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(54) **PAINTING METHOD**

(57) A painting method provides for using a painting device (100) comprising: a handle (1), a supporting rod (2), and a cylindrical roller (6) rotatably mounted on the supporting rod (2); the roller (6) comprising an outer surface (40) from which a plurality of projections (5) in the shape of a truncated pyramid with a square base protrudes, being distributed along rows (R) and columns (C); the roller (6) being suitable for rolling over a layer of fresh paint applied to a surface of a wall or substrate, so that the projections (5) compress and reduce the thickness of the layer of fresh paint, leaving prints (7) with an irregular contour and a different shade of color with respect to a color (8) of the layer of fresh paint that has not been in contact with said projections (5) of the roller, so that the painted surface has an appearance similar to that of a fabric used for jute bags.

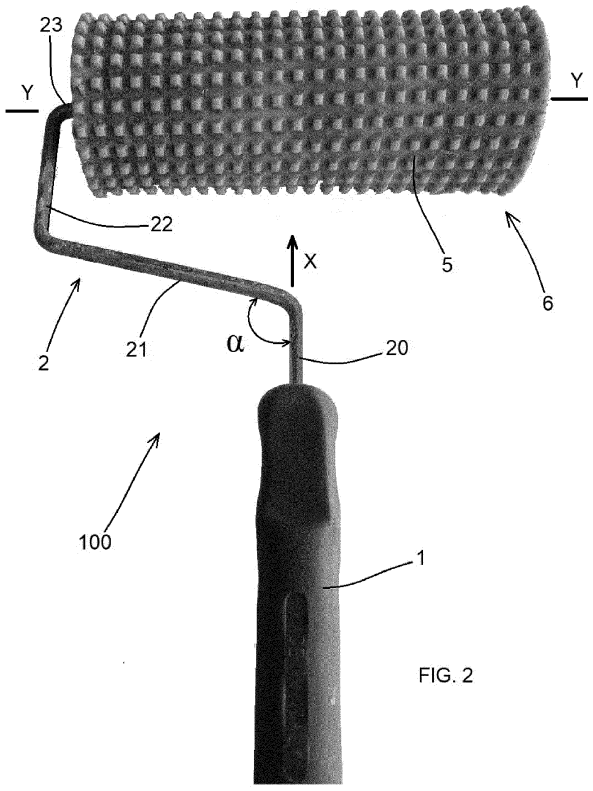

FIG. 2

EP 4 166 244 A1

Description

[0001] The present invention relates to a painting method used to obtain a particular decorative pattern on a surface.

[0002] Although specific reference will be made to painting, the invention also extends to varnishing.

[0003] In addition to the classical painting with a brush or roller, various painting techniques for the walls of buildings are known, such as spray painting, sponged painting, spatula painting, and scratched effect painting.

[0004] Spray painting uses a compressor and a spray gun to transfer the paint onto the wall, without a direct contact of the spray gun with the wall. The paint is sprayed with a jet of compressed air so that a uniform layer of paint is applied to the wall. Such a technique has some advantages, such as fast execution, quick drying and low paint consumption, but it does not provide any special aesthetic effects of the painted surface.

[0005] Sponged painting is characterized by a 'wrinkled' effect of the surface, which is achieved by using a special tool consisting of a sponge support whereon a synthetic mohair fabric with a shaved pile is applied. The support has a handle which is usually made of plastic or metal and is easy to hold and practical to use. Several types of pads are commercially available, each one of them having a particular pattern. A layer of paint of the chosen color is spread on the wall using a paintbrush; once the layer of paint has dried, the pad is dipped into another paint of the same color, but of a different shade (darker or lighter). Then the wall is dabbed with the pad. This technique makes it possible to achieve original results and to give a personal touch to the walls with an easy process, low costs and customizable decoration.

[0006] Spatula painting uses a metal spatula, instead of a brush or roller, and provides for painting a wall with several layers. Such a technique has a great decorative effect, but it is impaired by a long execution time and high costs. It is a complex technique with great scenic effect that is ideal for classical settings. Thanks to the overlapping of irregular marks and lines and to the presence of glazing and contrasts, spatula painting creates a three-dimensional visual effect. It is more expensive than the previous painting techniques and requires experience and know-how.

[0007] Scratch-effect painting provides for applying a first layer of paint having a base color and for letting it dry; then a second layer of paint is applied over the first layer. Before the second layer of paint dries, a metal trowel is applied to the second layer of paint and is moved from the bottom up, and then from right to left to obtain well-defined lines. The scratch-effect on the wall can be customized by using two different colors: a dark color for the base and a lighter color for the surface paint. In view of the above, when the lines are made on the walls, the two colors are visible, in addition to the scratched effect. Such a technique hides any imperfections in the wall, has good durability and low cost.

