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(54) A MODULAR SYSTEM FOR PARTITION OR CLADDING

MODULARES SYSTEM ZUR RAUMTRENNUNG ODER VERKLEIDUNG

SYSTEM MODULAIRE DE CLOISONNEMENT OU REVÊTEMENT DES ESPACES

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Description

TECHNICAL FIELD

[0001] The present invention relates to a modular tile system comprising various tile elements, which can be assembled to form flexible partitions, wall coverings or spherical shapes, the extent, appearance and characteristics of which can be changed according to specific requirements by choosing appropriate tile elements and method of assembling said elements. The tile system may be used for attaining given, desired design effects, functional effects and for providing the possibility to apply acoustic control of a room or local areas within a room, for instance around a work place.

BACKGROUND OF THE INVENTION

[0002] A prior art modular tile system has been described in EP 1 818 470 A2 relating to a basic module for a modular screen for display or partition purposes. The modules described in this document comprise a central main body, from opposing end edges of which there extend protrusions provided for locking engagement with adjacent modules. The system comprises a plurality of modules wherein modules when assembled to form a complete screen partially overlap each other to form a structure somewhat resembling the tiles of a roof. In order to connect a module with an adjacent module, the modules are provided with through openings penetrating the central portion of the module, through which openings protrusions on adjacent modules can be passed. The protrusions are provided with notches that are brought into locking engagement with corresponding edge parts of the through openings in adjacent modules.

[0003] Furthermore, document WO 2006/053060 A2 describes a collapsible construction barrier comprising three planar main panels with hinge portions between the middle panel and the two side panels, respectively. Thereby a three-dimensional structure that can stand on the ground can be formed, in that the two side panels respectively are provided with attachment portions that can be brought into locking engagement with each other. On assembly the attachment portions can either be screwed together or snap-fitted by provisions of appropriate mating means on the respective attachment portions.

SUMMARY OF THE INVENTION

[0004] It is an object of the present invention to provide a basic tile element that is shaped such that a plurality of tile elements can easily be assembled to larger units, for instance a partition. By applying tile elements of different colours, materials (or covered by different materials) or other characteristics many different appearances of the unit can be attained, which may be of interest at least from a design point of view. Furthermore, a partition

according to the invention can by proper choice of materials be given desirable acoustical properties and it may thus be used for acoustical control of a room. According to a specific embodiment of the invention the tile elements are made of a textile provided on both opposing sides of a core of a suitable thickness, for instance 5 to 10 mm made of PE foam, which is a flameproof and closed-cell foam material. It is, however, understood that also other materials could be used for composing the tile elements according to the invention and that these also as an alternative could be made in one piece - for instance without upholstery - of a suitable material.

[0005] The above mentioned and further objects are achieved by a modular tile system comprising a plurality of modular tile elements and connecting means for releasable engagement of one tile element with another tile element, each modular tile element comprising:

a central main body comprising side parts, the central main body being provided with elongated protrusions extending in an outward direction from said body along some or all of said side parts for releasable engagement with at least one other modular tile element, a notch provided at each longitudinal end of said protrusions wherein said protrusions are separated from said central main body by embossments along said side parts of the central main body, whereby the protrusions become substantially rectilinearly pivotable along said embossment, and wherein said connecting means are formed as an elongated, resilient body comprising an inner open region substantially corresponding to said embossments, a central region, and longitudinal end portions, where the central region of said elongated body is resilient, and the longitudinal end portions of said body are made of a substantially rigid material, whereby said connecting means for said modular tile system are shaped for connecting said tile elements along said embossments and said notches bordering said protrusions.

[0006] According to an embodiment, the central main body of said tile element comprises one or more planar, oblong and hexagonal elements, even though many other shapes would also be conceivable, where at some or all of the sides of the tile element outwardly extending protrusions are provided, which can be connected releasable with protrusions on the adjacent tile elements by means of a hereto made connection part. In order to retain a plurality of said tile elements in a total assemblage of tile elements, for instance to form a partition as described above. The tile elements can furthermore be provided with through slits, through which a support for instance consisting of nails, hooks or screws, etc. can be passed, such that the individual tile element is supported at its position in the system of tile elements. The central main body of the tile elements in addition can be embossed in lines from corner to centre and/or from one

side to the opposite side in order to make the tile elements flexible and hence the possibility to create decorative variations. In one preferred embodiment the tile elements can attain convex corners only and in another embodiment the central main body of the tile elements can have concave as well as convex corners in the same tile element in order to create spherical shapes and decorations.

[0007] For assembling a total system such as a partition or tapestry said outwardly extending protrusions are connected to the main part of the tile element through an embossed line functioning as a hinge whereby said protrusions become pivotable in a substantial rectilinear bending along the side onto which said protrusion is attached. By means of a connection element adjacent protrusions in adjacent tiles can be joined in order to combine said tile elements into said partition or tapestry. The present invention thus relates to basic forms of tile elements, means for connecting said tile elements and the corresponding total systems that can be assembled from these tile elements whether alone or in combination.

