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(54) **SPACE ORGANIZER FOR A LOCKER**

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(57) **ABSTRACT**

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An organizing unit for a locker including a collapsible box portion having first, second, third and fourth sides, a middle panel, and a releasable connection between opposite edges of the middle panel and the second and fourth sides. The first and third sides are substantially rigid and opposite one another, with the second side pivotally connected to one edge of the first side and to one edge of the third side and the fourth side pivotally connected to the opposite edge of the first side and to the opposite edge of the third side. The second and fourth sides each include a central hinge between their pivotal connections with the first and third sides. The connection secures the middle panel at right angles to both the second and fourth sides, and includes flanges along the middle panel opposite edges and a channel defined at each of the central hinges. The flanges are slidably receivable in the channel of the side connected thereto.

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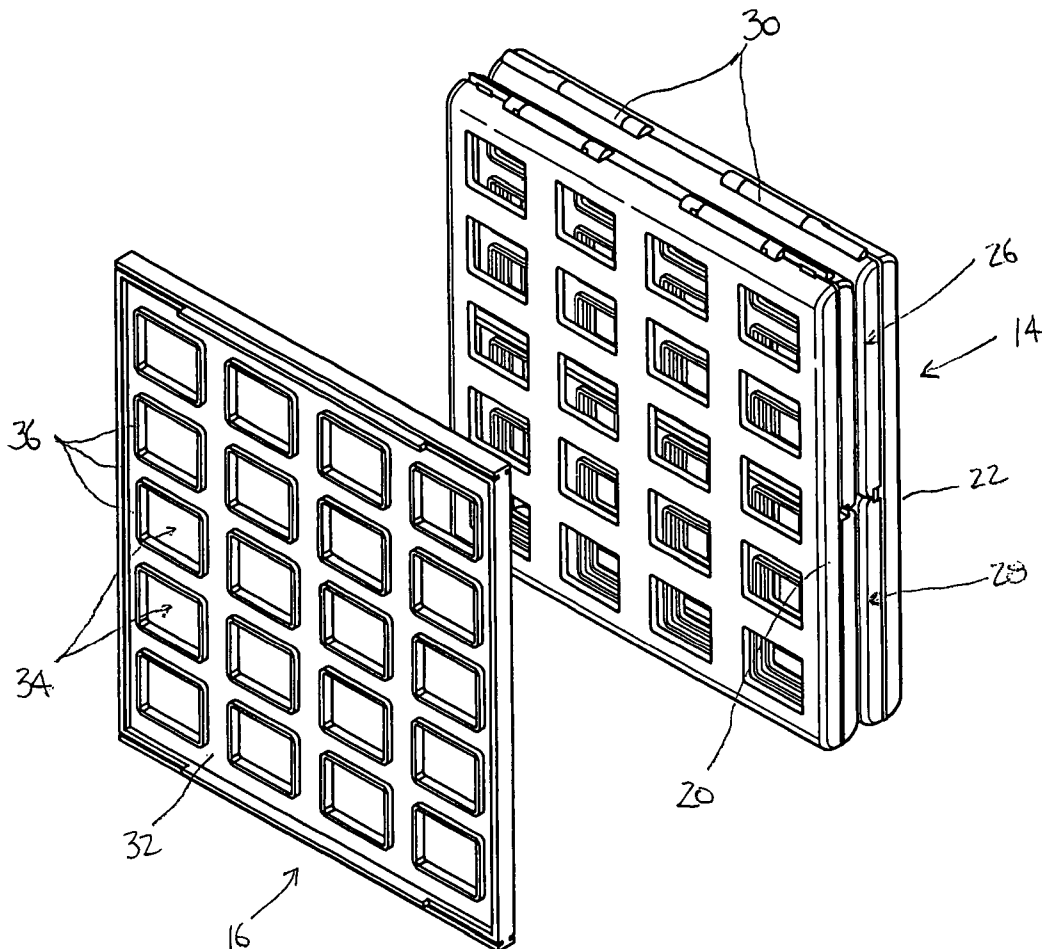