[0008] JPS55153173U describes a roller-type painting device used to apply a layer of a very viscous, sticky paint. Therefore, the roller of such a painting device has a special configuration to prevent the paint from sticking to the roller. In fact, the painting device includes a perforated roller having holes cut into the surface of the roller. Thus, the roller has no projections that project from the surface of the roller. The holes of the roller have a polygonal shape in cross-section that can be shaped like a truncated cone or a truncated pyramid. As a result, the projections between the holes of the roller have a continuous shape with a net or grid pattern and thus the projections do not have the shape of a truncated pyramid. The holes in one row are staggered with respect to the holes in an adjacent row. This means that the projections between the holes are not aligned in longitudinal rows and circumferential columns. Furthermore, if the continuous portions of the roller between the holes are considered projections, certainly such projections do not have a head shaped like a segment of a sphere. Therefore, a perforated roller, such as that described in JPS55153173U cannot generate a jute bag effect when applied over a layer of paint.

[0009] The purpose of the present invention is to eliminate the drawbacks of the prior art by providing a painting method that is capable of obtaining a painted surface having the appearance of a jute fabric, such as that used in the production of grain sacks.

[0010] Another purpose is to provide such a painting method that is practical, versatile, inexpensive, and easy to implement.

[0011] These purposes are achieved in accordance with the invention with the features of the appended independent claim 1.

[0012] Advantageous achievements of the invention appear from the dependent claims.

[0013] Further features of the invention will appear clearer from the following detailed description, which refers to a merely illustrative and therefore nonlimiting embodiment, illustrated in the appended drawings, wherein:

Fig. 1 is a view of a jute bag fabric;
Fig. 2 is a photograph of a painting device for realizing the painting method according to the invention;
Fig. 3 is an enlarged detail of a notched roller of the painting device of Fig. 2;
Fig. 4 is a photograph of a substrate having a surface painted with the device of Fig. 2;
Fig. 5 is a cross-section of the notched roller with a plane orthogonal to its longitudinal axis; and
Fig. 6 is an enlarged detail of the notched roller.

[0014] With reference to Figs. 2 and 3, a painting device used to perform the painting method according to the invention is described. Such a painting device is indicated generally with the reference numeral 100. The painting device (100) has been devised to obtain a painted surface having the effect of a jute fabric of the type

used for grain sacks.

[0015] Referring to Figs. 2 and 3, the painting device (100) comprises a handle (1) having a substantially cylindrical shape with an axis (X). The handle (1) is suitable for being held by an operator.

[0016] A supporting rod (2) is connected to the handle (1). The supporting rod (2) is appropriately bent. The supporting rod (2) comprises:

- a first section (20) that protrudes axially from the handle (1) along the axis (X) of the handle,
- a second section (21) that protrudes from the first section (20) by an angle (α) of about 90-110° with respect to the axis (X) of the handle,
- a third section (22) parallel to the axis (X) of the handle (1), and
- a fourth section (23) orthogonal to the axis (X) of the handle.

[0017] A cylindrical roller (6) is rotatably mounted on the fourth section (23) of the supporting rod, in such a way to rotate about an axis of rotation (Y) orthogonal to the axis (X) of the handle. The roller (6) has a length such that the axis (X) of the handle (1) passes through the center of the roller (6).

[0018] The roller (6) can be made in one piece.

[0019] Alternatively, the roller (6) may comprise a supporting core (3) rotatably mounted on the fourth section (23) of the supporting rod and a tubular liner (4) mounted on the supporting core (3) in such a way to rotate integrally with the supporting core (3).

[0020] The liner (4) has an internally hollow cylindrical shape. The liner (4) can be fixedly mounted on the supporting core (3) or can be integral with the supporting core (3).

[0021] The handle (1) can be made of plastic or wood. The supporting rod (2) can be made of metal. The supporting core (3) can be made of wood or rigid plastic.

[0022] The liner (4) can be made of synthetic rubber, natural rubber, latex or silicone.

[0023] Referring to Fig. 3, the roller (6) can be defined as a notched roller, which includes an outer surface (40) and a plurality of projections (5) that project radially from said outer surface (40).

[0024] Each projection (5) is shaped like a truncated pyramid with a square base, which narrows as one moves away from the axis of rotation (Y) of said roller (6).

[0025] The major base (B) of each projection (5) has a side (L) of about 4-7 mm, preferably 5 mm, whereas the minor base (b) has a side (L1) of about 2-5 mm, preferably 2.5 mm. The minor base (b) of each projection (5) has a convex shape and more precisely coincides with a segment of a sphere, as shown in the enlargement of Fig. 6.

[0026] Each projection (5) has a height (H) of about 3-6 mm, preferably 3.5 mm.

[0027] The projections (5) are aligned with each other and regularly spaced along rows (R) extending along a direction parallel to the axis (Y) of the roller (6) and columns (C) extending in a circumferential direction.

