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(54) **Athletic appliance and cover for an athletic appliance**

(57) An athletic appliance (1) and a cover for an athletic appliance (1), the athletic appliance (1) including a core of a shock-absorbing material surrounded by the cover. The cover includes a top (2), a bottom (3) and one or more side sections (4a-4d), and means (8) for fastening the cover around the core. At least one of the parts (2, 3, 4a-4d) of the cover is removable as the top (2), the

bottom (3) and/or one or more of the side sections (4a-4d) is/are provided with fastening means (8) along its circumference for releasable fastening to corresponding fastening means (8) on the remaining part of the cover.

Hereby it is avoided to replace the entire cover, e.g. due to wear or damage, as one, several or all sides of the cover can readily be replaced without using tools.

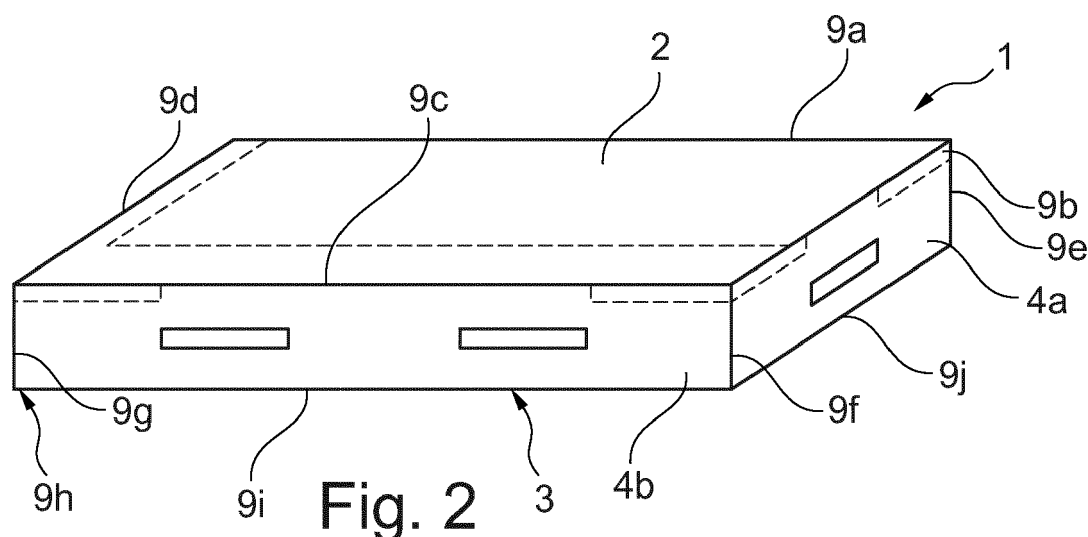


Fig. 2

Description

Field of the Invention

[0001] The present invention concerns a cover for an athletic appliance, the athletic appliance including a core of a shock-absorbing material surrounded by the cover enclosing the core, wherein the cover includes a top, a bottom and one or more side sections, and means for fastening the cover around the core.

[0002] The invention also concerns an athletic appliance including a core which is surrounded by a cover.

Background of the Invention

[0003] In connection with various athletics, e.g. gymnastic exercises, various appliances are normally used.

[0004] Many modern gymnastic appliances are built up of a foam core which is surrounded by a cover. In connection with jumping gymnastics are used e.g. landing mats on which the gymnast lands after performing a jump, e.g. from a trampoline, a vaulting box or similar appliance. In addition there are used air-filled mats or appliances that are kept inflated by a slight overpressure during use.

[0005] In addition to landing mats, a number of different foam-based appliances and accessories for landing mats are known, e.g. vaulting boxes in the form of quadratic or rectangular blocks, or other foam members, e.g. in the form of wedges, semi-cylindrical or fully cylindrical blocks, or so-called side and end boxes. These can minimise the risk of the gymnast being injured in connection with the gymnastic exercise, and the appliances can also be used for assisting the gymnast in learning to perform a certain exercise correctly.