[0008] The present invention may furthermore be used in a method of providing a surface, for instance a partition, where the method basically comprises the following steps:

- (a) provision of a plurality of modular tile elements comprising a central body and substantially rectilinearly pivotable protrusions along sides of said tile element extending in an outward direction from said body;
- (b) provision of connecting means for connecting said plurality of tile elements;
- (c) assembling said surface by bringing said adjacent protrusions on said adjacent tile element into a releasable engagement by means of said connecting means.

[0009] The invention may furthermore be used for attaining given, desired design effects, functional effects and for providing the possibility to apply acoustic control of a room or local areas within a room, for instance around a work place.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] The invention will be more fully understood by reading the following detailed description of various embodiments of the invention in conjunction with the figures, where

figure 1 shows a schematic representation of a basic tile element according to an embodiment of the invention shown in plain view.

figure 2 shows a schematic representation of another tile element according to an embodiment of the invention shown in plain view.

figure 3 shows a schematic representation of a third tile element according to an embodiment of the invention shown in plain view.

figure 4 a shows a schematic representation of a basic tile element according to another embodiment of the invention with convex as well as concave corners shown in plain view.

figure 4 b shows a detail of the end part of the protrusions along sides of the tile element. A notch for securing connecting means is shown in detail.

figure 5 shows a perspective cut view of a section of a junction between two tile elements A and B. The rectilinear pivotable protrusions are bent upwards and the connecting means are shown. The tile elements are of the octagonal convex/concave embodiment of the invention shown in figure 4 a. The connection scheme is similar to the embodiment in figure 1 - 3.

[0011] figure 9 shows an embodiment of the connecting means. The greyed middle part in this embodiment is the yielding part and the ends are of a more rigid implementation.

[0012] figure 10 shows the connecting means with emphasis on the end part where the implementation can have support for manual elongation during fitting.

[0013] figure 11 shows a schematic view of a lower fragment of an assembled partition according to an embodiment of the invention

[0014] figures 12 - 14 shows pictures of examples of assembled tile elements according to an embodiment of the invention utilizing elements as shown in figure 4 a.

[0015] figure 15 shows a picture of a lower fragment of an assembled partition utilizing elements as shown in figure 1 - 3.

DETAILED DESCRIPTION OF THE INVENTION

[0016] In the following, a more detailed description of embodiments of the modular tile elements according to the present invention is given and of a system composed of such tile elements, by which a partition is formed. It should, however, be noted that a person skilled in the art would be able to conceive other embodiments of the basic inventive idea and that such alternative embodiments are regarded as being within the scope of the invention, as defined by the appended claims and technical equivalents of these.

[0017] Referring to figure 1 there is thus shown an embodiment of the invention as a basic planar oblong hexagonal tile element according to the invention generally referred to by reference numeral 1, comprising a central main body 3 and protrusions 4 along four of the side parts of the tile element. In this shown embodiment said central main body 3 is provided with a number of embossings 5

substantially linearly through the centre from each corner of the hexagonal shape to the opposing corner on one or both surfaces. Additionally an embossing 6 is provided centrally between the end parts without protrusions. Said protrusions 4 are connected to the central main body 3 by means of embossments 7 along the sides of the main body 3, which makes the protrusions substantially rectilinearly pivotable along said embossment. A slit 8 can be provided through which fastening means like nails, hooks or screws, etc. can be passed, such that the individual tile element can be supported at its position in the system of tile elements and hence support the assembly as a whole.

Referring to figure 2 and 3 which shows the modular concept by combining more basic planar oblong hexagonal tile elements into double and triple modular tile elements a system is provided which together with said connecting means and said slit makes building arbitrary partitions and wall coverings conceivable and attachable.

[0018] With reference to figure 4 a another embodiment of the present invention is shown, which by means of a combination of convex and concave edges makes it possible to create spatial assemblies, and in which embodiment concurrent embossments from corners further enhance the spatial appearance.

[0019] With reference to figure 9 a connecting means for joining modular tile elements is shown. The greyed part 13 can be manufactured from a yielding material, the intermediate part 14 is of a more rigid sort for better guidance and the end parts 15 can provide grips for manual elongation in direction of the arrows 16. While substantially rectilinearly pivoting two adjacent protrusions on two adjacent modular tile elements along the embossments 7, firmly holding in contact and elongation said connecting means makes possible to slide said connecting means over said protrusion and into a notch 11, and said connecting means will rest in said notch and the grooves created from the embossments along the side of the main body of the tile element and the protrusion, hereby being partly concealed. Final position of said connecting means is shown in figures 5 to 8. It is understood that other compositions of said connecting means might be applicable.