Fig. 1

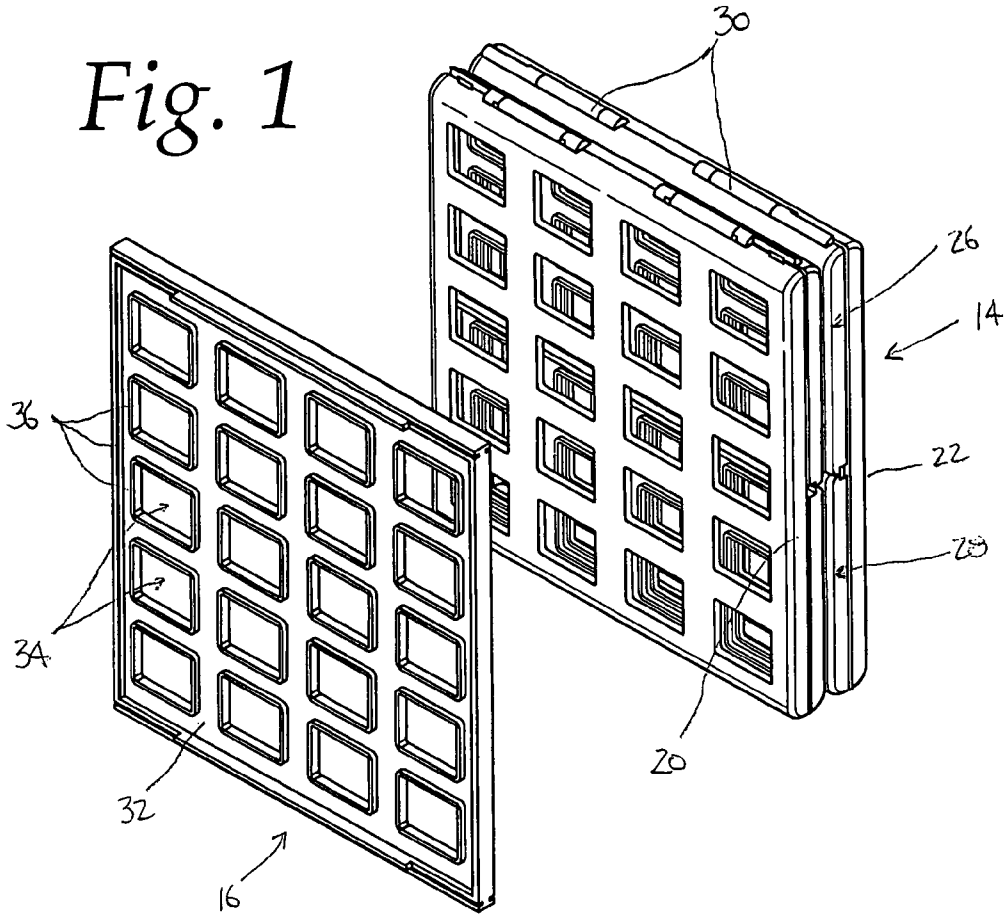
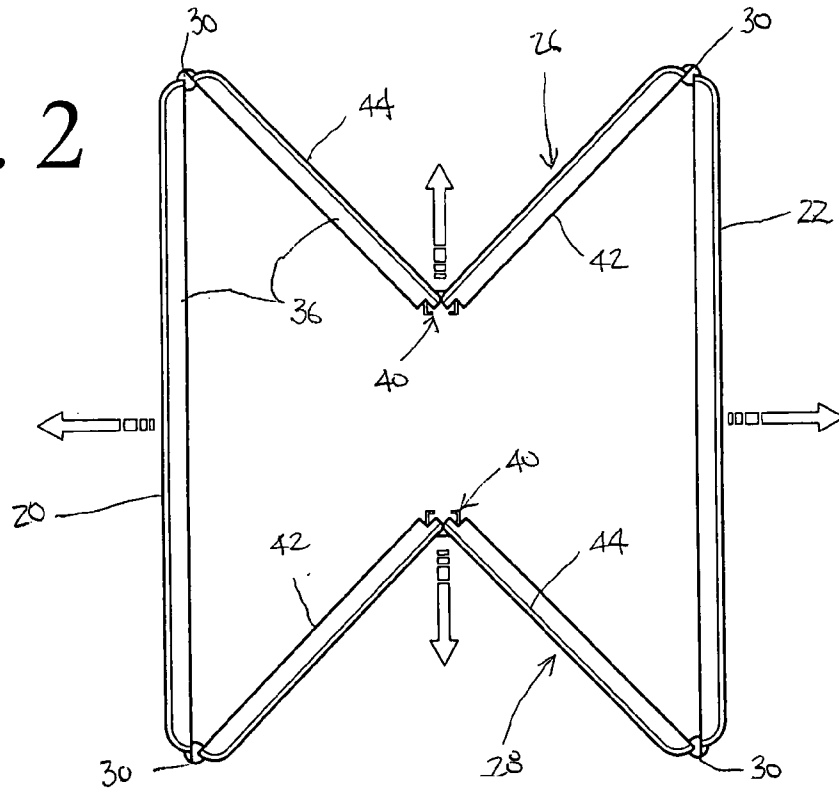