[0006] Landing mats and foam-based gymnastic appliances are usually most often formed by a foam core, optionally including a shock-absorbing layer, surrounded by a cover. The cover is normally made with a top, a bottom and a side section which is welded or sewn together into an annular side section and mounted between the top and the bottom. In order to be able to mount the cover on the core, the cover is provided with zipper, Velcro® tape, or similar mounting means along two or three side sections, e.g. at the joint between the top or bottom and the side sections, or along the middle of the side sections.

[0007] An example of a mat system with a cover for assembling several foam cores in a larger cover is disclosed in GB 1463308 A. Here, assembly of a top part with side sections and a bottom part with side sections is shown along the centre line of the side of the mat. Assembling is performed by a cord that is drawn through a series of thimble rings mounted along the lower edge of the side sections.

[0008] Similar appliances, including particularly landing mats, are also used in other athletic areas, e.g. within athletics in connection with high jumping or pole vaulting,

or corresponding activities, see e.g. US 4057245 A, or when training fall techniques and similar within military sports and/or martial arts.

[0009] The cover is normally made of a plastic or rubber coated fabric material which in the following is called tarpaulin, or alternatively with one or more surfaces of an alternative material.

[0010] The cover can include one or more handles that e.g. are mounted at the side or the side section of the mat or appliance such that it is easy to handle or move the mat or appliance.

[0011] Moreover, the mat may frequently include areas with Velcro tape which enables fastening of mats and/or appliances to each other. The loop part of the Velcro tape can e.g. be mounted on the top or the side section, and the hook part of the Velcro tape can be mounted on a flap or coating which e.g. is mounted in the joint between a top or bottom side and the side section.

[0012] It may occur during use that a handle or a Velcro tape becomes defective, or that the top, bottom or side section is worn or torn apart. This means that the entire appliance, alternatively the entire cover, has to be replaced, entailing increased maintenance costs for the owner, i.e. the institution, school or association responsible for maintenance of the appliances and the mats.

[0013] By the making of the cover for the mat or appliance it is possible to order the mat or appliance with print on one or more sides, e.g. in connection with large athletic events where a sponsor wants a visible advertisement during the event. If the print is to be replaced, e.g. when changing the sponsor, the entire cover is also to be replaced.

Object of the Invention

[0014] The object of the invention is to overcome the above mentioned drawbacks of the prior art athletic appliances and to provide a gymnastic appliance which is simple and cheap to maintain.

[0015] The object of the invention is also to provide a cover for a gymnastic appliance which is easy and cheap to maintain and which provides greater flexibility in the choice of materials, print, colours etc. on the appliance, and greater flexibility in production of the cover/appliance.

Description of the Invention

[0016] This object of the invention is achieved by a cover for an athletic appliance, the athletic appliance including a core of a shock-absorbing material surrounded by the cover enclosing the core, wherein the cover includes a top, a bottom and one or more side sections, and means for fastening the cover around the core. The cover according to the invention is peculiar in that the parts of the cover are replaceable as the top and the bottom are provided with fastening means along their entire circumference for releasable fastening to corre-

sponding fastening means on the side section or sections.

[0017] The object of the invention is furthermore achieved by an athletic appliance including a core of a shock-absorbing material surrounded by a cover, wherein the cover includes a top, a bottom and one or more side sections, and means for fastening the cover around the core. The athletic appliance is peculiar in that the parts of the cover are replaceable as the top and the bottom are provided with fastening means along their entire circumference for releasable fastening to corresponding fastening means on the side section or sections.

[0018] Hereby is achieved that a side, top or bottom of the cover can readily be removed and replaced if it is worn or damaged, without having to replace the entire cover. It is thereby avoided that the entire cover is to be replaced or sent for repair, implying that the athletic appliance cannot be used in the time it takes to produce a new cover or to repair the existing cover. The producer can thereby produce and keep in stock top, bottom and side section(s) as single parts, e.g. in different colours, material qualities etc., and with or without optional standard print. This means that the producer can just forward a new part for replacing the worn or damaged part, and the owner of the athletic appliance, e.g. a school, a sports association or the like, can easily replace the cover parts themselves without using tools.

