vertical slots and can rotate is projected laterally from at least one of the side walls of the body with vertical slots between an extracted position in which they extend outwards from the body with vertical slots and another retracted position in which they are folded against said body with vertical slots, wherein one of the walls of the body with vertical slots has a movable rake adhered externally along the length thereof, having transverse slots of slightly greater width than the thickness of the plates on the front longitudinal edge thereof; wherein the movable rake is held in place by two levers, an upper lever and a lower lever that are connected at an intermediate point to the wall of the folded body, while the movable rake is connected to one of the ends thereof and to a rod at the opposite end that is parallel to the movable rake and can change longitudinally. The levers rotate between two full positions, an inoperative position wherein the tines of the movable rake are not projected frontally from the longitudinal front edge of the wall of the body with vertical slots whereto said movable rake is joined and another, active position wherein the tines are projected frontally with respect to said edge and the slots that separate each two consecutive tines are disposed opposite to the plates in the extracted position on the wall thereof in order to hold the edge opposite to these portions.

[0005] Other stacking column blockage systems wherein the activation and/or deactivation of the blockage system is carried out individually for each of the columns are known in the state of the art.

[0006] In all the frames described in this section, each one of the blockage systems of each of the columns must be actuated individually, thereby increasing execution time and increasing the possibility of lags between the blockage systems of different columns, with the ensuing risk of accident due to the possible fall of one of the flat components upheld by the columns.

[0007] The mechanism for activating and/or deactivating a column blockage system of the present invention resolves all of the aforementioned drawbacks.

DESCRIPTION OF THE INVENTION

[0008] The present invention relates to a mechanism for activating and/or deactivating a system for blocking the columns that form part of a frame of a container destined for the transportation and storage of parts or components having a generally flat configuration, such as motor vehicle body components or parts, which are disposed at different levels, upheld by the frame columns.

[0009] The mechanism for activating and/or deactivating a column blockage system comprises actuation means that transmit the rotation to a shaft having one or several cams fixed thereto.

[0010] Each of the cams is joined in an articulated manner to a first end of a strip that is joined to the column blockage system by its second end in order to carry out the activation or deactivation of said system due to the movement of the strips.

[0011] Therefore, the movement is transmitted through the actuation means, the rotation axis, cams and strips simultaneously to all the columns that form the container frame.

DESCRIPTION OF THE DRAWINGS

[0012] In order to complement the description being made and with the object of helping to better understand the characteristics of the invention, in accordance with a preferred embodiment thereof, said description is accompanied, as an integral part thereof, by a set of drawings where, in an illustrative and non-limiting manner, the following has been represented:

Figure 1 shows a perspective view of the mechanism for activating and/or deactivating a system disposed on a container frame.

Figure 2 shows a detailed view of the mechanism for activating and/or deactivating a column blockage system disposed on two columns disposed on opposite sides of the container frame.

PREFERRED EMBODIMENT OF THE INVENTION

[0013] In light of the foregoing figures, following is a description of a preferred embodiment of the mechanism for activating and/or deactivating a system for blocking the columns that form part of a frame of a container destined for the transportation and storage of parts or components having a generally flat configuration, such as motor vehicle body components or parts, which are disposed at different levels, upheld by the frame columns, wherein the column blockage system in this preferred embodiment is disclosed in Spanish validation ES2362299 of the European patent with publication number EP1792853 cited herein.

[0014] The activation and/or deactivation mechanism comprises actuation means (20, 21, 22) that transmit the rotation to a central shaft (23) whereto one or several cams (24) are fixed, each of which (24) transmits the movement to two columns (25) disposed on opposite sides of the container (26).

[0015] In order to carry out the transmission of the movement to the columns (25), the mechanism for activating and/or deactivating the blockage system of said columns comprises a strip (27) that is joined in an articulated manner by means of a first end (28) of said strip (27) to the cam (24) and, by means of a second end (29) of said strip (27), in an articulated manner, to a lower lever (10) of the column blockage system to carry out the activation or deactivation of said system due to the movement of the strips (27), wherein the column blockage system will be described later in the text.

[0016] The actuation means can be a lever (20) actuated manually and solidarily joined to the central rotary shaft (23) or a stop element (21) external to the container (26) that comes into contact with a pedal (22) solidarily joined to the central rotary shaft (23) when the container (26) is deposited on a certain surface.