[0020] With reference to figure 11 a segment of a partition is shown. In this embodiment a plurality of tile elements is upholstered in different colours whereby creating a decorative and visual pleasing effect. Said tile elements are attached to each other in the above described manner in a side by side relationship by constriction of two adjacent protrusions by means of said connecting means. A photograph of this construction is shown in figure 15. In figure 15 is demonstrated use of the modular tile elements shown in figure 1 - 3.

[0021] With reference to figures 12 to 14 examples of spatial representation of assemblies of the tile element from figure 4 a is shown as photographs. The examples are for decoration and can in addition create acoustical damping effects. It is intentional to combine tile elements

with upholstery in different colours and surface character.

[0022] In a preferred embodiment the modular tile element can be fabricated by upholstering a core of polyethylene flame retardant foam by adhering a fabric by means of an EVA Polymer to one or both sides of the core. By diecasting embossments can be tailored to specific purposes.

10 Claims

1. A modular tile system comprising a plurality of modular tile elements (1) and connecting means for releasable engagement of one tile element (1) with another tile element (1), each modular tile element (1) comprising:

a central main body (3) comprising side parts, the central main body (3) being provided with elongated protrusions (4) extending in an outward direction from said body (3) along some or all of said side parts for releasable engagement with at least one other modular tile element (1), a notch (11) provided at each longitudinal end of said protrusions (4) **characterised in that** said protrusions (4) are separated from said central main body (3) by embossments (7) along said side parts of the central main body (3), whereby the protrusions (4) become substantially rectilinearly pivotable along said embossment (7), and

in that said connecting means are formed as an elongated, resilient body (13, 14) comprising an inner open region substantially corresponding to said embossments (7), a central region (13), and longitudinal end portions (14), where the central region (13) of said elongated body is resilient, and the longitudinal end portions (14) of said body are made of a substantially rigid material, whereby said connecting means for said modular tile system are shaped for connecting said tile elements (1) along said embossments (7) and said notches (11) bordering said protrusions (4).

2. A modular tile system according to claim 1, wherein said central main body (3) of said tile element (1) comprises one or more planar, oblong and hexagonal elements.
3. A modular tile system according to claim 1 or 2, wherein said central main body (3) has both concave and convex corners.
4. A modular tile system according to claim 1, 2 or 3, wherein said central main body (3) of said tile element (1) having embossments (5, 6) across one or both surfaces of said modular tile element.

5. A modular tile system according to any of the preceding claims, wherein said tile element (1) is equipped with a through hole or slit (8) through which a fastening element can secure said modular tile element in its individual position.
6. A modular tile system according to any of the preceding claims, wherein said tile element (1) is made of textile provided on either side of a core with a thickness in the range of 5 to 10 mm.

Patentansprüche

1. Modulares Ziegelsystem umfassend eine Mehrzahl von modularen Ziegelementen (1) und Verbindungsmitteln zum lösbaren Eingriff eines Ziegelementes (1) mit einem anderen Ziegelement (1), wobei jedes modulare Ziegelement (1) umfasst:

einen Hauptkörper (3), der Seitenteile umfasst, wobei der zentrale Hauptkörper (3) mit langgestreckten Vorsprüngen (4) versehen ist, die sich nach außen von dem Körper (3) längs einiger oder aller der Seitenteile zum lösbaren Eingriff mit mindestens einem anderen modularen Ziegelement (1) erstrecken, einen Einschnitt (11), der an jedem Längsende der Vorsprünge (4) vorgesehen ist, **dadurch gekennzeichnet, dass** die Vorsprünge (4) von dem zentralen Hauptkörper (3) durch Prägungen (7) längs der Seitenteile des zentralen Hauptkörpers (3) getrennt sind, wodurch die Vorsprünge (4) längs der Prägung (7) im Wesentlichen geradlinig drehbar werden, und

dadurch, dass die Verbindungsmittel als ein langgestreckter, nachgiebiger Körper (13, 14) ausgebildet sind, umfassend einen inneren offenen Bereich im Wesentlichen entsprechend der Prägung (7), einen Mittenbereich (13) und Längsendteile (14), wobei der Mittenbereich (13) des langgestreckten Körpers nachgiebig ist, und die Längsendteile (14) des Körpers aus einem im Wesentlichen steifen Material hergestellt sind, wodurch die Verbindungsmittel für das modulare Ziegelsystem zum Verbinden des Ziegelementes (1) entlang der Prägungen (7) und der Einschnitte (11) geformt sind, die an die Vorsprünge (4) angrenzen.

2. Modulares Ziegelsystem nach Anspruch 1, wobei der zentrale Hauptkörper (3) des Ziegelementes (1) eins oder mehrere planare, langgestreckte und hexagonale Elemente umfasst.
3. Modulares Ziegelsystem nach Anspruch 1 oder 2, wobei der zentrale Hauptkörper (3) sowohl konkave als auch konvexe Ecken aufweist.

