

TITLE

MODULAR STORAGE SYSTEM

FIELD OF THE INVENTION

5 The present invention relates to a storage system comprised of modular elements.

BACKGROUND TO THE INVENTION

It is known to require the use of storage systems, particularly those using drawers, which can be constructed in a modular fashion. One application in which such a storage system is used is in the retail of small items of metal hardware.

Known modular storage systems can be limited in strength and/or rigidity. The present invention seeks to provide a modular storage system which provides more rigidity than some known modular storage systems.

SUMMARY OF THE INVENTION

In accordance with one aspect of the present invention there is provided a modular storage system comprising a plurality of frame members, characterised in that each frame member has a first surface opposed to a second surface, and a first side surface opposed to a second side surface, wherein the frame member includes a first track and a second track extending along the frame member in a longitudinal direction, the first track protruding outwardly from the first surface and the second track protruding outwardly from the second side surface, the frame member further including a first groove and a second groove extending along the frame member in a longitudinal direction, the first groove being recessed inwardly of the second surface and the second groove being

recessed inwardly of the first side surface, wherein the first groove is complementary in shape to the first track such that a first track of a first frame member may locate within the first groove of a second frame member, and the second groove is complementary in shape to the second track such that a second track of the first frame member may locate within the second groove of a third frame member.

Preferably, at least one of the first and second tracks is formed by the insertion of a bead within a third groove.

Advantageously, this allows the storage system to be constructed in a modular fashion in two dimensions.

In accordance with a second aspect of the present invention there is provided a modular storage system comprising a plurality of frame members, each frame member having a first surface opposed to a second surface, wherein the frame member includes a first track extending along the frame member in a longitudinal direction, the first track protruding outwardly from the first surface, the frame member further including a first groove extending along the frame member in a longitudinal direction, the first groove being recessed inwardly of the second surface, the first groove having a corresponding track on an opposing side of the second surface, wherein the first groove is complementary in shape to the first track such that a first track of a first frame member may locate within the first groove of a second frame member, and wherein, in use, a drawer may locate in relation to and slide along the tracks corresponding to the first groove.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will now be described, by way of example, with reference to the accompanying drawings, in which:

Figure 1 is a perspective view of a first box extrusion used in the modular storage system of the present invention;

Figure 2 is a perspective view of a second box extrusion used in the modular storage system of the present invention;

5 Figure 3 is a perspective view of a first bridge extrusion used in the modular storage system of the present invention;

Figure 4 is a perspective view of a second bridge extrusion used in the modular storage system of the present invention;

Figure 5 is a perspective view of a T-piece extrusion used in the modular storage system of the present invention; and

10 Figure 6 is a perspective view of a bead used in the modular storage system of the present invention.

DESCRIPTION OF PREFERRED EMBODIMENTS

15 Referring to the Figures, there is shown in Figure 1 a frame member in the form of a first box extrusion 10 for use in a modular storage system. The first box extrusion 10 includes a top face 12, a bottom face 14, a first side face 16 and a second side face 18. These four faces are substantially the same length, so as to form a substantially square shaped cross-section.

20 The top face 12 has an outwardly facing first surface 20. The bottom face 14 has an outwardly facing second surface 22. The first surface 20 is opposed to the second surface 22.

The top face 12 includes two longitudinally extending first tracks 24. Each first track 24 is located near, and parallel to, a side of the top face 12. The first tracks 24 are formed by

an apparent deformation in the cross sectional shape of the top face 12, with the first tracks 24 protruding outwardly from the first surface 20.

The bottom face 14 includes two longitudinally extending first grooves 26. Each first groove 26 is located near, and parallel to, a side of the bottom face 14. The first grooves 26 are directly beneath the first tracks 24. The first grooves 26 are formed by an apparent deformation in the cross sectional shape of the bottom face 14, with the first grooves 26 being recessed inwardly of the second surface 22.

The first tracks 24 are complementary in shape to the first grooves 26, such that a pair of first tracks 24 of a first frame member may locate, and slide longitudinally, within a pair of first grooves 26 of a second frame member, thus engaging the first and second frame members in a first, vertically aligned orientation.

The first grooves 26 have corresponding tracks extending inwardly of the bottom face 14. In use, a drawer (not shown) may have locate in relation to, and slide along, the inwardly extending tracks. Preferably, the drawer has grooves which locate over the inwardly extending tracks, and when located on the tracks the base of the drawer is raised slightly above the bottom face 14.

