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(54) Plastic container which is stackable and nestable.

(57) Plastic container which is stackable and nestable, with an open front and top, comprising a bottom (2), a rear wall (5), two side walls (3, 4), and a movable, stacking bracket placed near the front, for supporting a similar type of container stacked on the container, while the rear wall and the side walls are directed outwards at an angle, and the rear wall is provided with bearing elements (13) which in the stacked position rest on a container below, and the rear wall is also provided with recesses which in the nested position accommodate the bearing elements of containers lying above, while the container (1) is provided with supporting means (20, 21) near the front, and the rear wall is provided with one or more supporting projections (13) and corresponding bearing apertures (24), for stacking the containers in at least one intermediate position, between the nested position and the stacked position.

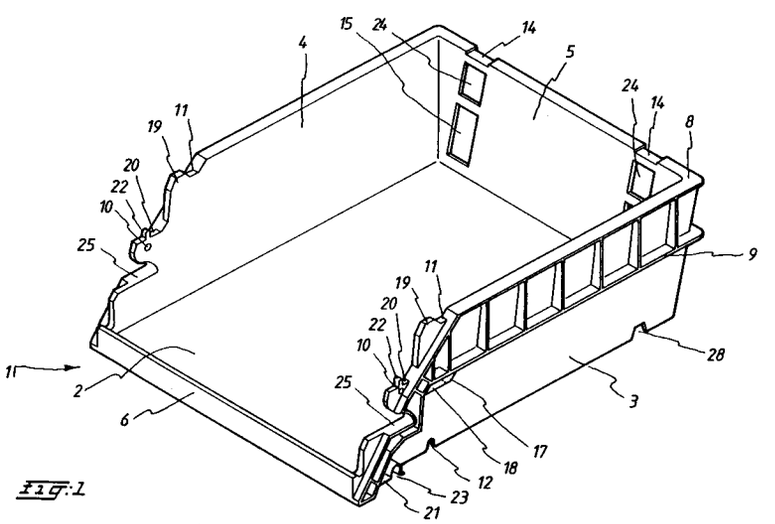

Fig.1

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The invention relates to a plastic container which is stackable and nestable, with an open front and top, comprising a bottom, a rear wall, two side walls lying opposite each other, and a movable first stacking bracket placed near the front, for supporting a similar type of container stacked on the container, the rear wall and the side walls being directed outwards at an angle starting at the bottom, the rear wall being provided with one or more first bearing elements which in the stacked position rest on a container below, the rear wall also being provided with one or more recesses which in the nested position accommodate the first bearing elements of one or more containers above, and the container being provided with laterally outward directed second bearing elements, for supporting the container on a container below when in the nested position.

Such a container is known from EP-B-0 140 459. A container of the same type can be stacked on said known container by pivoting upwards the hinged stacking bracket, which is U-shaped and bridges the side walls, with the result that the container above is supported near the front by the stacking bracket and at the rear wall by projections. In the downwards pivoted position of the stacking bracket the containers can be nested, so that they take up as little space as possible.

Such containers are often used for displaying goods in shops, for example bread. In this case the filled containers are transported from the bakery to the shop in the stacked position, the containers are emptied by the customers, and the empty containers are then returned in the nested position.

The disadvantage of these known containers is that they are stackable only in one height, with the result that in the case of products of different heights one either has to work with partially filled containers, or separate containers have to be kept in stock for each product height.

The latter possibility must be rejected for logistical reasons, so that the first solution is chosen and the loss of space accepted.

The object of the invention is to eliminate the abovementioned drawback by providing a container of the type mentioned in the introduction which can be stacked also at one or more intermediate heights.

This object is achieved by a container which is characterised in that near the front the container is provided with supporting means, and the rear wall is provided with one or more supporting projections and corresponding bearing apertures for supporting a container of the same type in at least one intermediate position between the nested position and the stacked position.

In a first embodiment the supporting means comprise supporting elements which are provided on the edge of each side wall situated at the front, and the container is provided at each side wall with a laterally outward directed third bearing element, such that a third bearing element can rest in an intermediate position on a supporting element of a container below.