Fig. 2



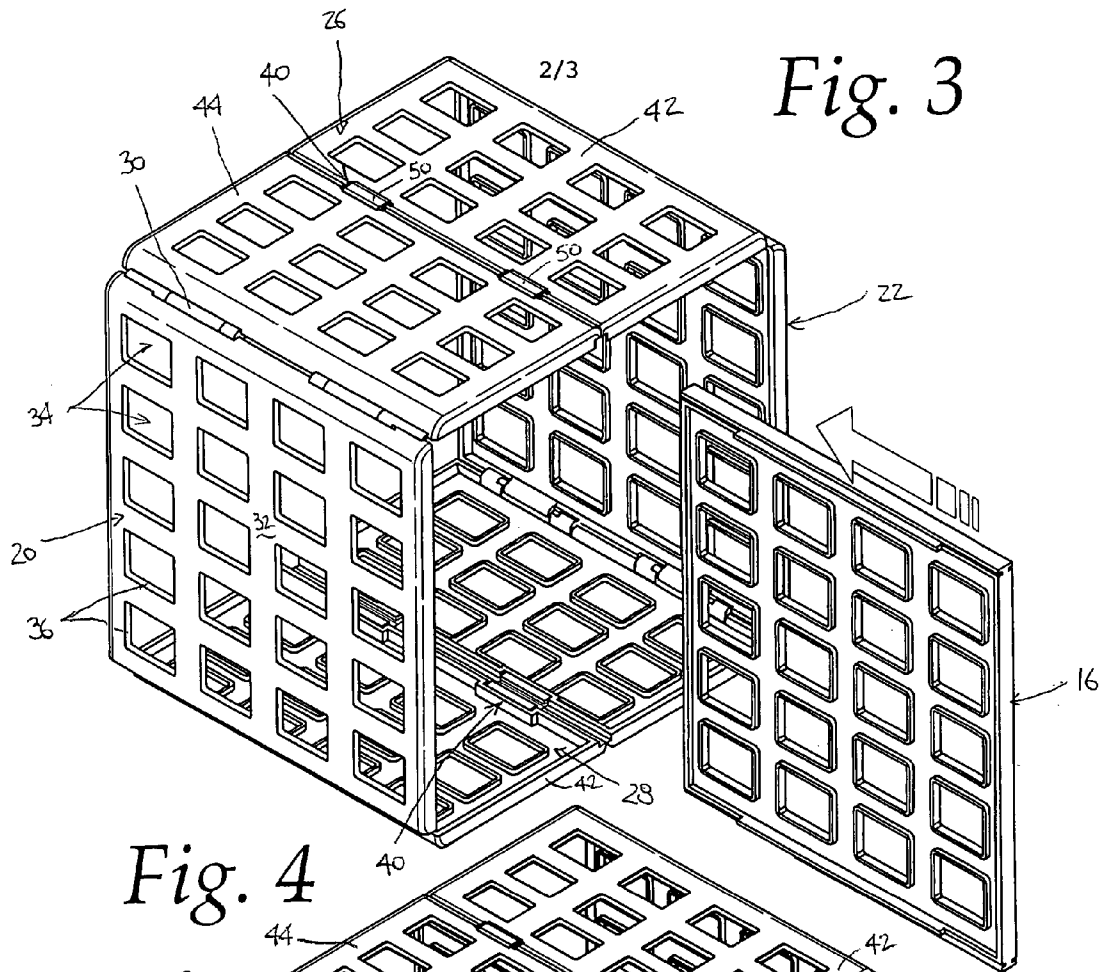
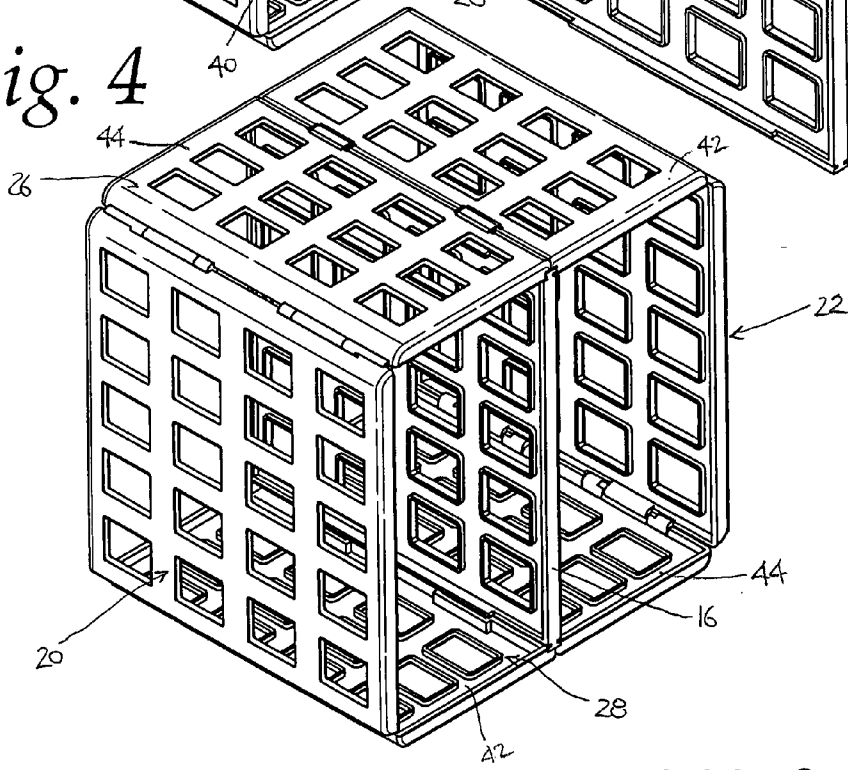