[0017] The activation and/or deactivating mechanism also comprises at least one second cam (30) fixed to the rotary shaft, which is joined in an articulated manner at one of the ends of a piston (31) that is joined in an articulated manner by its other end to the container (26). The two stable equilibrium positions of this piston (31) enable the definition of the activation and deactivation positions of the blockage system.

[0018] Each of the stacking columns (25) comprise a body (1) having a U-shaped cross-section between the walls (2), whereto plates (3) are connected that can rotate and that project laterally from at least one of the side walls of the body (1) with a U-shaped cross-section between an extracted position (3') in which they extend outwards from the body (1) and another, retracted position in which they are folded against said body (1), where a movable rake (7) with transverse slots (13) on the front longitudinal edge thereof having a width greater than the thickness of the plates (3) is adhered externally along the length of one of the walls (2) of the body (1); where the movable rake (7) is held in place by two levers (9, 10), an upper lever (9) and a lower lever (10) that are connected at an intermediate point (11) to the wall (2) of the body (1) with a U-shaped cross-section, while being connected to the movable rake (7) at one of its ends and to a rod (12) at the opposite end that is parallel to the movable rake (7) and can change longitudinally, where the levers (9, 10) rotate between two full positions, an inoperative position in which the tines (8) of the movable rake (7) are not projected frontally from the front longitudinal edge of the wall (2) of the body (1) with a U-shaped cross-section whereto said movable rake (7) is joined, and an active position wherein the tines (8) are projected frontally with respect to said edge and the transverse slots (13) that separate each of the tines (8) are disposed opposite the plates (3) in the extracted position (3') on the wall thereof in order to secure the opposite edge of these plates (3), thereby constituting the blockage system.

[0019] The rotary shaft (23) is disposed in the container (26) by means of flanges (31) present in said container (26).

[0020] As mentioned earlier, the application of the mechanism for activating and/or deactivating a column blockage system is not limited to the aforementioned blockage system.

Claims

1. A mechanism for activating and/or deactivating a system for blocking the columns that form part of a frame of a container (26) destined for the transportation and storage of parts or components having a generally flat configuration, which are disposed at different levels, upheld by the columns (25) of the container frame (26), **characterised in that** the activation/deactivation mechanism comprises actuation means (20, 21, 22) that transmit the rotation to a shaft (23) whereto one or several first cams (24) are fixed, that are joined in an articulated manner to a first end (28) of a strip (27) which is joined by its second end (29) to the column blockage system for activating or deactivating said blockage system.

2. A mechanism for activating and/or deactivating a column blockage system, according to claim 1, **characterised in that** the actuation means are a lever (20) that is solidarily joined to the central rotary shaft (23).

3. A mechanism for activating and/or deactivating a column blockage system, according to claim 1, **characterised in that** the actuation means are a stop element (21) external to the container (26) that comes into contact with a pedal (22) solidarily joined to the rotary shaft (23) when the container (26) is deposited on a certain surface.

4. A mechanism for activating and/or deactivating a column blockage system, according to any of the preceding claims, **characterised in that** it also comprises at least one second cam (30) fixed to the rotary shaft (23) that is joined in an articulated manner to one of the ends of a piston (31) that is joined in an articulated manner by its other end to the container (26).

5. A mechanism for activating and/or deactivating a column blockage system, according to claim 4, **characterised in that** the piston (31) has two stable equilibrium positions for defining the activation and deactivation positions of the blockage system.

6. A mechanism for activating and/or deactivating a column blockage system, according to any of the preceding claims, **characterised in that** the rotary shaft (23) is disposed in the container (26) by means of flanges (31) disposed in said container (26).

