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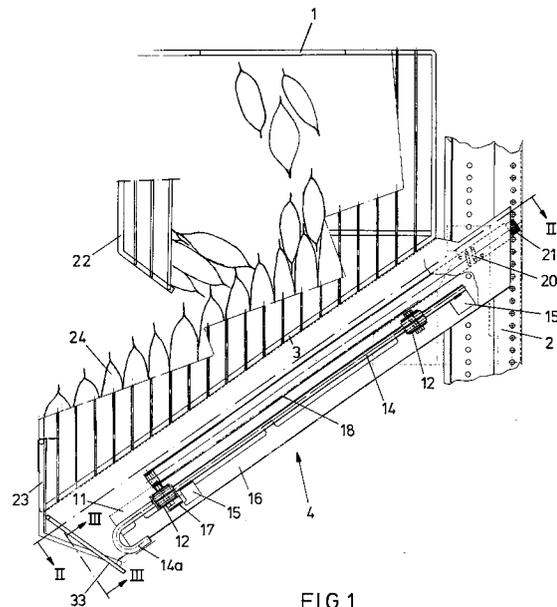
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Take-out basket rack.

A rack having take-out baskets or similar display/take-out containers for merchandise in a retail business, in particular a self-service shop, in which at least one basket (1) has an inclined bottom (3) and the merchandise items (24) present in the basket (1) are accessible at the side facing the consumer, the basket being movable along laterally arranged rails (8,9) between an upper position located against the rear wall and between mounting columns (2) of a rack, and a bottom filling position located in front of the rack, each rail having mounted thereon a rotatably journalled rod (14), connected to the basket, wherein the rod and the rails comprise stopping means and the stopping means can be caused, by rotation of the rod, to cooperate with the stopping means (15,17) of the rails for defining at any rate the upper and lower positions, respectively, of the basket, and the assembly of rails and rod, and optionally a tension spring (20), is accommodated in a space below an inclined wall forming a transition between the bottom and a side wall.



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The invention relates to a rack having take-out baskets or similar display/take-out containers for merchandise in a retail business, in particular a self-service shop.

Known display/take-out shelves for merchandise items such as nuts packed in bags or pouches, or fragile merchandise items packed under inclusion of air, such as crisps and the like, are often baskets made from bar grating material, either in shallow drawer form or in the form of a deep box having a filling opening at the top and an inclined bottom, with a take-out opening provided in the front wall at the bottom end facing the consumer. In accordance with the "first-in, first-out" principle, only those merchandise items are accessible to the consumer that were first placed into the basket, and the other merchandise items present in the basket are protected against undesired manipulation and damage.

Shallow drawer-shaped baskets are usually arranged one closely below the other and it is desired that they can be pulled out in turns so that they can be filled. In particular in the case of deep take-out baskets, arranged at a higher level, the take-out portion is still within the consumer's reach, however, it is desired that the basket can temporarily be moved to a lower level so that it can be filled. To enable displacement between a higher position against the rear wall and between the mounting columns of a rack, and a lower filling position in front of the rack, known take-out baskets are suspended from a tilting lever system via which a basket can be moved in upright position between the high level and the low level.

German Gebrauchsmuster 8515351 discloses a rack comprising shallow display/take-out containers having inclined bottoms, which, via a rail construction, are slidably extendible and retractable on opposite sides in inclined supports extending from rack columns, wherein stopping means are present for limiting the lower, extended position, while the upper, retracted position can be fixed by a lock operable from the front of the container, and wherein tension springs are provided between the front side of the container and the rack.

A drawback of this known apparatus is that the tension springs and the lock are arranged under the flat bottom in the central portion of the basket, which may impede the shifting of the merchandise over the bottom of a subjacent container.

The object of the invention is to provide a rack having display/take-out containers of the type described, having a displacement construction which is simple and takes up little space, not requiring any complicated tilting lever systems which take up much space, and wherein the above-mentioned drawback of the construction disclosed in the Gebrauchsmuster is avoided.