Fig. 3

Fig. 4



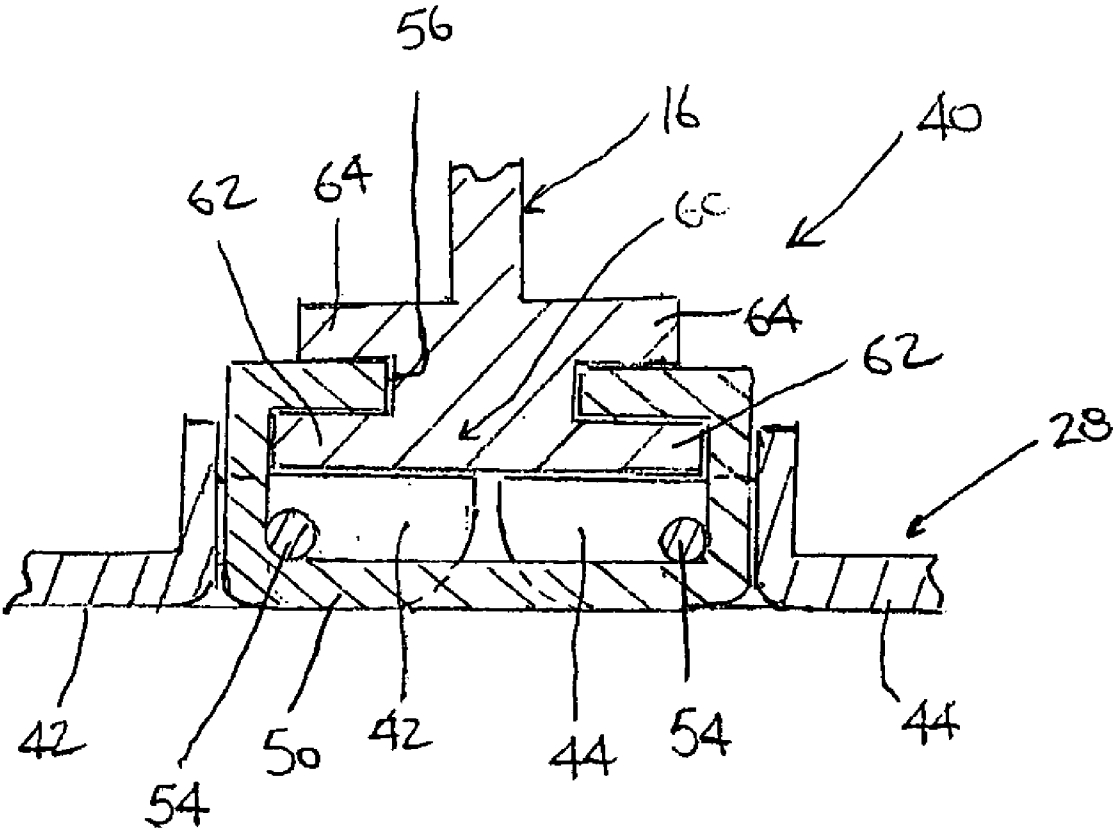


FIG. 5

SPACE ORGANIZER FOR A LOCKER

CROSS REFERENCE TO RELATED APPLICATION(S)

[0001] Not applicable.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[0002] Not applicable.

REFERENCE TO A MICROFICHE APPENDIX

[0003] Not applicable.

TECHNICAL FIELD

[0004] The present invention is directed toward shelf units, and particularly toward shelf units usable in lockers.

BACKGROUND OF THE INVENTION AND TECHNICAL PROBLEMS POSED BY THE PRIOR ART

[0005] Lockers are widely used in a variety of places, including schools, airports, bus stations, etc. Some uses are relatively transient, short term or infrequent. For example, locker type structures may be used for long or short term storage by individuals, where access to the stored materials is only infrequently had. However, in many cases the lockers are used over a long period of time, with the user making frequent access to the locker. Schools are a common example where lockers are so used, with a student keeping a specific locker for an entire school year and going into their locker to place or retrieve items (e.g., books, coats, boots, etc.) multiple times each school day. Each locker may be used in that manner for decades by scores of different students.

[0006] While many school lockers will have, for example, a shelf at the top of the locker, many students using such lockers wish to have the ability to organize items in their locker to a greater extent than that single shelf may permit. Therefore, students have heretofore added a variety of different structures to help them organize the space in their lockers.

[0007] For example, in some instances, students have added their own shelf units at the bottom of their lockers. Such shelf units have been, for example, free standing structures which extend across less than the full width of the locker, where the structure is put into the locker fully assembled. Other exemplary shelf units which have been used require assembly within the locker. While shelf units requiring assembly have the advantage of permitting the shelves to potentially span substantially the full width of the locker (i.e., since the door opening of the locker is typically narrower than the locker interior space, full-width pre-assembled units may be difficult to get into the locker), units which require assembly in the locker can be difficult to assemble and can be relatively flimsy even after assembled.

