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PAINTING DEVICE

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A painting device (100) comprises: a handle (1), a support rod (2) and a roller (6) rotatably mounted on the support rod (2); the roller (6) comprising a lateral surface (40) and a plurality of ribs (51, 52), namely longitudinal ribs (51) distributed along rows (R) and transverse ribs (52) distributed along circumferential 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 ribs (51, 52) compress the fresh paint leaving imprints (7) of irregular contour with a different shade of color than a color (8) of the layer of fresh paint that has not been in contact with said ribs (51, 52) of the roller, so that the surface repeatedly paints the same pattern with a texture comprising a shaded irregular set of orthogonal streaks.

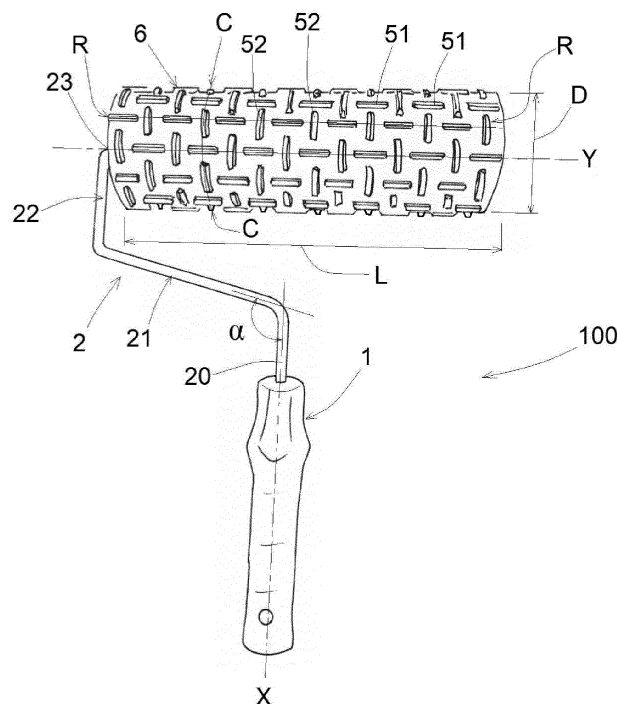


FIG. 1

Description

[0001] The present invention relates to a painting device used for obtaining a particular decoration on a surface.

[0002] Although the following description will refer to painting, the invention also extends to varnishing.

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

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

[0005] Dabbed painting is characterized by a 'rippled' effect of the surface, which is obtained by using a pad consisting of a sponge support to which a synthetic smooth mohair fabric is applied. The support is attached to a handle that is easy and practical to use and is usually made of plastic or metal. Several types of pads are commercially available, each one with a particular pattern. A layer of paint of the chosen color is spread on the wall with 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. Such a technique makes it possible to achieve original results and give a personal touch to the walls with easy execution, low cost and customizable decoration. However, such a technique is somewhat time-consuming.

[0006] Instead of a brush or roller, spatula painting uses a metal spatula and involves making several layers to paint a wall. Such a technique has a great decorative effect, long lead times and high cost. It is a complex technique with great a scenic effect and ideal for classical settings. Thanks to the overlapping of irregular signs and lines and to the presence of glazes and contrasts, spatula painting creates a three-dimensional visual effect. It is a more expensive painting technique than the previous ones, and the user of such a techniques must be experienced and skilled.

[0007] Scratch effect painting involves applying a first layer of paint with a background color and letting it dry; after that, a second layer of paint is applied over the first layer. Before the second layer of paint dries, a metal trowel is applied on the second layer of paint and is moved from the bottom up, and then from right to left, so as to obtain well-defined lines. The scratch effect on the wall can be customized by using two different types of color: a dark color for the base and a lighter color for the surface paint. In such a way, when making the lines on the walls, not only the scratch effect is obtained, but also the possibility to observe both colors. Such a technique hides

any imperfections in the wall, has good durability and low cost. However, this technique is somewhat time-consuming because it involves moving the trowel vertically and then horizontally. Moreover, also this technique requires experience and skill.

[0008] The purpose of the present invention is to eliminate the drawbacks and limitations of the prior art by providing a painting device that is extremely simple and quick to use and at the same time is capable of repeatedly generating the same patterned design on the painted surface characterized by a texture comprising a shaded irregular set of orthogonal streaks.

[0009] Another purpose is to provide such a painting device that is practical, versatile, economical, and easy to implement.

[0010] These purposes are achieved in accordance with the invention with the characteristics of the appended independent claims.

[0011] Advantageous achievements of the invention appear from the dependent claims.