4. Modulares Ziegelsystem nach Anspruch 1, 2 oder 3, wobei der zentrale Hauptkörper (3) des Ziegelementes (1) Prägungen (5, 6) über eine oder beide Oberflächen des modularen Ziegelementes aufweist.

5. Modulares Ziegelsystem nach einem der vorherstehenden Ansprüche, wobei das Ziegelement (1) mit einem Durchgangsloch oder einem Schlitz (8) versehen ist, durch welches/welchen ein Befestigungselement das modulare Ziegelement in seiner individuellen Position sichern kann.

6. Modulares Ziegelsystem nach einem der vorherstehenden Ansprüche, wobei das Ziegelement (1) aus Textil hergestellt ist, das auf beiden Seiten eines Kerns mit einer Dicke im Bereich von 5 bis 10 mm vorgesehen ist.

Revendications

1. Système de tuiles modulaire comprenant une pluralité d'éléments de tuiles modulaire (1) et des moyens de connexion pour l'engagement détachable d'un élément de tuile (1) avec un autre élément de tuile (1), chaque élément de tuile (1) comprenant:

un corps principale central (3) comprenant des parties latérales, le corps principal central (3) étant muni de protubérances allongées (4) s'étendant dans une direction vers l'extérieur à partir dudit corps (3) le long de quelques-unes des parties latérales ou toutes les parties latérales pour l'engagement détachable avec au moins un autre élément de tuile modulaire (1), une encoche (11) fournie à chaque extrémité longitudinale desdites protubérances (4) **caractérisé en ce que** lesdites protubérances (4) sont séparées dudit corps principal central (3) par des bossages (7) le long desdites parties latérales dudit corps principal central (3), par quel moyen les protubérances (4) deviennent substantiellement pivotante de manière rectiligne le long desdits bossages (7), et

en ce que lesdits moyens de connexion sont formés comme un corps souple et allongé (13, 14) comprenant une région ouverte intérieure correspondant audits bossages (7), une région centrale (13), et des parties d'extrémité longitudinales (14), où la région centrale (13) dudit corps allongé est souple, et les parties d'extrémité longitudinales (14) dudit corps sont faits d'une matière substantiellement rigide, par quel moyen lesdits moyens de connexion pour ledit système de tuiles modulaire sont formés pour connecter lesdits éléments de tuiles (1) le long desdits bossages (7) et lesdites encoches (11)

bordant lesdites protubérances (4).

2. Système de tuiles modulaire selon la revendication 1, où ledit corps principal central (3) dudit élément de tuile (1) comprend au moins un élément plan, oblong et hexagonal. 5
3. Système de tuiles modulaire selon l'une des revendications 1 ou 2, où ledit corps principal central (3) a tant des coins concaves que des coins convexes. 10
4. Système de tuiles modulaire selon l'une des revendications 1, 2 ou 3, où ledit corps principal central (3) dudit élément de tuile (1) a des bossages (5, 6) à travers soit l'une, soit les deux surfaces dudit élément de tuile modulaire. 15
5. Système de tuiles modulaire selon l'une quelconque des revendications précédentes, où ledit élément de tuile (1) est équipé d'un trou borgne ou une fente (8), à travers lequel/laquelle un élément de fixation peut assurer ledit élément de tuile modulaire dans sa position individuelle. 20
6. Système de tuiles modulaire selon l'une quelconque des revendications précédentes, où ledit élément de tuile (1) est fait de textile fourni sur chaque côté d'un coeur avec une épaisseur se situant entre 5 et 10 mm. 25