Each side wall of the container is advantageously provided with a recess extending from the front of the container, for the accommodation of a third bearing element of a container above in the nested position. This means that the containers can be placed in vertical alignment above one another in the nested position.

By providing the third bearing elements and the supporting elements with positioning means which can interlock positively, it is ensured that the containers cannot shift relative to each other when they are in an intermediate position.

In a second embodiment the supporting means comprise supporting elements which are provided on the edge of each side wall situated at the front and can support the movable first stacking bracket in at least one intermediate position. This means that a container above also rests in an intermediate position on the first stacking bracket, with the result that it is always firmly supported.

Each side wall of the container is advantageously provided with a slot-shaped guide element for guiding the first stacking bracket.

In a third embodiment the supporting means comprise a movable second stacking bracket which is hinged to the container and has a working position in the intermediate position.

In a fourth embodiment the first stacking bracket is hinged to the container, and the second stacking bracket is hinged to the first stacking bracket. A container which is simple to stack in an intermediate position is obtained in this way.

The supporting projections at the rear wall of the container are preferably formed by the first bearing elements which in an intermediate position rest in correspondingly positioned bearing apertures in the rear wall of the container below.

It is also advantageous to provide the second bearing elements near the front of the container with a downward-directed wall part lying at a distance from the side wall, which wall part in the nested position falls over a part of the container below. This ensures that in a stack of nested containers the side walls of the containers cannot bulge out excessively, particularly near the front, where they are relatively weak. In this way the nested containers are prevented from becoming jammed in each other.

Providing the first stacking bracket and/or the second stacking bracket with positioning means ensures that a container above is held in place. In the case of high stacks in particular, the lateral

freedom of movement of a container on a stacking bracket leads to undesirable shifting and loss of shape of the stack. The positioning can be obtained by, for example, a specially bent shape of the stacking bracket or projections provided on the stacking bracket.

The invention will be explained below with reference to examples of embodiments of the container shown in the drawing, in which:

Fig. 1 shows a view in perspective of a first embodiment of a container according to the invention;

Fig. 2 shows a side view of the container from Fig. 1;

Fig. 3 shows a side view of a second embodiment of the container according to the invention;

Fig. 4 shows a side view of a third embodiment of the container according to the invention; and

Fig. 5 shows a side view of a fourth embodiment of the container according to the invention.

Fig. 1 shows a container which is indicated in its entirety by reference number 1, with a bottom 2, two side walls 3 and 4, a rear wall 5 and a low front edge 6. The container has a top edge 8 and a rib 9 running parallel thereto.

In the stacked position a similar container above (not shown) rests with its bottom 2 on a U-shaped stacking bracket 15 (see Fig. 2), which is pivoted upwards. The hinge point of the stacking bracket is formed by apertures 10. Here the stacking bracket lies in recesses 11 in the top edge 8. Recesses 12 engage on the stacking bracket 15, for the purpose of preventing shifting of the container. At the rear side the container above rests with supporting projections 13 (see Fig. 2) in recesses 14 in the top edge 8.

In the nested position the container rests with rib 9 on the top edge 8 of a container below (not shown). Locking tongues 17 in this case engage in the recesses 11, with the result that the containers are secured against shifting. A wall part 18 also falls over a part 19 of the container below, so that lateral bulging of the side walls is limited.

For stacking in an intermediate position, the container is provided with supporting elements 20. Flanges 21 of a container above (not shown) then lie on the supporting elements 20, while tongues 22 fall into recesses 23. The supporting projections 13 rest here on the bottom edges of bearing apertures 24 in the rear wall 4. In case of the nesting of several containers these bearing apertures 24 also serve to accommodate supporting projections 13 of a container above. In the nested position the flanges 21 fall into recesses 25 in the side walls 3, 4.

It can be seen in Fig. 2 how the container from Fig. 1 when stacked can also be placed further back relative to a container below (not shown). The recesses 23 in this case fall over the stacking bracket 15 of the container below, and a channel 28 in the bottom 2 engages in the recesses 14 in the top edge 8.

