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(54) A STRIP CEILING SYSTEM

(57) The present invention relates to a strip ceiling system comprising a sheet and a plurality of elongate strips. A part of the side face of an individual strip is sized and configured to fit and fasten into an individual longitudinal groove in the sheet surface of the sheet. When mounted in the parallel longitudinal grooves, each elongate strip is configured such that a space is formed between neighboring elongate strips, thereby allowing the sheet to be visible there through.

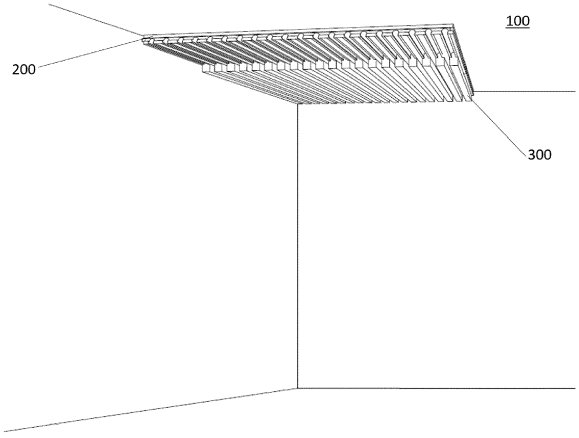

Fig. 1

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Description

Technical field of the invention

[0001] The present invention relates to ceiling systems.

Background of the invention

[0002] When designing houses, whether it is a special designed or a standard house, the architect often chooses a ceiling of plaster or wood profiles. Wood strip ceilings are beautiful and very architectural. Despite this, they are not used to a large degree. This is primarily because it is a solution, which is quite difficult to mount, and thus quite costly in terms of labor.

[0003] It is therefore desirable to provide an easy-to-mount ceiling system for wood strip ceilings.

Summary of the invention

[0004] The inventor has found that strip ceiling systems where the elongate strips are made of other materials than wood will also result in a beautiful ceiling.

[0005] A first aspect relates to a strip ceiling system, the system comprising:

- a sheet having opposed first and second sheet surface sides, and at least three sheet side edges; and
- a plurality of elongate strips having a side face, and first and second spaced ends;
  wherein a plurality of parallel longitudinal grooves are formed in the first sheet surface side of the sheet;
  wherein the second sheet surface side of the sheet is configured for facing an existing wall and/or ceiling of a room;
  wherein a part of the side face of an individual strip is sized and configured to fit and fasten into an individual longitudinal groove in the first sheet surface side of the sheet.

[0006] In one or more embodiments, the strip is made from a material selected from wood, polymer, metal, and mixtures thereof, such as wood/polymer/metal strips.

[0007] A second aspect relates to a strip ceiling system, the system comprising:

- a sheet having opposed first and second sheet surface sides, and at least three sheet side edges; and
- a plurality of elongate strips having a side face, and first and second spaced ends;
  wherein a plurality of parallel longitudinal grooves are formed in the first sheet surface side of the sheet;
  wherein the second sheet surface side of the sheet is configured for facing an existing wall and/or ceiling of a room;
  wherein a part of the side face of an individual strip is sized and configured to fit and fasten into an individual longitudinal groove in the first sheet surface side of the sheet;
  wherein one or more spring clips are positioned within each longitudinal groove, the spring clip being sized and configured for receiving a part of the side face of an individual strip.

[0008] A third aspect relates to a strip ceiling system, the system comprising:

- a sheet having opposed first and second sheet surface sides, and at least three sheet side edges; and
- a plurality of elongate strips having a side face, and first and second spaced ends;
  wherein a plurality of parallel longitudinal grooves are formed in the first sheet surface side of the sheet;
  wherein the second sheet surface side of the sheet is configured for facing an existing wall and/or ceiling of a room;
  wherein a part of the side face of an individual strip is sized and configured to fit and fasten into an individual longitudinal groove in the first sheet surface side of the sheet.

[0009] In one or more embodiments, one or more spring clips are positioned within each longitudinal groove, the spring clip being sized and configured for receiving a part of the side face of an individual strip.

[0010] In one or more embodiments, when mounted in the parallel longitudinal grooves, each elongate strip is configured such that a space is formed between neighboring elongate strips, thereby allowing the sheet to be visible there through.

[0011] A fourth aspect relates to a strip ceiling system, the system comprising:

- a foam sheet having opposed first and second sheet surface sides, and at least three sheet side edges; and
- a plurality of elongate strips having a side face, and first and second spaced ends;
  wherein a plurality of parallel longitudinal grooves are formed in the first sheet surface side of the foam sheet;
  wherein the second sheet surface side of the foam sheet is configured for facing an existing wall and/or ceiling of a room;
  wherein a part of the side face of an individual strip is sized and configured to fit and fasten into an individual longitudinal groove in the first sheet surface side of the foam sheet.

[0012] In one or more embodiments, when mounted in the parallel longitudinal grooves, each elongate strip is configured such that a space is formed between neighboring elongate strips, thereby allowing the sheet to be visible there through.

