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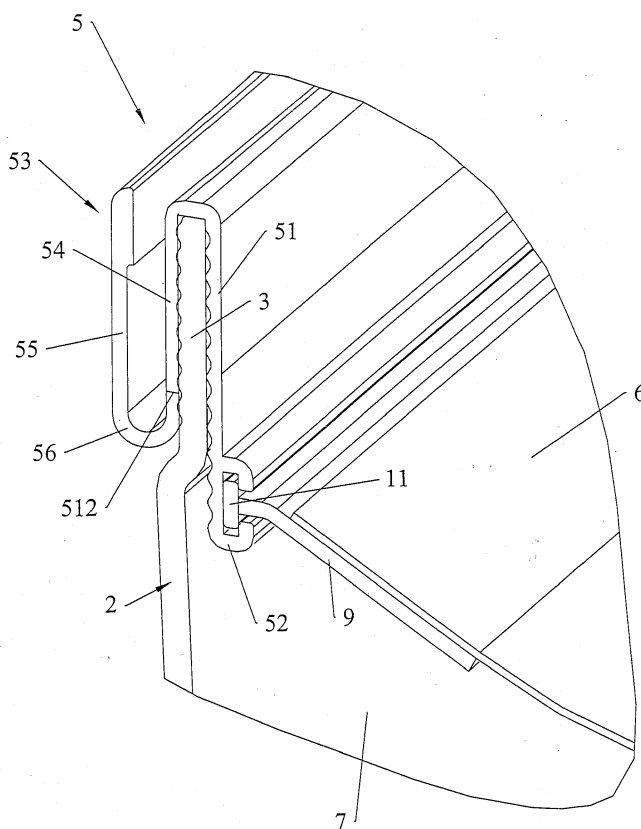
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(54) **Suitcase with improved connection for a partition**

(57) A suitcase (1) is described comprising a body (2) with an edge (3) adapted to couple with a compartment (4) of a connection means (5) for a partition (6) adapted to divide the internal space of the suitcase (1) into a lower compartment (7) and an upper compartment

(8). Said connection means (5) comprises a raceway (52) which is adapted to slidably couple with a sliding element (11) which is complementary to the raceway (52) and is fixed to a support element (9), with which the partition (6) is integrally associated. (Fig. 2).



**FIG.2**

## Description

**[0001]** The present invention relates to a suitcase with improved connection for a partition.

**[0002]** The existence is known on the market of suitcases with partition sheets between the upper space and lower space of the suitcase in order to accommodate rather incompatible objects, such as for example shoes and garments.

**[0003]** Said partitions are usually made of fabric and have to be mounted by the edge of the upper or lower shell of the body of the suitcase. The connection to said edge usually occurs by stitching, together with the body, to a profile adapted to "wrap up" said edge of the body and the edge of the partition. More accurately, said connection profile comprises an internal portion of the body connected to an external portion of the body. The stitching crosses said two portions past the body and the partition comprised therebetween. Said profile also comprises a further external portion adapted to cover the stitching. An edge of an outer zip fastener also stitched to the body by means of the same single stitching, can be expected between said two outer portions.

**[0004]** Hence the partition is irreversibly integral with the body, it being usually equipped with an inner zip fastener to access the upper or lower compartment of the suitcase. In any case, the partition is not removable from the suitcase.

**[0005]** GB-2121093 describes a raceway connection which is integral with the body of the suitcase and couplable with an element which is integral with the partition by means of a profile that is complementary to, and can be inserted in said raceway. Said couplable elements are extruded in plastic material of the same type. Disadvantageously, the raceway requires a deformable portion for the connection of the external fastener with respect to a significant stiffness required for the coupling with the rigid body of the suitcase and the support of the partition which would otherwise not slide in the raceway. Accordingly, since it is made of the same material as the connection portion of the body, the deformable part tends to break because it is too rigid for the object for which it is designed.

**[0006]** WO-2012/107389 by this applicant describes a suitcase comprising a body with an edge adapted to couple with a compartment of a connection means which provides an internal portion of the body made of soft material at the extremity of which the raceway made of rigid material is fixed, and an external portion of the body made of soft material, the sliding element being made of rigid material fixed to the support element made of soft material.

**[0007]** Disadvantageously, the application of a stitching which makes said internal and external portions integral, induces the curling thereof, thus jeopardizing the efficacy and therefore the life of the connection.

**[0008]** It is the object of the present invention to make a suitcase with a means for connecting the partition to

the shell which is simple and affordable to make, in which the application of a connecting stitching between the internal and external portion is quick, effective and long-lasting.