The first side face 16 has an outwardly facing first side surface 30. The second side face 18 has an outwardly facing second side surface 32. The first side surface 30 is opposed to the second side surface 32.

The first side face 16 includes a longitudinally extending second groove 34. The second groove 34 is located adjacent, and parallel to, a lower edge of the first side face 16. The second groove 34 is formed by an apparent deformation in the cross sectional shape of the first side face 16, with the second groove 34 being recessed inwardly of the first side surface 30.

The second side face 18 includes a longitudinally extending third groove 36. The third groove 36 is located adjacent, and parallel to, a lower edge of the second side face 18. The third groove 36 is formed by an apparent deformation in the cross sectional shape of the second side face 18, with the third groove 36 being recessed inwardly of the second side surface 32.

The third groove 36 is arranged to receive a bead 38, as shown in Figure 6. The bead 38 is longitudinally extending, and is substantially figure-8 shaped in cross section. The bead is sized such that one side of the figure-8 shape may be inserted within, and slid along, the third groove 36. When in this position, the other side of the figure-8 shape forms a second track protruding from the second side surface 32.

The second track is complementary in shape to the second groove 34, such that a second track of a first frame member may locate, and slide longitudinally, within a second groove 34 of a second frame member, thus engaging the first and second frame members in a second, horizontally aligned orientation.

Whilst the modular storage system of the present invention may be constructed solely from first box extrusions 10 as described herein above, it may also use other types of frame members. One such frame member is a second box extrusion 40 as shown in Figure 2.

The second box extrusion 40 is rectangular in shape, with a height the same as that of the first box extrusion 10 and a width twice that of the first box extrusion 10. The second box extrusion 40 has first and second side faces 16, 18 identical to those of the first box extrusion 10. The second box extrusion 40 has a top face 42 identical in shape to two top faces 12 of the first box extrusion 10, joined side-by-side. The second box extrusion 40 has a bottom face 44 identical in shape to two bottom faces 14 of the first box extrusion

10, joined side-by-side.

It will thus be appreciated that the second box extrusion 40 has four first tracks 24 across the top face 42, with two located adjacent edges and two located substantially centrally. Similarly, the second box extrusion 40 has four first grooves 26 complementary in shape and position to the four first tracks 24.

In use, two substantially square drawers may locate within, and slide within, the second box extrusion 40. Alternatively, one rectangular drawer may be used.

The second box extrusion 40 may be joined horizontally to a first box extrusion 10, or another second box extrusion 40, by the same mechanism described with respect to the first box extrusion 10.

The second box extrusion 40 may be joined vertically to two horizontally-connected first box extrusions 10 by location of the first tracks of one within the first grooves of another. Alternately, the second box extrusion 40 may be joined vertically to another second box extrusion 40 in a similar fashion.

Another possible frame member is a first bridge extrusion 50, as shown in Figure 3. The first bridge extrusion 50 is comprised of a longitudinally extending, substantially flat member having the same width as the first box extrusion 10. The first bridge extrusion 50 has a first, upper surface 52 and a second, lower surface 54. A pair of longitudinally extending first tracks 24 are located near, and parallel to, the sides of the first bridge extrusion 50. The first tracks 24 are formed by an apparent deformation in the cross sectional shape of the first bridge extrusion 50, with the first tracks 24 protruding outwardly from the first surface 52. Corresponding first grooves 26 are recessed inwardly of the second surface 54.

The first bridge extrusion 50 has lip portions 56 at each side thereof. The lip portions

include second and third tracks 58, 59 extending outwardly.

In use, a first bridge extrusion 50 may be joined horizontally between two box extrusions 10 or 40. Where this bridge extrusion 50 is within an array of box extrusions 10, 40, it may provide a location on which a drawer may be located, with side walls being provided by adjacent box extrusions 10, 40.

A second bridge extrusion 60 as shown in Figure 4 may be used in a similar fashion. The second bridge extrusion 60 is the same width as the second box extrusion 40, and is similar in shape to the top face 42 of the second box extrusion 40, with lip portions 56 similar to that of the first bridge extrusion 50.