[0013] A fifth aspect relates to a strip ceiling system,

the system comprising:

- a sheet having opposed first and second sheet surface sides, and at least three sheet side edges; and
- a plurality of elongate strips having a side face, and first and second spaced ends;
  wherein a plurality of parallel longitudinal grooves are formed in the first sheet surface side of the sheet;
  wherein the second sheet surface side of the sheet is configured for facing an existing wall and/or ceiling of a room;
  wherein a part of the side face of an individual strip is sized and configured to fit and fasten into an individual longitudinal groove in the first sheet surface side of the sheet;
  wherein one or more spring clips are positioned within each longitudinal groove, the spring clip being sized and configured for receiving a part of the side face of an individual strip;
  wherein when mounted in the parallel longitudinal grooves, each elongate strip is configured such that a space is formed between neighboring elongate strips, thereby allowing the sheet to be visible there through.

[0014] A sixth aspect relates to a strip ceiling system, the system comprising:

- a sheet having opposed first and second sheet surface sides, and at least three sheet side edges; and
- a plurality of elongate strips having a side face, and first and second spaced ends;
  wherein a plurality of parallel longitudinal grooves are formed in the first sheet surface side of the sheet;
  wherein the second sheet surface side of the sheet is configured for facing an existing wall and/or ceiling of a room;
  wherein a part of the side face of an individual strip is sized and configured to fit and fasten into an individual longitudinal groove in the first sheet surface side of the sheet;
  wherein when mounted in the parallel longitudinal grooves, each elongate strip is configured such that a space is formed between neighboring elongate strips, thereby allowing the sheet to be visible there through.

In one or more embodiments, one or more spring clips are positioned within each longitudinal groove, the spring clip being sized and configured for receiving a part of the side face of an individual strip. The spring clips are thereby concealed within the longitudinal groove.

[0015] The term "sheet" as used in this application means a body whose thickness is only small in relation to its length and width. The term "sheet surface" is meant as the two outer faces of the sheet that are perpendicular to the direction of the sheet thickness. The term "sheet side edge" is meant as the remaining faces of the sheet. Preferably, the sheet side edges (three or more, depending on the form) are parallel to the direction of the sheet thickness.

[0016] The principles behind such a system is to plate an existing wall and/or ceiling of a room with one or more sheets, preferably foam sheets or sheets made from a cement-bonded wood wool. Subsequently, strips are fastened into the longitudinal grooves, preferably by the aid of spring clips. Thereby, the overall appearance of the strip ceiling is not disturbed by visible screw heads from screws used to fasten the strips to the existing wall and/or ceiling of a room. Furthermore, the use of a sheet according to the present invention obviates the need to paint or plaster the existing ceiling before fastening a strip ceiling.

[0017] Preferably, the system comprises a plurality of sheets for easier handling and mounting.

[0018] The individual sheet has opposed first and second surface sides as evident from normal plates or sheets.

[0019] The individual elongate strip has first and second spaced ends, spaced lengthwise of the elongate strip. The remaining face of the strip is the side face.

[0020] Preferably, the elongate strip is an elongate wood strip.

[0021] In one or more embodiments, an individual strip is sized and configured for releasable fastening into an individual spring clip positioned within a longitudinal groove.

[0022] Preferably, the sheets have four sheet side edges such that the sheet is squared for easier mounting and assembling. However, the sheets may e.g. also be of triangular or pentagonal form, thereby having three or five sheet side edges respectively.

[0023] In one or more embodiments, a part of the side face of an individual strip is sized and configured for releasable fastening into an individual longitudinal groove and preferably, the spring clips positioned therein, in the first sheet surface side of the sheet. This may be an advantage, if a strip needs replacement or to be cleaned or painted. This function is inherent for embodiments, where the sheet material is compressible and automatically retains its original shape. A "conformable, compressible" material is a material that readily deforms when subjected to an applied stress, but will tend to elastically recover when the stress is removed. In one or more embodiments, the sheet material is conformable, compressible.

[0024] In one or more embodiments, the system comprises a plurality of sheets; wherein the sheet side edges of the individual sheet are configured as a part of a joint for joining abutting sheets together. This is an advantage when mounting the ceiling system.

[0025] In one or more embodiments, the system comprises a plurality of sheets; wherein a sheet side edge of a first sheet comprises an elongate recess formed in and defined by the sheet material, and wherein a sheet side edge of a second sheet comprises a tongue formed in and defined by the foam sheet material; wherein the

tongue engages in the elongate recess in the joined state.

[0026] In one or more embodiments, the individual longitudinal groove has a C-shaped transverse cross-section.

[0027] In one or more embodiments, the individual longitudinal groove has a transverse cross-section that is substantially circular.

[0028] In one or more embodiments, the individual longitudinal groove has a U-shaped transverse cross-section.

[0029] In one or more embodiments, a part of the individual longitudinal groove wall is configured as a tongue.