**[0009]** In accordance with the invention, such an object is achieved with a suitcase as described in claim 1.

**[0010]** These and other features of the present invention will become increasingly apparent from the following detailed description of one of its non-limiting practical embodiments disclosed in the accompanying drawings, in which:

figure 1 shows a perspective view of a suitcase conveniently cut according to the present invention;  
figure 2 shows an enlarged perspective view of a body-partition connection;  
figure 3 shows an enlarged perspective view of the connection without body;  
figure 4 shows a sectional vertical view of the connection alone;  
figure 5 shows a sectional vertical view of the connection alone with an external folded portion;  
figure 6 shows an enlarged perspective view of the connection with internal and external zip fastener;  
figure 7 shows a sectional vertical view of a second embodiment of the connection;  
figure 8 shows a sectional vertical view of the connection in figure 7 with an external folded portion;  
figure 9 shows a sectional vertical view of a third embodiment of the connection;  
figure 10 shows a sectional vertical view of a fourth embodiment of the connection.

**[0011]** A suitcase 1 (figure 1) comprises a lower rigid body 2 with an edge 3 adapted to couple with a compartment 4 of a connection means 5 for partition 6 which is adapted to divide the internal space of suitcase 1 into a lower compartment 7 and an upper compartment 8.

**[0012]** The connection means 5 (figure 2) provides an internal portion 51 with which the lower extremity of a raceway 52 is integral which is adapted to couple with a sliding element 11 connected, for example by coextrusion, to a support element 9, with which a partition layer 6 is integrally associated. An internal zip fastener 13 (figure 6) may be associated with partition 6.

**[0013]** Partition 6 is for example made of fabric and is for example stitched to element 9; or may be glued thereon 9.

**[0014]** The internal portion 51, raceway 52 and the sliding element 11, are made of rigid plastic material, for example rigid polypropylene. The rigidity is fundamental because otherwise element 11 would not slide in raceway 52.

**[0015]** The hardness of an elastomeric or plastic material is commonly expressed in Shore.

**[0016]** The Shore Hardness is a parameter established by Standards DIN 53505 and DIN EN ISO 868. The Shore Hardness Tester consists in a spring-loaded indenter,

the elastic penetration depth of which is a measurement for the relative Shore Hardness of the material, which is measured on a scale from 0 to 100.

[0017] Shore Hardness classes are also identified. The most common Shore classes are Shore A and Shore D.

[0018] Shore A is indicated on elastomers and soft plastic matters after having measured with a clipped needle.

[0019] Shore D is indicated on elastomers and hard plastic matters after having measured with an unclipped needle which goes in at an angle 30°.

[0020] A high number within the same class means increased hardness.

[0021] Therefore, rigid material is intended for example as an elastomeric or plastic material with a Shore D hardness, soft material is intended for example as an elastomeric or plastic material with a Shore A hardness.

[0022] The connection means 5 also comprises an external portion 53 which provides a first stretch 54 made of rigid material facing and in one piece with said internal portion 51 to form compartment 4 adapted to accommodate edge 3 of body 2, and a second stretch 55 made of soft plastic material, for example of soft thermoplastic material such as PVC, TPE and PP, or rubber, facing said first stretch 54.

[0023] A stretch of deformable connection 56 in one piece with said second stretch 55 and connected, for example by coextrusion, to the lower part of said first stretch 54 at a connection portion 512, ensures the mobility of said second stretch 55 made of soft material with respect to said first stretch 54 made of rigid material.

[0024] The support element 9 is also made of soft plastic material.

[0025] The first stretch 54 is restrained to body 2 and to the first stretch 51 for example by means of stitching as is the fabric edge of an external zip fastener 12 (figure 6).

[0026] Accordingly, the connection means 5 consists of an external portion 53 and an internal one 51. To facilitate the connection for example by means of a single stitching to body 2, the internal portion 51 and the first stretch 54 of the external portion 53 are made of rigid material. Accordingly curling does not occur which jeopardizes the efficacy of the stitching and therefore the connection.

[0027] As shown in figure 5, the possibility of folding the second stretch 55 with respect to the first stretch 54 facilitates the operation of hooking the connection means 5 to body 2. The fact that stretch 55 is made of rubbery material means the folding operation does not risk breaking; at the same time the hold is ensured of the connection of partition 6 by means of the rigidity of the plastic material of raceway 52, of the internal portion 51 and of the first stretch 54 of the external portion 53.

[0028] Figures 7 and 8 show a second embodiment of connection 5 in which provided at the free extremity of the second stretch 55 of the external portion 53 is an extremity element 551 made of soft material M1 of PVC,

TPE and PP type, or rubber, however harder than the soft material M2 of the remaining portion of the second stretch 55. M1 is for example a soft material with a hardness value of 90 Shore, M2 is a soft material with a hardness value of 75 Shore or less than M1.

[0029] Said alternative solution allows end 551 to be more resistant to dragging, blows and scratching, which habitually occur in the step when the partition is mounted and the product is used.

[0030] Advantageously, end 551 remains straight, without any waves, and simple for the user to grasp and handle.

[0031] Alternatively (figures 9 and 10), it is possible to provide the sole internal portion 51, inclusive of raceway 52 made of hard plastic material, the remaining external portion 53, which is separate from the internal portion 51 by a connection portion 513, being completely made of soft material except possibly end 551 as indicated above, which is made of a soft material M1 that is harder than the soft material M2 of the remaining external portion 53.

