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(54) **Nestable and stackable container**

(57) The present invention relates to a container (1) comprising a base, upright walls connecting thereto, at least one wall of which is provided with a support member (3) which is displaceable between a stacking position

and a nesting position, wherein an activation member (4) is connected to the support member for displacement thereof between the nesting position and the stacking position.

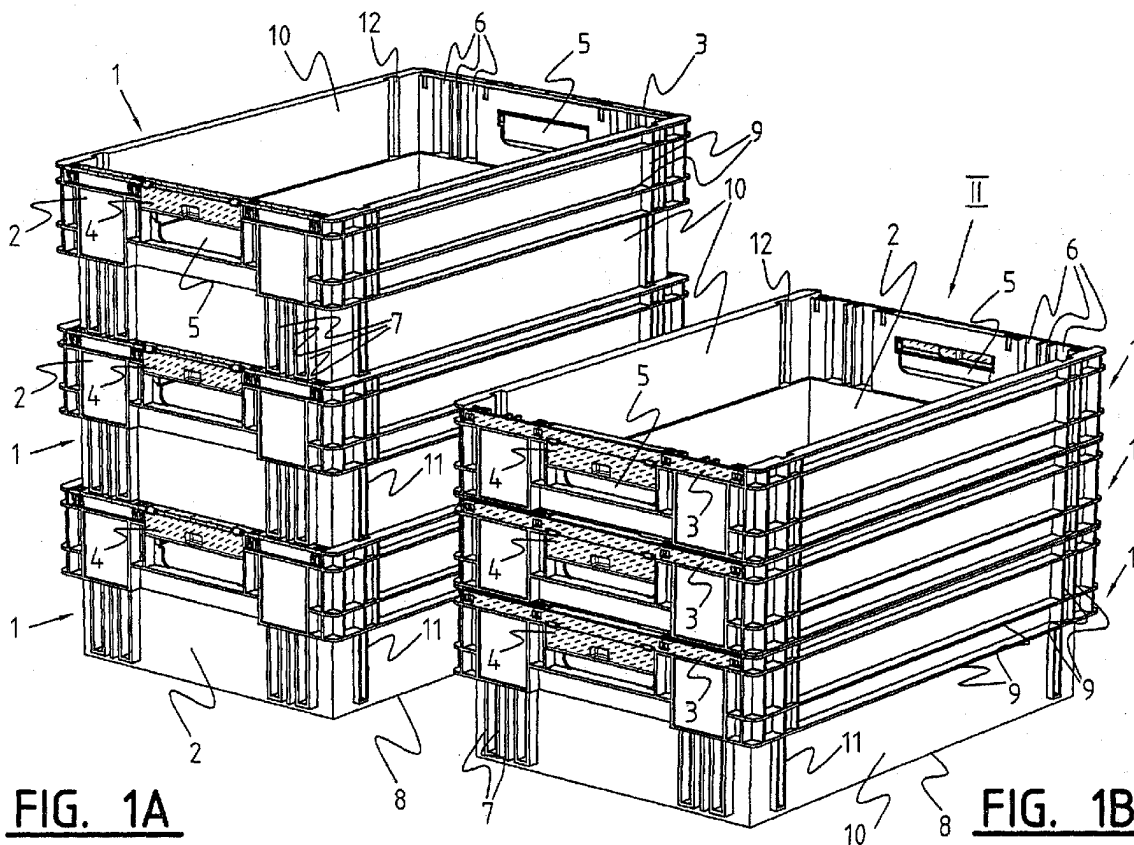


FIG. 1A

FIG. 1B

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Description

[0001] The present invention relates to a nestable or stackable container or crate with one or more displaceable support members with which nesting of a container placed on the container can be allowed or prevented. The invention relates more particularly to a container comprising a base, upright walls connecting thereto, at least one wall of which is provided with a support member which is displaceable between a stacking position and a nesting position.