[0030] In one or more embodiments, a part of the side face of an individual strip is configured as a protrusion comprising an elongate recess extending along the length of the strip; and wherein a part of the individual longitudinal groove wall is configured as a tongue; wherein the tongue engages in the elongate recess in the joined state.

[0031] In one or more embodiments, the sheet is made from a foam material, such as an open or closed cell material selected from the group consisting of melamine-resin foam, polyurethane foam, polystyrene foam, inorganic foam, silicone foam, and mixtures thereof.

[0032] In one or more embodiments, the sheet is made from a cement-bonded wood wool, such as Troldtekt®. This material is particularly preferred for its sound dampening/absorbing effect on sound waves.

[0033] In one or more embodiments, the system further comprises fastening means for attaching the sheet to an existing wall and/or ceiling of a room. The spring clip may be configured with a channel for receiving such fastening means. The spring clip will thereby be further fixed within the individual longitudinal groove, such that the strip can be released therefrom without risk of damaging the sheet.

[0034] Another aspect relates to a sheet for a strip ceiling system, the sheet having opposed first and second sheet surface sides, and at least three sheet side edges; wherein a plurality of parallel longitudinal grooves are formed in the first sheet surface side of the sheet.

[0035] In one or more embodiments, one or more sheet side edges comprises an elongate recess formed in and defined by the sheet material and/or a tongue formed in and defined by the sheet material.

[0036] Another aspect relates to the use of a sheet for building a strip ceiling, the sheet having opposed first and second sheet surface sides, and at least three sheet side edges; wherein a plurality of parallel longitudinal grooves are formed in the first sheet surface side of the sheet.

[0037] In one or more embodiments, each elongate strip is configured such that the width of the space between neighboring elongate strips is within the range of 15-40 mm, such as within the range of 16-39 mm, e.g. within the range of 17-38 mm, such as within the range of 18-37mm, e.g. within the range of 19-36 mm, such as within the range of 20-35 mm, e.g. within the range of 21-34 mm, such as within the range of 22-33 mm, e.g. within the range of 23-32 mm, such as within the range of 24-31 mm, e.g. within the range of 25-30 mm, such as within the range of 26-29 mm, preferably within the range of 15-25 mm. This width is a particularly advantage for dampening/absorbing sound waves.

[0038] In one or more embodiments, each elongate strip is configured such that the depth of the space between neighboring elongate strips is within the range of 20-60 mm, such as within the range of 21-59 mm, e.g. within the range of 22-58 mm, such as within the range of 23-57mm, e.g. within the range of 24-56 mm, such as within the range of 25-55 mm, e.g. within the range of 26-54 mm, such as within the range of 27-53 mm, e.g. within the range of 28-52 mm, such as within the range of 29-52 mm, e.g. within the range of 30-51 mm, such as within the range of 31-50 mm, e.g. within the range of 32-49 mm, such as within the range of 33-48 mm, e.g. within the range of 34-47 mm, such as within the range of 35-46 mm, e.g. within the range of 36-45 mm, such as within the range of 37-44 mm, e.g. within the range of 38-43 mm, such as within the range of 39-42 mm, e.g. within the range of 40-41 mm, preferably within the range of 20-40 mm. This depth is a particularly advantage for dampening/absorbing sound waves.

[0039] In one or more embodiments, the width of an individual elongate strip is within the range of 15-40 mm, such as within the range of 16-39 mm, e.g. within the range of 17-38 mm, such as within the range of 18-37mm, e.g. within the range of 19-36 mm, such as within the range of 20-35 mm, e.g. within the range of 21-34 mm, such as within the range of 22-33 mm, e.g. within the range of 23-32 mm, such as within the range of 24-31 mm, e.g. within the range of 25-30 mm, such as within the range of 26-29 mm, preferably within the range of 15-25 mm.

[0040] In one or more embodiments, each elongate strip is configured such that the depth of the space between neighboring elongate strips is within the range of 20-60 mm, and wherein the width of the space between neighboring elongate strips is within the range of 15-40 mm.

[0041] In one or more embodiments, the spring clip is a retaining spring clip.

[0042] In one or more embodiments, the spring clip is a retaining spring clip comprising one or more barbed taps.

[0043] In one or more embodiments, one or more barbed taps are extending outwardly from the outer face of the spring clip.

[0044] In one or more embodiments, one or more barbed taps are extending outwardly from the inner face of the spring clip.

[0045] In one or more embodiments, one or more barbed taps are extending outwardly from the outer face of the spring clip, while one or more barbed taps are extending outwardly from the inner face of the spring clip.

[0046] It should be noted that embodiments and features described in the context of one of the aspects of

the present invention also apply to the other aspects of the invention.