[0028] As shown in Figs. 5 and 6, the projections (5) of a column (C) are equidistant from each other by a distance (d1) of about 3-6 mm, preferably 3.5 mm, measured between the major bases (B) of the projections (5).

[0029] The projections (5) of a column (C) are equidistant from each other by a distance (d2) of about 4-7 mm, preferably 5 mm, measured between the minor bases (b) of the projections.

[0030] The projections (5) of a row (R) have identical distances (d1 and d2).

[0031] The shape and distribution of the projections (5) have been studied so that the projections (5) leave prints on a layer of paint suitable for generating an aesthetic effect similar to that of a jute bag fabric, such as that shown in Fig. 1.

[0032] The painting method according to the invention provides for painting a surface of a wall or substrate in a conventional manner, such as with a brush, a roller or a spray gun, so as to obtain a uniform layer of paint. Then, before the layer of paint dries, the roller (6) of the painting device (100) is rolled over the layer of fresh paint. In such a case, the projections (5) of the roller (6) compress the layer of fresh paint.

[0033] As shown in Fig. 4, the pressure of the projections (5) of the roller (6) on the layer of fresh paint generates prints (7) on the layer of paint, having an irregular contour and a different color shade than the color (8) of the layer of fresh paint that has not been in contact with the projections (5) of the roller. Such prints (7) are distributed along rows (R) and columns (C), like the projections (5) of the roller.

[0034] In particular, the prints (7) of the layer of paint have a lighter color than the color (8) of the layer of fresh paint that has not been in contact with the projections (5) of the roller because, as a result of said contact, the layer of fresh paint is compressed, pushed laterally, and thinned, making it possible to see, albeit irregularly and in a blurred manner, the color shade of the panel or wall whereon the layer of fresh paint was spread.

[0035] By comparing the image in Fig. 1 and the image of a substrate painted with the device according to the invention of Fig. 4, it is apparent that the surface of the substrate painted with the painting method according to the invention recalls the appearance of jute bag fabric.

[0036] Equivalent variations and modifications may be made to the present embodiment of the invention, within the reach of a person skilled in the art, which are nevertheless within the scope of the invention as expressed by the appended claims.

Claims

1. A painting method of a surface of a wall or substrate comprising the following steps:

A) providing a painting device (100) comprising:

- a handle (1) with a longitudinal axis (X) suitable for being held by an operator,
- a supporting rod (2) connected to the handle (1), and
- a cylindrical roller (6) rotatably mounted on the supporting rod (2) so as to rotate about an axis of rotation (Y) orthogonal to the axis (X) of the handle (1); said roller (6) comprising an outer surface (40) and a plurality of projections (5) that project radially from said outer surface (40); wherein said projections (5) of the roller (6) are shaped like a truncated pyramid with square base, which narrows as one moves away from the axis of rotation (Y); said projections (5) being regularly spaced along rows (R) that extend in parallel direction to said axis (Y) and columns (C) that extend circumferentially to the roller;

B) applying a layer of paint to a surface of a wall or substrate, and
C) using the painting device (100) by rolling the roller (6) over said layer of paint when the layer of paint is still fresh, so that the projections (5) compress and reduce the thickness of the layer of fresh paint, leaving prints (7) with an irregular contour and a different shade of color with respect to a color (8) of the layer of fresh paint that has not been in contact with said projections (5) of the roller, so that the painted surface has an appearance similar to that of a fabric used for jute bags.

2. The painting method of claim 1, wherein the major base (B) of each projection (5) has a side (L) of approximately 4-7 mm, preferably 5 mm, whereas the minor base (b) has a side (L1) of approximately 2-5 mm, preferably 2.5 mm.

3. The painting method of claim 1 or 2, wherein the minor base (b) of each projection (5) has a convex shape, and more precisely the shape of a segment of a sphere.

4. The painting method of any one of the preceding claims, wherein:

- the projections (5) of a column (C) are equidistant from each other by a distance (d1) of approximately 3-6 mm, preferably 3.5 mm, measured between the major bases (B) of the projections;
- the projections (5) of a column (C) are equidistant from each other by a distance (d2) of approximately 4-7 mm, preferably 5 mm, measured between the minor bases (b) of the projections;
- the projections (5) of a row (R) have identical distances (d1 and d2).

5. The painting method of any one of the preceding claims, wherein said roller (6) comprises a supporting core (3) and a liner (4) mounted on said supporting core (3), said projections (5) externally projecting from said liner (4).

