The present invention relates to a flexible compartment system comprising a plurality of conjoined cells (1) which open out between flexible, interconnected walls and which are collapsible by laying opposing or adjacent walls (2) of the cells (1) on top of one another, wherein the cells (2) form an array (3) of cells (1) which are disposed adjacent to one another in a plurality of rows (4). In order to create a flexible compartment system which, although having on the one hand the advantage of a high degree of flexibility of the individual cells or cell walls, nevertheless at the same time can also be made to stand up freely by itself and does not collapse or contract when placed in an opened-out state in a larger container without being connected to the walls of the latter, it is proposed, according to the invention, that rigid outer walls (5) of two rows (4) of cells (1) located on opposing sides of the array (3) are each connectable or connected to a rigid wall element (6) at a fold angle of at least 30° in the direction of the rigid outer wall (5).
FLEXIBLE COMPARTMENT SYSTEM

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of German Application No. 20 2005 013 806.1, filed Aug. 31, 2005.

FIELD

[0002] The present invention relates to a flexible compartment system comprising a plurality of conjoined cells which open out between flexible walls and which are collapsible by laying opposing or adjacent walls of the cells on top of one another, wherein the cells are disposed adjacent to one another in a plurality of rows so as to form a matrix, or array, of cells.

BACKGROUND

[0003] Such flexible compartment systems are known in the state of the art. In particular, such a flexible compartment system is described in a German Patent Application No. 10 2004 008 969.8 from the same applicant, said application being not yet published but co-pending. The present invention relates in particular, but not exclusively, to an improvement of the compartment system described in this aforementioned patent application.

[0004] Collapsible compartment systems are known per se in the state of the art. There are, for example, compartment systems which consist of strips of cardboard, arranged in parallel, which have incisions from one side at regular spacings and which are joined to correspondingly fashioned cardboard strips extending normally to the first-mentioned cardboard strips, said correspondingly fashioned cardboard strips likewise having corresponding slots extending approximately half-way such that the mutually intersecting cardboard strips are joined in the region of the respectively mutually facing slots, wherein the slot of one strip respectively encompasses a half of the cardboard strip extending oppositely and normally to the first-mentioned cardboard strip, the slot of said oppositely and normally extending strip not extending into said half.

[0005] These compartmental divisions, being sheared diagonally, can also be collapsed into a more or less folded state. The folded system becomes markedly longer, however, and attains a length which corresponds, substantially, to the sum of two sides of the compartment system previously opened-out in rectangular form.

[0006] Furthermore, these compartment systems are not flexible, i.e. the walls, which are composed of cardboard or the like, are relatively rigid and cannot fit closely in a flexible manner to the items accommodated in the compartments. Moreover, such a compartment system can easily come apart, or be easily pulled apart, since the mutually engaging slot regions do not offer a secure support. Such systems also wear out relatively quickly when they are subjected to stress and also, for example, when subjected to multiple folding-up and reopening operations. If items accommodated in the compartments are somewhat larger in one direction than the respective compartment, the respective cardboard strips can also easily become damaged, or begin to tear. Improvements in comparison therewith are already provided by the flexible compartment system that is described in the simultaneously pending German Patent Application 10 2004 008 969.8, since said system consists of flexible webs which are able to adapt substantially better to the form of an item and which, at the same time, can be produced from a textile or fleece material that can be subjected to substantially more stress than cardboard. A disadvantage of this known system, however, is that it must always be used in a corresponding rigid container and its outer form must be adapted to the dimensions of the outer container in order to open out such a compartment system therein. The compartment system must then either be filled with appropriate items and be stabilized thereby, or, alternatively, it must be connected to the walls of the respective container by additional means in order to remain in an opened-out form.

[0007] In this case, although it remains not precluded for the container to be a collapsible container, nevertheless it is scarcely possible in a meaningful manner to collapse the compartment system jointly with the corresponding container.