Brief description of the figures

[0047]

Figure 1 shows a strip ceiling system in accordance with various embodiments of the invention;

Figure 2A shows a sheet in accordance with various embodiments of the invention;

Figure 2B shows a cross-section of a sheet in accordance with various embodiments of the invention, where a few strips have been inserted;

Figure 3A shows elongate strips in accordance with various embodiments of the invention;

Figure 3B shows a cross-section of an elongate strip in accordance with various embodiments of the invention;

Figure 4 shows a cross-section of a sheet in accordance with various embodiments of the invention, where spring clips are positioned within the longitudinal grooves;

Figure 5 shows a strip ceiling system in accordance with various embodiments of the invention; and

Figure 6 shows a strip ceiling system in accordance with various embodiments of the invention where the spring clip is a retaining spring clip.

Detailed description of the invention

[0048] Referring to Figure 1, the general scheme of the invention is shown. Figure 1 shows a strip ceiling system 100 comprising a sheet 200 and a plurality of elongate strips 300. The sheet is attached to an existing wall and ceiling of a room. The elongate strips 300 are fastened into longitudinal grooves in the sheet.

[0049] Figure 2A shows an individual sheet 200, viewed from the second sheet surface side 220. The second sheet surface side 220 is configured for facing an existing wall and/or ceiling of a room, such that the entire surface will be in contact with the ceiling. This is an advantage if the sheet is glued onto the ceiling. The sheet 200 is rectangular, and thus has four sheet side edges 230 (only two are marked). The sheet side edges 230 are configured as a part of a joint for joining abutting sheets together. Two side edges comprises an elongate recess 232 formed in and defined by the sheet material; and the two other side edges comprises a tongue 234 formed in and defined by the sheet material. When two individual sheets are joined, the tongue 234 of one sheet engages in the elongate recess 232 of another sheet.

[0050] Figure 2B shows a cross-section of a sheet 200, where a few strips 300 have been inserted into a plurality of parallel longitudinal grooves 240 formed in the first sheet surface side 210 of the sheet 200. One side edge comprises an elongate recess 232 formed in and defined by the sheet material; and another side edges comprises a tongue 234 formed in and defined by the sheet material. A part of the individual longitudinal groove wall is configured as a tongue 242 for engaging with an elongate recess 312 (Figure 3A) extending along the length of the strip 300.

The width 710 of the space 700 between neighboring elongate strips are preferably within the range of 15-40 mm. The depth 720 of the space 700 between neighboring elongate strips is preferably within the range of 20-60 mm. The width 730 of elongate strip is preferably within the range of 15-40 mm.

[0051] Figure 3A shows elongate strips 300 in accordance with various embodiments of the invention. The elongate strip 300 has a side face 302, and first 304 and second 306 spaced ends.

A part of the side face 302 of an individual strip 300 is sized and configured to fit and fasten into an individual longitudinal groove 240 in the first sheet surface side 210 of the sheet 200. This part is here shown configured as a protrusion 310 comprising an elongate recess 312 extending along the length of the strip 300. A cross-section of an elongate strip is shown in Figure 3B.

[0052] Figure 4 shows a cross-section of a sheet 200 in accordance with various embodiments of the invention, where spring clips 400 are positioned within the longitudinal grooves. The sheet is fastened to an existing wall and/or ceiling 600 of a room by fastening means 500. The spring clips are fastened to the sheet 200 with the same fastening means 500.

[0053] Figure 5 shows a strip ceiling system in accordance with various embodiments of the invention.

[0054] Figure 6 shows a strip ceiling system in accordance with various embodiments of the invention where the spring clip is a retaining spring clip. One or more barbed taps 420 are extending outwardly from the outer face 440 of the spring clip, while one or more barbed taps 420 are extending outwardly from the inner face 430 of the spring clip.

References

[0055]

100	Strip ceiling system
200	Sheet
210	First sheet surface side
220	Second sheet surface side
230	Sheet side edge
232	Elongate recess
234	Tongue
240	Longitudinal groove

242 Tongue
300 Strip
302 Side face
304 First end
306 Second end
310 Protrusion
312 Elongate recess
400 Spring clip
410 Tongue
420 Barbed tap
430 Inner face
440 Outer face
500 Fastening means
600 Existing wall and/or ceiling of a room
700 Space
710 Width of the space between neighboring elongate strips
720 Depth of the space between neighboring elongate strips
730 Width of elongate strip

Claims

1. A strip ceiling system (100), the system (100) comprising:

- a sheet (200) having opposed first (210) and second (220) sheet surface sides, and at least three sheet side edges (230); and
- a plurality of elongate strips (300) having a side face (302), and first (304) and second (306) spaced ends;

wherein a plurality of parallel longitudinal grooves (240) are formed in the first sheet surface side (210) of the sheet (200);
wherein the second sheet surface side (220) of the sheet (200) is configured for facing an existing wall and/or ceiling of a room;
wherein a part of the side face (302) of an individual strip (300) is sized and configured to fit into an individual longitudinal groove (240) in the first sheet surface side (210) of the sheet (200);
wherein one or more spring clips (400) are positioned within each longitudinal groove (240), the spring clip (400) being sized and configured for receiving a part of the side face (302) of an individual strip (300); wherein the strip is made from a material selected from wood, polymer, metal, and mixtures thereof.