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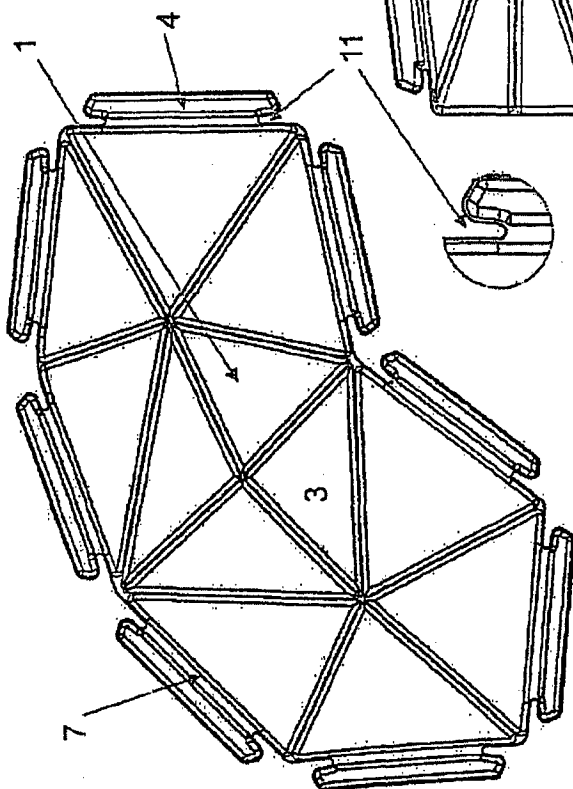
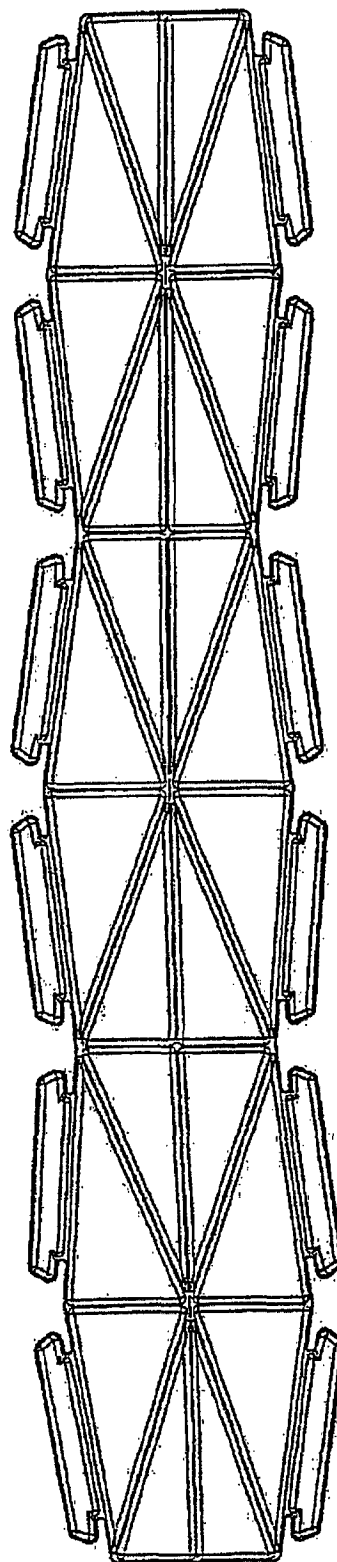
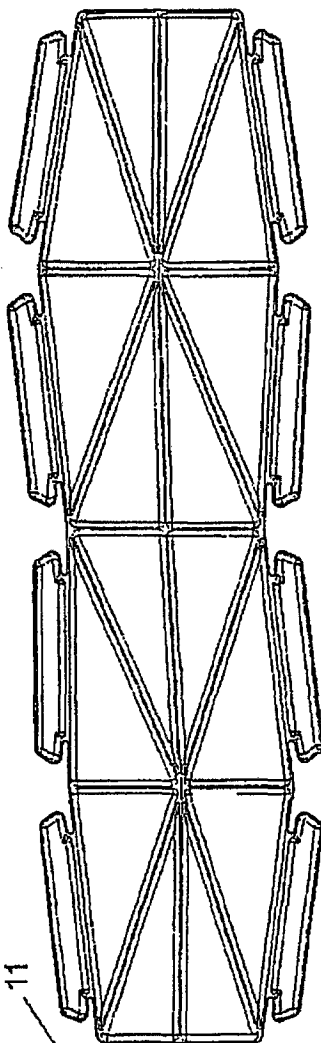
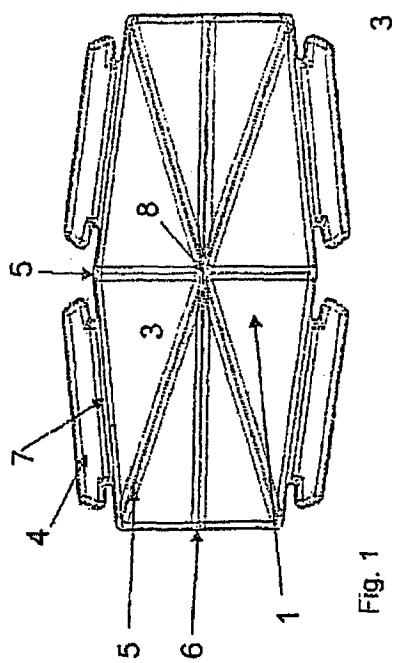
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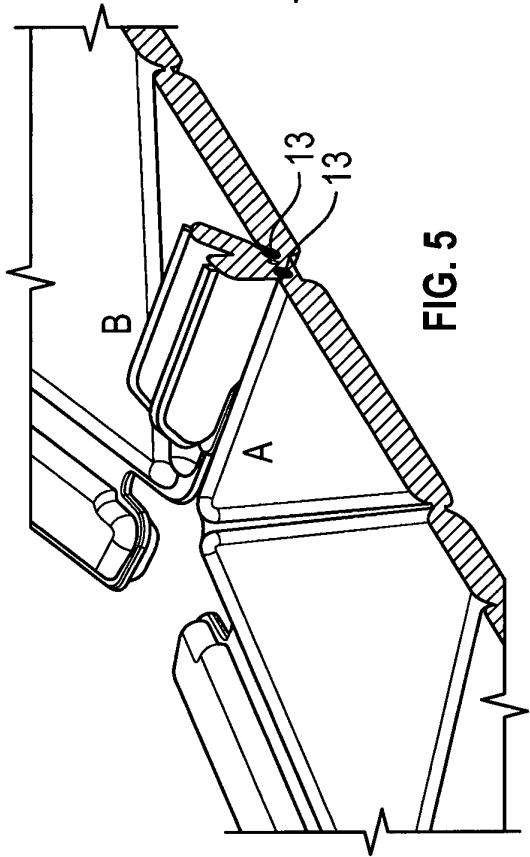