To this end, a rack having take-out baskets or similar display/take-out containers for merchandise in a retail business, in particular a self-service shop, wherein at least one basket is constructed as a drawer- or box-shaped container having an inclined bottom, the merchandise items present in the basket are accessible to the consumer at the end of the bottom facing the consumer and the basket can be displaced along rails arranged at the side portions of the basket, between an upper position located against the rear wall and between mounting columns of the rack, and a bottom filling position located in front of the rack and limited by stopping means, is characterized according to the invention in that on each side of the basket, in a space below an inclined wall forming a transition between the bottom and a side wall, an assembly of the rails and a rod rotatably journaled parallel to the rails is connected to the basket, the stopping means are arranged at the rod and at the rails, and the stopping means of the rod, by rotation of the rod, can be caused to cooperate with the stopping means of the rails for defining at any rate the upper and lower positions, respectively, of the basket.

Particularly in the case of flat, shallow baskets, mounted at relatively low levels at a slight inclination directly above each other, accommodating the rails and the lock construction designed as a rotary rod in spaces formed below the side portions of the bottom has the advantage that the basket bottoms do not have any projecting parts at the underside, which impede the shifting of the merchandise items in a subjacent basket or render it difficult for a filled basket to be retracted.

In the case of deep baskets, which are usually arranged at a high level so as to utilize the space at the top of a rack for storing merchandise, and which must therefore be lowered at a relatively steep incline to be filled without necessitating the use of steps and the like, the vertical forces are considerable, also because of the great weight of the basket contents, so that lifting and lowering the basket requires much strength.

In this connection, the assemblies of the rails and rods can be supplemented with a tension spring, which, according to the invention, is likewise arranged in the space below a wall forming a transition between the bottom and a side wall.

To further explain the invention, a practical example of the take-out basket rack will now be described, by way of example only, with reference to the drawings.

Figure 1 is a detail side view of the guide system of a take-out basket;

Figure 2 is a top plan view of the detail of Figure 1 taken on line II-II in Figure 1;

Figure 3 is an end view of the detail of Figure 1 taken on line III-III in Figure 1;

Figure 4 is a schematic detail side view of an alternative manner of mounting the basket with the guide system on a rack column;

Figure 5 is a front view of the telescopic supporting beam which is part of the mounting system according to Figure 4; and

Figure 6 is a perspective view of a push construction for pushing rows of packed merchandise items towards the take-out end.

According to the drawings, a basket produced from bar grating material is mounted on columns of a display rack by means of a guide assembly 4 which is parallel to the inclined basket bottom 3. In the embodiment shown, the guide assembly is accommodated in spaces 5 located below inclined walls 6 which form a transition between the bottom 3 and upright side walls 7 of the basket.

The guide assembly 4 comprises rails 8, known per se, of which a stationary portion 9 is connected to the rack 2 and a movable part 10 is connected to the basket 1 via a section 11. Mounted on section 11 are laterally projecting supports 12, wherein a rod 14 is journaled so as to be rotatable about its axis. Rod 14 carries stopping means in the form of lugs 15.

A section 16, connected to the stationary portion 9 of the rails or directly to the rack 2, comprises stopping means in the form of bent-out lugs 17, the rotation of rod 14, which comprises an end hook 14a for gripping, allowing stopping lugs 15 of the rod to be swung between a downward position as shown in Figures 1 and 2, wherein stopping lugs 17 of section 16 prevent rod 14 from moving and thereby prevent basket 1 from moving downwards, and a horizontal position, in which rod 14 and consequently also the basket are capable of moving downwards. This downward movement is limited by lug 15 at the rear end of rod 14 abutting against lug 17 at the front end of section 16.

In the embodiment of the guide means 4 as shown, a tube 18 is mounted on support 12 at the end of guide means 4 by a screw 19. Accommodated in tube 18 is a helical spring 20 having its rear end mounted on the column 2 at 21.

In Figures 1 and 2 it can be seen that basket 1 is provided with an awning-shaped top front wall 22. Between this wall 22 and a low bottom front wall 23, the products offered for sale, schematically indicated in the drawing as bags 24 with food, are within the consumer's reach. The awning-shaped top front wall is dimensioned such that a stock of bags 24 is stored at the top of basket 1 and bags 24 slide on automatically as a single layer over basket bottom 3 upon removal of the foremost bags lying on the bottom.

Now follows a description of the displacement of basket 1 from a high position, in which the rear wall of the basket is located between columns 2, to

a low position, in which the basket is located in front of the rack and is more readily accessible for filling and the like.