2. A strip ceiling system (100) according to claim 1, wherein when mounted in the parallel longitudinal grooves (240), each elongate strip (300) is configured such that a space (700) is formed between neighboring elongate strips (300), thereby allowing the sheet (200) to be visible there through.

3. A strip ceiling system (100) according to any one of the claims 1-2, wherein each elongate strip (300) is configured such that the width (710) of the space between neighboring elongate strips (300) is within the range of 15-40 mm.

4. A strip ceiling system (100) according to any one of the claims 1-3, wherein each elongate strip (300) is configured such that the depth (720) of the space between neighboring elongate strips (300) is within the range of 20-60 mm.

5. A strip ceiling system (100) according to any one of the claims 1-4, wherein the width (730) of an individual elongate strip (300) is within the range of 15-40 mm.

6. A strip ceiling system (100) according to any one of the claims 1-5, wherein the spring clip (400) is a retaining spring clip comprising one or more barbed taps (420).

7. A strip ceiling system (100) according to claim 6, wherein one or more barbed taps (420) are extending outwardly from the outer face (440) of the spring clip (400).

8. A strip ceiling system (100) according to any one of the claims 6-7, wherein one or more barbed taps (420) are extending outwardly from the inner face (430) of the spring clip (400).

9. A strip ceiling system (100) according to any one of the claims 1-8, wherein a part of the side face (302) of an individual strip (300) is sized and configured for releasable fastening into an individual spring clip (400) positioned within a longitudinal groove (240).

10. A strip ceiling system (100) according to any one of the claims 1-9, wherein the sheet (200) is made from a cement-bonded wood wool.

11. A strip ceiling system (100) according to any one of the claims 1-10, wherein a part of the side face (302) of an individual strip (300) is configured as a protrusion (310) comprising an elongate recess (312) extending along the length of the strip (300); and wherein a part of the spring clip (400) is configured as a tongue (410); wherein the tongue engages (410) in the elongate recess (312) in the joined state.