FIG. 5

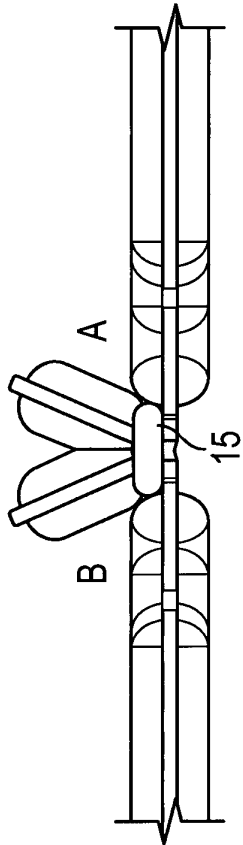


FIG. 6

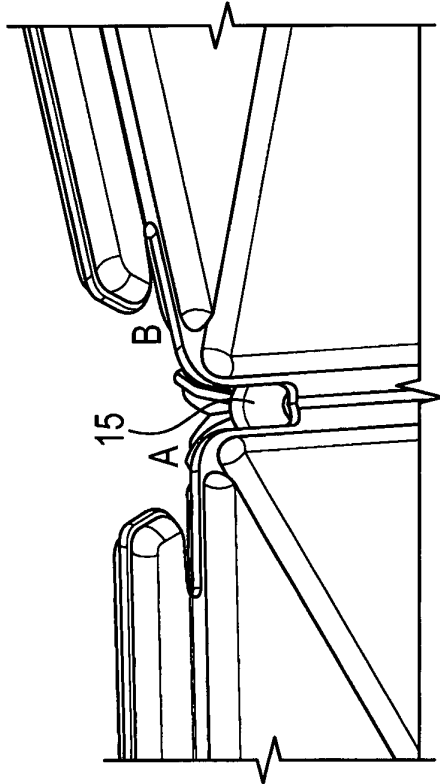


FIG. 7

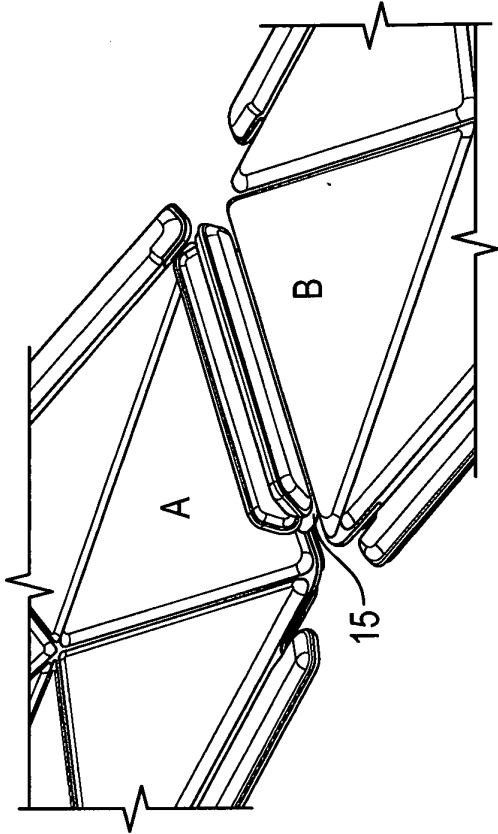