A further frame member, in the form of a T-piece extrusion 70, is shown in Figure 5. The T-piece extrusion 70 has a central wall 72 which is slightly smaller in height than the side faces 16, 18 of the box extrusions 10, 40. The T-piece extrusion 70 has a top flange 74 perpendicular to the central wall 70. The top flange 74 has two first tracks 24 located adjacent side edges thereof. The top flange 74 is sized such that the two first tracks 24 are spaced from each other by the same distance as the two centrally located first tracks 24 of a second box extrusion 40.

The T-piece extrusion 70 has an elongate lower lip 76 which extends along the base of the central wall 72.

In use, the T-piece extrusion 70 may be used within an array of frame members to provide a side wall as required, with adjacent bridge extrusions 50, 60 providing tracks on which drawers may be located. The elongate lower lip 76 of the T-piece extrusion 70 may be complementary in shape to recesses 78 located in the lip portions 56 of the bridge extrusions 50, 60.

Modifications and variations as would be apparent to a skilled addressee are deemed to be within the scope of the present invention.

CLAIMS

1. A modular storage system comprising a plurality of frame members, characterised in that each frame member has a first surface opposed to a second surface, and a first side surface opposed to a second side surface, wherein the frame member includes a first track and a second track extending along the frame member in a longitudinal direction, the first track protruding outwardly from the first surface and the second track protruding outwardly from the second side surface, the frame member further including a first groove and a second groove extending along the frame member in a longitudinal direction, the first groove being recessed inwardly of the second surface and the second groove being recessed inwardly of the first side surface, wherein the first groove is complementary in shape to the first track such that a first track of a first frame member may locate within the first groove of a second frame member, and the second groove is complementary in shape to the second track such that a second track of the first frame member may locate within the second groove of a third frame member.

2. A modular storage system as claimed in claim 1, characterised in that at least one of the first and second tracks is formed by the insertion of a bead within a third groove.

3. A modular storage system comprising a plurality of frame members, characterised in that each frame member has a first surface opposed to a second surface, wherein the frame member includes a first track extending along the frame member in a longitudinal direction, the first track protruding outwardly from the first surface, the frame member further including a first groove extending along the frame member in a longitudinal direction, the first groove being recessed inwardly of the second surface, the first groove having a corresponding track on an opposing side of the second surface, wherein the first groove is complementary in shape to the first track such that a first track of a first frame

member may locate within the first groove of a second frame member, and wherein, in use, a drawer may locate in relation to and slide along the tracks corresponding to the first groove.

4. A modular storage system comprising a plurality of frame members, characterised in that each frame member has a first surface opposed to a second surface, and a first side surface opposed to a second side surface, wherein the frame member includes a first track extending along the frame member in a longitudinal direction, the first track protruding outwardly from the first surface, the frame member further including a first groove, a second groove, and a third groove extending along the frame member in a longitudinal direction, the first groove being recessed inwardly of the second surface, the second groove being recessed inwardly of the first side surface, and the third groove being recessed inwardly of the second side surface, wherein the first groove is complementary in shape to the first track such that a first track of a first frame member may locate within the first groove of a second frame member, and the second and third grooves are complementary in shape to a bead such that a second groove of the first frame member may locate adjacent the second groove of a third frame member, and the first frame member and third frame member may be connected by a bead.

5. A frame member for use in a modular storage system as claimed in any preceding claim, characterised in that the frame member is in the form of a box extrusion.

6. A frame member as claimed in claim 5, characterised in that the box has a top face, the first surface comprising an outwardly facing side of the top face; and a bottom face; the second surface comprising an outwardly facing side of the bottom surface.

7. A frame member as claimed in claim 6, characterised in that the first and second tracks are formed by an apparent deformation in the cross sectional shape of the top and

bottom faces.

8. A frame member as claimed in any one of claims 5 to 7, characterised in that the box extrusion is substantially square in cross-section.

9. A frame member as claimed in claim 8, characterised in that the first surface includes two first tracks and the second surface includes two first grooves.

10. A frame member as claimed in any one of claims 5 to 7, characterised in that the box extrusion is substantially rectangular in cross-section.

11. A frame member as claimed in claim 8, characterised in that the first surface includes four first tracks and the second surface includes four first grooves.

12. A frame member for use in a modular storage system as claimed in any one of claims 1 to 4, characterised in that the frame member is in the form of a bridge extrusion, being a longitudinally extending, substantially flat member.

13. A frame member as claimed in claim 12, characterised in that the first track and the first groove are formed by an apparent deformation in the cross sectional shape of the bridge extrusion.