[0019] In that the top and bottom surfaces of the cover have fastening means around the circumference thereof such that top, bottom and/or side section/side sections can be assembled and replaced individually, e.g. when there is wear on one of the parts, or if e.g. a new sponsor print is desired on one or more surfaces of the athletic appliance, it thereby becomes possible to order a single part of the cover, e.g. as substitution for a defective side section, which just can be shipped as a common package, and the users of the athletic appliance can replace the individual part by themselves without using tools, and thereby do no longer need to be visited by a service assistant. It is also possible to send a single part, e.g. a side section, for repair if it is defective instead of sending the entire appliance by a carrier, or to take the whole cover off the athletic appliance and send it for repair. Thereby it becomes easier, faster and cheaper to repair the covers or to replace sponsor print on the covers without using tools, as described below.

[0020] Besides, this design of the covers for athletic appliances entails a significant improvement of ergonomics when the covers for the athletic appliances are made and/or repaired. This is due to the fact that the worker sewing or repairing the cover parts does not need to handle the whole cover at once by the final sewing together, but instead can handle top, bottom and side sections separately. This means that the worker sewing/repairing the cover can avoid inexpedient work positions during the handling of the cover and is not to handle large and heavy pieces of fabric/tarpaulin during the sewing of the

cover.

[0021] In some cases, specially designed prints can be made on one or both sides of the cover, e.g. for the logo of an athletics association and/or the desired logo or message of a sponsor on the appliance. This is typically done in a large printer and requires a flat material in order to make the print. In connection with the prior art covers, the print is typically made before producing the cover which is sewn or welded together afterwards. In that the cover includes one or more single parts in the form of flat elements it is easy for the producer to provide print on a finished surface of a part of the cover, e.g. a top, a bottom and/or a side section of the cover. This also reduces the delivery time for a new cover significantly, including particularly cover with print. In addition, it will be easy for the owner to change a print, e.g. in connection with an athletics event where a sponsor wants his logo or message shown on the athletic appliance.

[0022] In an embodiment of the invention, the bottom and the top of the cover are removable as the upper and lower edges of the side section or sections are provided with fastening means along its entire circumference for releasable fastening of the bottom on the lower edge of the side section or sections or the top on the upper edge of the side section or sections. Top and bottom can thereby be mounted on the remaining part of the cover which includes corresponding fastening members.

[0023] Hereby is achieved that top and/or bottom can be replaced without the remaining part of the cover needing to be replaced. Also, the side section or sections can be replaced without needing to replace the top and/or the bottom.

[0024] In a further embodiment of the invention, one or more of the side sections are furthermore provided with fastening means along its entire circumference for releasable fastening of the side section on bottom, top and one or more other side sections. The side sections can thereby be mounted on the remaining part of the cover which includes corresponding fastening members.

[0025] Hereby is achieved that a single side section can be replaced without the remaining part of the cover needing to be replaced.

[0026] In a variant of the invention, the fastening means include one or more zippers and/or Velcro tapes which are well-known to most people. This means that common users of the athletic appliance can mount the replaced parts of the cover to the remaining part of the cover without using special tools. It can be avoided thereby that the producer has to send a fitter in order to mount a new or repaired cover. This entails a substantial reduction in costs of maintaining the appliance for the owner, and entails reduced delivery times for finishing repair or delivery of a new cover or a new athletic appliance, e.g. with special colour combinations or special print.

[0027] In a variant of the athletic appliance, the core may include a foamed plastic or rubber material, preferably with a layer of a shock-absorbing material, a fibre-filled core, an air-filled core, or combinations thereof.

[0028] The athletic appliance is e.g. a mat, and will typically include a rectangular or quadratic core material with modest height in relation to width and height, which is surrounded by the cover. Such is typically used by gymnastics for jumping on or landing on after jumping, e.g. from a trampoline, a vaulting box or the like. Alternatively, the athletic appliance is a so-called foam appliance, which e.g. is box-shaped, wedge-shaped, semi-cylindrical or fully cylindrical, typically used in connection with training gymnastic exercises or in setting up obstacles to be scaled, e.g. in connection with play or athletics for children.