[0012] Further features of the invention will appear clearer from the following detailed description, which refers to a purely illustrative and thus not limiting embodiment, illustrated in the appended drawings, wherein:

Fig. 1 is a photograph of the painting device according to the invention;

Fig. 2 is an enlarged detail of the device in Fig. 1;

Fig. 3 is an axonometric detailed view of some ribs of a roller of the painting device according to the invention;

Fig. 4 is a cross-section of said roller with a plane orthogonal to its longitudinal axis;

Fig. 5 is a photograph of a substrate having a surface painted with the device of Fig. 1; and

Fig. 5A is an enlargement of a part of the surface painted by means of the substrate of Fig. 5.

[0013] With the aid of Figs. 1, 2, 3 and 4, a painting device is described according to the invention, which is comprehensively denoted with reference numeral 100.

[0014] With reference to Figs. 1 and 2, 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.

[0015] A support rod (2) is attached to the handle (1). The support rod (2) is appropriately bent. The support rod (2) comprises:

- a first section (20) protruding axially from the handle (1) along the axis (X) of the handle,
- a second section (21) protruding 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 (X) axis of the handle.

[0016] A cylindrical roller (6) is rotatably mounted on the fourth section (23) of the support rod, so as 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).

[0017] The roller (6) can be made in one piece.

[0018] Alternatively, the roller (6) may comprise a support core (3) rotatably mounted on the fourth section (23) of the support rod and a tubular sleeve (4) mounted on the support core (3), so as to rotate integrally with the support core (3). Fig. 4 shows the roller (6) with the tubular sleeve (4) mounted on the support core (3).

[0019] The sleeve (4) has an internally hollow cylindrical shape. The sleeve (4) can be fixedly mounted on the support core (3) or can be integral with the support core (3).

[0020] The handle (1) can be made of plastic or wood. The support rod (2) can be made of metal. The support core (3) can be made of wood or rigid plastic.

[0021] The sleeve (4) can be made of synthetic rubber, natural rubber, latex or silicone.

[0022] With reference to Figs. 1 and 2, the peculiarity of the roller (6) is that it comprises a plurality of ribs (51, 52) on its lateral surface (40).

[0023] Each rib (51, 52) has decreasing dimensions moving away from the longitudinal axis (Y) of the roller (6).

[0024] Specifically, each rib (51, 52) has a trapezoidal cross-section with the major base in contact with the lateral surface (40), and has a trapezoidal longitudinal section with the major base in contact with the lateral surface (40).

[0025] Each rib (51, 52) also has a convex upper surface (50) (shown in Fig. 3).

[0026] The plurality of ribs (51, 52) comprises:

- multiple spaced sets of longitudinal ribs (51) aligned along rows (R) extending parallel to the longitudinal axis (Y) of the roller (6); each consecutive pair of longitudinal ribs (51) being spaced by a space (SR);
- multiple spaced sets of transverse ribs (52) aligned along columns (C) extending circumferentially to the roller (6); each consecutive pair of transverse ribs (52) being spaced by a space (SC).

[0027] Each space (SR) of each row (R) is crossed by one of said transverse ribs (52), whereas each space (SC) of each column (C) is crossed by one of said longitudinal ribs (51).

[0028] Preferably each longitudinal rib (51) crosses the corresponding space (SC) centrally and each transverse rib (52) crosses the corresponding space (SR) centrally.

[0029] The longitudinal ribs (51) are all equal and the transverse ribs (52) are all equal.

[0030] With reference to Fig. 3 each longitudinal rib (51) preferably has the following dimensions:

- the major base of the trapezoidal longitudinal section has a length (L1) of 1.5-2.5 cm;
- the major base of the trapezoidal cross-section has a length (G1) of 0.3-0.8 cm;
- a height (H1) of 0.2-0.8 cm.

[0031] Still with reference to Fig. 3, the transverse ribs (52) preferably have the following geometric characteristics:

- the major base of the trapezoidal longitudinal section has a length (L2) of 1.8-2.8 cm;
- the major base of the trapezoidal cross-section has a length (G2) of 0.3-0.8 cm;
- the height (H2) is 0.2-0.8 cm.

[0032] The space (SR) between two longitudinal ribs (51) has a length (QR) lower than the length (L1) of the trapezoidal longitudinal section of the longitudinal rib (51).

[0033] The space (SC) between two transverse ribs (52) has a length (QC) lower than the length (L2) of the trapezoidal longitudinal section of the transverse rib (52).

[0034] Specifically, the space (SR) between two longitudinal ribs (51) has a length (QR) of 1-1.8 cm measured between the major bases of the longitudinal sections of the longitudinal ribs (51).

[0035] The space (SC) between two transverse ribs (52) has a length (QC) of 1-2 cm measured between the major bases of the longitudinal sections of the transverse ribs (52).

[0036] Each row (R) is staggered with respect to the adjacent row (R) and each column (C) is staggered with respect to the adjacent column (C).