[0002] Such a nestable crate is known from Netherlands patent application 9201031. In this nestable crate two mutually opposite walls are provided on the inner side with foldaway support members. In the usual position of the crate, support members lie in a stable position of balance in which the stacking of crates is possible. When the crate is held upside down, the support members swivel to a second position in which the crates can be nested. After nesting, the entire stack of crates can be turned over again, so that when a crate is removed it is immediately ready to be filled and then stacked. It is not necessary to hold each crate upside down for the purpose of nesting, the support members can also be carried from a position of balance to a second position and held there by hand. A drawback of this nesting system for a crate is that it is relatively complex, since different operations are required to enable nesting of the crates.

[0003] The object of the present invention is to provide an improved container which is nestable and stackable. The invention has for its object to provide such a container, wherein nesting and stacking can be performed in only one way in operationally reliable, rapid and simple manner.

[0004] For this purpose the container is characterized according to the present invention in that a activation member is connected to the support member for displacing thereof between the nesting position and the stacking position. When the activation member is operated the nesting position or stacking position of the support member is obtained as desired without different operations having to be performed with the container or support member.

[0005] The support member preferably extends along the edge of the wall remote from the base.

[0006] When a handgrip is arranged in the wall and the activation member extends into this handgrip, a displacement of the support member is brought about in advantageous manner when a container is picked up.

[0007] The support member is preferably pivotable about a pivot axis parallel to the wall. The pivot axis of the support member is positioned such that the stacking position or the nesting position, preferably the nesting position, is the stable position of balance for the support member. It is hereby sufficient to operate the activation member when changing from the stacking position to the nesting position, or optionally vice versa.

[0008] For a simple displacement of the support member, the activation member is preferably connected thereto for pivoting.

[0009] In the stacking position the support member is suitable for co-action with the base of another container. In addition, the wall is provided on the inside with grooves and provided on the outside thereof with ribs, wherein the grooves co-act with the ribs of another container to obtain a nesting function. The ribs and grooves preferably extend substantially over half the height of the wall so as to obtain a nesting of 50%.

[0010] In order to obtain the nesting position or the stacking position, the support member respectively covers the grooves or the support member leaves the grooves clear.

[0011] In a preferred embodiment of the invention, the base of the container has a rectangular form and the walls are provided on the short side with support members.

[0012] The present invention will be further elucidated with reference to the annexed drawings. In the drawings:

Figure 1 shows a perspective view of a stack of stacked containers and a stack of nested containers;

Figure 2 shows a detail view of a wall of a container according to the invention;

Figures 3a and 3b show respectively two different embodiments of a support member with activation member according to the invention, and

Figures 4a-4c show a cross-section along line IV-IV in figure 2.

[0013] In the perspective views of figures 1a and 1b, stacks of containers or crates 1 according to the invention are shown. The stacked crates 1 in figure 1a are stacked one on top of the other in order to protect the content arranged in the crates, while the stacked crates 1 shown in figure 1b are nested in order to reduce the volume thereof for storage or transport. In order to obtain the stacking or nesting position, two opposite walls 2 of each crate 1 are provided with support members 3. Support members 3 are connected to activation members 4 which extend into handgrips 5 in walls 2 of crate 1. Walls 2 are further provided on the inside with grooves 6 and provided on the outside thereof with ribs 7. In the nesting position the grooves 6 of a crate 1 co-act with ribs 7 of another crate 1 (figure 1b). In the stacking position the support members 3 cover grooves 6. In that case the support members 3 of a crate 1 co-act with the base 8 of another crate 1 (figure 1a).

[0014] Crates 1 can be provided on the outside with stiffening ribs 9 arranged in longitudinal or transverse direction on walls 2, 10. Further provided on walls 10 on the long side of crate 1 are ribs 11 and grooves 12 coacting therewith, these ribs and grooves fulfilling a positioning and sliding function during nesting of crates 1. Ribs

7 and grooves 6 extend substantially over half the height of walls 2, so that a 50% nesting is obtained.