6. The painting method of claim 5, wherein said roller (6) is made in one piece with rubber, latex or silicone.

7. The painting method of any one of claims 1 to 5, wherein said liner (4) is made of rubber, latex or silicone.

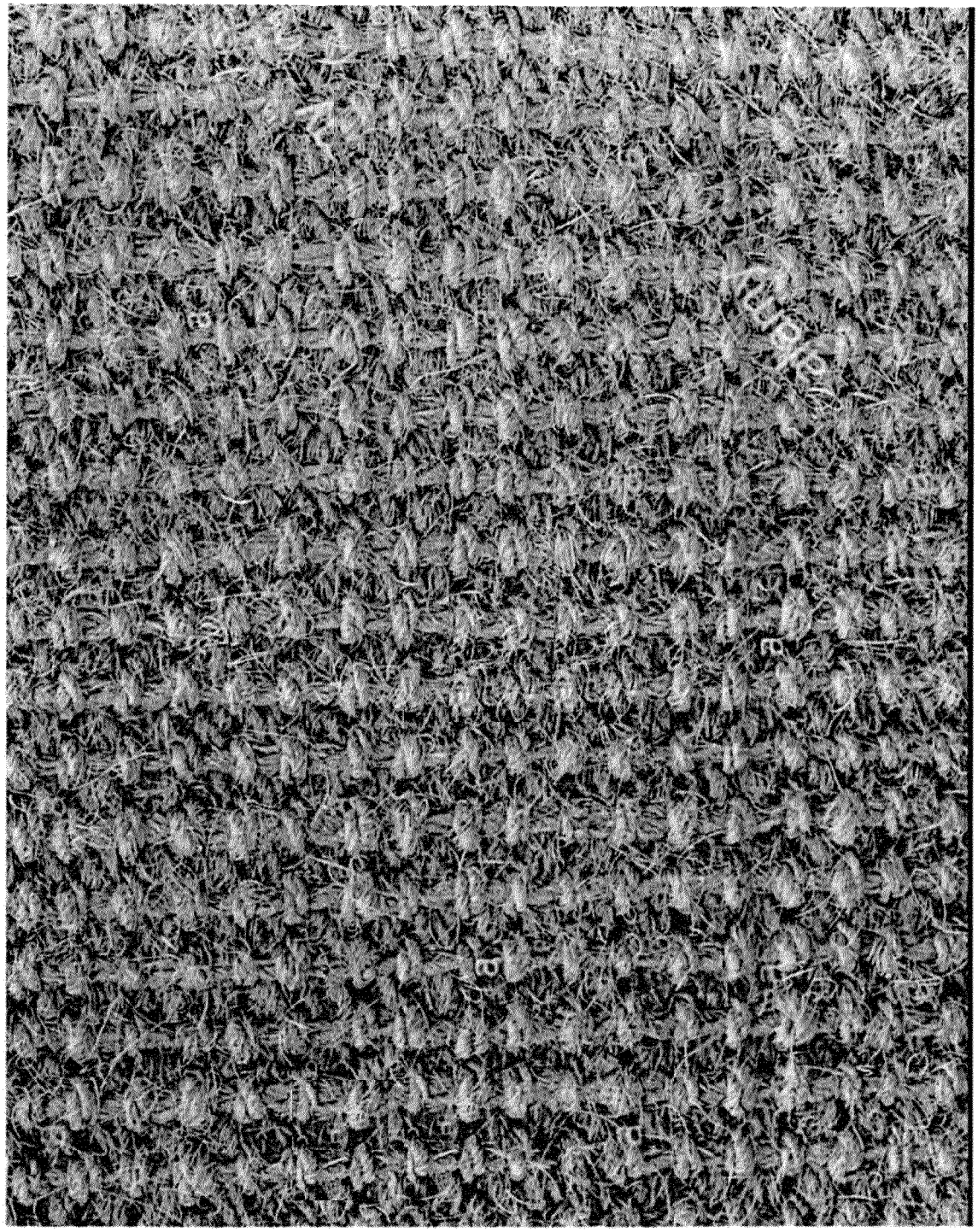

FIG. 1