[0037] More precisely, each row (R) is staggered with respect to the adjacent row (R) by a section (TL) equal to half the sum of the length (L1) of the major base of the longitudinal section of the longitudinal rib (51) with the length (QR) of the space (SR) between two longitudinal ribs (51). Each column (C) is staggered with respect to the adjacent column (C) by a circumferential section (TC) equal to half the sum of the length (L2) of the major base of the longitudinal section of the transverse rib (52) with the length (QC) of the space (SC) between two transverse ribs (52).

[0038] As a result of the above, each row (R) is staggered with respect to the adjacent row but is not staggered with respect to the row (R) immediately following the adjacent row. Similarly, each column (C) is staggered with respect to the adjacent column (C) but is not staggered with respect to the column immediately following the adjacent column (C).

[0039] Let's now consider the example of a roller (6) having ribs (51, 52) with said specifications and having a length (L) of about 20-35 cm and a diameter (D) of about 6-12 cm, thus a circumference of 19-37 cm. In such a case, a row (R) comprises 6 to 10 longitudinal ribs (51) and a column (C) comprises 6 to 12 transverse ribs (52).

[0040] The shape and distribution of the ribs (51, 52) are designed in such a way that the ribs (51, 52) leave imprints on a layer of paint suitable for generating an aesthetic effect composed of orthogonal irregular streaks so as to achieve a particularly attractive patterned texture.

[0041] The ways in which the device according to the invention is used to paint a surface are described below.

[0042] First of all, it must be noted that the device according to the invention is to be used on surfaces that have been previously painted in the traditional way, such as with a brush, roller, or spray. Then, before the layer of paint dries, the roller (6) of the painting device (100) is rolled over the layer of fresh paint. In this case, the ribs (51, 52) of the roller (6) compress the layer of fresh paint. With reference to Fig. 5 and 5A, the color of the fresh paint is a lighter color than the color of the painted surface.

[0043] As also shown in Fig. 5 and 5A, the pressure of the ribs (51, 52) of the roller (6) on the layer of fresh paint generates imprints (7) with an irregular contour on the layer of paint, with a different color shade than the color (8) of the layer of fresh paint that has not been in contact with the ribs (51, 52) of the roller. Such imprints (7) are distributed along staggered rows (R) and columns (C), like the ribs (51, 52) of the roller.

[0044] In particular, the imprints (7) of the layer of paint are lighter than the color (8) of the layer of fresh paint that has not been in contact with the ribs (51, 52) of the roller, since the fresh paint is removed as a result of said contact. Indeed, irregular vertical and horizontal streaks (9) can be appreciated around the imprints (7) that correspond precisely to the parts where the ribs (51, 52) have removed the fresh paint.

[0045] Again with reference to Figs. 5 and 5A, the painting device (100) according to the invention makes it possible to obtain a particularly attractive visual effect that combines the regularity of the distribution of the lines and columns with the irregularity given by the removal of paint by the ribs (51, 52) in an uneven manner.

[0046] Moreover, it is evident how the painting device (100) according to the invention allows even an inexperienced user to make walls with a patterned texture in a simple and extremely rapid way, by simply running the roller over the fresh paint only along one direction. So the new painting device (100) greatly facilitates the painting operations. In fact, the painting device (100) can be easily used even by inexperienced users who can achieve distinctive and aesthetically appealing results without availing themselves of professional painters, just like those obtained by the ordinary methods of the prior art that are usually used by professional painters.

[0047] Equivalent variations and modifications may be made to the present embodiment of the invention, within the reach of an expert of the field, still within the scope of the invention expressed by the appended claims.

Claims

1. Painting device (100) comprising:

- a handle (1) suitable for being held by an operator,
- a support rod (2) attached to the handle (1), and
- a roller (6) rotatably mounted on the support rod (2) so as to rotate about an axis of rotation (Y) orthogonal to an axis (X) of the handle; said roller (6) comprising a lateral surface (40) and a plurality of ribs (51, 52) projecting radially from said lateral surface (40); wherein said plurality of ribs (51, 52) comprises:

- multiple spaced sets of longitudinal ribs (51) aligned along rows (R) extending parallel to the longitudinal axis (Y) of the roller (6); each consecutive pair of longitudinal ribs (51) being spaced by a space (SR);
- multiple spaced sets of transverse ribs (52) aligned along columns (C) extending circumferentially to the roller (6); each consecutive pair of transverse ribs (52) being spaced by a space (SC).

wherein each space (SR) of each row (R) is crossed by one of said transverse ribs (52) whereas each space (SC) of each column (C) is crossed by one of said longitudinal ribs (51); said roller (6) being suitable for being rolled over a layer of fresh paint applied to a surface of a wall or substrate, so that the ribs (51, 52) compress the fresh paint, leaving imprints (7) of irregular contour with a different shade of color than a color (8) of the layer of fresh paint which has not been in contact with said ribs (51, 52) of the roller, so that the surface repeatedly paints the same pattern with a texture comprising a shaded irregular set of orthogonal streaks.