[0029] In a further variant of the athletics appliance the cover can surround a plurality of separate cores. If e.g. two or more mats are to be assembled into a longer or thicker mat, they can be held together temporarily by a Velcro tape mounted on the cover, e.g. on top, bottom and/or side sections. If a more permanent joining of two or more mats is desired, a cover adapted in size for purpose can be applied. The risk that the athletic appliances inadvertently slide away from each other during use is thereby reduced since all the athletic appliances, e.g. the mats, are assembled in a common cover.

[0030] The cover is normally made of a plastic or rubber coated fabric material which is here called a tarpaulin. The tarpaulin material ensures i.a. that the mat or appliance is skid-proof such that the gymnast or other users of the appliance cannot slide on the mat or appliance, also ensuring that the mat or appliance will not slide on the base during use. As alternative to tarpaulin there may be used a stretchable fabric or a strong nylon-based fabric, e.g. Beaver Nylon® on one or more sides, including in particular the top which particularly provides increased comfort for the gymnast or the other users of the athletic appliance when the appliance is used for a soft landing, e.g. as fall protection.

[0031] Furthermore, the cover frequently includes areas with Velcro tape, which enables fastening of mats and/or appliances to each other. The loop part of the Velcro tape can e.g. be mounted on the top or the side section, and the hook part of the Velcro tape can be mounted on a flap or coating which e.g. is mounted in or at the joint between a top or bottom side and the side section.

Description of the Drawing

[0032] The invention will now be explained below with reference to the drawing, where:

Fig. 1 shows an isometric view of a traditional athletics appliance in the form of a traditional mat, e.g. for use in jump gymnastics;

Fig. 2 shows an isometric view of an athletics appliance according to the invention exemplified by mat, e.g. for use in jump gymnastics;

Fig. 3 shows an isometric view of an athletic appliance according to the invention where two cores or

two mats with cover are surrounded by a common cover; and

Figs. 4a-4c show an isometric view of examples of variants of athletic appliances according to the invention.

[0033] In the explanation of the Figures, identical or corresponding elements will be provided with the same designations in different Figures. Therefore, no explanation of all details will be given in connection with each single Figure/embodiment.

Detailed Description of Embodiments of the Invention

[0034] In the following, the invention will be described with reference to a mat, though the invention is not limited to athletic appliances in the form of mats as the cover according to the invention also can be used for other foam-based, fibre-filled or air-filled athletic appliances of various forms, of which Figs. 4a-4d show non-limiting examples.

[0035] Fig. 1 shows a traditional mat 1 for use in e.g. jumping gymnastics, also called landing mats.

[0036] The mat is built up around a core (not shown) preferably of foamed plastic or rubber, also called a foam core. Alternatively, the core is a fibre-filled core. The core can possibly comprise a shock-absorbing layer of a more firm foam type. Alternatively, the core can comprise an air-filled core as e.g. known from air jumping tracks, a fibre layer as e.g. known from fibre jumping tracks, or combinations of air- and foam-filled layers.

[0037] The core is surrounded by a cover which typically consists of a top 2, a bottom 3 and a number of side sections 4a-4d.

[0038] The side sections 4a-4d of the cover are normally welded or sewn together into an annular side section and mounted between the top 2 and the bottom 3, as top 2 and bottom 3 are welded together with the annular wall 4 along all side sections of the top/bottom. The joint between the top 2 or bottom 3 and the remaining part of the cover is provided with zipper, Velcro® tape, or similar mounting means 8 along two or three side sections 9a-9c, e.g. at the joint between the top 2 or bottom 3 and the side sections 4a-4d in order to be able to mount the cover on the core. Alternatively, the mounting means are disposed along the centre line 10 on two or three of the side sections 4a-4d.

[0039] Similar appliances, including particularly landing mats, are also used in other athletic areas, e.g. within athletics in connection with high jumping or pole vaulting, or corresponding activities, or when training fall techniques and similar within military sports and/or martial arts.