For enabling a downward movement, rod 14 is gripped at the end hook 14a and rotated over 90° such that downwardly extending stopping lugs 15 are swung laterally and move beyond the reach of stopping lugs 17 which are stationarily connected to the fixed portion of the rack. Now, the basket can be lowered while being guided, a part of the weight of the basket and the contents thereof being taken up by spring 20. When rod 14 is rotated reversely, the abutment of rear lug 15 against lug 17 prevents further downward movement and via these lugs the weight of the basket is taken up in the stationary portion of the apparatus.

When the basket is to be shifted upwards again, the rod is rotated again and the basket is pushed upwards, spring 22 contributing to the upward movement. The high position is locked by rotating the rod back to the position shown in the drawing.

Figures 4 and 5 show an alternative manner of mounting a take-out basket, which may be of the type discussed with reference to Figures 1-3, on a display rack having parallel columns 2.

The problem with such display racks is that the columns often do not have the exact interspace intended, i.e., the space between two successive columns may vary slightly.

In the manner of suspending take-out baskets as shown in Figure 1, where the stationary portion 9 of the extendible rail assemblies 8, 9 is always connected to a rack column, such deviations from the intended interspaces of the rack columns may cause problems.

According to Figure 4, a supporting beam 25, extending along the bottom edge of the rear wall of the basket, is used for the connection between a rack column and the stationary rail portion 9 or any other portion that is also connected to a take-out basket.

Supporting beam 25 comprises two telescopic tube sections 26, 27, of rectangular design in the embodiment shown, at the free ends thereof provided with hooks 28, through which the supporting beam and the take-out basket mounted thereon can be suspended from two rack columns 2. Because the two supporting beam portions 26, 27 are telescopic, being for instance extensible by about 3 centimetres, small deviations from the intended distance between two successive rack columns can be compensated.

In Figure 6, a push element 29 is shown that can be used advantageously in a take-out basket of the type set forth in the present application, particularly so when the basket has a bottom of grating bars inclined towards the take-out end.

For pushing the rows of packed merchandise items, for instance bags of peanuts, towards the front side or take-out side, it is known to pre-load such push elements towards the take-out end of the basket. In strongly inclined baskets, this pre-load can be realized by gravity or by using a push or pull spring of the helical spring type.

Such helical springs, of which at least one should be present in each push element, take up space in the bottom zone of a basket. Further, a helical spring, in released condition, has a considerable length in relation to the effective spring travel. Consequently, if a push element is to be loaded throughout its path along the bottom, the helical spring must not be arranged in front of or behind the push element in its bottom path, but beside or below the push element. In that case, the spring force must be transmitted to the push element via a wire or the like and a bend pulley.

In the embodiment according to Figure 6, the push element 29 is pre-loaded by a spring in the form of a self-coiling helical spring 31. In the released, coiled condition, this spring takes up very little space and can be mounted directly between the push element 29 and a fixed point at the basket bottom 3 so as to be operative in the bottom surface.