[0015] The detail view according to figure 2 shows a wall of the crate according to the invention with exploded parts. Support member 3 is a lath which extends along the edge of wall 2 remote from base 8 and which is provided on both sides with pivot pins 13. These pivot pins co-act with slotted holes 14 arranged in the edge of wall 2 remote from base 8 (see figures 4a-4c). Through pivot pins 13 runs a pivot axis parallel to wall 2. This pivot axis is positioned such that the nesting position is the stable position of balance for support member 3 (figure 4a). Activation member 4 is connected to the support member by means of hinges 15. Shown in figures 3a and 3b are two different embodiments of hinges 15 which connect the activation member 4 to the support member. In the embodiment of figure 3a the hinge is formed by a slotted hole 16 in activation member 4 and the curved protrusion 17 on support member 3. The curved protrusions 17 protrude through slotted holes 16 and can move freely therein without coming loose therefrom. In the second embodiment according to figure 3b, hinge 15 is formed by a film hinge, obtained by injection-moulding support member 3 and activation member 4 simultaneously from plastic and embodying the connection between these two members with small dimensioning (see also figures 4a-4c). Activation member 4 is further provided with guide slots 19 which co-act with guide ribs 20 provided on wall 2.

[0016] Figures 4a-4c show three different positions of support member 3. Figure 4a shows the stable position of balance of support member 3, i.e. the nesting position. In this position the support member 3 leaves the grooves 6 on the inside of wall 2 clear for passage of the ribs 7 on the outside of the wall of another crate. In this position the activation member 4 extends into handgrip 5. When the crate is picked up, the activation member 4 is moved upward, wherein it is guided in this movement by guide slot 19 and ribs 20. While activation member 4 is being moved upward the support member 3 pivots about its pivot points 13 into the stacking position shown in figure 4c. In the stacking position the support member 3 covers grooves 6. Support member 3 co-acts with the base of another crate.

[0017] Because in figures 4a-4c there is opted for a slotted hole 14 in which pivot pins 13 of support member 3 can pivot, the assembly of activation member 4 and support member 3 can come to lie sealingly against the upper edge and outer side of wall 2. However, if slotted hole 14 is replaced with a round pivot hole, material of wall 21 will then have to be removed to enable rotation of the assembly of activation member 4 and support member 3. In that case no sealing of the upper edge of wall 2 is obtained. This latter embodiment is not therefore recommended.

[0018] The present invention is not limited to the embodiment shown in the figures. Forms other than the rectangular form are for instance possible for the container

according to the invention. The support members can be provided on one or more walls. The crates can take a conical, two-stage or multi-stage form so as to obtain a determined nestability. The invention is limited only by the appended claims.

Claims

1. Container comprising a base, upright walls connecting thereto, at least one wall of which is provided with a support member which is displaceable between a stacking position and a nesting position, **characterized in that** a activation member is connected to the support member for displacing thereof between the nesting position and the stacking position.
2. Container as claimed in claim 1, wherein the support member extends along the edge of the wall remote from the base.
3. Container as claimed in claim 1 or 2, wherein a handgrip is arranged in the wall and wherein the activation member extends into this handgrip.
4. Container as claimed in any of the claims 1-3, wherein the support member is pivotable about a pivot axis parallel to the wall.
5. Container as claimed in claim 4, wherein the pivot axis of the support member is positioned such that the stacking position or the nesting position, preferably the nesting position, is the stable position of balance for the support member.
6. Container as claimed in any of the claims 1-5, wherein the activation member is connected pivotally to the support member.
7. Container as claimed in any of the claims 1-6, wherein the support member is suitable for co-action in the stacking position with the base of another container.
8. Container as claimed in any of the claims 1-7, wherein the wall is provided on the inside thereof with grooves and provided on the outside thereof with ribs, wherein the grooves co-act in the nesting position with the ribs of another container.
9. Container as claimed in claim 8, wherein the ribs and grooves extend substantially over half the height of the wall.
10. Container as claimed in claim 8 or 9, wherein the support member covers the grooves in the stacking position and leaves them clear in the nesting position.

tion.