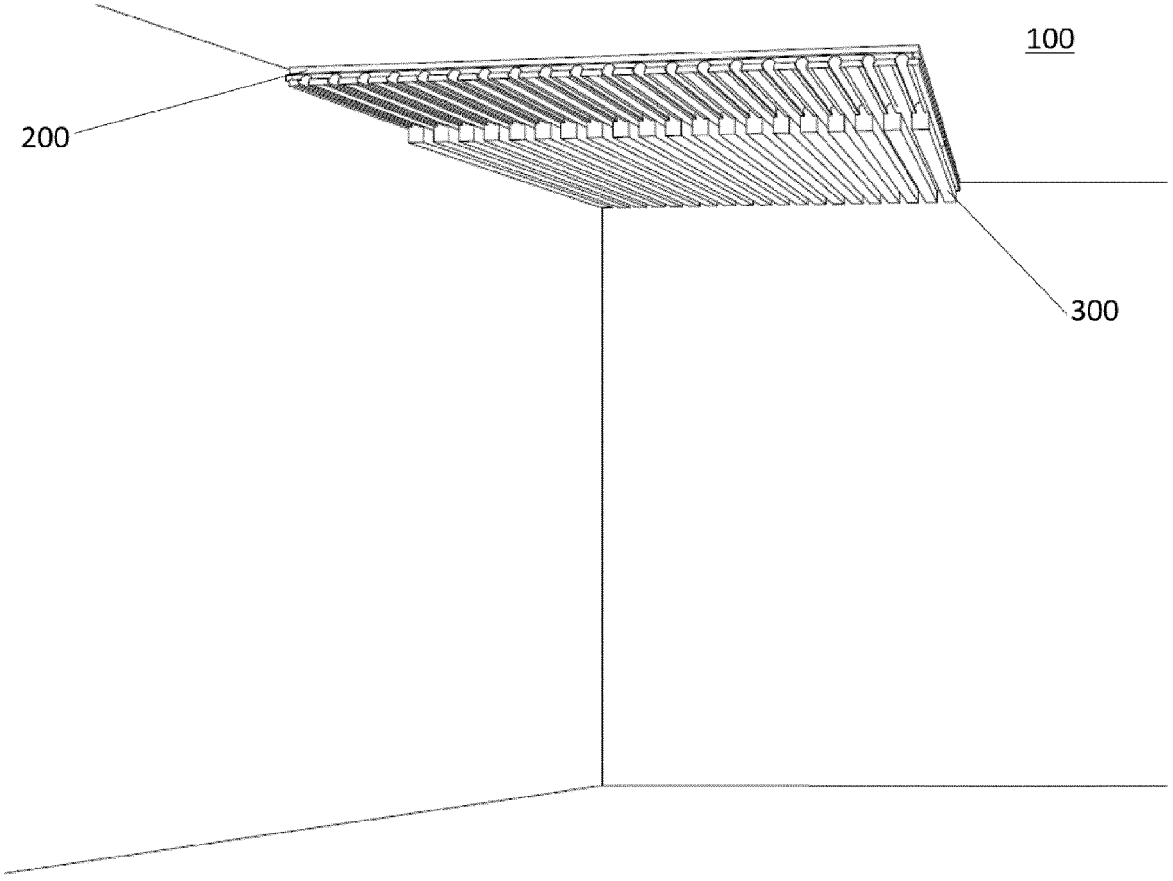

Fig. 1

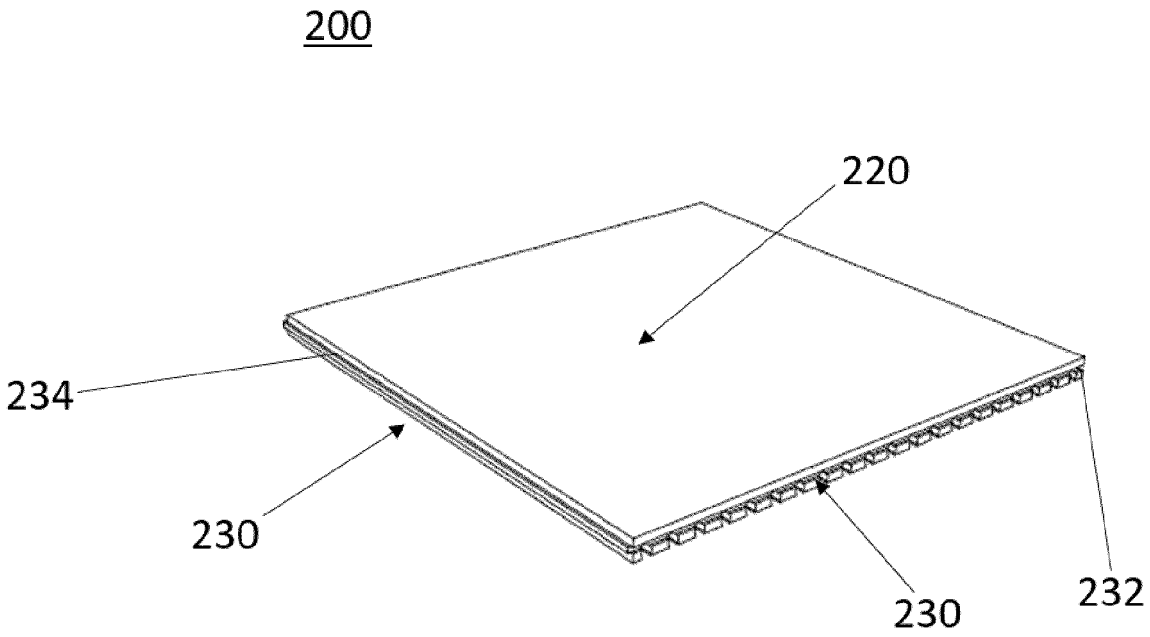

Fig. 2A

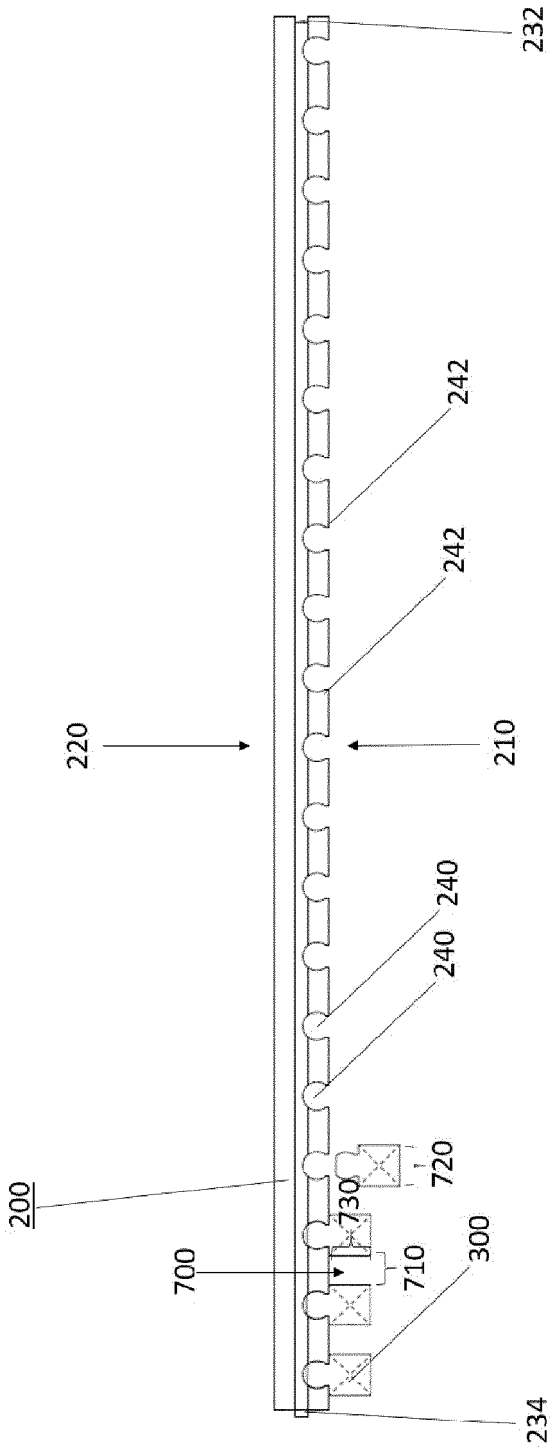

Fig. 2B

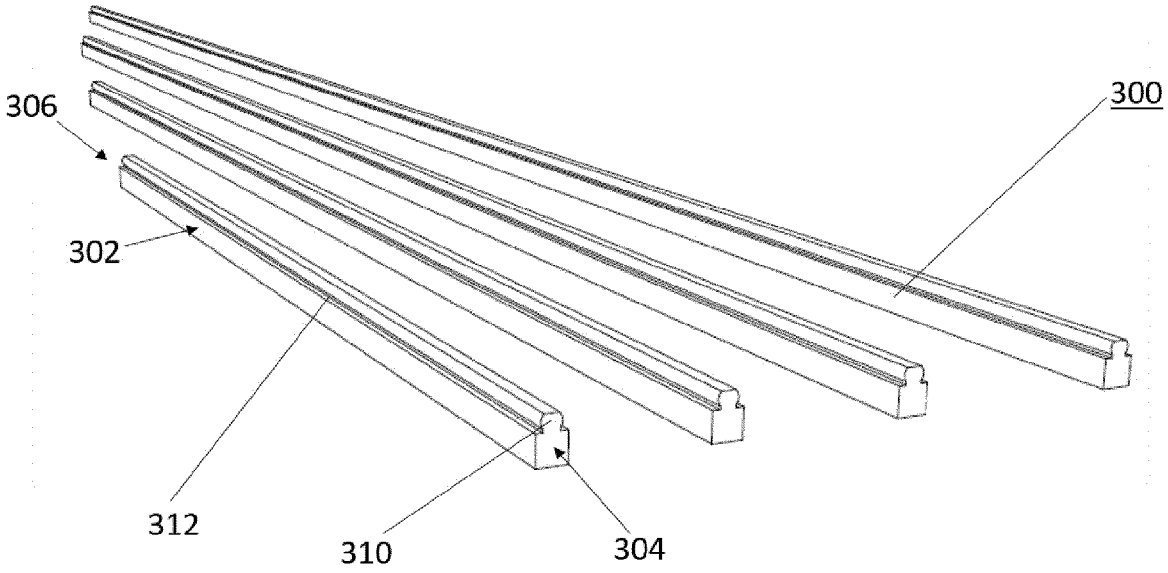

Fig. 3A

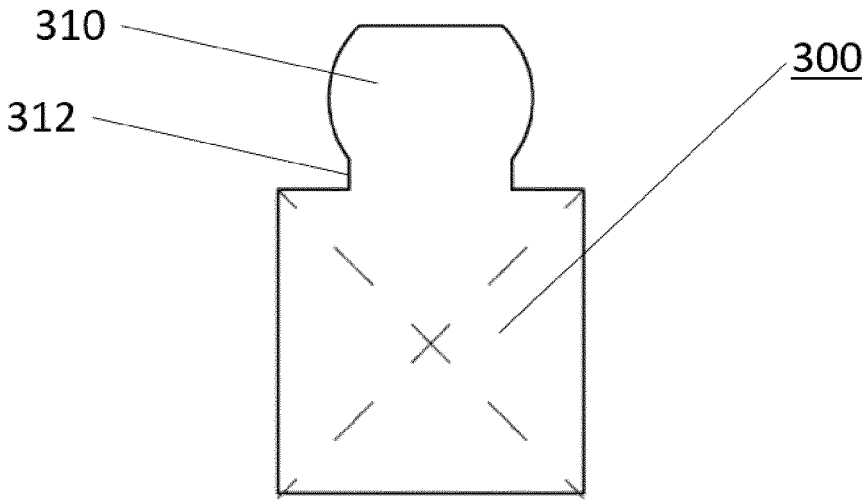

Fig. 3B

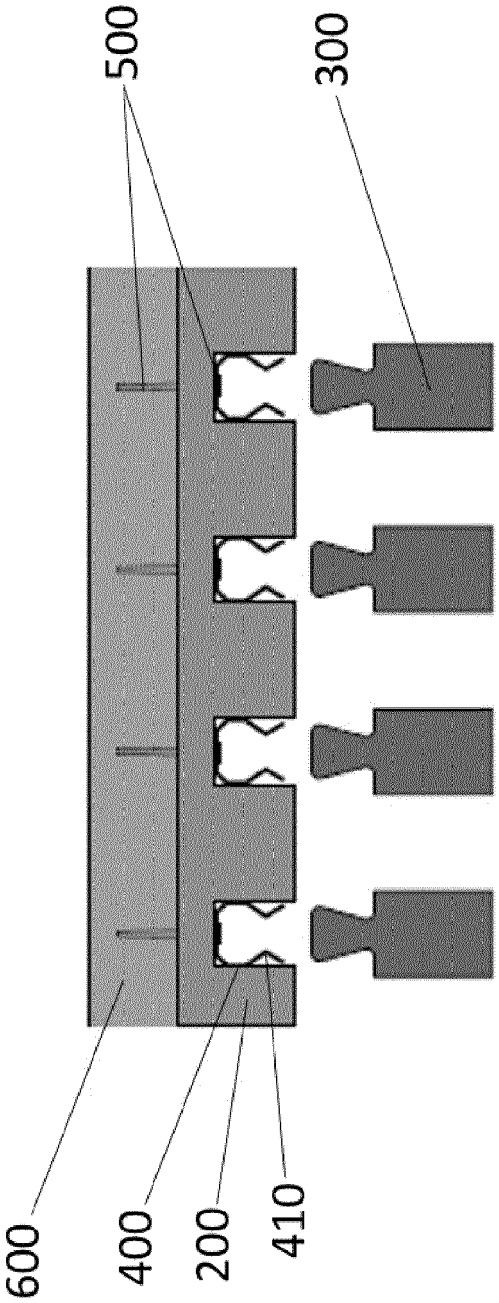

Fig. 4

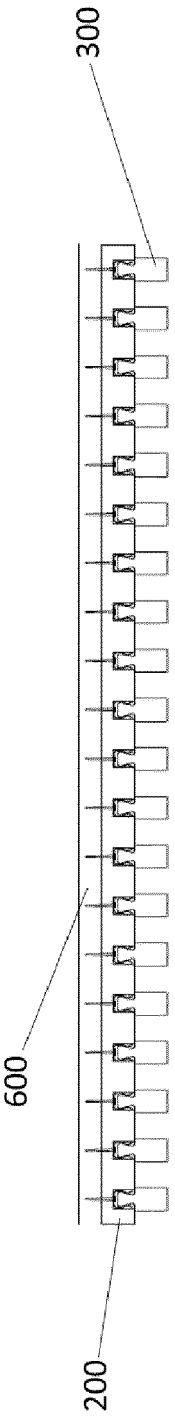

Fig. 5

