A liquid crystal display and coupling assembly thereof. The liquid crystal display includes a base and a panel module. The panel module is detachably disposed on the base. By means of engagement between a dovetail and a dovetail groove, the panel module is stably disposed on the base.
COUPLING ASSEMBLY AND LIQUID CRYSTAL DISPLAY UTILIZING THE SAME

BACKGROUND

[0001] The invention relates to a liquid crystal display, and in particular, to a liquid crystal display with a coupling assembly between a panel module and base thereof.

[0002] In a liquid crystal display, its support may be foldable or its base may be detachable to minimize its size or enable transport.

[0003] Figs. 1a-1c are schematic views of a conventional liquid crystal display 200 comprising a panel module 230 and a base 210. A support 220 of the panel module 230 is fixed at the base 210 via a hook 221.

[0004] The disadvantage of the conventional liquid crystal display is that the tolerance between the hook 221 and the base 210 is difficult to control. Thus, the hook may not engage the base. As a result, the panel module may be unstably connected to the base.

SUMMARY

[0005] Accordingly, an embodiment of the invention provides a liquid crystal display comprising a base and a panel module. The base comprises a dovetail. The panel module is detachably disposed on the base, and comprises a dovetail groove. The panel module is stably disposed on the base by means of engagement between the dovetail and the dovetail groove.

[0006] Furthermore, the base comprises a block, a hole adjacent to the block, and a receiving portion to receive the panel module. The dovetail, the block, and the hole are formed on the receiving portion. The panel module comprises a concave portion. The panel module is fixed at the base by the block engaging the concave portion.

[0007] It is understood that the base may be plastic.

[0008] Additionally, the panel module further comprises a support. The dovetail groove is formed on the support. The support is plastic.

[0009] Another liquid crystal display is provided, comprising a base and a panel module. The base comprises a dovetail groove. The panel module is detachably disposed on the base, and comprises a dovetail. The panel module is stably disposed on the base by means of engagement between the dovetail and the dovetail groove.

[0010] A coupling assembly is also provided, comprising a first member and a second member. The first member comprises a dovetail and a block. The second member is detachably disposed on the first member, and comprises a dovetail groove and a concave portion. The second member is stably disposed on the first member by means of engagement between the dovetail and the dovetail groove, and is fixed at the first member by the block engaging the concave portion.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] The present invention can be more fully understood by reading the subsequent detailed description and examples with references made to the accompanying drawings, wherein:

[0012] Figs. 1a-1c are schematic views of a conventional liquid crystal display;

[0013] FIGS. 2a-2b are schematic views of a liquid crystal display as disclosed in an embodiment of the invention; and

[0014] FIG. 3 is a partial enlarged view of a base and a panel module in FIG. 2a.

DETAILED DESCRIPTION

[0015] FIG. 2a shows a liquid crystal display 100 as disclosed in an embodiment of the invention. The liquid crystal display 100 comprises a base 10 and a panel module 20. The base 10 comprises two dovetails 11, a block 12, a hole 13, and a receiving portion 14. The hole 13 is adjacent to the block 12 so that the block 12 can be easily moved via the hole 13 from the exterior. The receiving portion 14 receives the panel module 20 thereon. The dovetails 11, the block 12, and the hole 13 are formed on the receiving portion 14.

[0016] The panel module 20 is detachably disposed on the base 10, and comprises a panel 20b and a support 20a. The support 20a comprises two dovetail grooves 21, corresponding to the dovetails 11 of the base 10, and a concave portion 22 corresponding to the block 12 of the base 10 at its bottom surface. The panel module 20 is stably disposed on the base 10 by the dovetails 11 of the base 10 engaging the dovetail grooves 21 of the support 20a. Furthermore, the panel module 20 is fixed at the base 10 by engagement between the block 12 of the base 10 and the concave portion 22 of the support 20a.

[0017] It is understood that the base 10 and the support 20a of the panel module 20 may be plastic.