2. The painting device (100) according to claim 1, wherein each longitudinal rib (51) crosses the corresponding space (SC) centrally and each transverse rib (52) crosses the corresponding space (SR) centrally.
3. The painting device (100) according to claim 1 or 2, wherein each rib (51, 52) has decreasing dimensions moving away from the longitudinal axis (Y) of the roller (6).
4. The painting device (100) according to any one of the preceding claims, wherein the longitudinal ribs (51) are all equal and the transverse ribs (52) are all equal.
5. The painting device (100) according to any one of

the preceding claims, wherein each rib (51, 52) has:

- a trapezoidal cross-section with the major base in contact with the lateral surface (40), and
- a trapezoidal longitudinal section with the major base in contact with the lateral surface (40).

6. The painting device (100) according to claim 5, wherein the space (SR) between two longitudinal ribs (51) has a length (QR) lower than the length (L1) of the trapezoidal longitudinal section of the longitudinal rib (51); wherein the space (SC) between two transverse ribs (52) has a length lower than the length (L2) of the trapezoidal longitudinal section of the transverse rib (52). 5 10 15
7. The painting device (100) according to claim 5 or 6, wherein each longitudinal rib (51) has:
 - the major base of the trapezoidal-longitudinal section with a length (L1) of 1.5-2.5 cm; 20
 - the major base of the trapezoidal cross-section with a length (G1) of 0.3-0.8 cm;
 - a height (H1) of 0.2-0.8 cm. 25
8. The painting device (100) according to claim 5 or 6 or 7, wherein each transverse rib (52) has:
 - the major base of the trapezoidal longitudinal section with a length (L2) of 1.8-2.8 cm; 30
 - the major base of the trapezoidal cross-section with a length (G2) of 0.3-0.8 cm;
 - a height (H2) of 0.2-0.8 cm.
9. The painting device (100) according to any one of the preceding claims, wherein the space (SR) between two longitudinal ribs (51) has a length (QR) of 1-1.8 cm. 35
10. The painting device (100) according to any one of the preceding claims, wherein the space (SC) between two transverse ribs (52) has a length (QC) of 1-2 cm. 40
11. The painting device (100) according to any one of the preceding claims, wherein each row (R) is staggered with respect to the adjacent row (R). 45
12. The painting device (100) according to any one of the preceding claims, wherein each column (C) is staggered with respect to the adjacent column (C). 50
13. The painting device (100) according to any one of the preceding claims, wherein each rib (51, 52) comprises a convex upper surface (50). 55
14. The painting device (100) according to any one of the preceding claims, wherein said roller (6) has a

length (L) of 20-35 cm and a diameter (D) of 6-12 cm; a row (R) comprises 6 to 10 longitudinal ribs (51) and a column (C) comprises 6 to 12 transverse ribs (52).

15. The painting device (100) according to any one of the preceding claims, wherein said roller (6) comprises a support core (3) and a sleeve (4) made of rubber, latex or silicone, removably mounted on said support core (3) and said ribs (51, 52) protruding from said sleeve (4).