In order to limit the lateral freedom of movement of a container above when stacked, the stacking bracket 15 is provided with projections 26 which fall in between the side walls of the container above.

In the embodiment of the container 1 in Fig. 3 a container above (not shown) both in the intermediate position and in the stacked position can rest on a stacking bracket 30, which then rests on supporting tongues 32 and 33, respectively. In the nested position the stacking bracket 30 lies in the flapped down position. The stacking bracket 30 slides with its ends 34 in a guide slot 35.

Fig. 4 shows an embodiment in which a container above (not shown) in the stacked position rests on a first stacking bracket 40 of the container 1, and in the intermediate position on a second stacking bracket 42. The likewise U-shaped stacking bracket 42 lies inside the stacking bracket 40, so that they can be moved independently of each other. Stacking bracket 42 has ends 43 which are directed outward and fall into hinge apertures 44. Ends 45 of the stacking bracket 40 are directed inward and fall into hinge apertures 46.

Fig. 5 shows another embodiment of the container 1, in which a first stacking bracket 50 is fixed in a hinge point 51 to the container 1. A second stacking bracket 52 has a hinge point 53, which is fixed to the first stacking bracket 50. In the stacked position the two brackets 50, 52 pivot upwards together, while in the intermediate position only the second stacking bracket 52 does so.

It is usual for the containers, certainly in the case of containers for bread products, to be provided with recesses in the bottom and the walls, in order to reduce the weight and to increase the air circulation in a stack of containers.

Claims

1. Plastic container (1) which is stackable and nestable, with an open front and top, comprising a bottom (2), a rear wall (5), two side walls (3, 4) lying opposite each other, and a movable first stacking bracket (15, 30, 40, 50) placed near the front, for supporting a similar type of container stacked on the container, the rear wall and the side walls being directed outwards at an angle starting at the bottom, the rear wall being provided with one or more first bearing elements (13) which in the stacked position rest on a container below, the rear wall also being provided with one or more recesses (24) which in the nested position accommodate the

first bearing elements of one or more containers above, and the container being provided with laterally outward directed second bearing elements, for supporting the container on a container below when in the nested position, **characterised in that** near the front the container (1) is provided with supporting means (20, 21; 32; 42; 52), and the rear wall (5) is provided with one or more supporting projections (13) and corresponding bearing apertures (24) for supporting a container of the same type in at least one intermediate position between the nested position and the stacked position.

2. Container according to Claim 1, **characterised in that** the supporting means comprise supporting elements (20) which are provided on the edge of each side wall (3, 4) situated at the front, and third bearing elements (21) which are provided on each side wall (3, 4) and are directed laterally outwards, such that the third bearing elements (21) can rest in an intermediate position on the supporting elements (20) of a container below.

3. Container according to Claim 2, **characterised in that** each side wall (3, 4) is provided with a recess (25) which extends from the front of the container (1), for accommodating a third bearing element (21) of a container above in the nested position.

4. Container according to Claim 2 or 3, **characterised in that** the third bearing elements (21) are provided with positioning means (23), and the supporting elements (20) are provided with positioning means (22), in such a way that they can interlock positively.

5. Container according to Claim 1, **characterised in that** the supporting means comprise supporting elements (32) which are provided on the edge of each side wall (3, 4) situated at the front and can support the movable first stacking bracket (30) in at least one intermediate position.

6. Container according to Claim 5, **characterised in that** each side wall (3, 4) of the container (1) is provided with a slot-shaped guide element (35) for guiding the first stacking bracket (30).

7. Container according to Claim 1, **characterised in that** the supporting means comprise a movable second stacking bracket (42; 52) which has a working position in at least one intermediate position.

8. Container according to Claim 7, **characterised in that** the second stacking bracket (42) is hinged to the container (1).

9. Container according to Claim 7, **characterised in that** the first stacking bracket (50) is hinged to the container (1), and the second stacking bracket (52) is hinged to the first stacking bracket (50).

10. Container according to one or more of the preceding claims, **characterised in that** the supporting projections (13) are formed by the first bearing elements, which in an intermediate position rest in the correspondingly positioned bearing apertures (24) in the rear wall (5) of the container below.