11. Container as claimed in any of the claims 1-10, wherein the base of the container has a rectangular form and wherein the walls are provided on the short side with support members.

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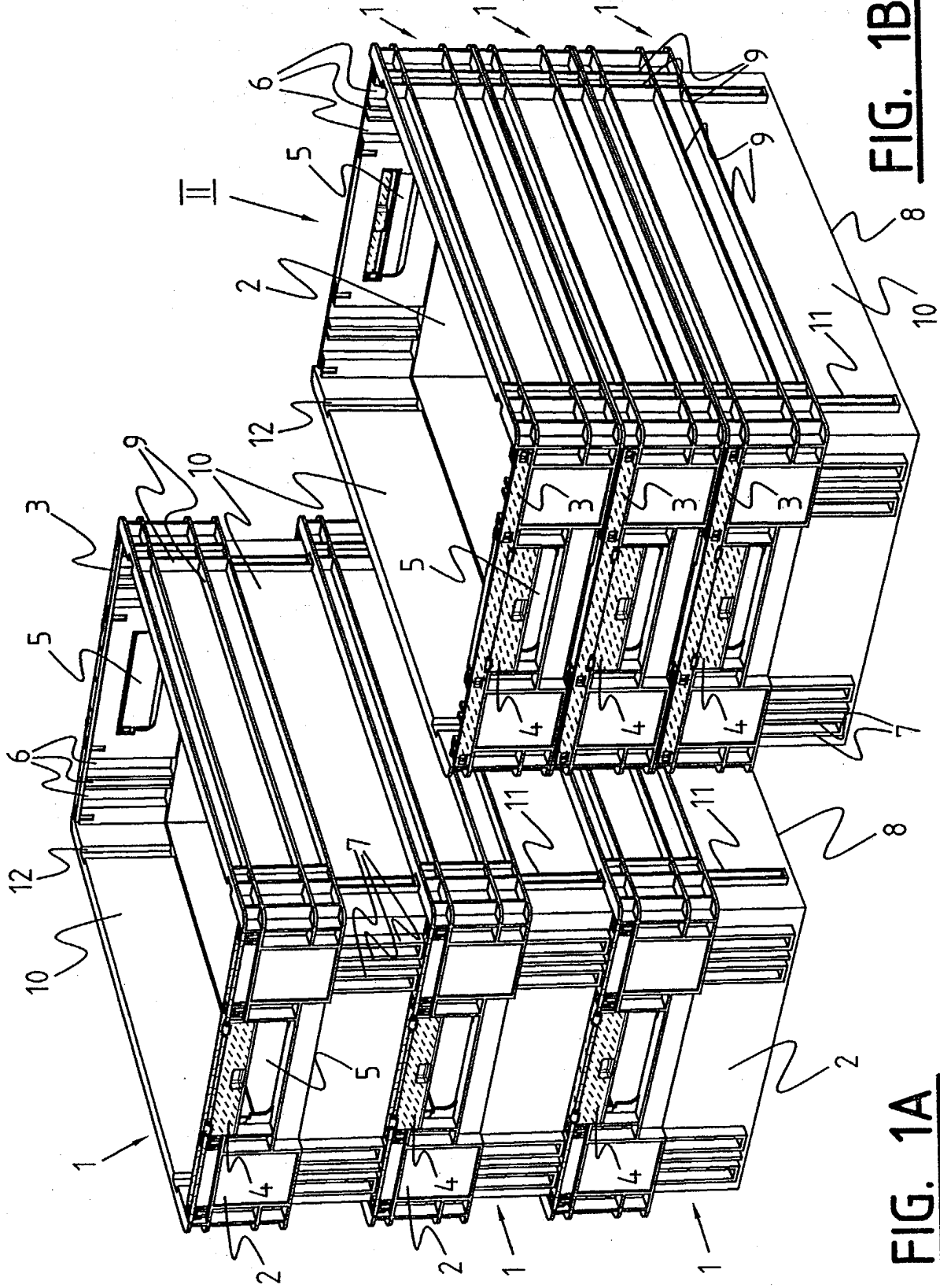