[0018] To transport the liquid crystal display 100, the panel module 20 and the base 10 are separated as shown in FIG. 2a.

[0019] To re-attach the panel module 20 to the base 10, the panel module 20 is moved in a direction of an arrow in FIG. 2a until the dovetails 11 of the base 10 engage the dovetail grooves 22 of the support 20a and the block 12 of the base 10 engages the concave portion 22 of the support 20a as shown in FIG. 2b.

[0020] To separate the assembled panel module 20 from the base 10, the block 12 is moved via the hole 13 to disengage from the concave portion 22.

[0021] As stated above, since the panel module is attached to the base by means of the engagement between the dovetails and the dovetail grooves, it can be stably slid on the base. Also, the panel module is not easily jarred on the base by external force. Furthermore, the structure is simple, and its mold design is also simple.

[0022] It is noted that, while the dovetails are here formed on the base and the dovetail grooves on the support, it is not limited thereto. For example, the dovetail grooves may be formed on the base, and the dovetails formed on the support. Additionally, the design is not limited to application with a liquid crystal display, and can, for example, be applied in a coupling assembly for two members.

[0023] While the invention has been described by way of example and in terms of preferred embodiment, it is to be
understood that the invention is not limited thereto. 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 liquid crystal display comprising:
   a base comprising a dovetail; and
   a panel module, comprising a dovetail groove, detachably disposed on the base, wherein the panel module is stably disposed on the base by means of engagement between the dovetail and the dovetail groove.

2. The liquid crystal display as claimed in claim 1, wherein the base further comprises a block, the panel module further comprises a concave portion, and the panel module is fixed at the base by the block engaging the concave portion.

3. The liquid crystal display as claimed in claim 2, wherein the base further comprises a hole adjacent to the block.

4. The liquid crystal display as claimed in claim 3, wherein the base further comprises a receiving portion to receive the panel module, and the dovetail, the block, and the hole are disposed on the receiving portion.

5. The liquid crystal display as claimed in claim 1, wherein the base is made of plastic.

6. The liquid crystal display as claimed in claim 1, wherein the panel module further comprises a support, and the dovetail groove is formed on the support.

7. The liquid crystal display as claimed in claim 6, wherein the support is made of plastic.

8. A liquid crystal display comprising:
   a base comprising a dovetail groove; and
   a panel module, comprising a dovetail, detachably disposed on the base, wherein the panel module is stably disposed on the base by means of engagement between the dovetail and the dovetail groove.

9. The liquid crystal display as claimed in claim 8, wherein the base further comprises a block, the panel module further comprises a concave portion, and the panel module is fixed at the base by the block engaging the concave portion.

10. The liquid crystal display as claimed in claim 9, wherein the base further comprises a hole adjacent to the block.

11. The liquid crystal display as claimed in claim 10, wherein the base further comprises a receiving portion to receive the panel module, and the dovetail groove, the block, and the hole are disposed on the receiving portion.

12. The liquid crystal display as claimed in claim 8, wherein the base is made of plastic.

13. The liquid crystal display as claimed in claim 12, wherein the panel module further comprises a support, and the dovetail groove is formed on the support.

14. The liquid crystal display as claimed in claim 13, wherein the support is made of plastic.

15. A coupling assembly comprising:
   a first member comprising a dovetail and a block; and
   a second member, comprising a dovetail groove and a concave portion, detachably disposed on the first member, wherein the second member is stably disposed on the first member by means of engagement between the dovetail and the dovetail groove, and the second member is fixed to the first member by the block engaging the concave portion.

16. The coupling assembly as claimed in claim 15, wherein the first member further comprises a hole adjacent to the block.

17. The coupling assembly as claimed in claim 16, wherein the first member further comprises a receiving portion to receive the second member, and the dovetail, the block, and the hole are disposed on the receiving portion.

18. The coupling assembly as claimed in claim 15, wherein the first member is made of plastic.

19. The coupling assembly as claimed in claim 15, wherein the second member is made of plastic.

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