[0032] Advantageously, as only the internal portion 51 is rigid, the embodiment in figures 9 and 10 will be more flexible with respect to the embodiments in figures 1-8 and may be used on smaller suitcases such as beauty cases or cabin trolleys, without deforming the product. Instead, the embodiments in figures 1-8, which have a rigid internal portion 51 and first stretch 54 of the external portion 53, may be assembled on large trolleys because this solution provides more structure and protects them more in the event of impact or strong pressure.

## Claims

1. A suitcase (1) comprising a body (2) with an edge (3) adapted to couple with a compartment (4) of a connection means (5) for a partition (6) adapted to divide the internal space of the suitcase (1) into a lower compartment (7) and an upper compartment (8),  
said connection means (5) comprising an internal portion (51), an external portion (53) and a raceway (52) which is adapted to slidably couple with a sliding element (11) which is complementary to the raceway (52) and is fixed to a support element (9), with which the partition (6) is integrally associated,  
said external portion (53) comprising a first stretch (54) facing said internal portion (51) to form the compartment (4), and a second external stretch (55) facing said first stretch (54), at least a portion of said second stretch (55) being made of soft material,  
**characterized in that**  
said internal portion (51) and said raceway (52), which is integral to the lower extremity of the internal portion (51), are made of rigid material.
2. A suitcase (1) according to claim 1, **characterized in that** said first stretch (54) of said external portion

(53) is made of rigid material and said second stretch (55) of said external portion (53) is made of soft material.

3. A suitcase (1) according to claim 2, **characterized in that** said external portion (53) comprises a stretch of deformable connection (56) in one piece with said second stretch (55) and connected to the lower part of said first stretch (54) at a connection portion (512), thus ensuring the mobility of said second stretch (55) made of soft material with respect to said first stretch (54) made of rigid material.
4. A suitcase (1) according to any one of the preceding claims, **characterized in that** provided at the free extremity of the second stretch (55) of the external portion (53) is an extremity element (551) made of soft material (M1) with a hardness value (Shore) which is greater than the hardness value (Shore) of the soft material (M2) of the remaining portion of the second stretch (55).
5. A suitcase (1) according to any one of the preceding claims, **characterized in that** rigid material is intended as an elastomeric or plastic material with a Shore D hardness, and soft material is intended as an elastomeric or plastic material with a Shore A hardness.