[0008] As compared with this state of the art, the object of the present invention is to create a flexible compartment system which, although having on the one hand the advantage of a high degree of flexibility of the individual cells or cell walls, nevertheless at the same time can also be made to stand up freely by itself and does not collapse or contract when placed in an opened-out state in a larger container without being connected to the walls of the latter.

SUMMARY

[0009] This object is achieved in that the outer walls of rows of cells located on opposing sides of the array each have a rigid wall which, for its part, has at least one respective further rigid wall element projecting beyond the array row that is connected to the rigid wall, said wall element being connected or connectable to the rigid wall at a fold angle of at least 30° in the direction of the array. The possible fold angle is preferably 90° towards the array and, particularly preferably, is up to 180° at least in the direction facing away from the array of cells.

[0010] The rigid wall elements connected on opposing sides of the array to each of the outermost row of cells can be pushed in towards one another, in which case the intermediate cells collapse, or they can be pulled apart in the opposite direction, whereby the cells in between are opened out. These opposing wall elements can also at the same time be offset in their longitudinal direction relative to one another, such that the array is sheared to a greater or lesser extent. The at least one additional wall element adjoining the first wall element which is connected to one of the outer rows of cells can be bent over or folded over towards the array, and thus form an additional rigid wall for a remaining side of the array having until then no rigid wall. The free end of this further rigid wall element can usefully be made so that it can be connected to the facing end of the opposing rigid wall that is provided on the opposite side of the array. The same happens with the further rigid wall element that is attached to the wall of the opposite side.

[0011] It is also possible for both ends of the rigid walls attached to the outermost rows to be provided with a respective further rigid wall element, which is made to be appropriately shorter, projects on both sides and is connect-
able or connected at an appropriate fold angle. When the said rigid walls are drawn apart, the projecting wall elements disposed on opposing walls are brought into a correspondingly bent-over state, or folded over, wherein the free ends of the projecting wall elements on opposing walls meet and are connected to one another.

[0012] As previously mentioned a variant of the invention is particularly preferred in which these further rigid wall elements can be bent over or folded over by 180° relative to the first rigid wall element, towards the side facing away from the array of cells. They then lie with their exterior flat on the exterior of the rigid walls. A hinge is expediently provided between the rigid wall and the further rigid wall element; this hinge also being able to be a bending hinge comprising a flexible band or strip. If the flexible wall elements are composed of plastic, the hinge may also be formed by, for example, a connecting portion, between the wall and the rigid wall element, which connecting portion is made deliberately thin-walled and as a single piece with the rigid wall.

[0013] Moreover, an embodiment of the invention is preferred in which the cells are constructed in the same manner as that of the flexible system of DE 10 2004 008 969.8, in that, namely, the rows of cells are formed by a plurality of parallel webs, wherein respectively adjacent webs are connected to one another along substantially parallel lines and the connection sites of respectively adjacent rows are offset in relation to one another.

[0014] The outer rows of the array, or the outer walls of the flexible part of the array, may be connected to the rigid wall by means of, for example, hook-and-loop strip, but they may also be tacked on, sewn on, stuck on or stapled on. A variant of the present invention is particularly preferred in which the outer flexible walls of the majority of joined cells are fastened to the rigid wall, at least over a portion of the region of connection to the rigid wall, so as to be replaceable in the longitudinal direction of a series of connection locations. This design is such that, upon the opposing rigid walls being drawn apart and upon the corresponding deformation of the flexible wall elements, which then run in an approximately undulatory or zigzag manner, it becomes possible for the fastening locations to move closer together and to have a lesser spacing than when in the collapsed state, in which the two rigid walls are moved towards one another such that the flexible wall elements extend between them in a flat, planar state, such that, in this state, the fastening locations on the rigid wall are able to assume a wider spacing by sliding in a corresponding guide in the longitudinal direction. The fastening may be effected by means of, for example, a type of button or rivet, said buttons or rivets being displaceably disposed in longitudinal slots of the rigid wall. In this case, a central fastening point, for example, may be immovably fixed in position.