[0040] The cover is normally made of a plastic or rubber coated fabric material, also called tarpaulin, or alternatively with one or more surfaces of an alternative material.

[0041] The cover can include one or more handles 6

that e.g. are mounted on the sides or the side sections 4a-4d of the mat or appliance 1 such that it is easy to handle or move the mat or appliance.

[0042] In addition, the mat frequently includes areas with Velcro tape 5, which enables fastening of mats and/or appliances 1 to each other. The loop part of the Velcro tape can e.g. be mounted on the top 2 or the side sections 4a-4d, and the hook part of the Velcro tape can be mounted on a side section 4a-4d, the bottom 3 or a not shown flap or coating which e.g. is mounted in or at the joint between the top 2 or bottom 3 and one of the side sections 4a-4d. Alternatively, Velcro tape can be used where each half of the Velcro tape assembly includes loops and hooks, or other types of joining means.

[0043] The athletic appliance 1 can be provided with a print 7 on an area which on Fig. 1 is shown on the top 2 of the mat 1. Also, one or more side sections 4a-4d and/or the bottom 3 can be provided with printed areas.

[0044] Fig. 2 shows an athletic appliance 1 according to the invention, including a cover according to the invention which also includes a top 2, a bottom 3 and a number of side sections 4a-4d.

[0045] At least one of the sides, e.g. the top 2, is connected along all its side edges 9a-9d with the remaining part of the cover by fastening means 8, e.g. in the form of one or more zippers, Velcro tapes or combinations thereof, for releasable fastening to the rest of the cover. Alternatively, the bottom 3 and/or at least one of the side sections 4a-4d are mounted releasably on the remaining part of the cover in a similar way. It is hereby possible for a part of the cover to be dismantled and replaced, e.g. if worn or damaged, if the colour of the side concerned is desired to be changed, or if the print on the side in question is wanted to be changed.

[0046] In a variant, the top 2 and the bottom 3 are releasably mounted on side sections 4a-4d which are e.g. sewn or welded together into an annular side wall 4.

[0047] In a further variant, at least one of the side sections 4a-4d are releasably mounted to one or more other side sections 4a-4d and to the top 2 and the bottom 3. Correspondingly, all parts, i.e. top 2, bottom 3 and all side sections 4a-4d, can be releasably mounted in relation to each other by fastening means 8 as described above.

[0048] These embodiments all allow individual parts of the cover to be replaced separately and that the producer can produce and keep stock of a number of standard elements, e.g. top 2, bottom 3, side section(s) 4a-4d in various colours and materials which rapidly can be assembled into a new cover or be sent to the owner of the athletic appliance if desired to replace a part of the cover, e.g. the top 2. The owner can then by himself dismount the part of the cover to be replaced and insert the new part without using tools.

[0049] Fig. 3 shows an embodiment of the cover where several cores or appliances 1, here mats, are provided in a common cover in order to prevent the appliances from inadvertently sliding away from each other during

use.

[0050] The invention is not limited to mats but may be applied to other athletic appliances 1 that include a core and a removable cover. Figs. 4a-4c show schematic examples of non-limiting, alternative shapes of athletic appliances according to the invention in the form of a block or vaulting box (Fig. 4a), a wedge-shaped mat or block (Fig. 4b) and a semi-cylindrical block (Fig. 4c), where the number of side sections 4a-4d on the athletic appliance varies depending on the shape of the appliance, and where the top 2, bottom 3 and side sections 4a-4d are connected by fastening means 8 as described above. Figs. 4a-4c, however, are not to be regarded as limiting to the shape of the athletic appliance 1 as other geometrical shapes of the appliance are feasible as well.