7. A mechanism for activating and/or deactivating a column blockage system, according to any of the preceding claims, **characterised in that** each of the stacking columns (25) comprises a body (1) with a U-shaped cross-section between the walls (2) of which plates (3) are connected that can rotate and project laterally from at least one of the lateral walls of the body (1) with a U-shaped cross-section between an extracted position (3') in which they extend outwards from the body (1) and another retracted position in which they are folded against said body (1), where a movable rake (7) with transverse slots (13) on the front longitudinal edge thereof having a width greater than the thickness of the plates (3) is adhered externally along the length of one of the walls (2) of the body (1); where the movable rake (7) is held in place by two levers (9, 10), an upper lever (9) and a lower lever (10) that are connected at an intermediate point (11) to the wall (2) of the body (1) with a U-shaped cross-section, while being connected to the movable rake (7) at one of its ends and to a rod (12) at the opposite end that is parallel to the movable rake (7) and can change longitudinally, where the levers (9, 10) rotate between two full positions, an inoperative position in which the tines (8) of the movable rake (7) are not projected frontally from the front longitudinal edge of the wall (2) of the body (1) with a U-shaped cross-section whereto said movable rake (7) is joined, and an active position wherein the tines (8) are projected frontally with respect to said edge and the transverse slots (13) that separate each of the tines (8) are disposed opposite the plates (3) in the extracted position (3') on the wall thereof in order to secure the opposite edge of these plates (3), thereby constituting the blockage system.