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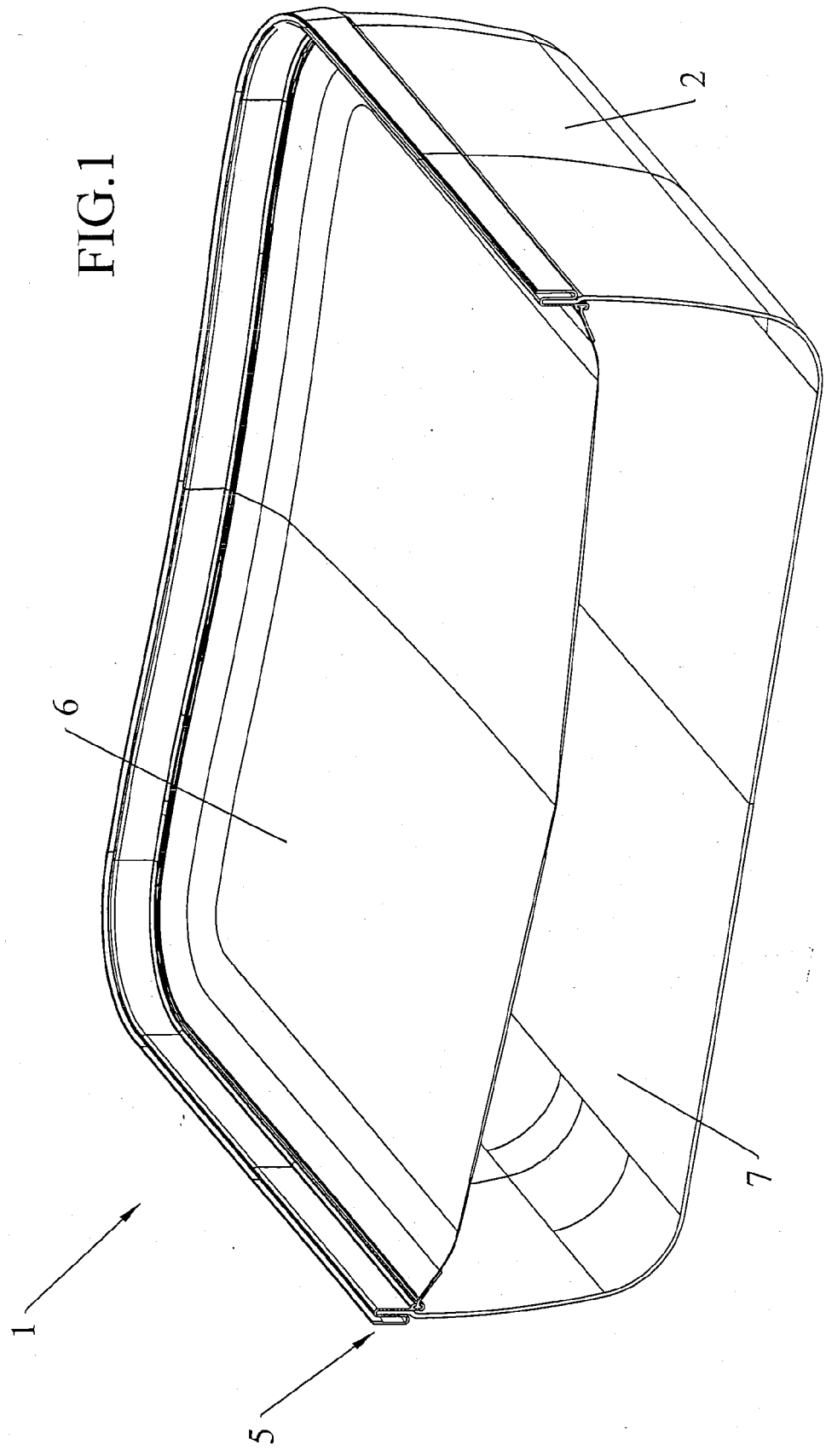
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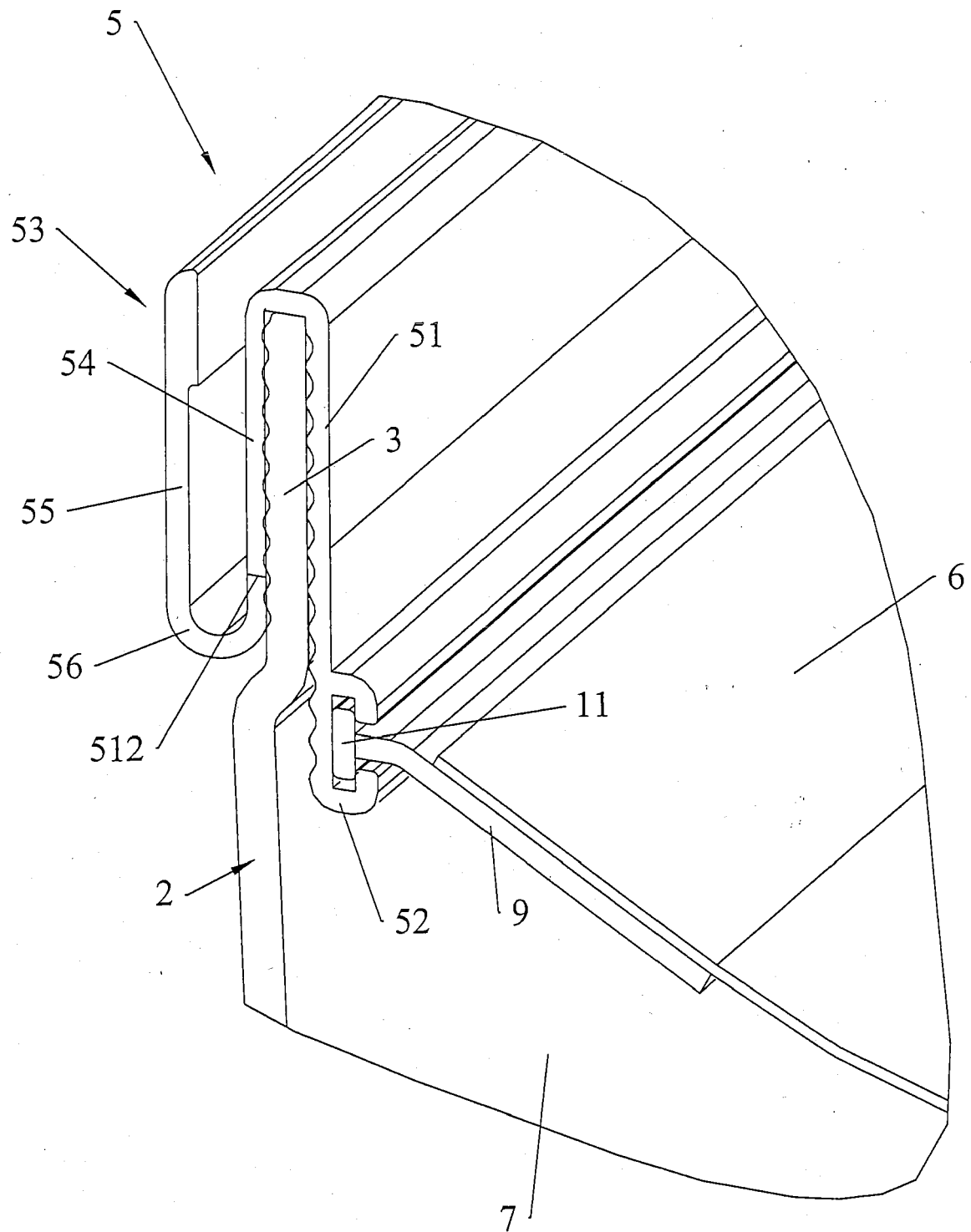