[0008] Further, in addition to, or instead of, adding horizontal shelves, some students have added vertical dividers whereby, for example, books, notebooks and papers may be placed in the locker standing up, with the vertical dividers assisting in separating such materials for organization. Such vertical dividers may, however, also be difficult to get

through the narrow locker door opening and/or difficult to assemble in the locker, particularly for younger students.

[0009] Still further, it should be appreciated that many students do not wish to carry a conspicuously large structure to school, as it may make them self-conscious about standing out. As a result, organizing structures which are large, no matter how advantageously functional when in place, may be unsuitable because the student may never bring the structure to school.

[0010] The present invention is directed toward overcoming one or more of the problems set forth above.

SUMMARY OF THE INVENTION

[0011] According to one aspect of the present invention, an organizing unit for a locker is provided, including a collapsible box portion having first, second, third and fourth sides, a middle panel, and a releasable connection between opposite edges of the middle panel and the second and fourth sides. The first and third sides are substantially rigid and opposite one another, with the second side pivotally connecting one edge of the first side to one edge of the third side and the fourth side pivotally connecting the opposite edge of the first side to the opposite edge of the third side. The second and fourth sides each include a central hinge therein between their pivotal connections with the first and third sides. The distance between the middle panel opposite edges is substantially the same as the distance between the one and opposite edges of both the first and third sides.

[0012] In one form of this aspect of the present invention, the central hinges of the second and fourth sides fold in toward one another in a storage position.