Claims

1. A cover for an athletic appliance (1), the athletic appliance including a core of a shock-absorbing material surrounded by the cover enclosing the core, wherein the cover includes a top (2), a bottom (3) and one or more side sections (4a-4d), and means (8) for fastening the cover around the core, **characterised in** the parts (2, 3, 4) of the cover are individually replaceable as the top (2) and the bottom (3) are provided with fastening means (8) along its entire circumference (9a-9d) for releasable fastening to corresponding fastening means (8) on the side section or sections (4a-4d).
2. A cover according to claim 1, **characterised in that** the bottom (3) and the top (2) of the cover are removable as the upper and lower edge(s) of the side section or sections (4a-4d) is/are provided with fastening means (8) for releasable fastening of the bottom (3) on the lower edge of the side section or sections (4a-4d) and releasable fastening of the top (2) on the upper edge of the side section or sections (4a-4d).
3. A cover according to claim 1 or 2, **characterised in that** one or more of the side sections (4a-4d) is/are provided with fastening means (8) along its entire circumference for releasable fastening of the side section (4a-4d) on the bottom (3), the top (2) and one or more other side sections (4a-4d).
4. A cover according to any of preceding claims 1 to 3, **characterised in that** the fastening means (8) include one or more zippers and/or Velcro tapes.
5. An athletic appliance (1) including a core of a shock-absorbing material surrounded by a cover, wherein the cover includes a top (2), a bottom (3) and one or more side sections (4a-4d), and means (8) for fastening the cover around the core, **characterised in**

that the parts (2, 3, 4) of the cover are replaceable as the top (2) and the bottom (3) are provided with fastening means (8) along their entire circumference (9a-9d) for releasable fastening to corresponding fastening means, the side section or sections (4a-4d). 5

6. An athletic appliance (1) according to claim 5, **characterised in that** the bottom and the top of the cover are removable as the upper and lower edges of the side section or sections (4a-4d) are provided with fastening means (8) for releasable fastening of the bottom (3) on the lower edge of the side section or sections (4a-4d) and releasable fastening of the top (2) on the upper edge of the side section or sections (4a-4d). 10 15
7. An athletic appliance according to claim 5 or 6, **characterised in that** one or more of the side sections (4a-4d) is/are provided with fastening means (8) along its entire circumference for releasable fastening of the side section (4a-4d) on the bottom (3), the top (2) and at least one other side section (4a-4d). 20
8. An athletic appliance according to any of preceding claims 5 to 7, **characterised in that** the fastening means (8) include one or more zippers and/or Velcro tapes. 25
9. An athletic appliance according to any of preceding claims 5 to 8, **characterised in that** the core includes an air-filled core, a fibre-filled core, a foamed plastic or rubber material, and in addition preferably including a layer of a shock-absorbing material or combinations thereof. 30 35
10. An athletic appliance according to any of preceding claims 5 to 9, **characterised in that** the core surrounds one or more separate cores. 40