FIG.2

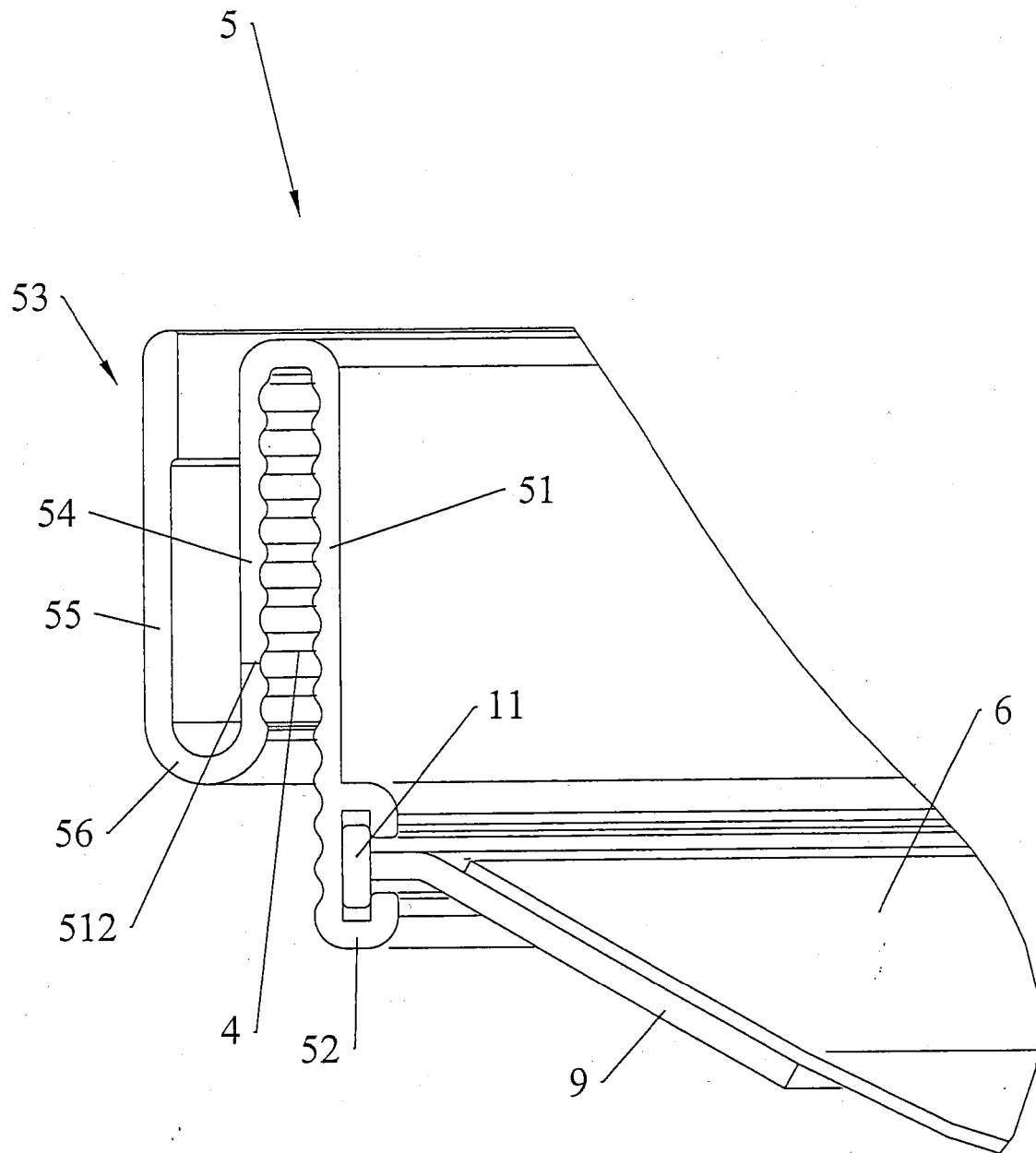


FIG.3

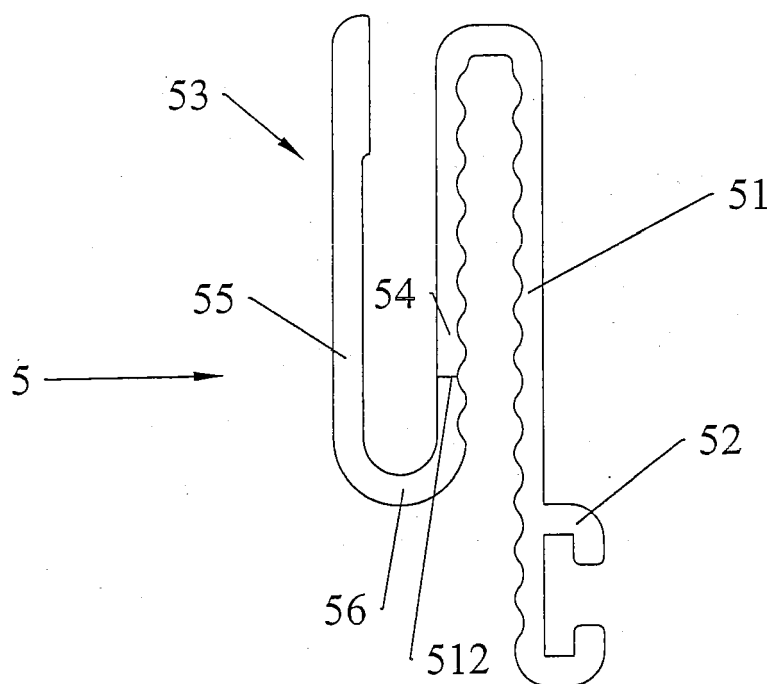


FIG.4

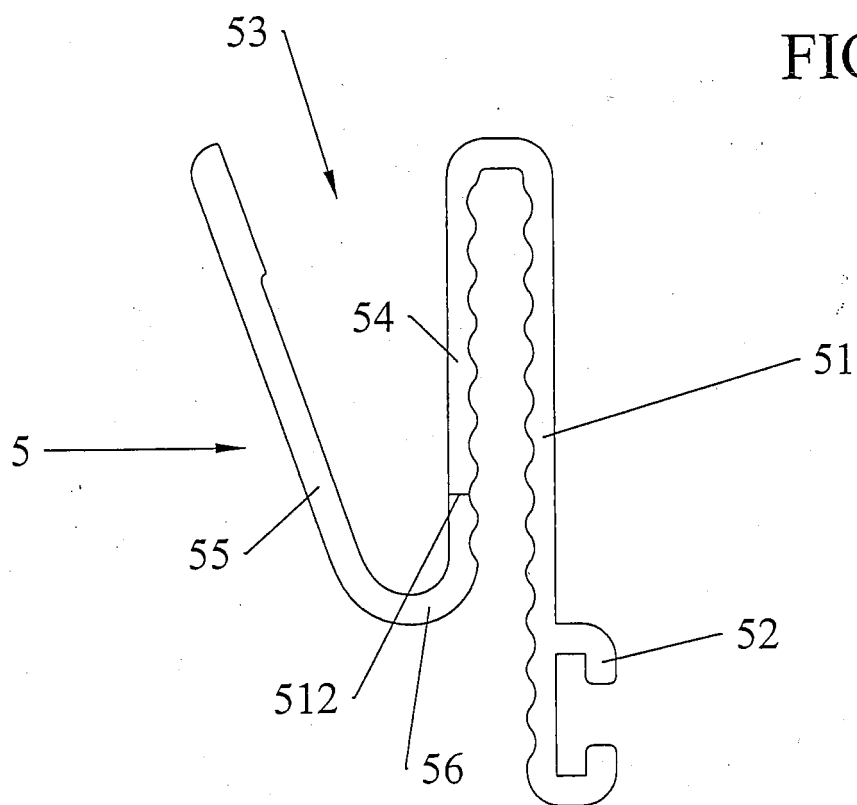