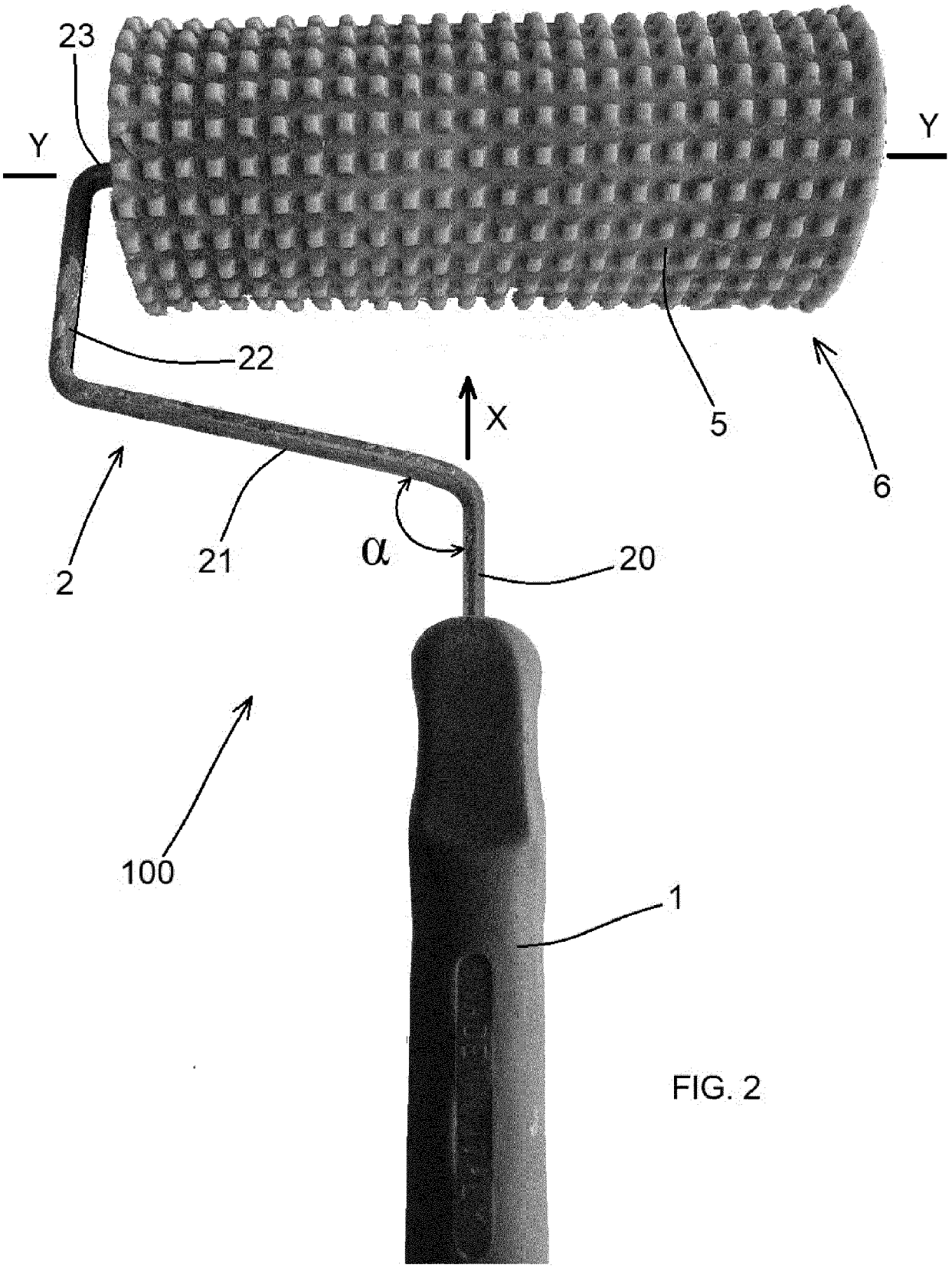

FIG. 2

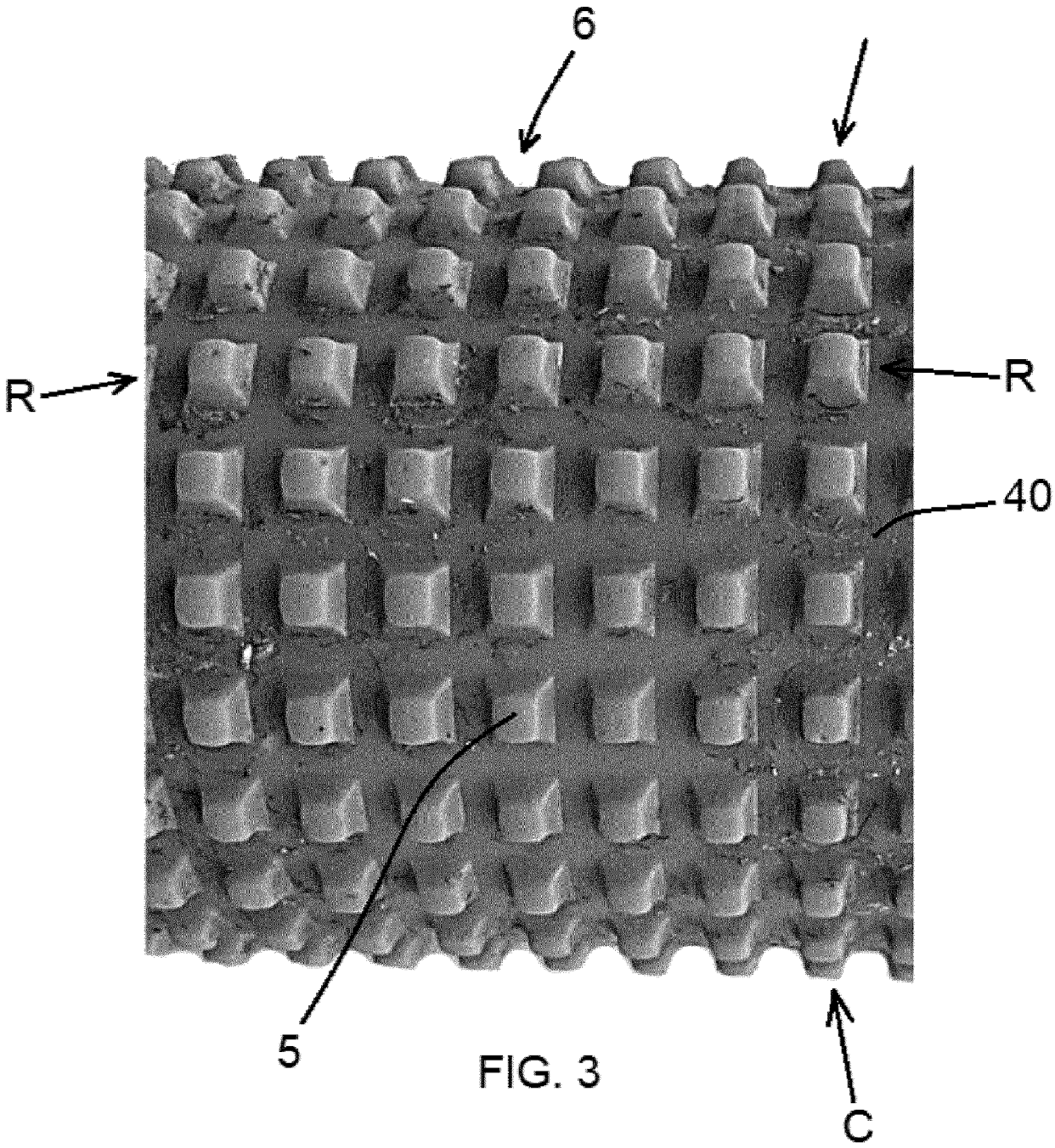

FIG. 3

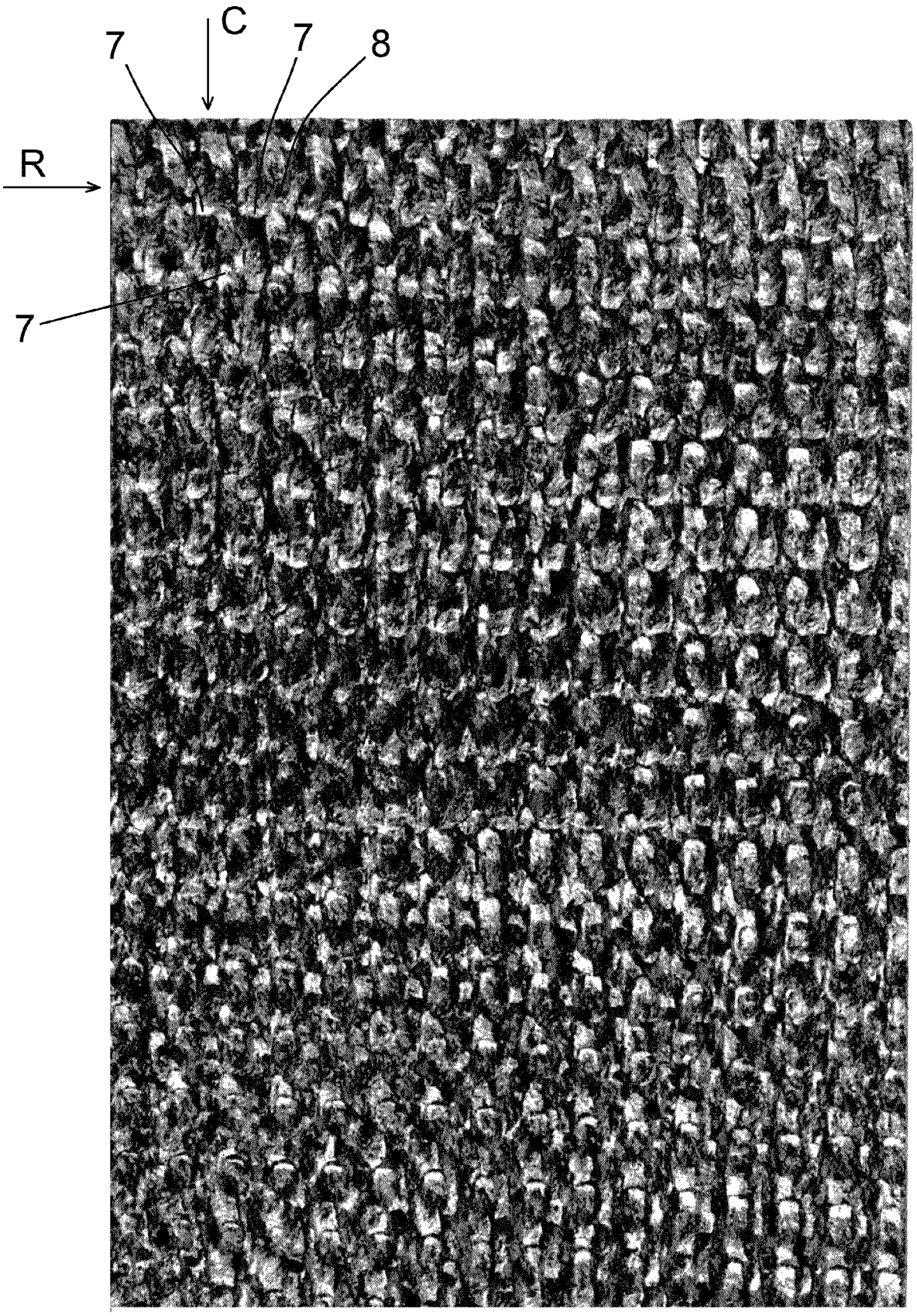

FIG. 4

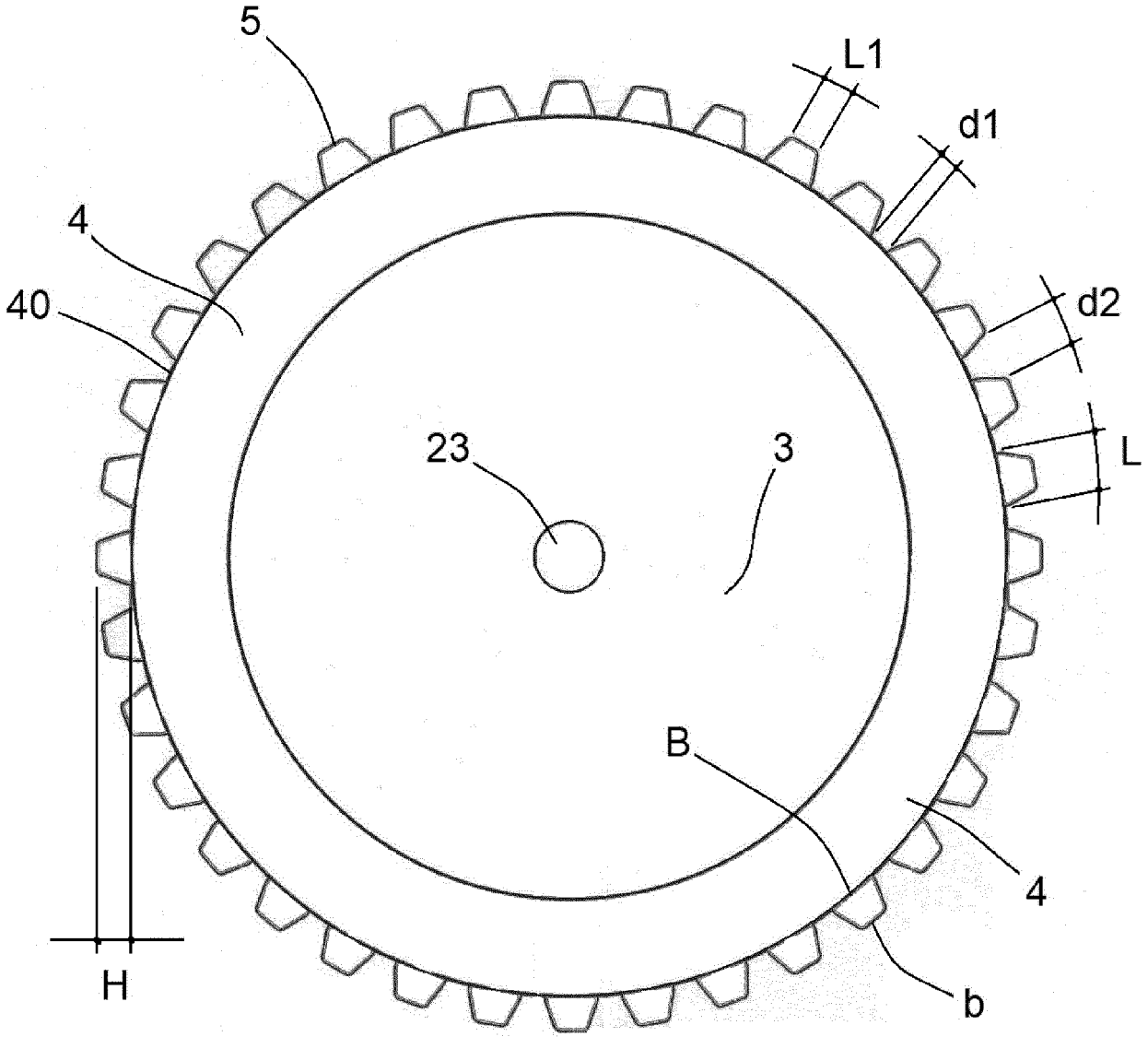

FIG. 5

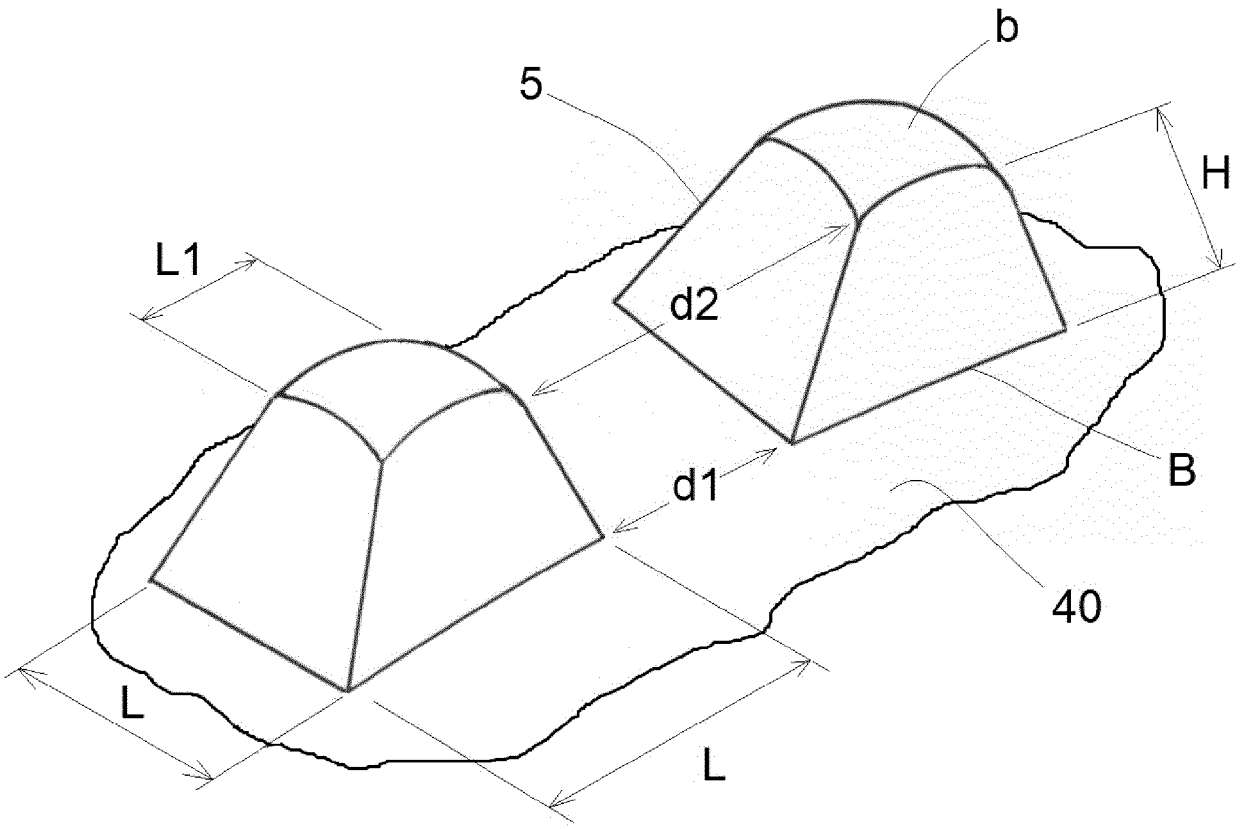

FIG. 6

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EUROPEAN SEARCH REPORT

Application Number
EP 22 19 9981

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A,D	JP S55 153173 U (DAINIPPON) 5 November 1980 (1980-11-05) * page 4 - page 5; figure 3 *	1-7	INV. B05C17/02 B05C17/10 B44D5/00
A	JP 2017 077526 A (NIPPON PAINT HOLDINGS CO LTD) 27 April 2017 (2017-04-27) * paragraph [0022] *	1-7	
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A	JP H11 141097 A (SAKAMOTO KIYOTO) 25 May 1999 (1999-05-25) * paragraph [0008] * * figure 5b *	1-7	

TECHNICAL FIELDS SEARCHED (IPC)

B05C
B44F
B44D
A45D
A61H

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	16 February 2023	Roldán Abalos, Jaime

CATEGORY OF CITED DOCUMENTS

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16-02-2023

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

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