FIG. 1A

FIG. 1B

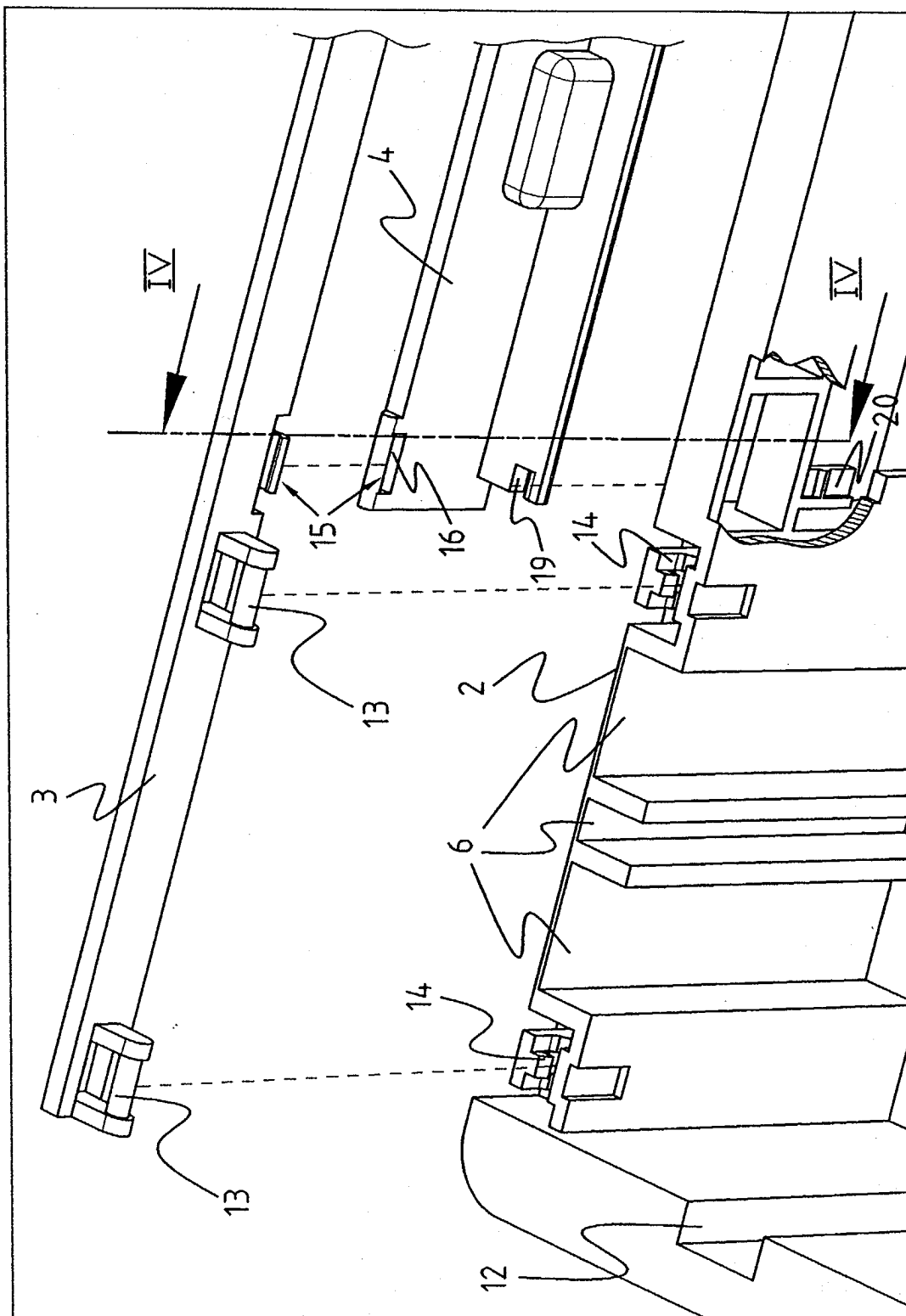