[0015] Alternatively, the outer flexible webs may also easily be firmly connected to the rigid wall at points corresponding to the fastening points of the respective intermediate plate, in which case the outer web then necessarily lies in folds, since the spacing of the rigid fastening points should correspond to the spacing of the contact surfaces, or contact lines, of the flexible webs when in the opened-out state.

[0016] Since only two of the rigid walls on opposing sides of the array are connected to the respectively outermost row of cells, or form the outer wall of the outermost rows, while the other walls are movable, as projecting wall portions, in a foldable or hinge-type manner relative to the first-mentioned walls, the flexible compartment system according to the invention can be collapsed into a very close state, and can nevertheless be made to stand up freely and opened out, as an array or matrix of cells, having an edge length defined by the rigid walls or wall elements, the individual cells assuming a well-defined form and size.

[0017] It is understood that this flexible and foldable compartment system may be enlarged to form a larger transport or storage facility having an outer housing or a frame whose inner dimensions correspond to an integer multiple (including the single multiple) of the outer dimensions of the respective flexible compartment system or systems to be accommodated therein. Such flexible compartment systems may obviously also be stacked on top of one another. In this case, a filled compartment system may be covered with, for example, a respective film or web, or even a thin plate, and a further flexible compartment system may be arranged on top of it in such a way that, expediently, the rigid wall elements of the compartment systems arranged on top of one another are respectively aligned with one another. It is furthermore expedient if the flexible walls are composed of an elastic material which is extensible by at least 20 to 50%. In this way it can be ensured that, when the compartment system is collapsed, the flexible walls contract accordingly and thereby occupy less space than a compartment system whose walls are not composed of extensible, flexible material.

[0018] Preferred or expedient embodiments of the present invention have, in particular, the following features, which may be realized both independently of each other and in combination with each other. The flexible walls 2 are preferably composed of a textile material, i.e., for example, of a woven fabric, or of a non-woven textile material such as, for example, a felt. The respectively outermost flexible webs are fastened to the rigid wall 5 at fastening points, fastening lines or fastening surfaces which are as parallel as possible, the spacing of the fastening points, lines or surfaces, measured along the rigid wall 5, being less than the same spacing when it is measured along the flexible web 2, i.e., the outer flexible webs 2 run in an undulatory manner, or are laid in folds, when the compartment system is in a folded state. The rigid walls and the wall elements 6, 6′, 6″, 16 and 17, and the base elements 18, 19, may be produced from, for example, a cardboard material, or they may also be produced from other, preferably thin-walled materials which are to a greater or lesser extent rigid or semi-rigid, such as, for example, thin plastic sheet, e.g. of a thermoplastic material, or they could also be produced from plywood or thin metal or sheet-metal plates, hinges or hinge connections being formed, in the simplest case, in the form of elastic strips made from a textile material or plastic. Ordinary hinge connections having pivots and loops are obviously also conceivable. The walls, wall elements and base elements may also have a textile material and be composed of, for example, a two-layer textile material forming pockets or loops into which sheets of cardboard, plastic or another rigid or semi-rigid material are easily inserted. If the textile webs for walls and base elements and wall elements form a coherent, single piece, the hinges are then easily formed by the double-layer textile webs, or the connecting pieces between double-layer textile pockets or webs.
The collapsible wall elements and also, in like manner, the collapsible base elements should have end portions which can be connected to each other as simply and easily as possible, such as, for example, slot or slot-and-hook connections that can be hooked into each other in a simple manner in that the respective mutually opposite elements are easily moved towards each other and returned to the normal position. Similarly possible for connection are simple hook-and-loop connections or also, simply, a frictional engagement. Base elements in this case need not necessarily be firmly connected to each other or firmly connected, by their free end, to a wall element, since it may possibly suffice if the base rests on an underlying surface and the compartment system is supported thereon. In particular, if the compartment system does not need to be removed as a whole with items present therein, the base elements 18 or 19 may be simply connected on one side to a wall element 5, while the other end of the base element remains freely movable.