FIG.5



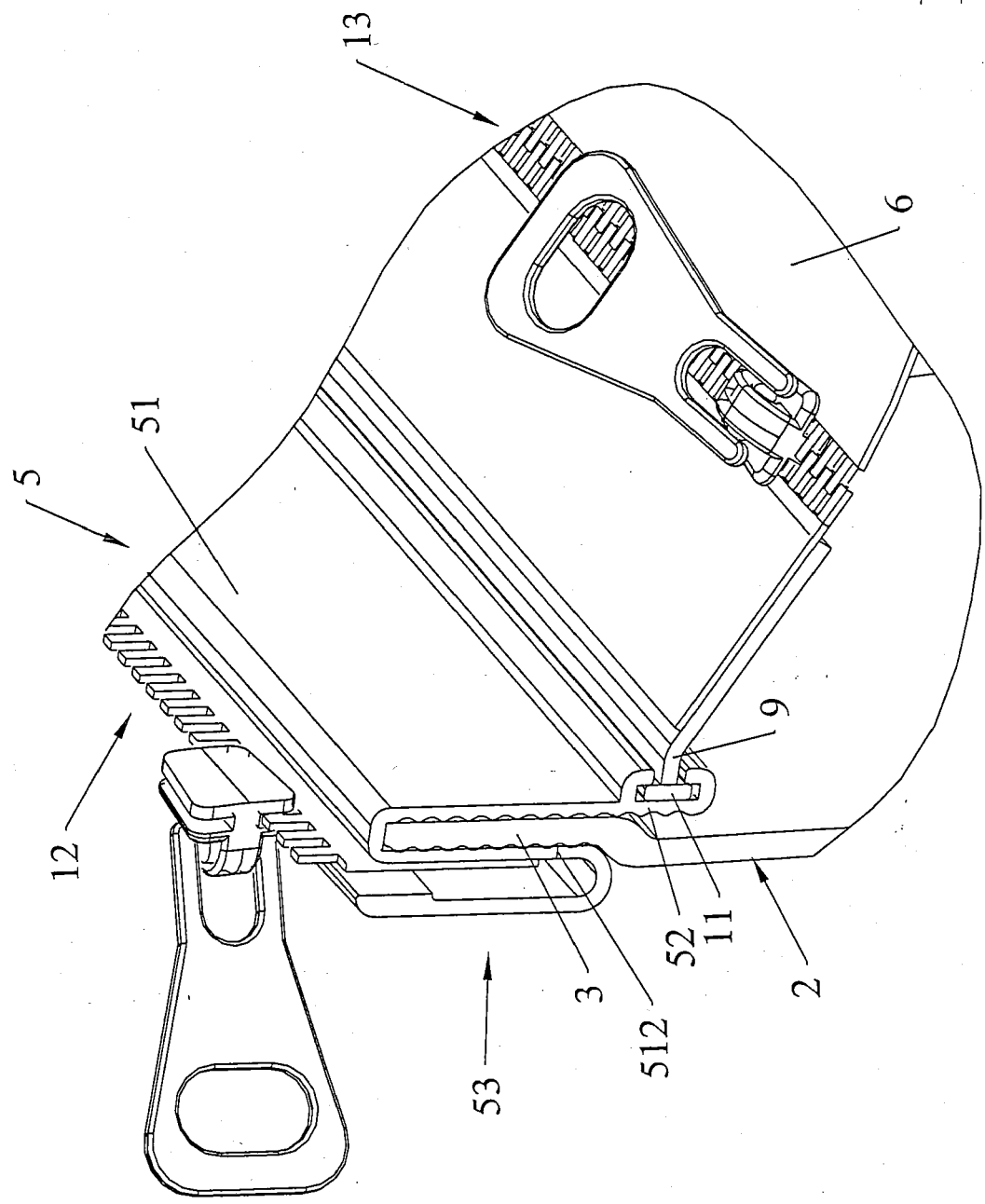


FIG.6

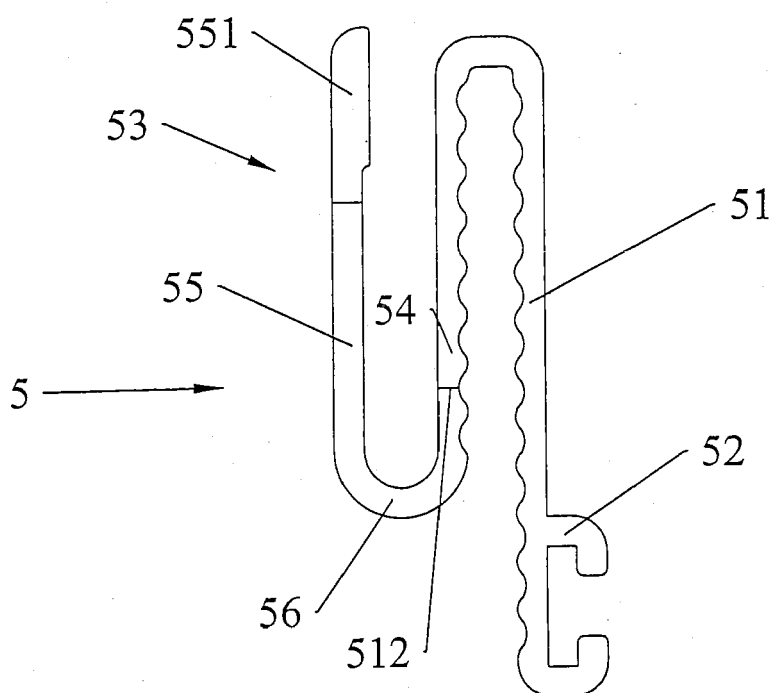


FIG. 7

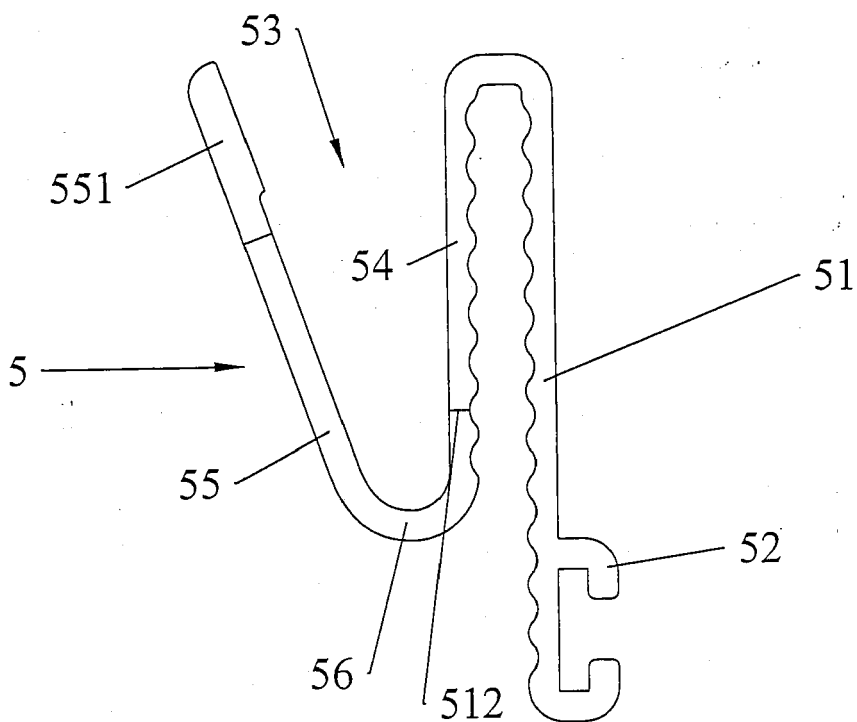


