A supporting mechanism of a backlight module includes a first member, a second member, and a connector connecting the first and second members. The first member has an initial thickness and the second member also has an initial thickness. The initial thickness of the first member is greater than that of the second member and the first member is longer than the second member.
SUPPORTING STRUCTURE AND SUPPORTING MECHANISM FOR BACKLIGHT MODULE

[0001] This application claims the benefit of Taiwan Application Serial No. 094130527, filed Sep. 6, 2005, the subject matter of which is incorporated herein by reference.

BACKGROUND

[0002] The invention relates to a supporting structure and a supporting mechanism for a backlight module.

[0003] Typically, two materials are connected in an edge-to-edge manner (named “butt-connection”), wherein the two materials generally have the same thickness. However, the relationship between thickness of materials and supporting force that an article needs in practice is not considered. For example, the supporting mechanism of a backlight module includes two pairs of metal bars wherein one pair differs from the other pair in length. All of the metal bars are of the same thickness and butt-connected to constitute the supporting mechanism. The longer metal bars of the supporting mechanism are required to provide greater supporting force for supporting the backlight module than the shorter metal bars. Therefore, forming the supporting mechanism by metal bars of the same thickness not only wastes material but increases the manufacturing cost and the weight of the backlight module.

SUMMARY

[0004] The invention provides a supporting structure and a supporting mechanism for a backlight module. The supporting mechanism for a backlight module comprises a first member, a second member, and a connector. The first member has an initial thickness and at least a fixing portion. The fixing portion provides the supporting mechanism to connect to the backlight module. The second member has an initial thickness. The initial thickness of the first member is greater than the initial thickness of the second member, and the length of the first member is greater than the length of the second member. The connector is located between the first member and second member to form butt connection therebetween. The connector may be a welding material or glue.

[0005] In another embodiment, a material is cut into a single member. The single member is a combination of the first and second members. The single member is an L shape or is approximately an L shape. The first member, the second member and the connector are formed as a single, unitary member.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006] The invention can be more fully understood by reading the subsequent detailed description in conjunction with the examples and references made to the accompanying drawings, wherein:

[0007] FIG. 1 is a schematic drawing of a backlight module of the invention;

[0008] FIG. 2 is a partial enlarged drawing of FIG. 1.

DETAILED DESCRIPTION

[0009] Referring to FIGS. 1 and 2, a supporting mechanism 10 of a backlight module comprises a first member 11 and a second member 12. In this embodiment, the first member 11 and the second member 12 are metal bars and butt connected forming the supporting mechanism 10. The first member 11 has an initial thickness D1 and the second member 12 has an initial thickness D2. The first member 11 further comprises fixing portions 111 and 112 to provide the first member 11 to connect to other elements on the backlight module (not shown). Thus, before manufacturing the first member 11, the initial thickness D1 is predetermined. After determining the initial thickness D1, the size and position of the fixing portions 111 and 112 is defined. The initial thickness D2 is defined similarly. The second member 12 comprises fixing portions 121 and 122 to provide the second member 12 to connect to other elements on the backlight module (not shown). In this embodiment, fixing portions 111 and 121 are mounting holes for providing openings through which the first and second members 11 and 12 are connected to other elements on the backlight module via screws. The fixing portions 112 and 122 protrude on the first member 11 and second member 12 respectively to connect to other elements on the backlight module. In another embodiment, a material is cut into a single member. The single member is an L shape or is approximately an L shape. The first member 11, the second member 12 and the connector 13 are formed as a single, unitary member.

[0010] Referring to FIG. 1, the first member 11 is butt connected to the second member 12 via the connector 13. In this embodiment, the connector 13 may be a welding material or glue. The initial thickness D1 of the first member 11 is greater than the initial thickness D2 of the second member 12. The length L1 of the first member 11 is greater than the length L2 of the second member 12.

[0011] The initial thickness D1 and the initial thickness D2 are defined according to support force that the first member 11 and the second member 12 need. In this embodiment, a backlight module comprises two pairs of sides. One pair of sides are greater than the others. The first member 11 requires greater support force to support the larger sides of a backlight module. Thus, initial thickness D1 of the first member 11 is greater than the initial thickness D2 of the second member 12. Thus, the invention may decrease the cost and weight of a backlight module.

[0012] The invention can be applied to a supporting structure which comprises a plurality of members but connected to each other to provide a support force. The member which provides greater support force (usually a longer side in a supporting structure) has greater thickness. The member which provides less support force (usually a shorter side in a supporting structure) has less thickness. The invention decreases cost and weight of a supporting structure.

[0013] While the invention has been described by way of example and in terms of the preferred embodiments, it is to be understood that the invention is not limited to the disclosed embodiments. To the contrary, it is intended to cover various modifications and similar arrangements (as would be apparent to those skilled in the art). Therefore, the scope of the appended claims should be accorded the broadest interpretation so as to encompass all such modifications and similar arrangements.
What is claimed is:
1. A supporting structure, comprising:
a first member having an initial thickness;
a second member having an initial thickness; and
a connector located between the first member and second member to butt therebetween,
wherein the initial thickness of the first member is greater than that of the second member, and the length of the first member is greater than that of the second member.
2. The supporting structure as claimed in claim 1, wherein the first member and second member are made of the same material.
3. The supporting structure as claimed in claim 1, wherein the first member and second member are metal.
4. The supporting structure as claimed in claim 1, wherein the connector is a welding material.
5. The supporting structure as claimed in claim 1, wherein the connector is glue.
6. The supporting structure as claimed in claim 1, wherein the first member, the second member and the connector are formed into one piece.
7. A supporting mechanism for a backlight module, comprising:
a first member having an initial thickness and at least one fixing portion configured to connect with the backlight module;
a second member having an initial thickness; and
a connector located between the first member and the second member to butt therebetween,
wherein the initial thickness of the first member is greater than that of the second member; and the length of the first member is greater than that of the second member.
8. The supporting mechanism for a backlight module as claimed in claim 7, wherein the first member and the second member are metal.
9. The supporting mechanism for a backlight module as claimed in claim 7, wherein the connector is a welding material.
10. The supporting mechanism for a backlight module as claimed in claim 7, wherein the connector is glue.
11. The supporting mechanism for a backlight module as claimed in claim 7, wherein the fixing portion comprises a protrusion.
12. The supporting mechanism for a backlight module as claimed in claim 7, wherein the fixing portion comprises a hole.
13. The supporting mechanism for a backlight module as claimed in claim 7, wherein the fixing portion comprises a protrusion and a hole.
14. The supporting mechanism for a backlight module as claimed in claim 7, wherein the second member has at least a fixing portion.
15. The supporting mechanism for a backlight module as claimed in claim 14, wherein the fixing portion of the second member comprises a hole.
16. The supporting mechanism for a backlight module as claimed in claim 14, wherein the fixing portion of the second member comprises a protrusion.
17. The supporting mechanism for a backlight module as claimed in claim 14, wherein the fixing portion of the second member comprises a protrusion and a hole.
18. The supporting mechanism for a backlight module as claimed in claim 7, wherein the first member, the second member and the connector are formed into one piece.