**DRAWINGS**

Further advantages, features and possible applications of the present invention are elucidated by means of the following description of a preferred embodiment and with reference to the associated figures. There are shown in:

**FIG. 1** is a top view of a multi-chamber partitioning element, according to the German Patent Application 10 2004 008 969.8, which is being drawn apart horizontally;

**FIG. 2** is a top view of the partitioning element according to **FIG. 1**, which has been drawn apart horizontally, in a state without a transport container (left part) and with a transport container (right part);

**FIG. 3** is an embodiment according to the present invention, having rigid webs and respectively two foldable rigid wall elements;

**FIG. 4** is a schematic top view of a variant of the system according to **FIG. 3**, wherein the rigid, foldable wall elements are respectively provided only at one end of the first rigid wall elements;

**FIG. 5** is a diagram of a method for production of the flexible cell array;

**FIG. 6** is a further variant with base elements which can be folded over;

**FIG. 7** is a variant with a single base element which can be folded over, and

**FIG. 8** shows stackable flexible compartment systems with an intermediate base.

**DETAILED DESCRIPTION**

**FIG. 1** is a representation of how a multi-chamber partitioning element 10 according to the invention is progressively unfolded or opened up. The representation is to be understood to be such that, when the partitioning element is deployed or drawn apart horizontally, the representation is a top view of the partitioning element. It is shown on the left side of **FIG. 1** that, in this state, not all of the webs 2 have yet been unfolded. The four webs 2 which are at the top in the representation, however, have already been drawn apart and, since they are joined to each other at common contact surfaces, they form three rows of substantially circular to elliptical chambers or cells 1. On the right side of **FIG. 1**, the partitioning element 10 has been almost completely deployed, and there are shown seven rows 4 of cells 1 which are realized by the webs 2, since respectively adjacent webs 2 are joined to each other via common contact surfaces 9.

**FIG. 2** shows a partitioning element 10 which has been completely deployed or opened out. At the outermost points of the webs 3, there are fixing elements of adhesive strip and/or hook-and-loop strip 9 by means of which the partitioning element 10 can be fixed to a transport container (right side of **FIG. 2**).

**FIG. 3** is an embodiment according to the present invention, having rigid webs and respectively two foldable rigid wall elements;

**FIG. 4** is a schematic top view of a variant of the system according to **FIG. 3**, wherein the rigid, foldable wall elements are respectively provided only at one end of the first rigid wall elements;

**FIG. 5** is a diagram of a method for production of the flexible cell array;

**FIG. 6** is a further variant with base elements which can be folded over;

**FIG. 7** is a variant with a single base element which can be folded over, and

**FIG. 8** shows stackable flexible compartment systems with an intermediate base.

In the case of the present invention, it is important that, inter alia, the free ends of the projecting elements can be detachably connected to the corresponding end of an opposing projecting wall element or, alternatively, to the end of a rigid wall element that is connected to an opposing row of cells. It is only this detachability of the connection which makes it possible to effect in a simple manner collapse into a very space-saving state, in that, as mentioned previously, the foldable wall elements are detached from the respectively opposite part and folded back by 180° to the back of the rigid wall element connected to them.