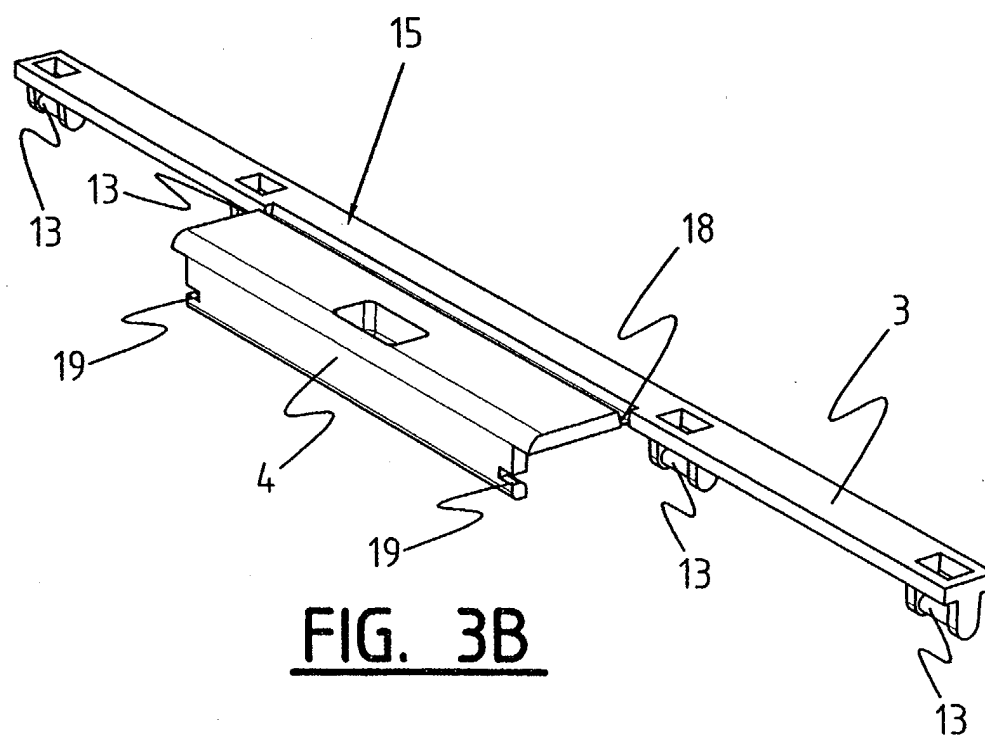
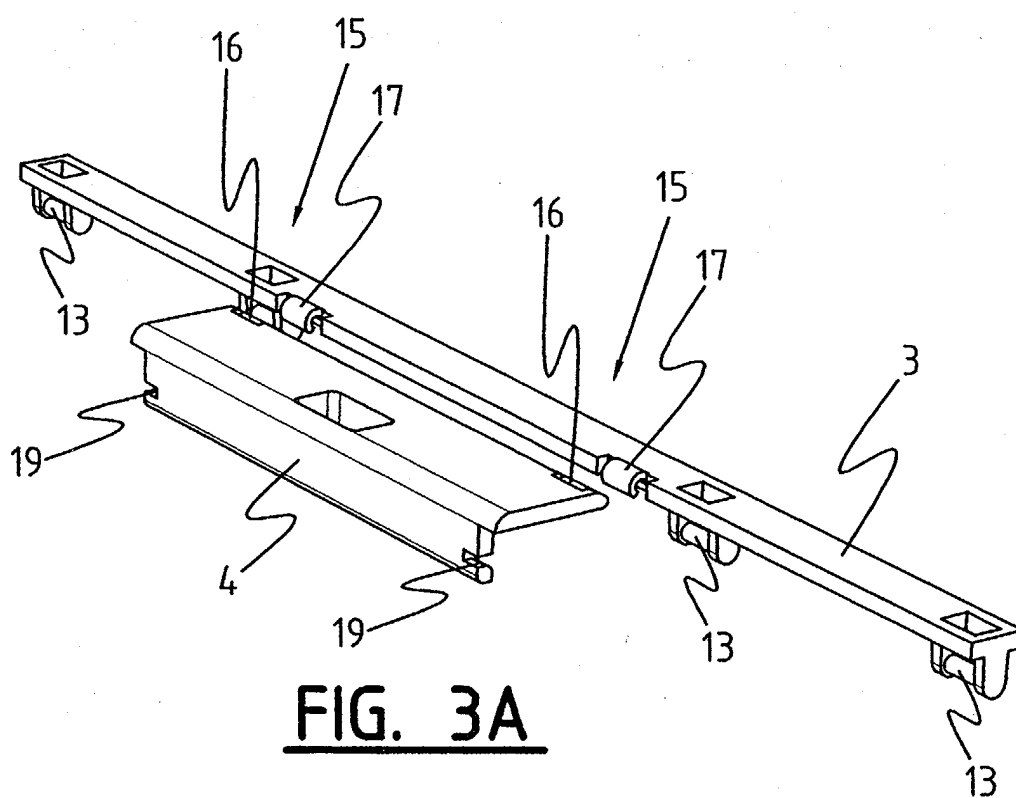