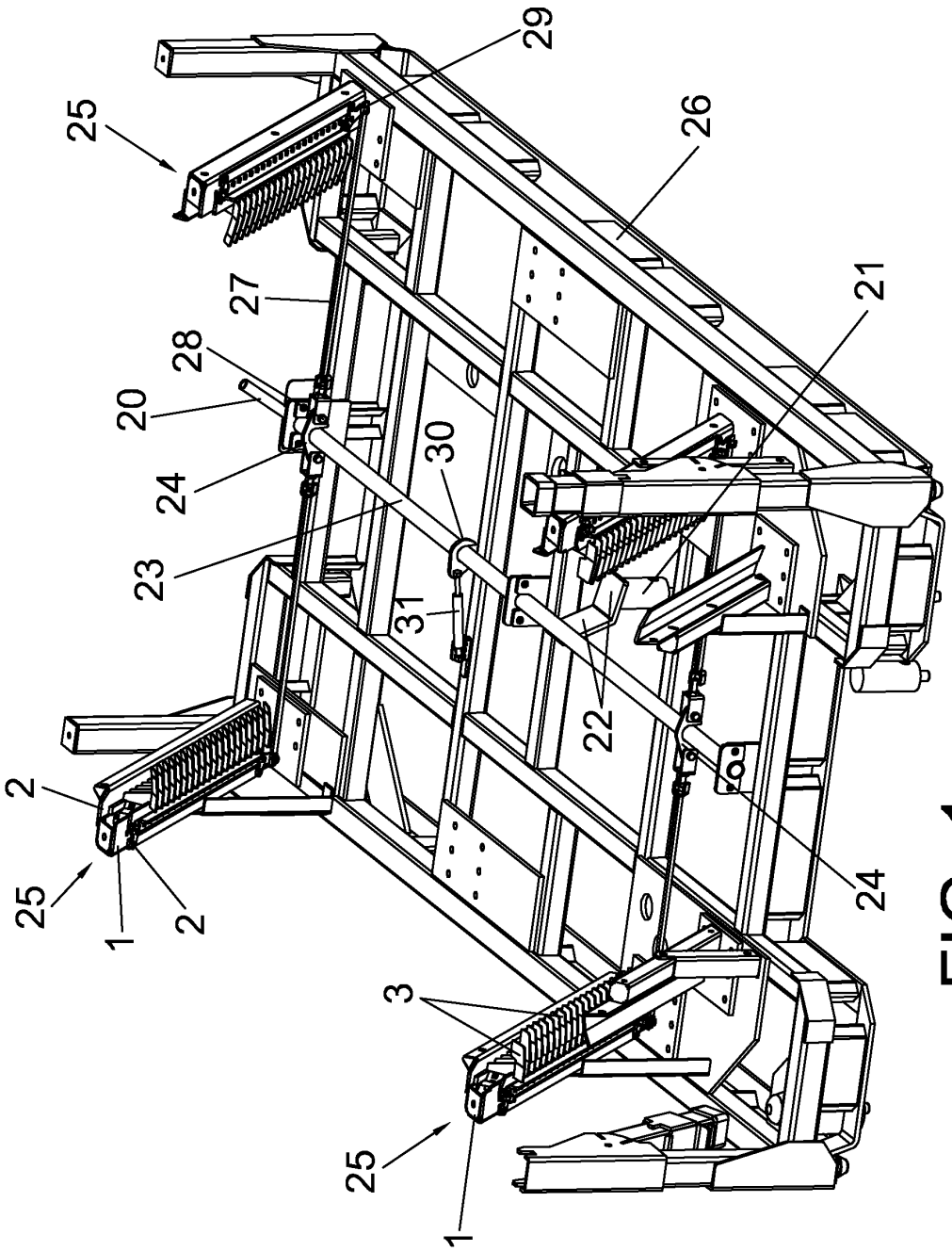

FIG. 1

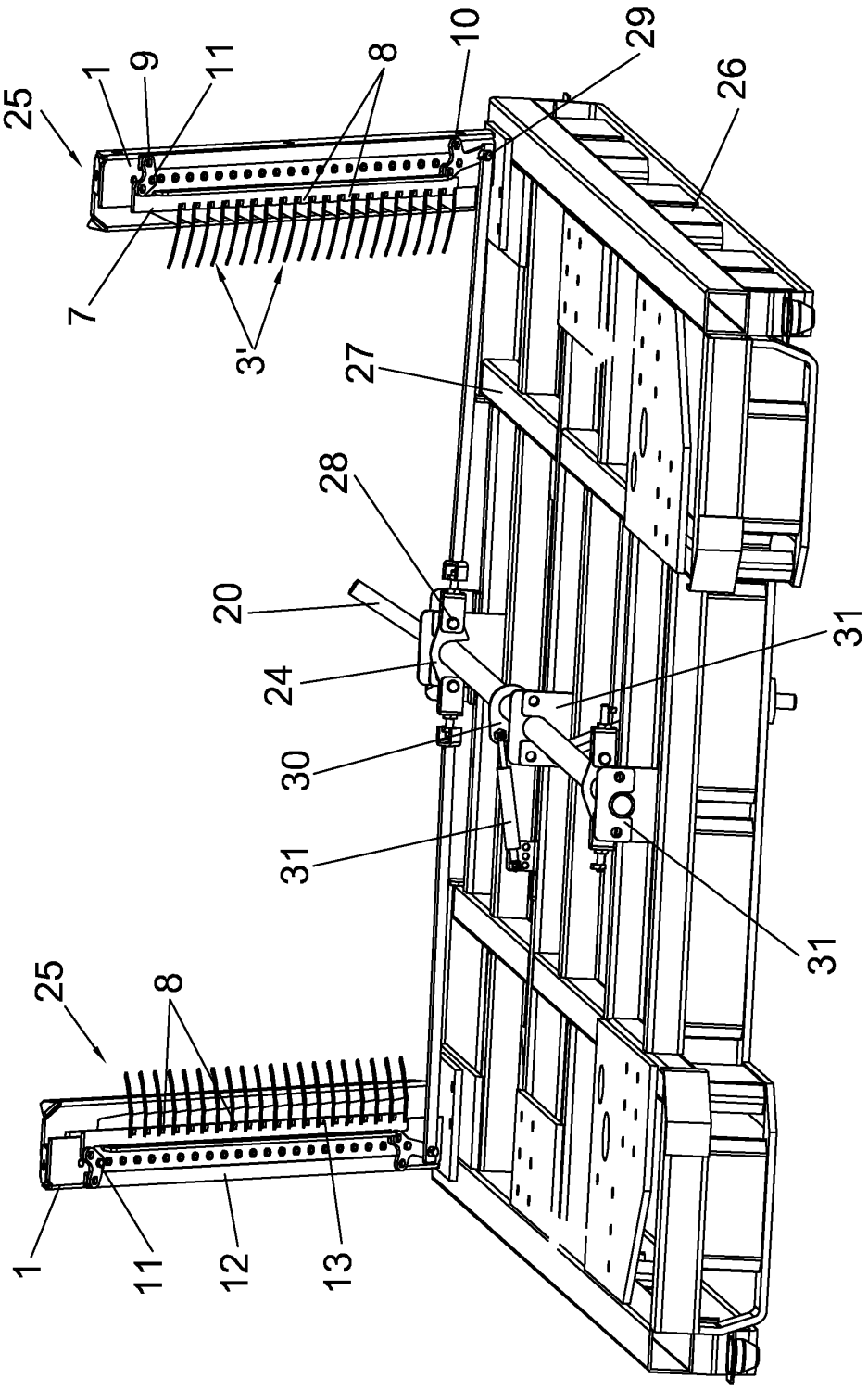

FIG. 2

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- ES 2362299 **[0004] [0013]**
- EP 1792853 A **[0004] [0013]**