11. Container according to one or more of the preceding claims, **characterised in that** the second bearing elements (9) near the front of the container (1) are provided with a downward-directed wall part (18) lying at a distance from the side wall (3, 4), which wall part in the nested position falls over a part (19) of the container below.

12. Container according to one or more of the preceding claims, **characterised in that** the first stacking bracket (15; 30; 30; 50) and/or the second stacking bracket (42; 52) is provided with positioning means for holding a container above in place relative to the stacking bracket (15; 30; 40; 42; 50, 52).

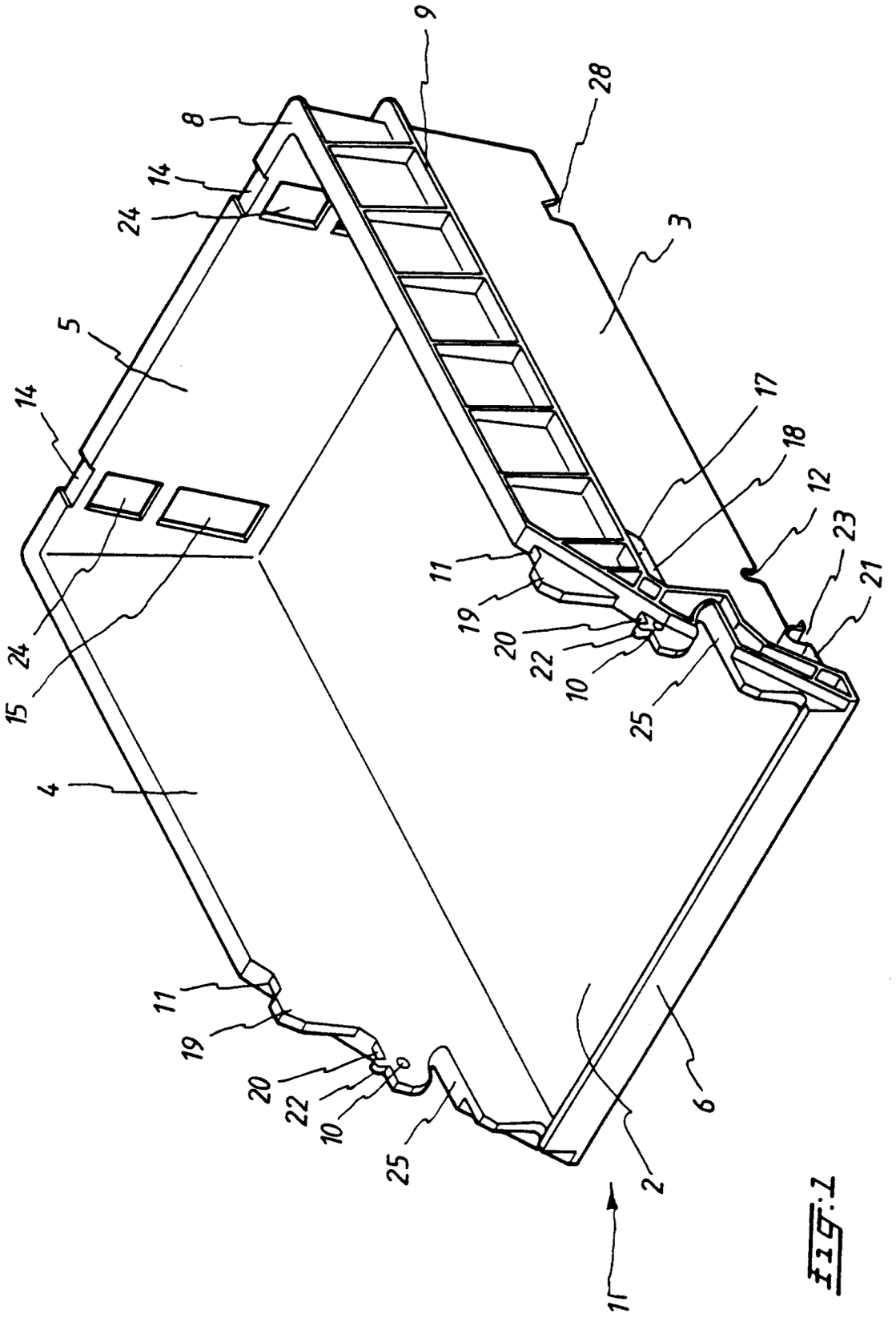
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Fig.1