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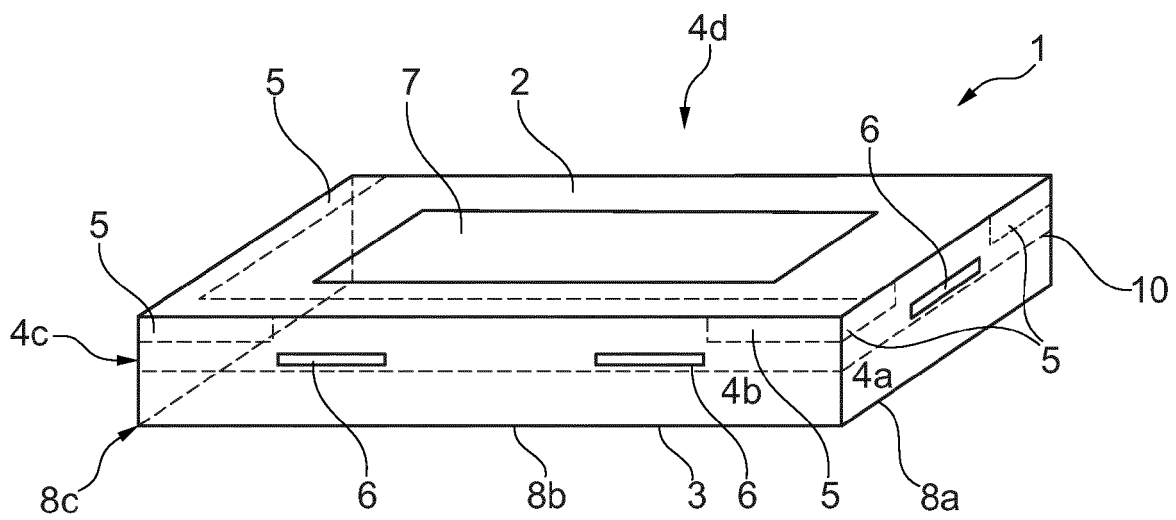
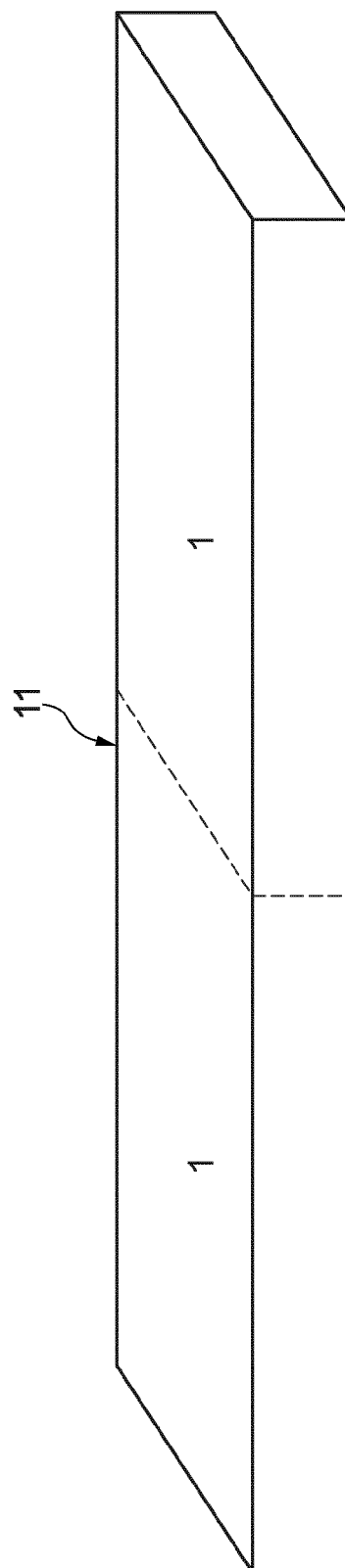
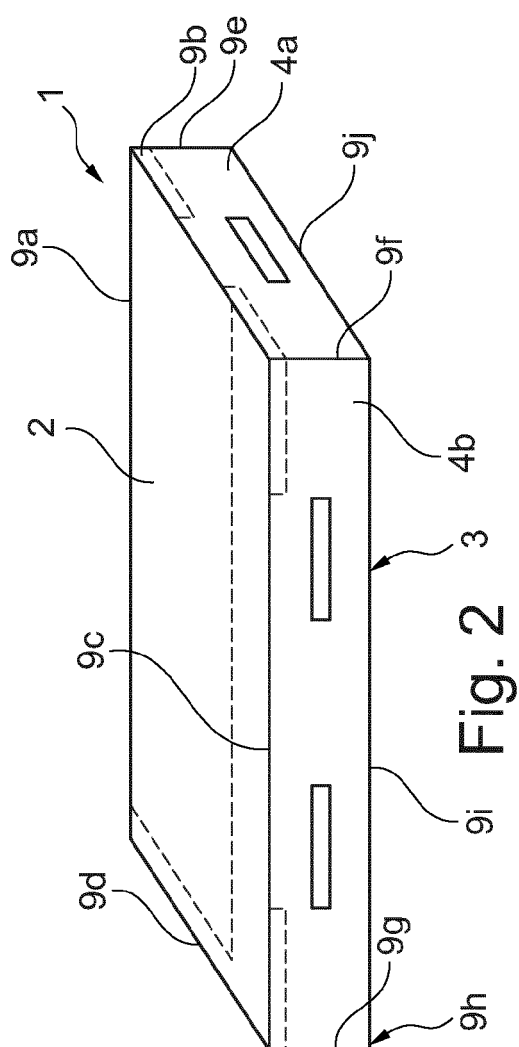


