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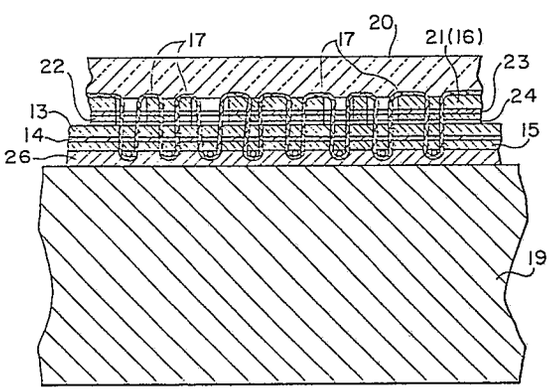
(54) Wooden decorative laminated sheet having an embroidery pattern and its manufacturing method.

(57) A wooden decorative laminated sheet with an embroidered pattern comprises a large-sized veneer (13); a liner (15) bonded to the rear surface of said large-sized veneer (13) via a thermoplastic sheet (14) through heating and compression; a small-sized decorative veneer (16) having a specific configuration and provisionally attached to a surface (13A) of said large-sized veneer (13); embroidery (18) provided on both of said veneers (13,16) with oil-repellant embroidery yarn (17); a baseplate (19) to which said large-sized veneer (13) is attached with said liner (15) placed therebetween; and a transparent protective layer (20) formed on said both veneers (13,16), the thickness of said transparent protective layer (20) being greater than the size of said oil-repellant embroidery yarn (17).

FIG. 21



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Description

WOODEN DECORATIVE LAMINATED SHEET HAVING AN EMBROIDERY PATTERN AND ITS MANUFACTURING METHOD

The present invention relates to a wooden decorative laminated sheet, and more particularly to a wooden decorative laminated sheet having an embroidery pattern such that a small-sized, patterned veneer processed into the form of a natural product or the like is laminated on a large-sized veneer, and an embroidery finish is provided therefor, including the small-sized veneer as well.

Conventionally, decorative laminated sheets in which a very thin sheet called veneer that is cut from natural decorative timber is attached and laminated onto a baseplate are used for furniture, such as high-quality chests of drawers and sideboards, as well as building materials.

These decorative laminated sheets produce naturally wrought patterns having the grain, curly grain, burls, etc. of natural timber. Wooden decorative laminated sheets are known in which decorative patterns are embroidered on this veneer with various types of fibrous yarn so as to reinforce and conceal the defects of the veneer such as back cracking and holes and to cause a variety of patterns to be revealed on the natural grain.

This conventional wooden decorative laminated sheet in which the veneer is embroidered and is attached to the baseplate has drawbacks in that only planar embroidery patterns can be created, and that molten resin permeates and stains the embroidery yarn at the time of processing with resin for surface protection. In addition, a resin layer having substantially the same thickness as an embroidery yarn layer projecting from the rear surface of the veneer is provided on a portion of the rear surface of the veneer where the embroidery yarn is not provided, and the veneer is attached to the baseplate after the rear surface thereof is thereby flattened. Accordingly, there has been another drawback in that the pre-attaching process is complicated, resulting in poor processing efficiency.

A wooden decorative laminated sheet which overcomes these drawbacks is already known and is disclosed in Japanese Utility Model Laid-Open No. 117200/1985 proposed by the present applicant.

This prior art is arranged as follows: A small-sized veneer processed into a particular configuration is partially and provisionally attached to one surface of a large-sized veneer, a liner being attached to the other (rear) surface of the large-sized veneer with a thermoplastic adhesive. Then, after the two veneers are embroidered with an oil-repellant embroidery yarn, the large-sized veneer is attached to a baseplate, and the small-sized veneer is attached to the large-sized veneer. A synthetic resin layer which has a sufficiently greater thickness than that of the embroidery yarn is provided on the two veneers, and the surface of that layer is ground and polished so as to be smoothened.

In this prior art, as shown in Fig. 23, at the time of attaching a liner 2 to a large-sized veneer 1, an adhesive 3 is sprayed onto the liner 2, and when an attempt is made to attach the liner 2 to the veneer 1, the adhesive 3 which has penetrated the liner 2 adheres to the press dies, thereby making processing extremely difficult. In addition, since a large amount of adhesive penetrates the cloth of the liner 2, it is necessary to increase the amount of the adhesive sprayed. Hence, there is the problem that it is very uneconomical.