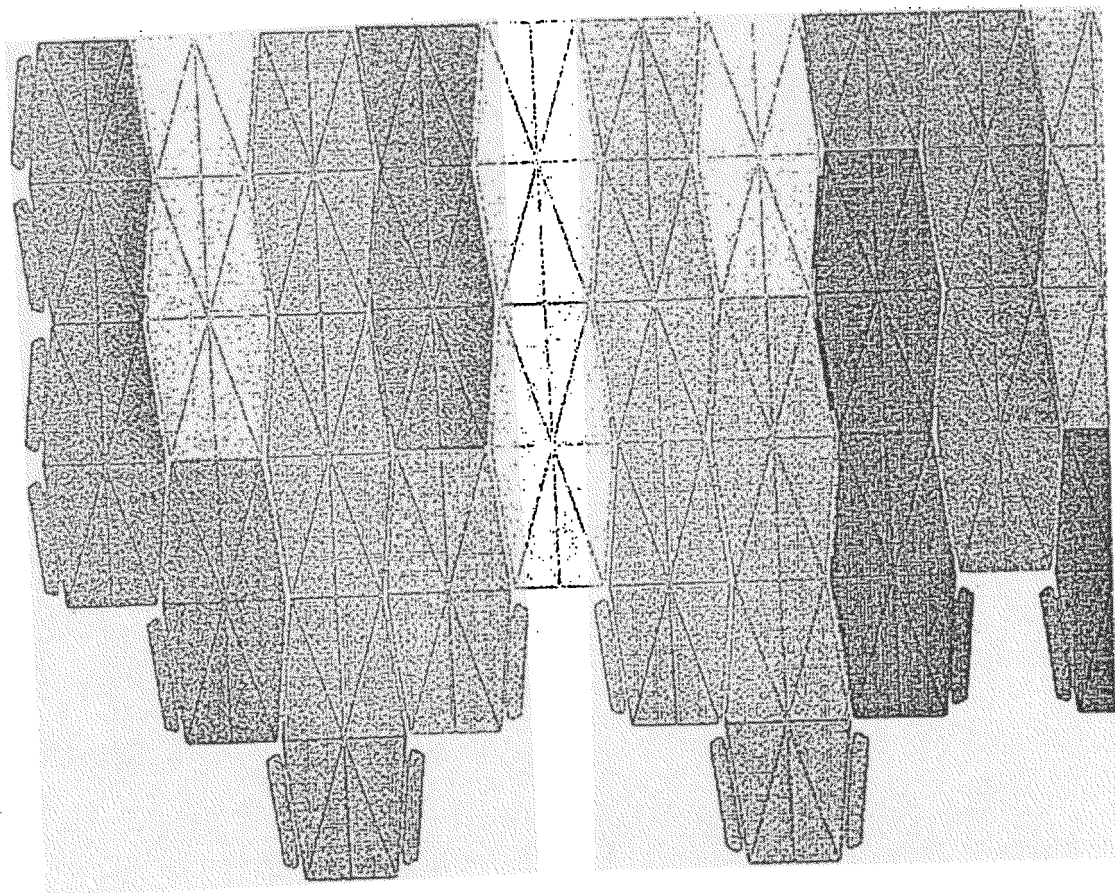
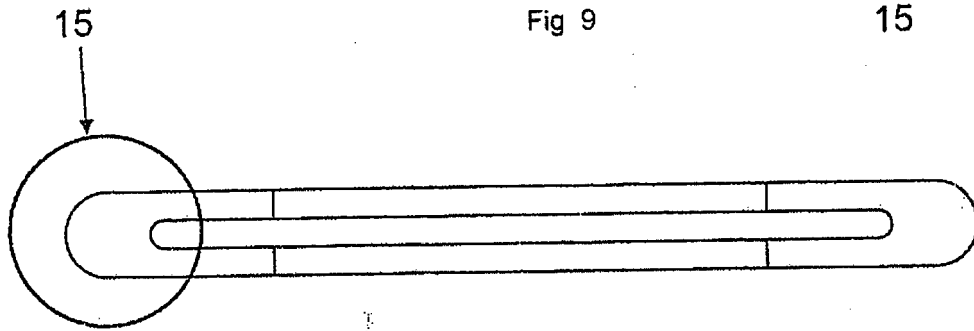
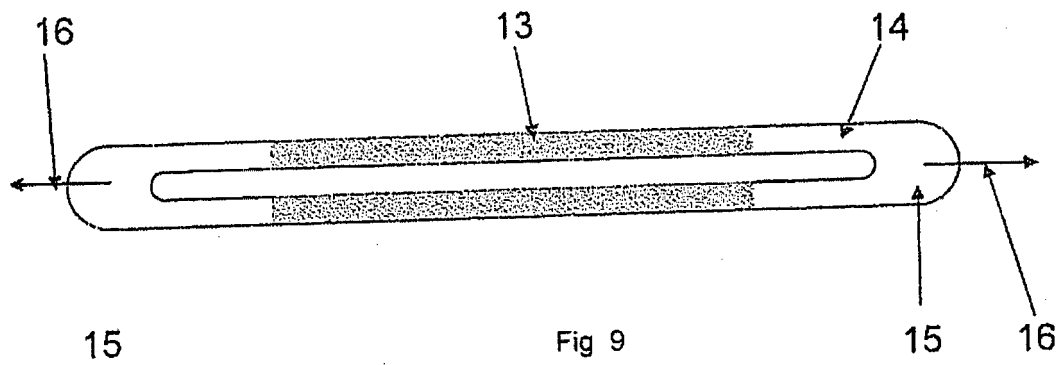