FIG. 2



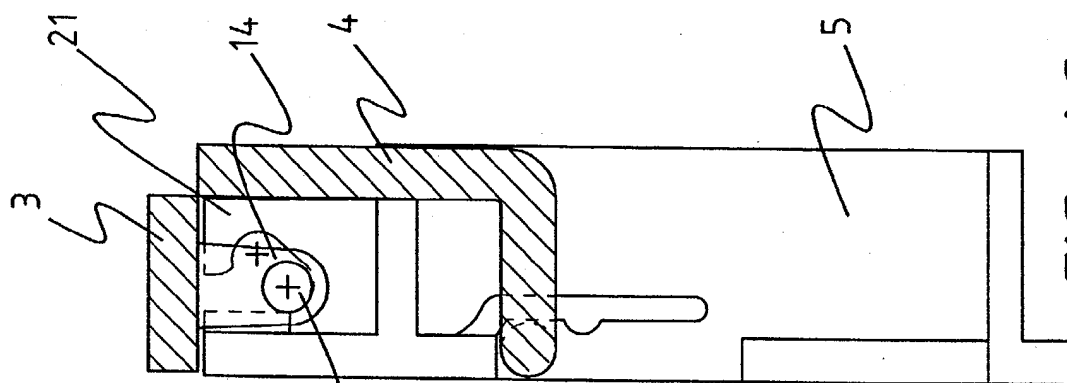


FIG. 4C

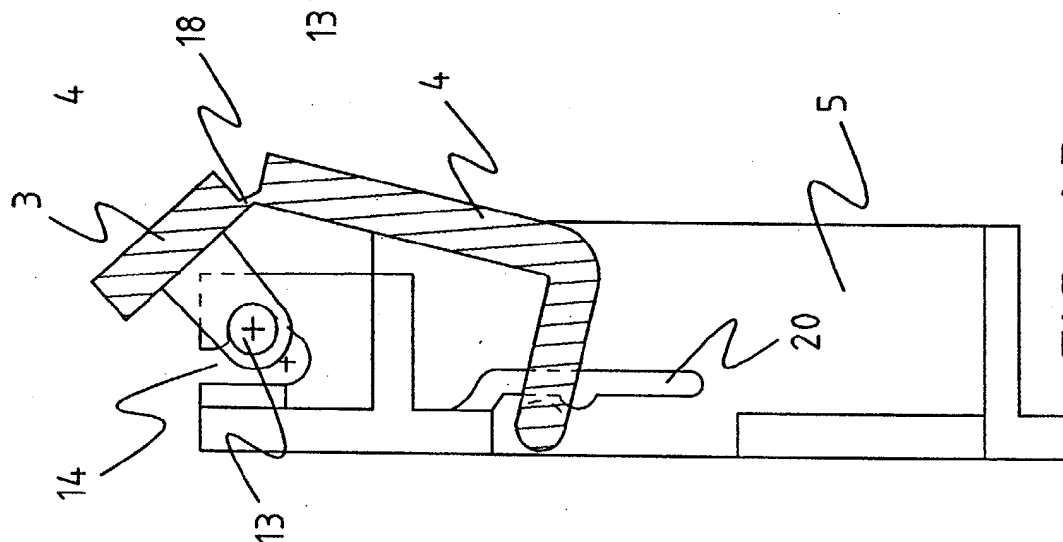


FIG. 4B

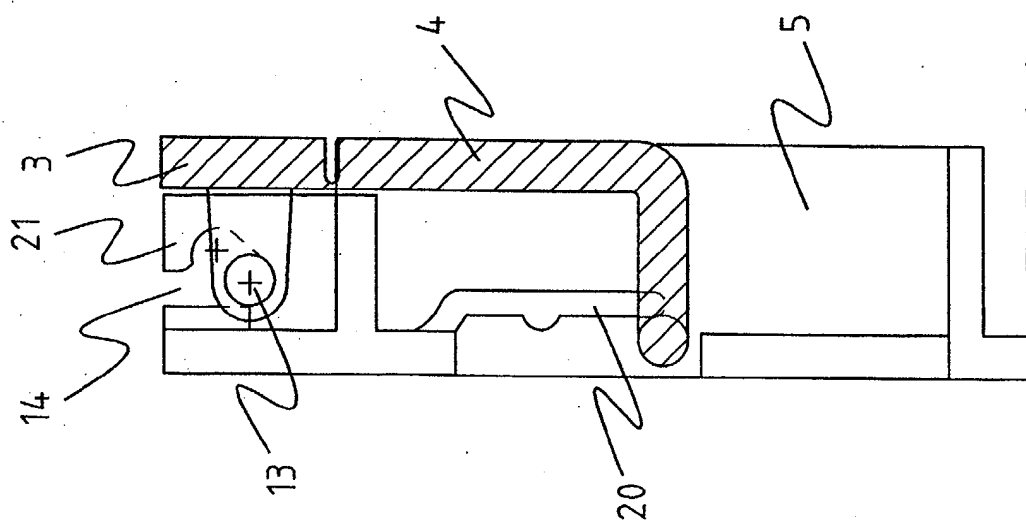


FIG. 4A



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EUROPEAN SEARCH REPORT

Application Number
EP 03 07 5763

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	US 6 085 932 A (COPE) 11 July 2000 (2000-07-11) * column 2, line 30 - line 46 * * column 5, line 7 - line 49; figures 1,8-10 *	1	B65D21/06
A	EP 0 505 585 A (SEITZ) 30 September 1992 (1992-09-30) * column 3, line 57 - column 4, line 51; figures 4-9 *	1	
A	FR 2 392 891 A (LOCATELLI) 29 December 1978 (1978-12-29) * claim 1; figures *	1	
A	GB 2 330 868 A (WOODALL) 5 May 1999 (1999-05-05) * figures 11-16 *	1	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			B65D
Place of search		Date of completion of the search	Examiner
THE HAGUE		13 June 2003	Newell, P
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**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 03 07 5763

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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