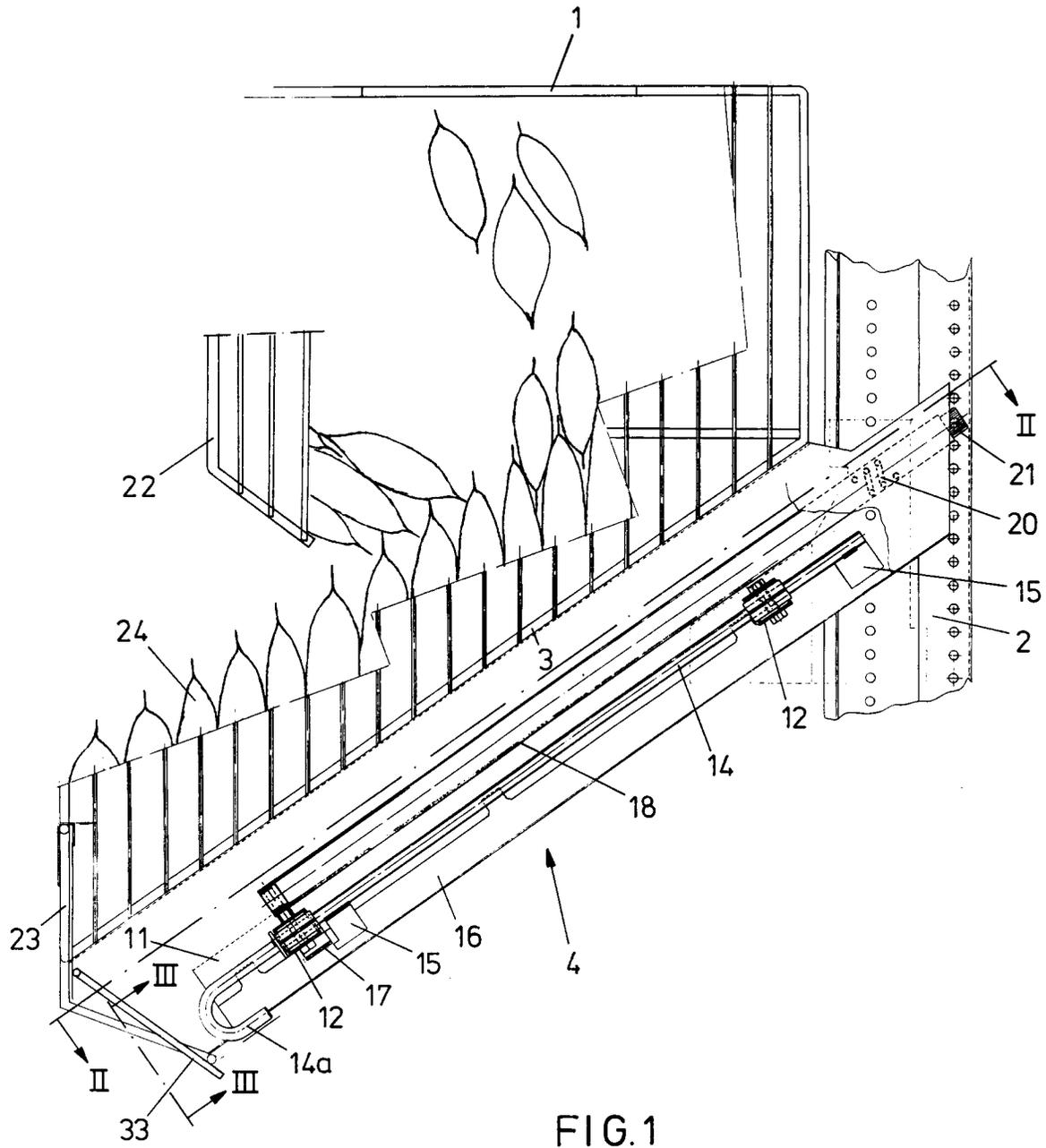
In the embodiment shown, helical spring 31 is accommodated in push element 29 and fixed at the front edge of the basket bottom at a beam 32.

Both in the coiled condition and in the extended condition, helical spring 31 hardly takes up any space and hence does not form any obstacle to packages 24 present in a basket or in a sub-jacent basket.

In the take-out basket rack according to the invention, end hooks 14a of rods 14 at the take-out side of baskets 1 can be covered by caps 33, indicated in Figure 1. Thus, the basket is prevented from being unlocked accidentally and sliding downwards.