[0013] In another form of this aspect of the present invention, the connection is at the central hinge of the second side and the central hinge of the fourth side.

[0014] In still another form of this aspect of the present invention, the connection secures the middle panel substantially rigidly to both the second and fourth sides. In one further form, the second and fourth sides are substantially flat when the middle panel is connected to the second and fourth sides and, in another further form, the middle panel is substantially at right angles to the second and fourth sides when connected thereto.

[0015] According to yet another form of this aspect of the present invention, the releasable connection includes flanges along the middle panel opposite edges and a channel defined at each of the central hinges when the second and fourth sides are substantially flat, wherein the flanges are slidably receivable in the channel of the side connected thereto. In a further form, the flanges are T-shaped with a base and outwardly extending ears, and the channel includes portions closing four sides with a slot through the portions closing one of the four sides, wherein the base of the associated flange is slidable through the slot. In a still further form, one of the central hinges pivotally connects segments of the second side and the other of the central hinges pivotally connects segments of the fourth side, and the central hinges are defined by channel members pivotally secured to associated side segments and defining the channel. In yet a further form, the channel members are separately pivotally secured to associated side segments about spaced pivot axes,

with the pivot axes spaced sufficiently to allow the side segments to be disposed substantially parallel in a storage position.

[0016] According to another aspect of the present invention, an organizing unit for a locker is provided including a collapsible box portion having first, second, third and fourth sides, a middle panel, and a releasable connection between opposite edges of the middle panel and the second and fourth sides. The first and third sides are substantially rigid and opposite one another, with the second side pivotally connected to one edge of the first side and to one edge of the third side and the fourth side pivotally connected to the opposite edge of the first side and to the opposite edge of the third side. The second and fourth sides each include a central hinge between their pivotal connections with the first and third sides. The connection substantially rigidly secures the middle panel substantially at right angles to both the second and fourth sides with the second and fourth sides substantially flat. Further, the connection includes flanges along the middle panel opposite edges, and a channel defined at each of the central hinges when the second and fourth sides are substantially flat, and the flanges are slidably receivable in the channel of the side connected thereto.

[0017] In one form of this aspect of the present invention, the central hinges of the second and fourth sides fold in toward one another in a storage position.

[0018] In another form of this aspect of the present invention, the connection is at the central hinge of the second side and the central hinge of the fourth side.

[0019] In still another form of this aspect of the present invention, the flanges are T-shaped with a base and outwardly extending ears, and the channel includes portions closing four sides with a slot through the portions closing one of the four sides, wherein the base of the associated flange is slidable through the slot. In a further form, one of the central hinges pivotally connects segments of the second side and the other of the central hinges pivotally connects segments of the fourth side, and the central hinges are defined by channel members pivotally secured to associated side segments and defining the channel. In a still further form, the channel members are separately pivotally secured to associated side segments about spaced pivot axes, with the pivot axes spaced sufficiently to allow the side segments to be disposed substantially parallel in a storage position.

BRIEF DESCRIPTION OF THE DRAWINGS

[0020] FIG. 1 is a perspective view of one organizing unit according to the present invention, with its collapsible box portion folded into a storage position;

[0021] FIG. 2 is a side view of the box portion of the FIG. 1 organizing unit, showing the opening of the box portion;

[0022] FIG. 3 is a perspective view showing assembly of an organizing unit according to the present invention;

[0023] FIG. 4 is a perspective view showing an assembled organizing unit according to the present invention, positioned for use as a vertical organizer; and

[0024] FIG. 5 is a cross-sectional view of the central hinge of two of the sides of the organizer.

DETAILED DESCRIPTION OF THE INVENTION

[0025] An organizing unit 10 according to the present invention is illustrated in the Figures. In the advantageous

embodiment illustrated, the organizing unit 10 includes a box portion 14 and a middle panel 16.

[0026] In the illustrated embodiment, the box portion 14 includes two rigid sides 20, 22 connected by two hinged sides 26, 28 by suitable hinges 30 connecting their edges. The sides 20, 22, 26, 28 may be formed of any suitable material providing the desired strength required in the organizing unit 10. For example, a flat panel 32 of rigid plastic having cutouts 34 (for reduced weight and material cost) and lateral flanges 36 (for strength against bending), may be advantageously used to form the sides 20, 22, 26, 28 of the present invention.