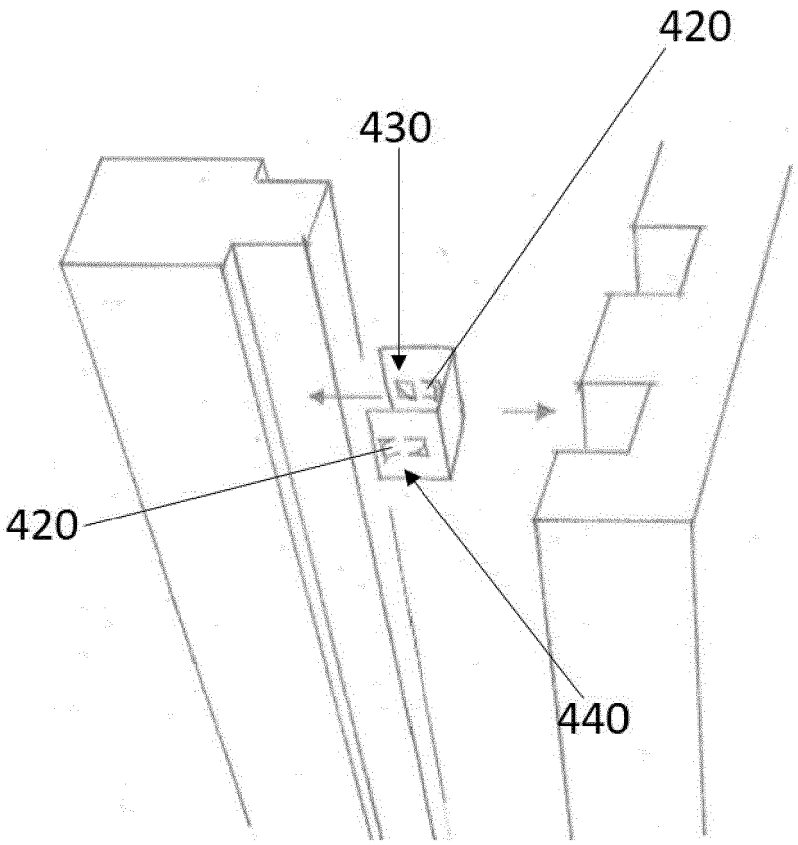

Fig. 6

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EUROPEAN SEARCH REPORT

Application Number
EP 16 18 5478

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X A	DE 10 2009 009987 A1 (SCHULTE GUIDO [DE]) 2 September 2010 (2010-09-02) * paragraph [0018] - paragraph [0020]; figures 1-11 * * paragraph [0041] *	1-5,9,10 6-8,11	INV. E04F13/08 E04F13/10 E04B9/36
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TECHNICAL FIELDS SEARCHED (IPC)

E04F
E04B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	7 November 2016	Manera, Marco

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 16 18 5478

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