As shown by **FIG. 3c**, the flexible compartment system consists of whole series of parallel, adjacent and mutually superposed webs 2 of a flexible material. Adjacent webs are respectively connected to one another along spaced-apart surface regions, with the surface regions along
which the webs, respectively adjoining the connection plane, are fastened being offset in relation to one another. This is illustrated clearly in the partially unfolded state according to FIG. 3b. As further shown by FIGS. 3a and 3b, the outermost flexible wall elements 2, i.e. in FIG. 3a the lowermost and the uppermost flexible wall element 2, are in addition respectively fastened to a rigid wall 5. The rigid wall 5, in turn, has, at its respectively two opposite ends, two extensions with wall elements 6 and 6' respectively, which are likewise rigid but can be offset at an angle relative to the wall element 5. These rigid wall elements project beyond the flexible webs or webs 2, in the longitudinal direction of the mutually superposed webs (i.e. to the right and left in FIG. 3a). The free ends of the wall elements 6' have a lug 12 and the end of the respectively opposite wall element 6 has a matching slot 13 through which the lug 12 can be inserted and which is so dimensioned that the lug 12 engages, by means of two upwardly and downwardly projecting lobes, into and behind the slot 13. In the state represented in FIG. 3a, the wall elements 6, 6' are offset only slightly relative to the rigid walls 5 and extend, substantially, in the longitudinal direction of the collapsed stack of flexible webs 2 which, in total, with the rigid walls and wall elements, form the flexible compartment system. If the two rigid walls 5 are drawn apart, such that they are at a greater distance from each other, the flexible compartment system is ultimately transformed, via the state represented in FIG. 3b, into the state represented in FIG. 3c, in which the flexible compartment system is fully opened out and the individual cells 1 are opened such that they can be loaded with the items to be accommodated therein.

[0038] In this state, the flexible compartment system can be made to stand up freely, since both the walls 5 and the wall elements 6, 6' are essentially rigid and thus open an essentially rectangular array of individual cells 1 which can be loaded with the items intended therefor. Such a flexible compartment system can either be made to stand up freely by itself or, alternatively, it is placed in a container whose outer dimensions either correspond to the outer dimensions of the flexible compartment system 10 or are a multiple of the length and/or width of the flexible compartment system, such that, if necessary, a plurality of such flexible compartment systems can be placed in a larger container. Moreover, such containers can also be easily stacked on one another, if it is ensured that the rigid walls 5 and wall elements 6, 6' and 6' of a higher layer of flexible compartment systems rest on the rigid walls and wall elements 5, 6, 6', 6'' of the layer beneath. Substantially, the mutually superposed walls and wall elements of compartment systems that are stacked on top of one another should be in alignment with one another. If there is provided an outer container whose inner dimensions correspond exactly to the outer dimensions of a flexible compartment system unfolded as in FIG. 3c, or whose inner dimensions correspond to an integer multiple of the dimensions of the flexible compartment system 10, such a superposed, aligned arrangement is automatically achieved if one level is filled completely with such flexible compartment systems and the next level is then stacked on top of it. It is furthermore possible in this case to lay a textile web, a film or even a plate between the different levels of such flexible compartment systems.

[0039] A further variant of a flexible compartment system according to the present invention is represented in FIGS. 4a and b. FIG. 4a shows the flexible compartment system 10 in a largely unfolded state with opened cells 1, which are disposed next to or over one another in a plurality of rows 4, the respectively outermost row having flexible walls 2 which are connected to rigid walls 5. In this case, a further rigid wall element is movably connected, respectively, to only one end of the rigid walls 5 in a foldable or hinge-type manner, and its length corresponds to the desired width of the flexible compartment system in the completely opened-out state. As indicated by the arrows A, the rigid wall element 6 can be swung round so widely that a free end can be joined to the remaining free end of the opposing rigid wall 5 and, conversely, the wall element 6 pivotally connected at the other end to the same rigid wall can be fastened, by its free end, to the remaining free end of the first rigid wall 5. The end portions of each second row of cells may have, for example, hooks, hook-and-loop strips or the like, by means of which they can be connected, if necessary, to the foldable wall elements 6.

[0040] In other respects, the flexible compartment system, when in the opened-out state, need not necessarily assume a rectangular form; rather, it may easily be envisaged, for example in the case of the state represented in FIG. 4a, that the upper rigid wall 5 is shifted substantially horizontally to the left, whilst the rigid wall elements 6 do not change their angle in relation to the walls 5, wherein the shift to the left and slightly downwards of the upper wall 5 is effected until the free ends of the wall elements 6 and of the walls 5 come into contact with each other and can be connected to each other by appropriate connecting means.