For this reason, it is conceivable to spray the adhesive 3 onto the rear surface of the veneer 1, as shown in Fig. 24, so as to attach the liner 2 thereto. With this process, however, the large-sized veneer 1 becomes warped, as shown in Fig. 25, so that there is the problem that it is extremely difficult to apply the liner 2 to the veneer 1. Moreover, there is a mutually incompatible drawback that, if the amount of the adhesive 3 sprayed is too small, the liner 2 will attach incompletely, while, if it is excessive, the adhesive oozes out to the surface of the veneer, with the result that the surface of the veneer is liable to show a pitted pattern and the defective fraction becomes large.

Accordingly, an object of the present invention is to provide a wooden decorative laminated sheet with a decorative embroidery pattern which is capable of substantially improving the process of bonding between the large-sized veneer and the liner and of being produced at low cost and with a good yield on a mass-production basis.

To this end, according to one aspect of the present invention, there is provided a wooden decorative laminated sheet with an embroidered pattern, comprising: a large-sized veneer; a liner bonded to the rear surface of the large-sized veneer via a thermoplastic sheet through heating and compression; a small-sized decorative veneer having a specific configuration and provisionally attached to a surface of the large-sized veneer; embroidery provided on both of the veneers with oil-repellant embroidery yarn; a baseplate to which the large-sized veneer is attached with the liner placed therebetween; and a transparent protective layer formed on the both veneers, the thickness of the transparent protective layer being greater than the size of the oil-repellant embroidery yarn.

According to another aspect of the present invention, there is provided a method of manufacturing a wooden decorative laminated sheet with an embroidered pattern, comprising the steps of: bonding a liner onto the rear surface of a large-sized veneer via a thermoplastic sheet by means of heating and pressurization; provisionally attaching a small-sized decorative veneer, processed into a specific configuration, to a surface of the large-sized veneer; providing embroidery on both of the veneers with oil-repellant embroidery yarn; attaching the large-sized veneer to the baseplate with the liner placed therebetween; and forming a transparent protective layer on the both veneers, the thickness of the transparent protective layer being greater

than the size of the oil-repellant embroidery yarn.

In accordance with the present invention, since the wooden decorative laminated sheet with an embroidered pattern is arranged as described above, it is possible to provide the wooden decorative laminated sheet with an embroidered pattern having a beautiful appearance at low cost on a mass-production basis through automation.

BRIEF DESCRIPTION OF THE DRAWINGS:

Figs. 1 to 21 illustrate an embodiment of the present invention, in which

Figs. 1 to 4 are perspective views illustrating the procedure of processing a large-sized veneer;

Figs. 5 to 7 are partially expanded cross-sectional views illustrating the procedure of processing the large-sized veneer;

Fig. 8 is a schematic top plan view of the large-sized veneer;

Fig. 9 is a top plan view of a state in which pattern contour stitching is provided;

Figs. 10 and 11 are diagrams illustrating the process of fixing a decorative veneer laminate on the large-sized veneer laminate;

Figs. 12 to 15 are diagrams illustrating the process of embroidering the large-sized veneer and decorative veneer laminates;

Fig. 16 is a cross-sectional view of the decorative veneer laminate on which embroidery has been completed;

Fig. 17 is a cross-sectional view in which this decorative veneer laminate is attached to a baseplate;

Figs. 18 to 21 are diagrams illustrating the proces of processing a protective layer on the decorative veneer laminate;

Fig. 22 is a cross-sectional view illustrating another embodiment of the present invention; and

Figs. 23 to 25 are cross-sectional views illustrating examples of the prior art.

DESCRIPTION OF THE PREFERRED EMBODIMENTS:

Referring now to the accompanying drawings, a description will be given of the embodiments of the present invention.

As shown in Figs. 1 and 5, a very thin thermoplastic sheet 14 and a liner 15, such as soft cloth or Japanese paper, are consecutively superposed on the rear surface of a large-sized veneer 13. Then, as shown in Figs. 3 and 6, this laminate is placed on a provisional processing plate D, such as the one shown in Fig. 2. Subsequently, this assembly is pressed by a press base P2 and a pressing plate P1 while it is being heated. As a result, the liner 15 is made to adhere to the rear surface of the large-sized veneer 13 via the thermoplastic sheet 14, thereby obtaining a substrate A, as shown in Figs. 4 and 8.