Claims

1. A rack having take-out baskets or similar display/take-out containers for merchandise in a retail business, in particular a self-service shop, in which at least one basket (1) is constructed as a drawer- or box-shaped container having an inclined bottom (3), the merchandise items (24) present in the basket (1) are accessible to the consumer at the end of the bottom facing the consumer and the basket (1) can be displaced along rails (8, 9) arranged at the side portions of the basket (1), between an upper position located against the rear wall and between mounting columns of a rack (2), and a bottom filling position located in front of the rack (2) and limited by stopping means (15, 17), characterized in that on each side of the basket (1), in a space (5) below an inclined wall (6) forming a transition between the bottom (3) and a side wall (7), an assembly of the rails (8, 9) and a rod (14) rotatably journalled parallel to the rails construction is connected to the basket (1), the stopping means (15, 17) are arranged at the rod (14) and at the rails (8, 9), and the stopping means (15) of the rod (14), by rotation of the rod (14), can be caused to cooperate with the stopping means (17) of the rails (8, 9) for defining at any rate the upper and lower positions, respectively, of the basket (1).
2. A rack according to claim 1, in which tension springs (20) are connected, at one end, to the basket (1) and, at the other, to the rack columns (2), characterized in that for each assembly of rails (8, 9) and a rod (14), a tension spring (20) is arranged in said space (5).
3. A rack according to claim 1 or 2, characterized in that for the connection between a rack column (2) and the stationary rail portion (9) or any other portion also connected to a take-out basket, use is made of a supporting beam (25), extending along the bottom edge of the rear wall of the basket (1) and comprising two telescopic tube sections (26, 27), said supporting beam (25) being provided, at the free ends thereof, with hooks (28) permitting the supporting beam (25) and the take-out basket (1) mounted thereon to be suspended from two rack columns (2).
4. A rack according to any one of the preceding claims, in which push elements (29) are capable of being slid over the basket bottom (3) over the bottom bars (30) and spring means (31) are present for pushing rows of packed merchandise items (24) toward the take-out side of the basket (1), characterized in that the spring means are formed by a self-coiling helical spring (31), mounted directly between the push element (29) and a fixed point (32) at the front edge of the basket bottom (3) so as to be operative in the bottom surface (3).
5. A rack according to any one of the preceding claims, characterized in that the end hook (14a) of the rod (14) being part of the basket lock, is covered by a cap (33).