[0027] A central hinge 40 (described in greater detail hereafter with reference to FIG. 5) is provided between two side segments 42, 44 of each of the hinged sides 26, 28.

[0028] As best illustrated in FIG. 1, the box portion 14 may be collapsed into a storage (and shipping) position in which the box portion 14 is substantially flat. In this storage position, the hinged sides 26, 28 are pivoted inward about their central hinge 40 so that their side segments 42, 44 substantially abut and are parallel to the rigid sides 20, 22. It should be appreciated from FIG. 1 that the organizing unit 10 in this configuration may be advantageously placed flat in a relatively thin box for shipping and sale, with the middle panel 16 compactly stacked directly against one of the rigid sides 20, 22. Such compact configuration also makes the unit 10 easy for even young students to unobtrusively carry to school for insertion into their locker.

[0029] Moreover, as particularly illustrated in FIGS. 2-4, it should be appreciated that the box portion 14 may be easily placed into the bottom of a locker by inserting the unit in a vertical orientation through the front locker opening (e.g., the opening for the door). This may, of course, be readily accomplished even though the box portion 14 may ultimately be wider than the front locker opening.

[0030] Once inside the locker, the box portion 14 may be expanded as illustrated in FIG. 2 by separating the rigid sides 20, 22, which will cause the hinged sides 26, 28 to expand until ultimately reaching a flat configuration (see FIG. 3). At that point, the middle panel 16 may be slid into position at the central hinges 40, in which configuration (see FIG. 4) the organizing unit 10 will provide a raised shelf (side 26) as well as vertical compartments (between side 20 and middle panel 16 and between middle panel 16 and side 22) for organized storage (of, e.g., books and papers). It should be appreciated, however, that the organizing unit 10 could also be turned ninety degrees, so that the rigid sides 20, 22 and the middle panel 16 are oriented horizontally, in which case the unit 10 would provide three supporting shelves for different organization if preferred by a student.

[0031] FIG. 5 illustrates one suitable configuration for the central hinge 40, which includes a channel member 50 which is pivotally secured to the side segments 42, 44 by pivot pins 54 fixed to the segments 42, 44. The pivot pins 54 define pivot axes which may be advantageously spaced sufficiently to allow the side segments 42, 44 to be disposed substantially parallel in the storage position as previously described. An open slot 56 is defined on the inwardly facing side of the channel member 50.

[0032] The middle panel 16 includes a T-shaped flange 60 on its outer edge, which flange includes outwardly extending

ears 62 which are received in the channel member 50. Another set of laterally extending ears 64 may be provided to help secure the middle panel 16 in a configuration where it is retained substantially rigidly at right angles to the connected hinged side 28 (or 26) when the panel 16 is slid into the box portion 14 to the position shown in FIG. 4.

[0033] It should be appreciated that the compact storage position is not only commercially advantageous with respect to product handling, but it is also ideal for students to transport to their locker for placing therein. That is, not only is the compact size convenient, but it also allows the students to carry it unobtrusively, which is important to some students who are afraid of carrying something which might cause them to not look "cool" to others (particularly at the uneasy start of a new school year when such items are typically taken to school for use in their new locker). Further, it should be appreciated that the organizing unit 10 when taken to a locker for use may be quickly and easily installed by even young students with just a few simple steps.

[0034] It should be appreciated that units configured other than as shown in the Figures may be used which advantageously incorporate aspects of the present invention. For example, connections for more than one panel between the rigid sides 20, 22 may be provided, and such connections may be at other than the hinge of the hinged sides 26, 28. Further, suitable hinge configurations need not be of the structure illustrated in FIG. 5. Moreover, while the FIG. 5 structure advantageously provides the central hinge for pivoting of the hinged sides 26, 28 as well as releasably securing the middle panel therein and also providing rigidity to the unit 10 so that it will retain its rectangular box shape when in use, it should be appreciated that some aspects of the present invention could be obtained with structures in which these elements are provided by separate structures (e.g., a separate suitable hinge lock at the corners of the box portion 14 could provide the rigidity required to maintain the unit in its rectangular box shape).

[0035] Further, it should be appreciated that the present invention may be used in organizing units having less or more than four legs, and with legs at other than the corners of the shelf. It should also be appreciated that the legs 20 could be adjustable in length (e.g., by telescoping) so as to provide a different, selectable height, if desired.