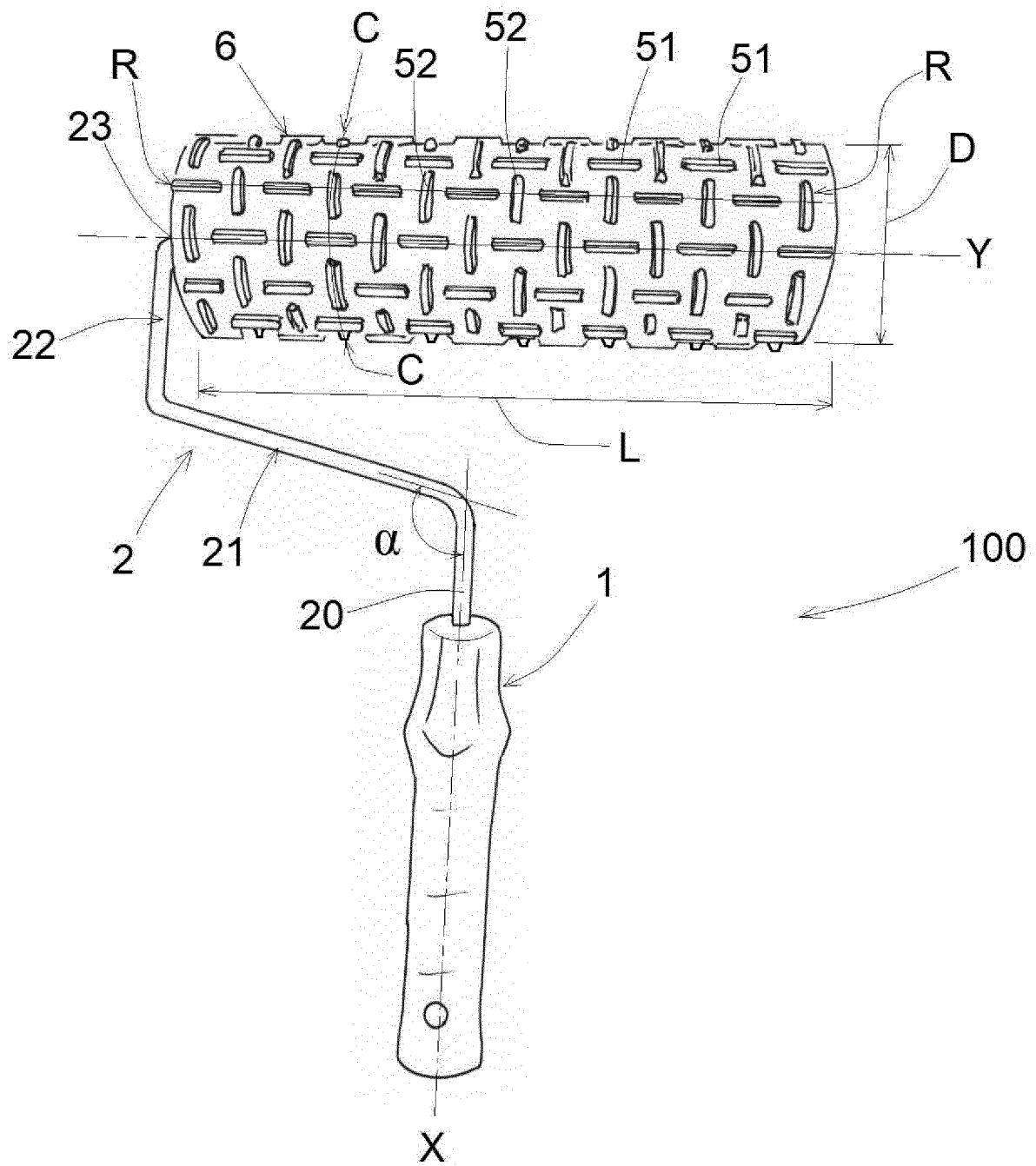


FIG. 1

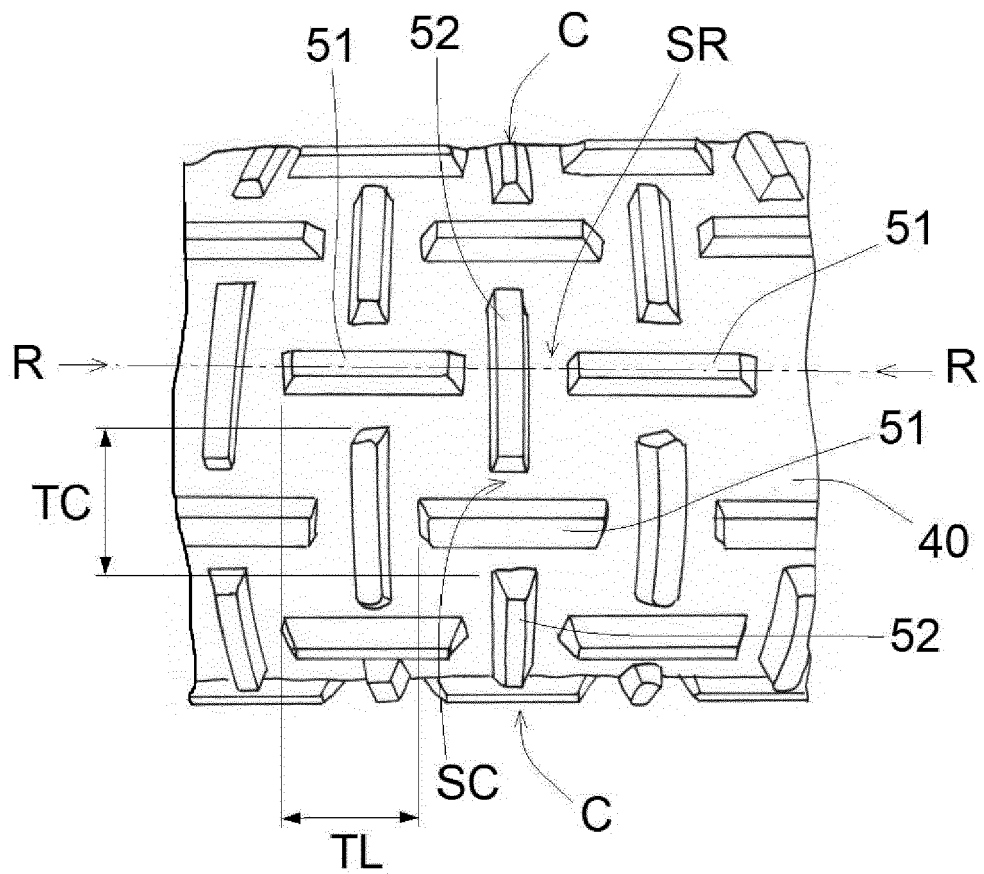


FIG. 2

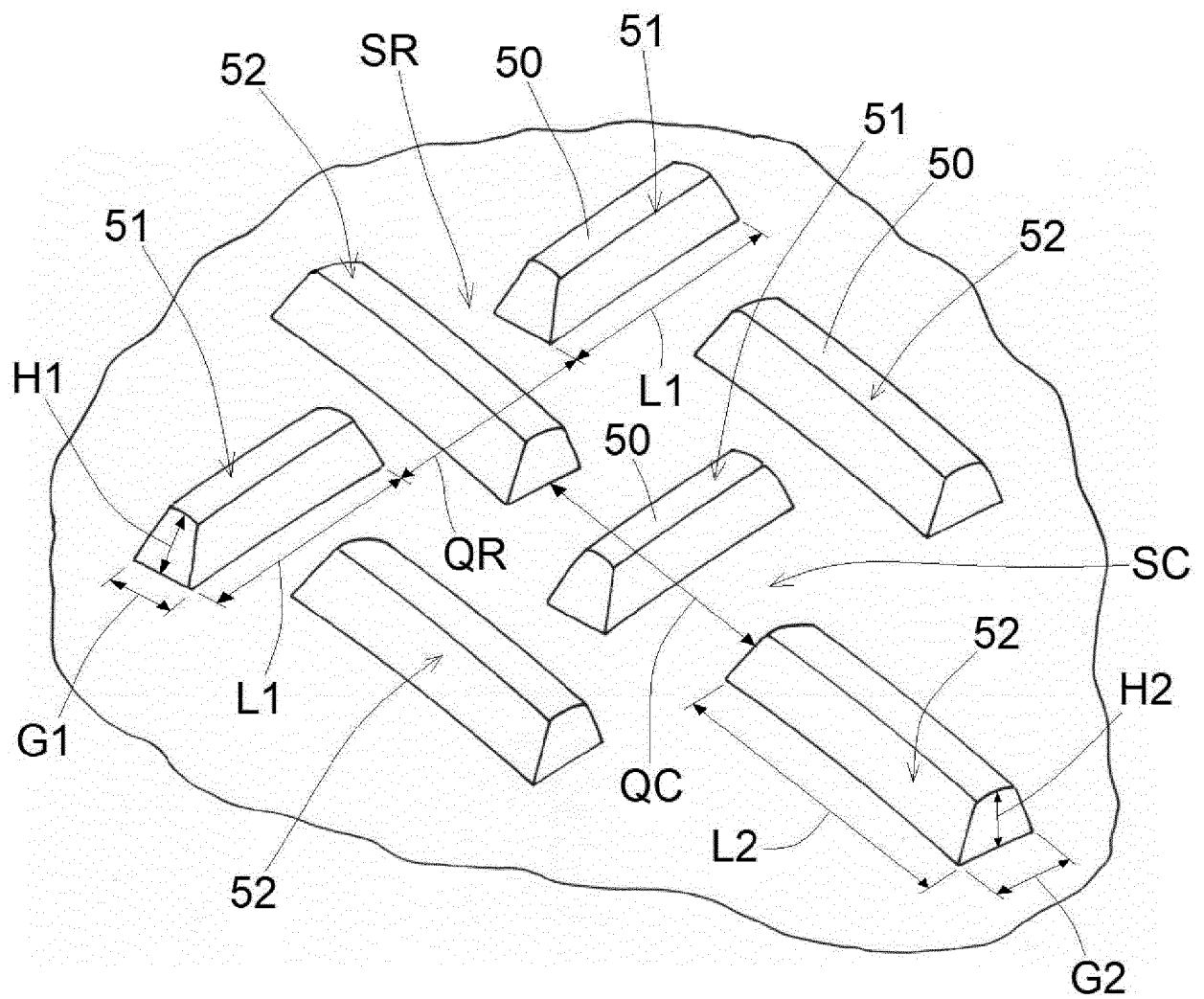


FIG. 3

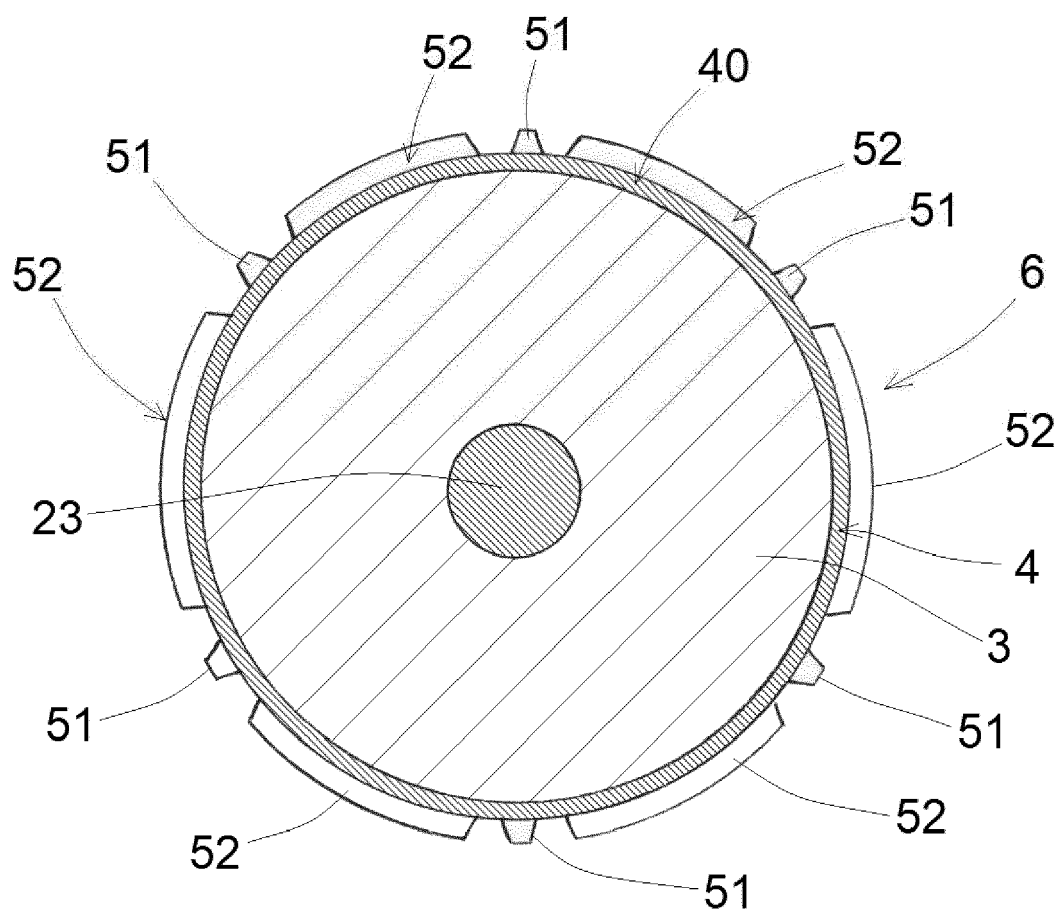


FIG. 4

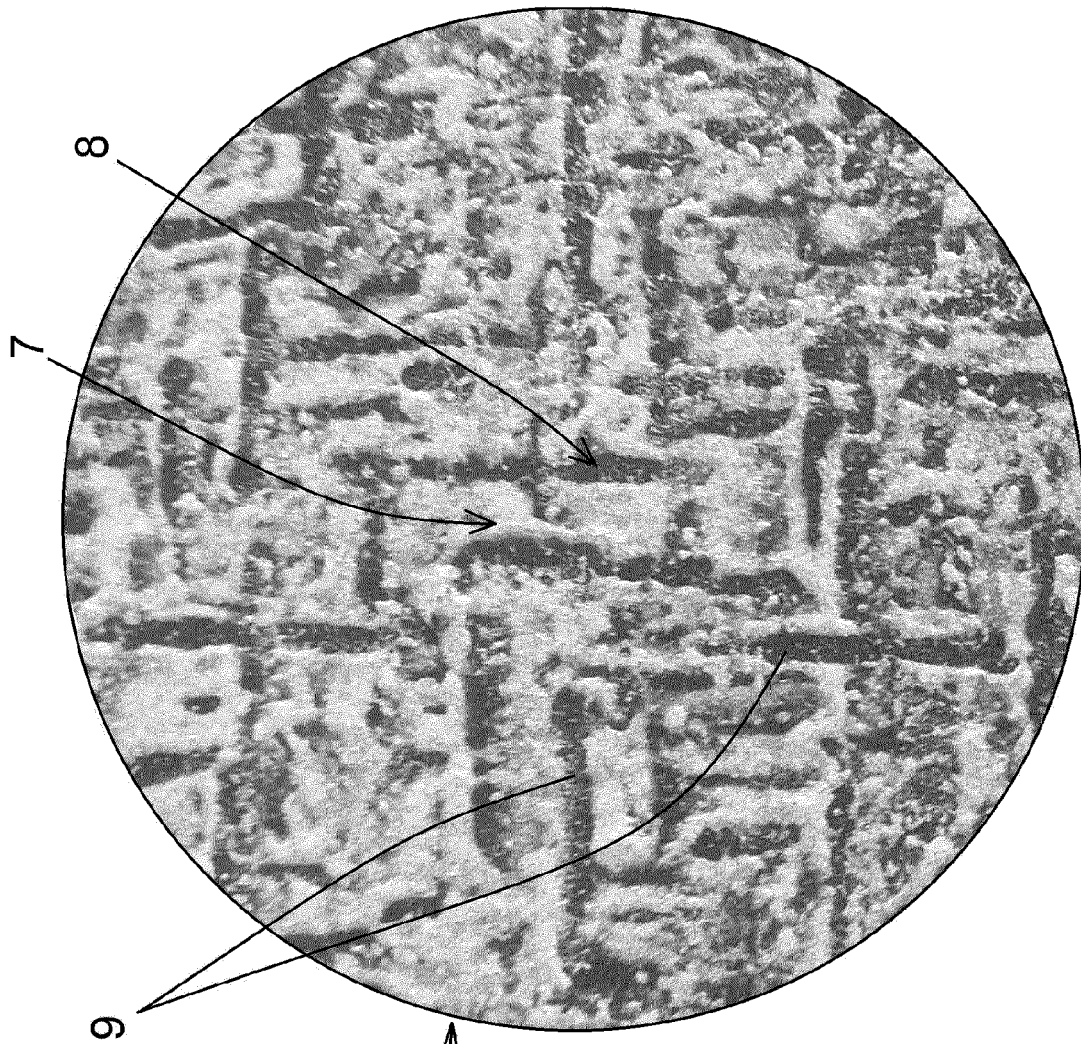


FIG. 5A

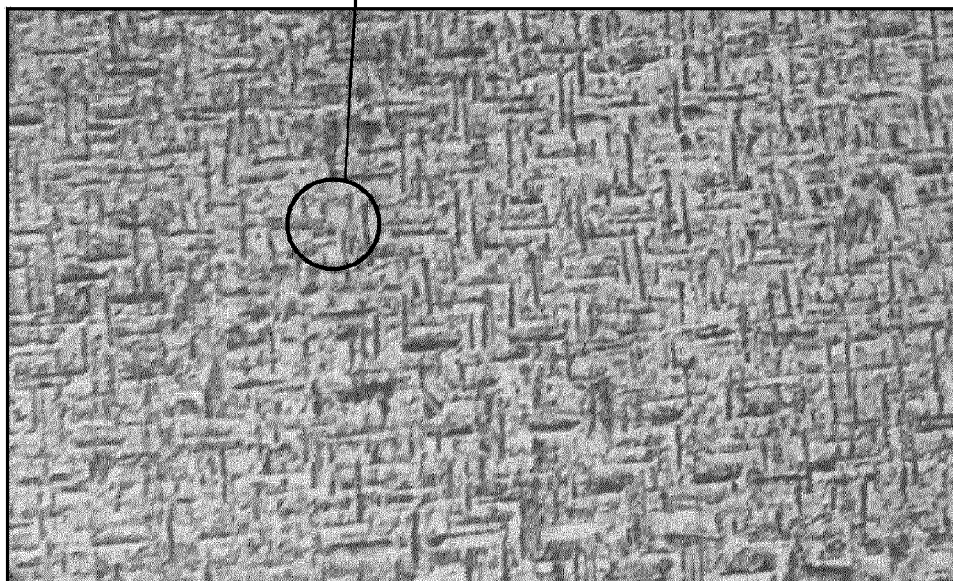


FIG. 5



EUROPEAN SEARCH REPORT

Application Number

EP 23 16 5238

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EPO FORM 1503 03.82 (P04C01)

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	US 2 753 641 A (DORMAN CHARLES R) 10 July 1956 (1956-07-10) * column 2 * * figure 1 *	1-15	INV. B05C17/02 ADD. B44D2/00
A	DE 631 434 C (FRITZ BENDER) 19 June 1936 (1936-06-19) * line 52 - line 69; figures 3, 10 *	1-15	
A	EP 2 289 635 A1 (TOUPRET SA [FR]) 2 March 2011 (2011-03-02) * paragraph [0025] - paragraph [0036] * * figure 2 *	1-15	
A	US 3 955 260 A (SHERDEN HERBERT O) 11 May 1976 (1976-05-11) * column 2, line 30 - line 45 * * figure 5 *	1-15	
			TECHNICAL FIELDS SEARCHED (IPC)
			B05C B44F B44D
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 24 January 2024	Examiner Roldán Abalos, Jaime
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5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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