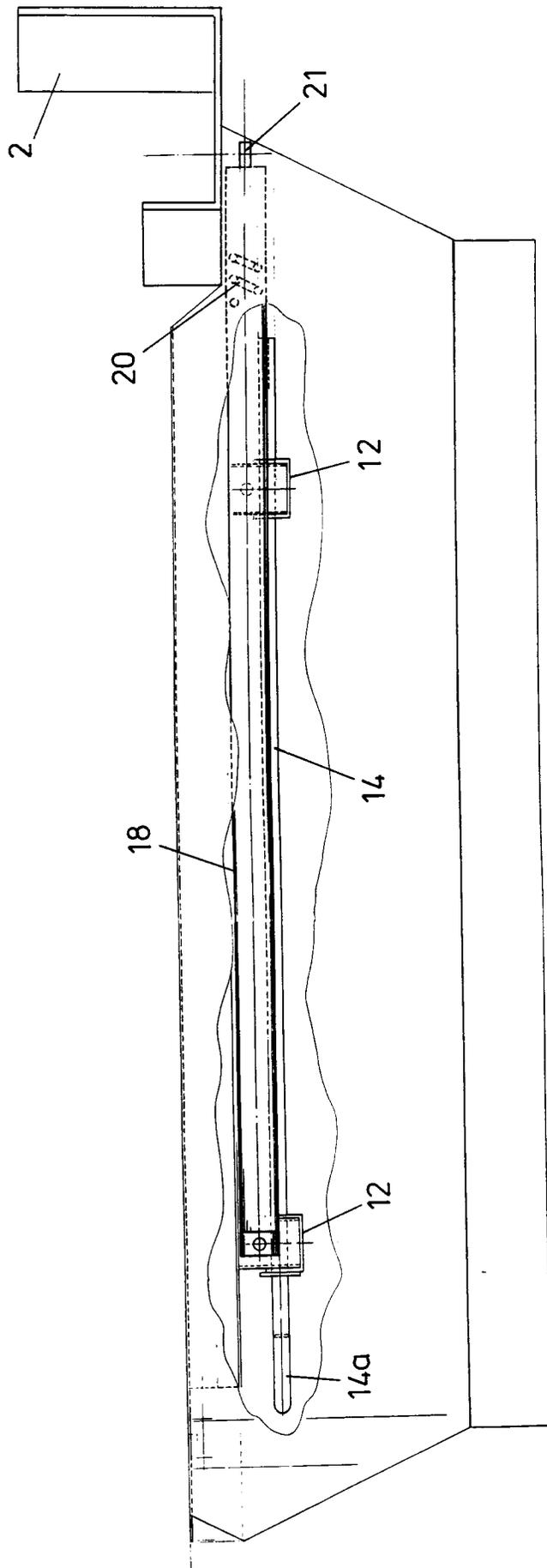


FIG. 2

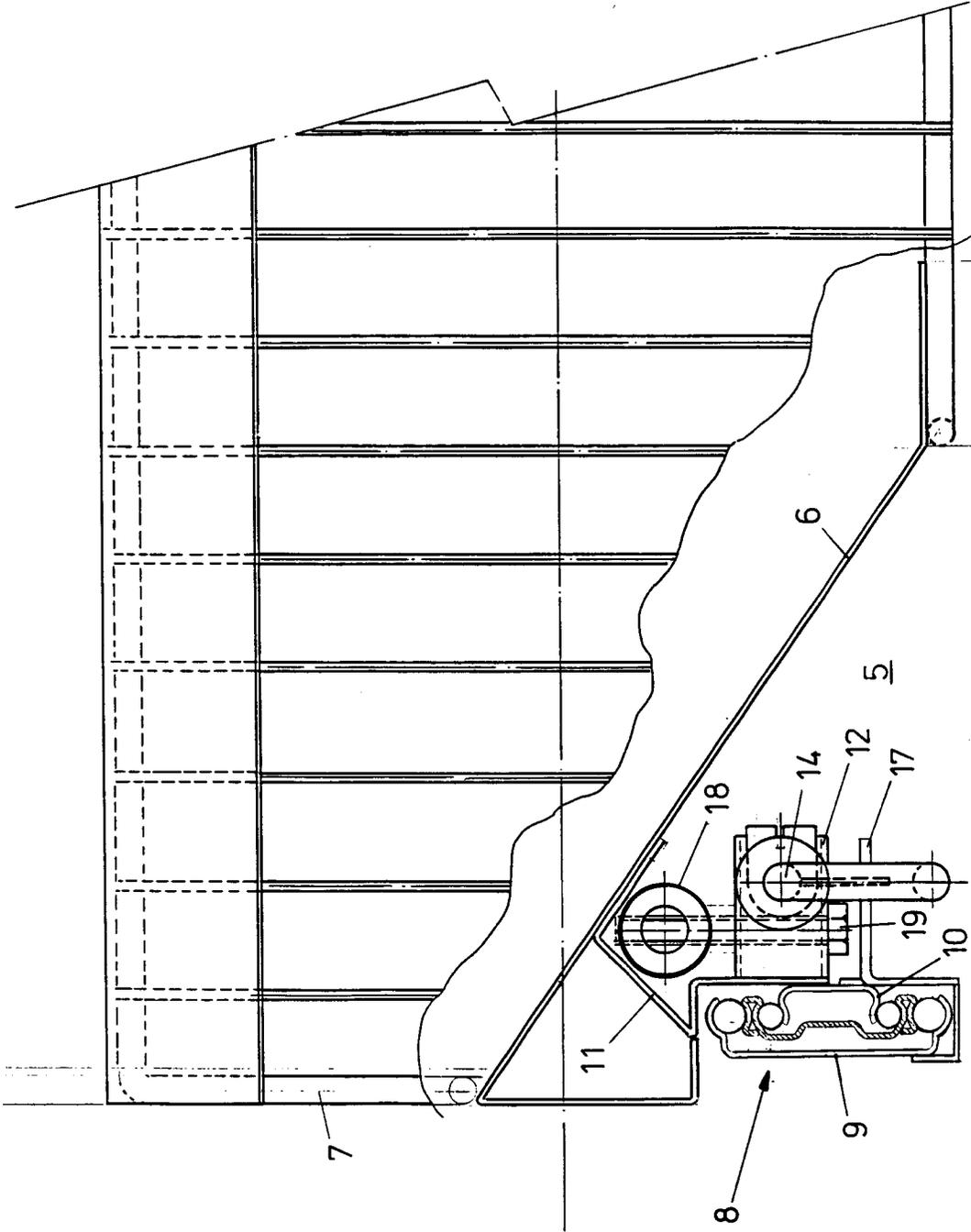


FIG. 3

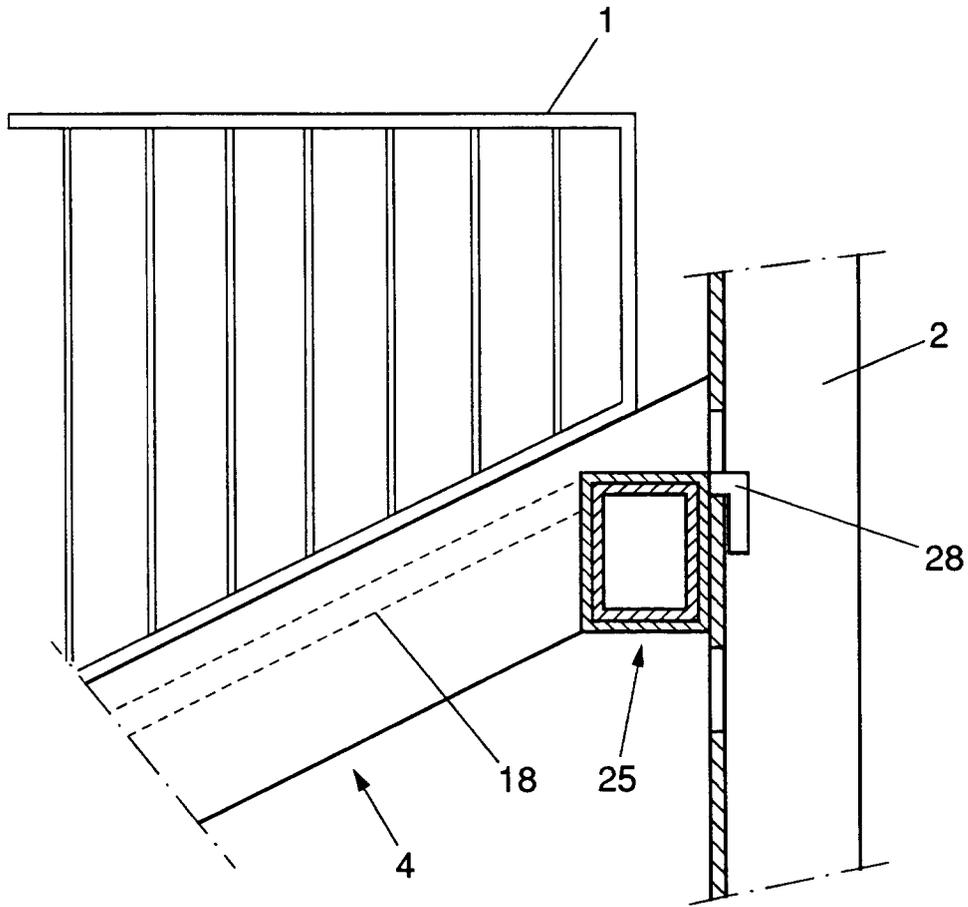


FIG. 4

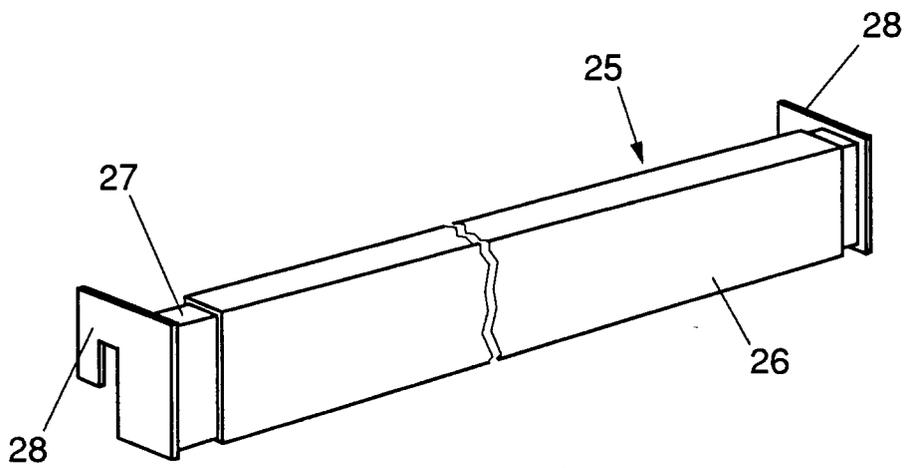


FIG. 5

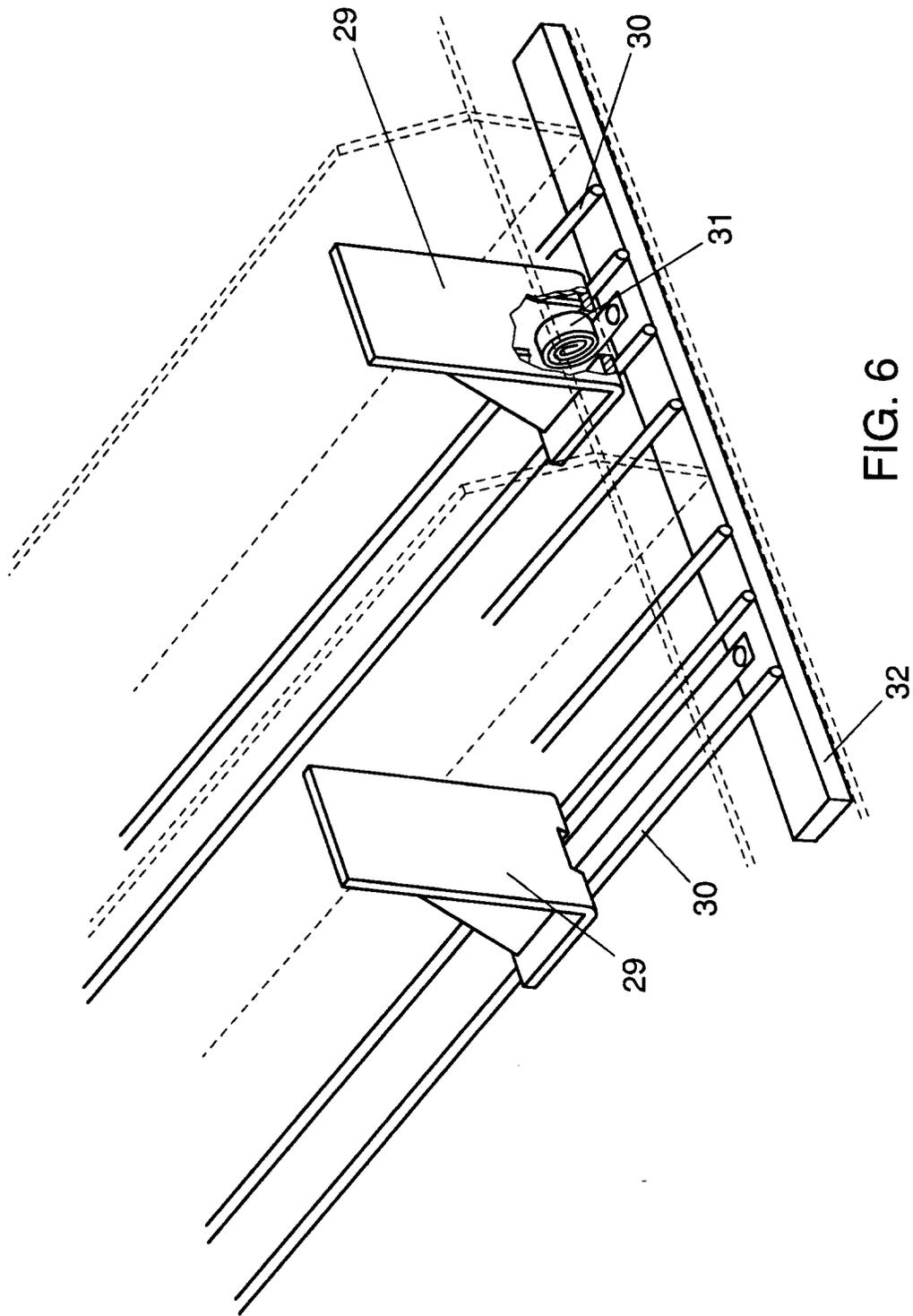


FIG. 6



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)
D,A	DE-U-8 515 351 (EFEKA) * page 3 - page 4; figures * ---	1-5	A47F3/06 A47F5/00
A	FR-A-2 412 290 (GENERALE ALIMENTAIRE) * page 3, line 15 - page 4, line 25; figures * ---	1	
A	WO-A-8 810 083 (LEGGETT & PLATT) * figure 1 * ---	1	
A	US-A-3 471 209 (HOWARD) * column 2, line 1 - column 3, line 25; figures * ---	1	
A	US-A-5 026 129 (MERL) * figures 1,5 * -----	1	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int. Cl.5) A47F A47B
Place of search THE HAGUE		Date of completion of the search 24 MARCH 1993	Examiner DE GROOT R.K.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			