FIG. 8



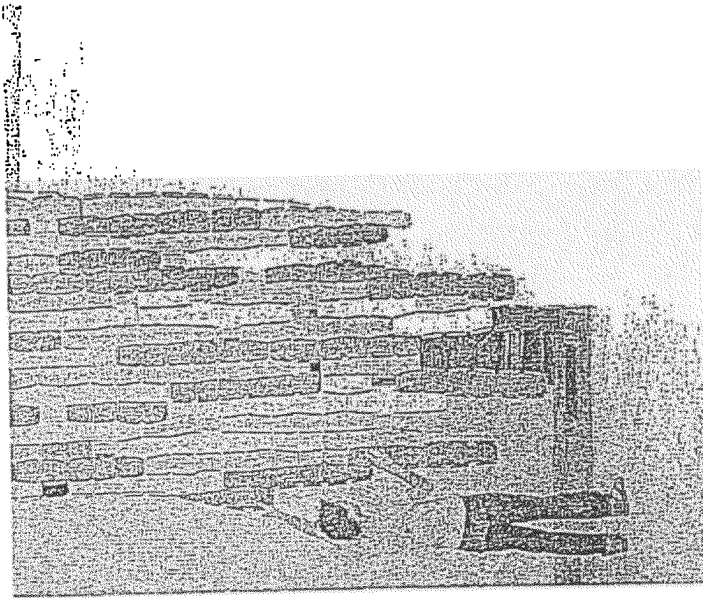


Fig. 15

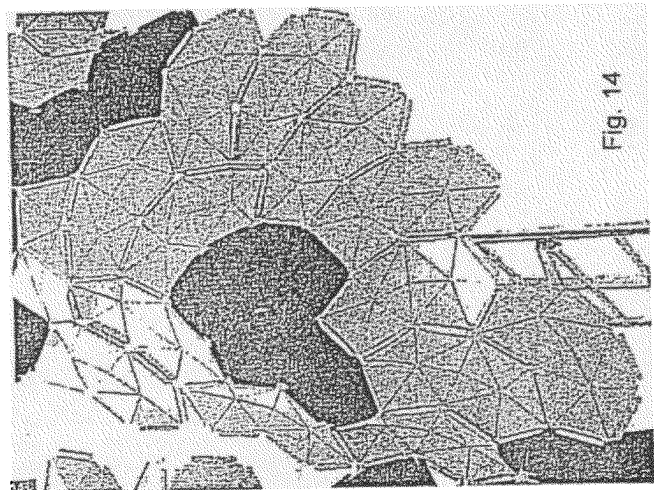


Fig. 14

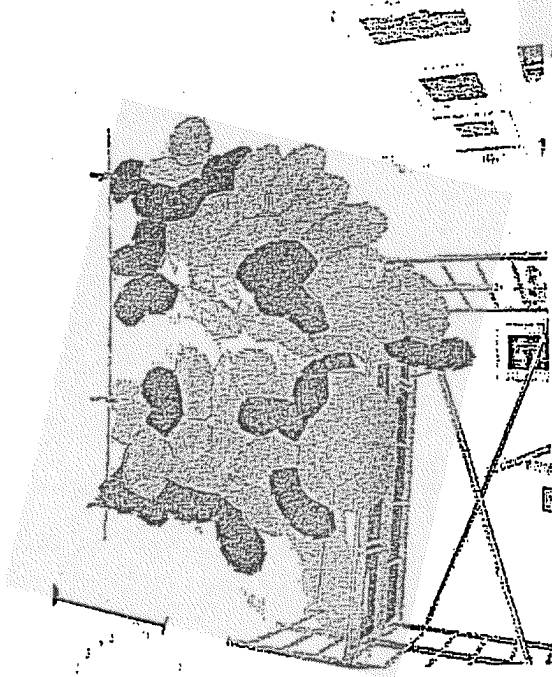


Fig. 12

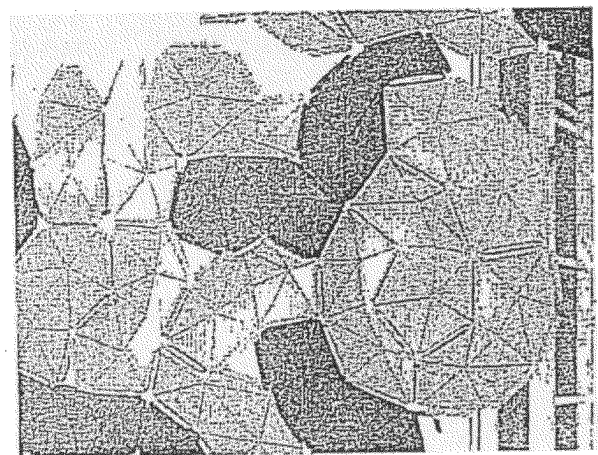


Fig. 13

REFERENCES CITED IN THE DESCRIPTION

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