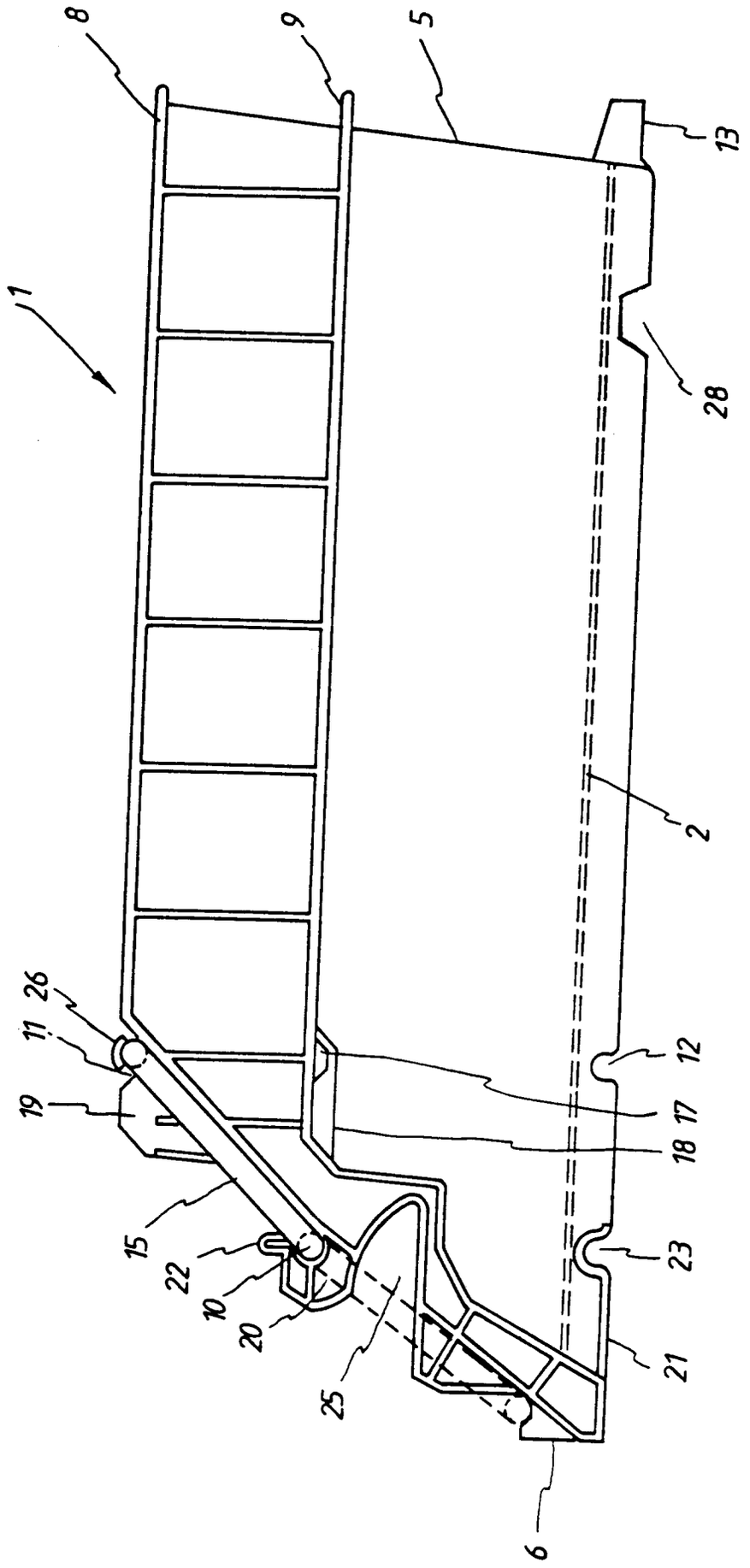

Fig.2

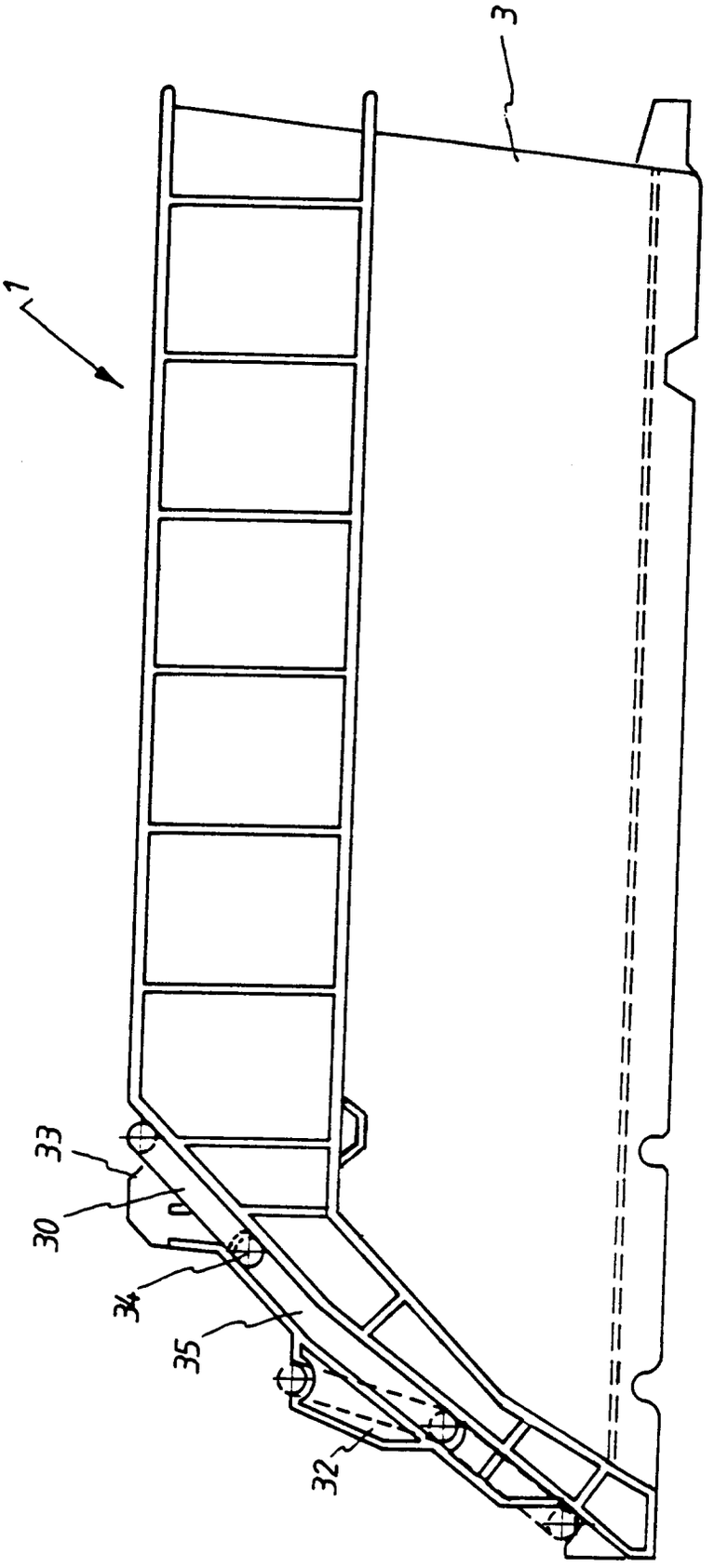

Fig.3

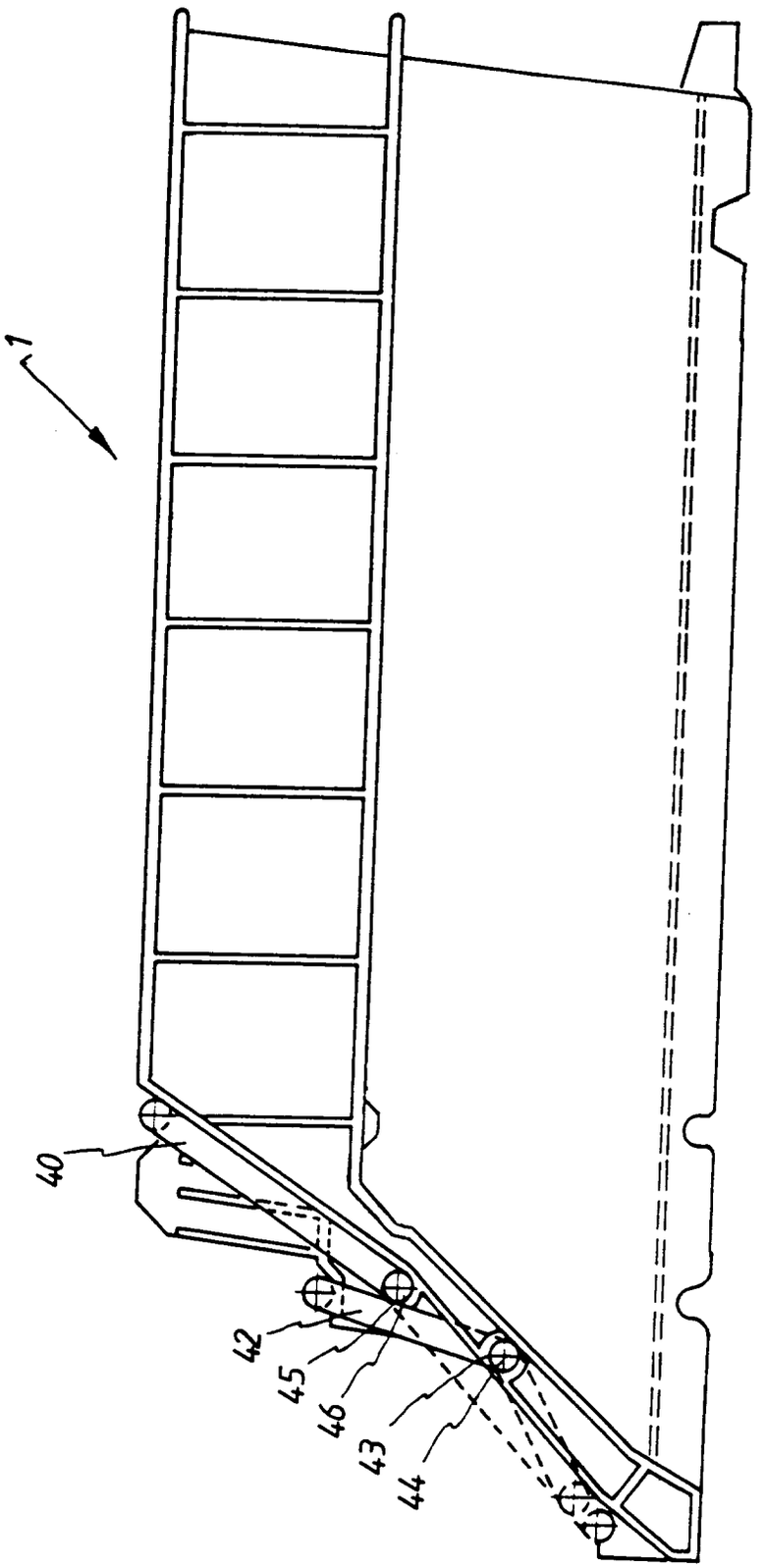

Fig.4

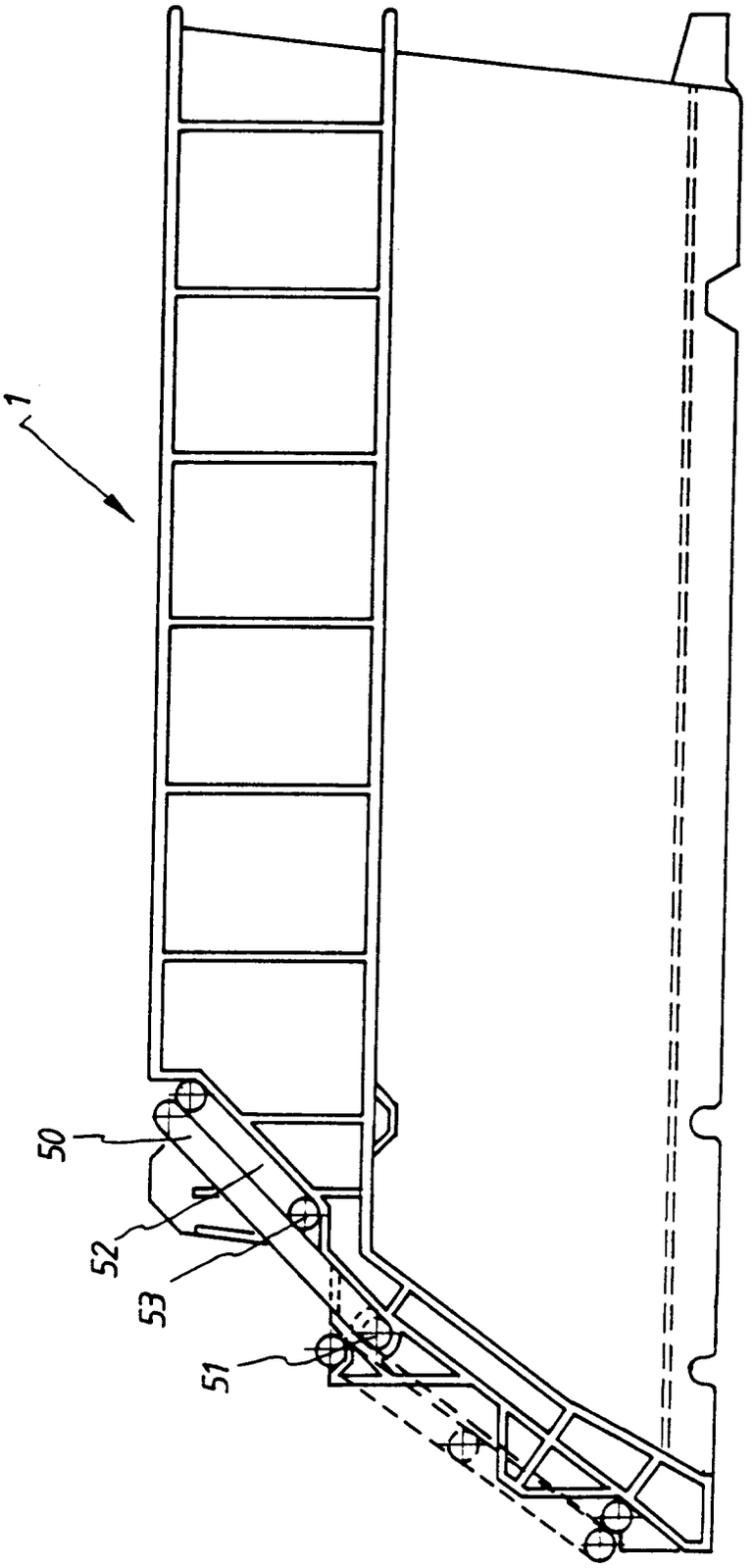

FIG.5

European Patent Office

EUROPEAN SEARCH REPORT

Application Number

EP 93 20 0232

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.5)
Y,D	EP-A-0 140 459 (CURVER) * the whole document *	1,5-6	B65D21/06 B65D21/04
A		10	
Y	GB-A-2 104 486 (PINCKNEY MOLDED PLASTICS) * the whole document *	1,5-6	
A	GB-A-2 067 167 (ENGINEERED PLASTICS SYSTEMS) * the whole document *	1,5-6	
A	US-A-3 219 232 (WILSON) * figure 1 *	2	

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

B65D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	04 MAY 1993	Alain BRIDAULT

CATEGORY OF CITED DOCUMENTS

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