[0041] Moreover, the arrows B indicate that the rigid wall elements 6 may also be folded by 180° away from the array of cells 1, to the back of the rigid walls 5, the two walls 5 additionally being able to be moved towards each other, such that the individual cells 1 collapse inwards and the flexible walls 2 form a stack of planar webs lying flat on top of one another. In FIG. 4b in this case, the offset connection points between adjacent webs on different levels are indicated by respective dots. This state, compared with the collapsed state represented in FIG. 3a, is particularly space-saving, since the foldable rigid wall elements 6 now no longer project beyond the length (in this representation, corresponding to the direction from left to right) of the individual webs 2.

[0042] It is understood that the embodiment according to FIGS. 3a-3e may be used and modified in similar manner, in that the lug 12 inserted in the slot 13 is removed from this slot, and both rigid wall elements at both ends of the walls 5 are then respectively folded backwards by 180° to the back of the walls 5.

[0043] FIG. 5 again shows a possible method for producing the inner part of the flexible compartment system, without the walls 5 and wall elements 6, consisting only of the flexible walls 2.

[0044] The schematic representations in FIGS. 5A-1 show a method for producing a partitioning element according to the present invention. In FIG. 5A, a piece of web 2 is unwound from a roll 8 towards a fixing device 7. FIG. 5B shows how a piece of the web 2 is cut off from the roll 8. This piece of the web 2 is fixed to a mounting device (not shown). As shown in FIG. 5C, this mounting device, with the web 2, moves upwards through the fixing device 7 beneath same, wherein said fixing device applies continuous
contact strips of adhesive to the web, with predefined spacings. At the same time, a further piece of web is unwound from the roll 8 in the direction of the fixing device 7. In FIG. 5D, a piece of web 2 unwound from the roll 8 is cut off. At the same time, the web 2, half of which has been provided with contact strips of adhesive, is transported to the left by a distance of half of its length. Fig. 5E then shows that the web 2, of which half has been provided with contact strips, is again passed through beneath the fixing device 7, wherein the latter applies adhesive strips to the half of the web 2 that had not been provided with contact strips. The web 2, which has now been provided with adhesive strips at predefined spacings over its entire width, is now located beneath the web 2 that was unwound from the roll 8 in FIG. 5C. This web, which has not been provided with adhesive up to this point, is lowered onto the web that is already fully provided with adhesive, and pressed onto the latter. The mounting device is thereupon shifted to the right or left by half of the distance between the contact strips that were applied to the first web. As shown in FIG. 5F, the application of the contact strips on the upper side of the second web 2 is accordingly offset by exactly half of the distance between the contact strips that were applied to the first web 2, while the mounting device, with the two webs, is passed beneath the fixing device 7. FIG. 5G, likewise, shows a piece of web 2 again being unwound from the roll 8. This piece of web 2 is cut off from the roll 8 in FIG. 5G. At the same time, the mounting device moves to the right by half of the width of the web 2. Then (FIG. 5H), the mounting device, with the two webs, moves through and beneath the fixing device 7, wherein the adhesive strips are applied to the second half of the second web. As soon as this has been done, the mounting device, with the two webs, moves again, by half of the distance between the contact strips, back into the initial position of FIG. 5A. Following lowering and pressing of the third web onto the upper side of the second web, the mounting device, with the three webs, again moves through and beneath the fixing device 7 (FIG. 5J). The operation represented in FIG. 5J corresponds substantially to the operations already explained in connection with FIG. 5C. The only difference is that the adhesive strips are applied, not to the first web as in FIG. 5C, but to the third web layered on top of the first and the second web.

[0045] It can be seen from FIGS. 5A-I that the fixing device 7 is continuously stationary during the process of producing partitioning elements according to the invention. The mounting device, with the web mounted thereon, or the webs layered on top of that web, moves forwards and backwards, transversely relative to the longitudinal axis of this fixing device 7, during the application of the contact strips, and it can also be moved laterally, in parallel to the longitudinal axis of the fixing device, whereby the left half and the right half of the uppermost web are alternately provided with contact strips.