FIG. 8

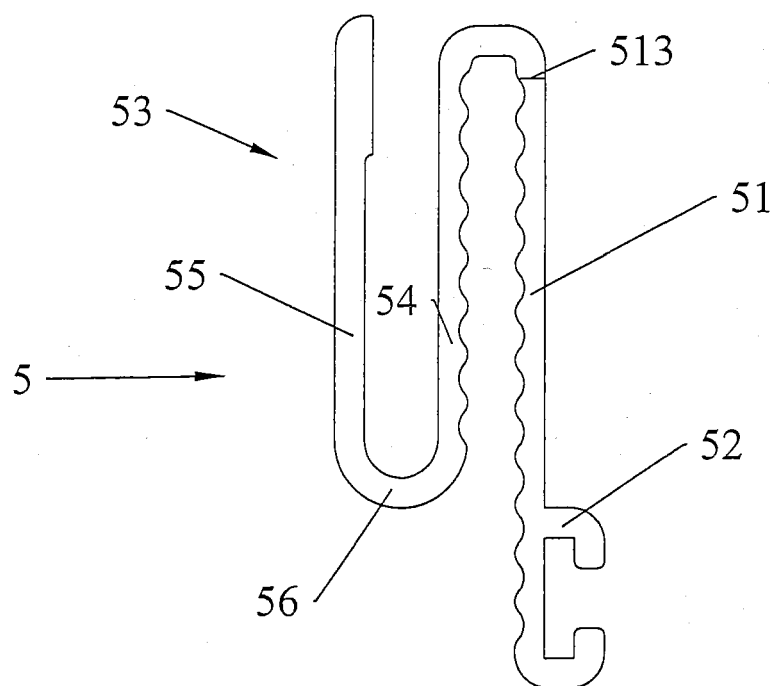


FIG.9

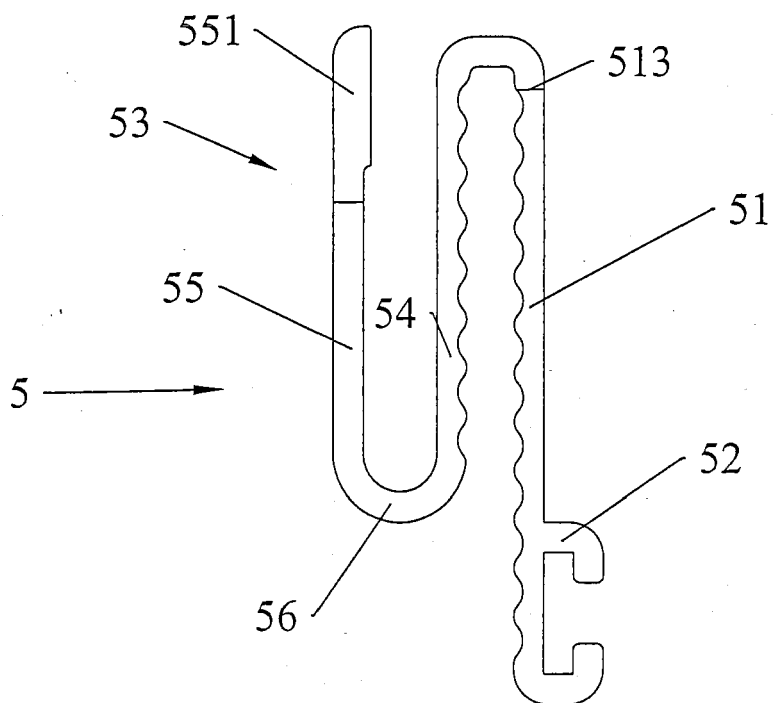


FIG.10

**REFERENCES CITED IN THE DESCRIPTION**

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**Patent documents cited in the description**

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