[0036] Still other aspects, objects, and advantages of the present invention can be obtained from a study of the specification, the drawings, and the appended claims. It should be understood, however, that the present invention could be used in alternate forms where less than all of the objects and advantages of the present invention and preferred embodiment as described above would be obtained.

1. An organizing unit for a locker, comprising:

a collapsible box portion having first, second, third and fourth sides,

said first and third sides being substantially rigid and opposite one another,

said second side pivotally connecting one edge of said first side to one edge of said third side,

said fourth side pivotally connecting the opposite edge of said first side to the opposite edge of said third side, and

said second and fourth sides each including a central hinge therein between their pivotal connections with said first and third sides;

a middle panel; and

a releasable connection between opposite edges of said middle panel and said second and fourth sides;

wherein the distance between said middle panel opposite edges is substantially the same as the distance between said one and opposite edges of both said first and third sides.

2. The organizing unit of claim 1, wherein said central hinges of said second and fourth sides fold in toward one another in a storage position.

3. The organizing unit of claim 1, wherein said connection is at said central hinge of said second side and said central hinge of said fourth side.

4. The organizing unit of claim 1, wherein said connection secures said middle panel substantially rigidly to both said second and fourth sides.

5. The organizing unit of claim 4, wherein said second and fourth sides are substantially flat when said middle panel is connected to said second and fourth sides.

6. The organizing unit of claim 4, wherein said middle panel is substantially at right angles to said second and fourth sides when connected thereto.

7. The organizing unit of claim 1, wherein said releasable connection comprises:

flanges along said middle panel opposite edges; and

a channel defined at each of said central hinges when said second and fourth sides are substantially flat;

wherein said flanges are slidably receivable in said channel of the side connected thereto.

8. The organizing unit of claim 7, wherein

said flanges are T-shaped with a base and outwardly extending ears; and

said channel includes portions closing four sides with a slot through the portions closing one of said four sides;

wherein the base of the associated flange is slidable through said slot.

9. The organizing unit of claim 8, wherein

one of said central hinges pivotally connects segments of said second side and the other of said central hinges pivotally connects segments of said fourth side; and

said central hinges are defined by channel members pivotally secured to associated side segments, said channel members defining said channel.

10. The organizing unit of claim 9, wherein said channel members are separately pivotally secured to associated side segments about spaced pivot axes, said pivot axes being spaced sufficiently to allow said side segments to be disposed substantially parallel in a storage position.

11. An organizing unit for a locker, comprising:

a collapsible box portion having first, second, third and fourth sides,

said first and third sides being substantially rigid and opposite one another,

said second side pivotally connected to one edge of said first side and to one edge of said third side,

said fourth side pivotally connected to the opposite edge of said first side and to the opposite edge of said third side, and

said second and fourth sides each including a central hinge therein between their pivotal connections with said first and third sides;

a middle panel; and

a releasable connection between opposite edges of said middle panel and said second and fourth sides, said connection substantially rigidly securing said middle panel substantially at right angles to both said second and fourth sides with said second and fourth sides substantially flat, and said connection including

flanges along said middle panel opposite edges, and

a channel defined at each of said central hinges when said second and fourth sides are substantially flat, wherein said flanges are slidably receivable in said channel of the side connected thereto.

12. The organizing unit of claim 11, wherein said central hinges of said second and fourth sides fold in toward one another in a storage position.

13. The organizing unit of claim 11, wherein said connection is at said central hinge of said second side and said central hinge of said fourth side.

14. The organizing unit of claim 11, wherein

said flanges are T-shaped with a base and outwardly extending ears; and

said channel includes portions closing four sides with a slot through the portions closing one of said four sides;

wherein the base of the associated flange is slidable through said slot.

15. The organizing unit of claim 14, wherein

one of said central hinges pivotally connects segments of said second side and the other of said central hinges pivotally connects segments of said fourth side; and

said central hinges are defined by channel members pivotally secured to associated side segments, said channel members defining said channel.

16. The organizing unit of claim 15, wherein said channel members are separately pivotally secured to associated side segments about spaced pivot axes, said pivot axes being spaced sufficiently to allow said side segments to be disposed substantially parallel in a storage position.

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