[0046] FIGS. 6 and 7 show a further variant of a flexible compartment system according to the present invention. In this case, the projecting wall elements are denoted by the references 16 and 17. The mutually facing edges of the wall elements 16, 17 have, in their centre, a respective horizontal slot, and the width of the two wall elements 16, 17 is respectively greater, by at least half of the slot depth, than half the distance between the opposing rigid walls 5. When the side walls are collapsed together, the mutually facing slots are simply inserted in each other, such that the two wall elements hold together. Alternatively, the part 16 could have a lug projecting into the lower half, and the part 17 could have a lug projecting into the upper half, in which case the lugs would each be somewhat wider than half the height of the wall elements 16, 17. At the edges facing towards them, one or both of these lugs may have a slot which is so arranged that both lugs engage in an adapted manner in this then vertically aligned slot.

[0047] In addition, this flexible compartmental element 10 has likewise essentially rigid or stiff base flaps 18, which can be folded under the flexible compartment system 10 and thus form a base. This facilitates stacking. Particularly preferred in this case is an embodiment wherein the width of the base flaps 18 and 19, measured from their connecting edge with the rigid walls 5 to their free edges, is no more than the height of the side walls 5. This ensures that, in the collapsed state, in which the base elements are also folded (over or under the wall elements 16, 17) by 180° towards the rigid wall 5, the base elements do not project over the height of the rigid walls 5.

[0048] Alternatively, as represented in FIG. 7, there could also be provided a single base element 19 which covers the full width or depth of the flexible compartment system 10. If the flexible compartment system is not wider than its height, in this case likewise the base element 19 can be folded by 180° towards the rigid wall 5, without projecting over the height of the rigid wall 5. Obviously, the base elements 18 and 19 may also be wider than the height of the rigid wall 5, since the portions of the base elements 18, 19 projecting over the height of the rigid walls 5 in the collapsed state are not inconvenient, or are scarcely inconvenient, in many applications.

[0049] It is understood that such flexible compartment systems 10 provided with base elements 18 and 19 can be stacked on one another in a simple manner. Alternatively, FIG. 8 shows a variant in which intermediate plates 20 are respectively inserted between two flexible compartment systems 10 that are stacked on top of each other, wherein the outer dimensions of the base plates 20, i.e. length and width, preferably match the length and width of the respective flexible compartment systems 10. Here, also, a different variant is conceivable, however, if for example a plurality of compartment systems 10 are accommodated adjacent on one level in a larger housing. In this case, the intermediate plates 20 may also be made correspondingly larger, and correspond either to the inner dimensions of the larger housing or to a fraction of the inner dimensions of the housing, such that, in total, they cover the full cross-section of the housing.

[0050] For purpose of original disclosure, it is pointed out that all features that may be inferred by a person skilled in the art from the present description, the drawings and the claims, even if such features have been described in a definite manner only in connection with certain further features, can be combined, both individually and in any groupings, with other features or feature groups disclosed here, unless this has been expressly precluded or unless technical facts render such combinations impossible or inappropriate. For reasons of brevity and legibility of the description, this document does not include a comprehensive, explicit description of all conceivable feature combinations.
What is claimed is:

1. A flexible compartment system, comprising:
   a plurality of conjoined cells which open out between flexible, interconnected walls and which are collapsible by laying opposing or adjacent walls of the cells on top of one another, wherein the cells form an array of cells which are disposed adjacent to one another in a plurality of rows; and
   two outer rows of cells located on opposing sides of the array of cells each having a rigid outer wall which is connected to a rigid wall element at a fold angle of at least 30° in the direction of the rigid outer wall.
2. The flexible compartment system according to claim 1, wherein the rigid wall element is pivotally connected to the rigid outer wall.
3. The flexible compartment system according to claim 2 wherein each end of each of the rigid outer walls has one of the rigid wall elements connected thereto.
4. The flexible compartment system according to claim 1 wherein a further rigid wall element is provided at one end of one of the rigid outer walls, and another further rigid wall element is likewise provided at another end of the opposing rigid outer wall that is diagonally opposite the array.
5. The flexible compartment system according to claim 4 wherein the further rigid wall elements are connectable at free ends thereof.
6. A flexible compartment system according to claim 5 wherein the rows of cells are formed by a plurality of parallel webs with adjacent webs being connected to one another along substantially parallel lines and connecting locations of adjacent rows of cells being offset from one another.
7. A flexible compartment system according to claim 1 wherein the rows of cells are formed by a plurality of parallel webs with adjacent webs being connected to one another along substantially parallel lines and connecting locations of adjacent rows of cells being offset from one another.
8. The flexible compartment system according to claim 1 wherein the flexible walls are composed of a textile material.
9. The flexible compartment system according to claim 1 wherein the rigid outer walls and rigid wall elements are produced from any of a cardboard material or a thin-walled plastic material.
10. The flexible compartment system according to claim 1 wherein the rigid outer walls are hingedly connected to respective rigid wall elements by hinges or hinged connections made in the form of elastic strips made from a flexible material.
11. The flexible compartment system according to claim 10 wherein the flexible material from which the elastic strips are made is any of textile material or flexible plastic.
12. The flexible compartment system according to claim 4 wherein the rigid outer walls are hingedly connected to respective rigid wall elements by hinges or hinged connections made in the form of elastic strips made from a flexible material.
13. The flexible compartment system according to claim 1 and further including base elements wherein the rigid outer walls, rigid wall elements and base elements are composed of a two-layer textile material formed to include the pockets or loops.
14. The flexible compartment system according to claim 13 wherein the rigid outer walls, rigid wall elements and base elements are composed of a two-layer textile material formed to include the pockets or loops.
15. The flexible compartment system according to claim 14 wherein the rigid outer walls, base elements and rigid wall elements form a unitary conjoined structure hingedly connected together by respective hinges or hinged connections formed by the double-layer textile material or by connecting pieces between pockets of the double-layer textile material.
16. The flexible compartment system according to claim 15 wherein each base element is connected to a lower edge of at least one of the rigid outer walls and can be folded over backwards.
17. The flexible compartment system according to claim 14 wherein the rigid outer walls, rigid wall elements and base elements include pockets or loops into which sheets of a rigid or semi-rigid material are easily inserted.
18. The flexible compartment system according to claim 17 wherein the rigid outer walls, rigid wall elements and base elements are composed of a two-layer textile material formed to include the pockets or loops.
19. The flexible compartment system according to claim 18 wherein the rigid outer walls, base elements and rigid wall elements form a unitary conjoined structure hingedly connected together by respective hinges or hinged connections formed by the double-layer textile material or by connecting pieces between pockets of the double-layer textile material.
20. The flexible compartment system according to claim 19 wherein each base element is connected to a lower edge of at least one of the rigid outer walls and can be folded over backwards.
21. The flexible compartment system according to claim 15, wherein each base element is connected to a lower edge of at least one of the rigid outer walls and can be folded over backwards.
22. The flexible compartment system according to claim 14, wherein each base element is connected to a lower edge of at least one of the rigid outer walls and can be folded over backwards.
23. The flexible compartment system according to claim 1 wherein a base element which can be folded over backwards is connected to a lower edge of at least one of the rigid outer walls.
24. A transport or storage facility for storing a plurality of flexible compartment systems, each flexible compartment system including outer dimensions of the flexible compartment systems to be accommodated therein.

a plurality of conjoined cells which open out between flexible, interconnected walls and which are collapsible by laying opposing or adjacent walls of the cells on top of one another, wherein the cells form an array of cells which are disposed adjacent to one another in a plurality of rows; and

two rows of cells located on opposing sides of the array of cells each have at a rigid outer wall which is connectable or connected to a rigid wall element at a fold angle of at least 30° in the direction of the rigid outer wall; and

the facility having a housing or a frame whose inner dimensions correspond to an integer multiple of the