Fig. 1



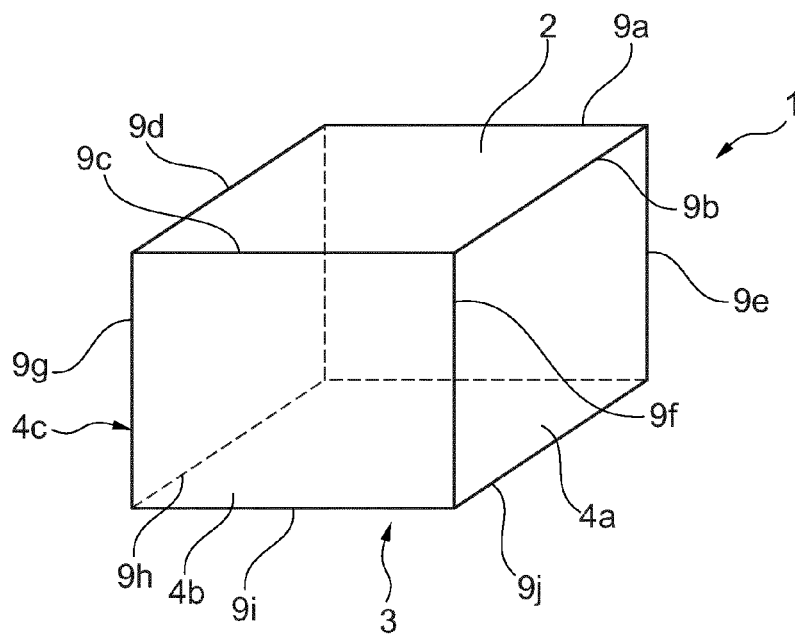


Fig. 4a

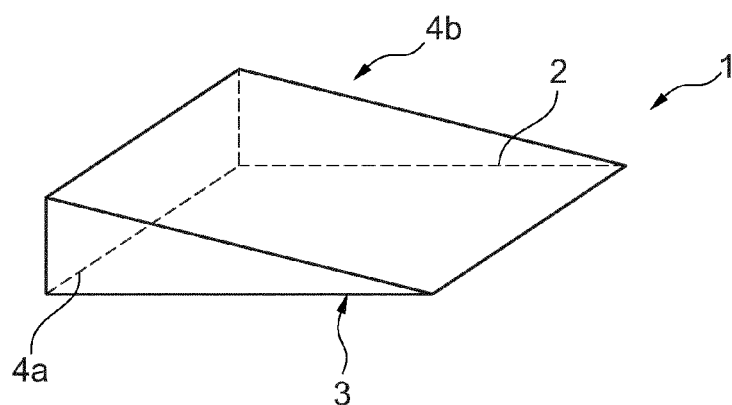


Fig. 4b

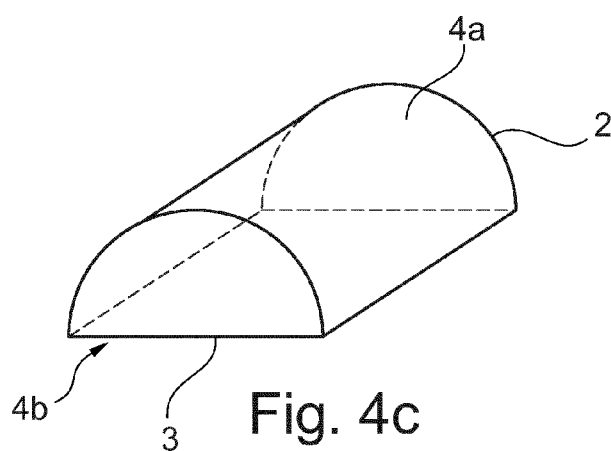


Fig. 4c



EUROPEAN SEARCH REPORT

 Application Number
EP 14 18 7041

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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 6 February 2015	Examiner Herry, Manuel
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 03.02 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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