Subsequently, as shown in Fig. 9, contour stitching is performed for the surface of the above-described large-sized veneer 13 with oil-repellant yarn 17 in such a manner as to trace the contour of a decorative veneer laminate 16 processed into a specific configuration, as will be described later.

Then, the decorative veneer laminate 16 is provisionally attached to the large-sized veneer 13, as shown in Figs. 10 and 11.

In other words, this decorative veneer laminate 16 is arranged as follows: A liner 22 is attached to the rear surface of a large-sized veneer 21 having a specific configuration corresponding to the portion of the above-described contour stitching, using a thermoplastic adhesive 23. An adhesive 24, which is the same as the aforementioned one, is applied to the other surface of the liner 22 where the adhesive had not been previously applied. This decorative veneer laminate 16 is processed into a specific configuration (the trunk of a pine tree in this embodiment), and is fixed to the surface of the large-sized veneer 13 by being partially heat-compressed by means of a heating tool, as shown in Fig. 11.

Subsequently, as shown in Figs. 12 to 16, a ground surface portion, a trunk, branches, and leaves are embroidered at portions 18 by using an embroidery sewing machine with an oil-repellant embroidery yarn (gold and silver threads) 17.

As shown in Fig. 17, a decorative laminated sheet 25 with an embroidered pattern thus processed is placed on a baseplate 19 formed of plain timber, plywood, a tile, or the like and is then subjected to heating so as to cause the veneer 13 to adhere to the baseplate 19 by means of a thermoplastic adhesive 26 with the liner 15 placed therebetween.

After this lamination process is completed, an adhesion aiding agent (sealer) 71 is sprayed onto the decorative laminated sheet 25 a plurality of times to make the surface thereof less uneven, as shown in Fig. 18. Subsequently, a solvent 72 formed of a polyester resin is applied thereto a plurality of times with a brush to make the surface even less uneven, as shown in Fig. 19.

Thus, a transparent protective layer 20 is formed on the decorative laminated sheet 25 having an embroidered pattern, and after this protective layer 20 is smoothed by being polished with sandpaper, as shown in Figs. 20 and 21, a finish spray is provided on this protective layer 20.

It should be noted that the decorative veneer laminate 16 may be directly bonded to the large-sized veneer 13 by means of the adhesive 23 without applying the liner 22 onto the rear surface of the decorative veneer laminate 16.

Since the present invention is arranged as described above, the present invention produces the following advantages.

With the wooden decorative laminated sheet in accordance with the present invention, the liner can be readily bonded to the large sized veneer by means of a very thin thermoplastic sheet, and since no adhesive is applied to the large-sized veneer, the large-sized veneer is prevented from warping. In addition, since no adhesive is applied to the liner,

stamping can be facilitated, and the wasteful adhesive resulting from the permeation of the adhesive can be eliminated, and the permeation of the adhesive through the large-sized veneer can be eliminated. Hence, there is the advantage that it is possible to obtain a beautiful wooden decorative laminated sheet which is free of pitted patterns.

In addition to the above-described advantage, by virtue of the above-described transparent, flat protective layer, the uneven surface patterns of the decorative veneer and the embroidery yarn layer can be expressed three-dimensionally. In addition, since the molten resin does not permeate the oil-repellant embroidery yarn at the time of formation of the protective layer, it is possible to obtain three-dimensional embroidery of a beautiful appearance. The uneveness of the rear-surface yarn is absorbed by an adhesive layer for bonding the veneer laminate onto the baseplate, while the surface uneveness can be absorbed by a protective layer formed thereon. Accordingly, there are additional advantages in that a three-dimensional pattern exhibiting a beautiful and gorgeous appearance can be obtained with good processing efficiency, and that, since mass production through automation is facilitated, it is possible to provide the wooden decorative laminated sheets at low cost.

Claims

1. A wooden decorative laminated sheet with an embroidered pattern, characterized by comprising:
a large-sized veneer (13);
a liner (15) bonded to the rear surface of said large-sized veneer (13) via a thermoplastic sheet (14) through heating and compression;
a small-sized decorative veneer (16) having a specific configuration and provisionally attached to a surface (13A) of said large-sized veneer (13);
embroidery (18) provided on both of said veneers (13, 16) with oil-repellant embroidery yarn (17);
a baseplate (19) to which said large-sized veneer (13) is attached with said liner (15) placed therebetween; and
a transparent protective layer (20) formed on said both veneers (13, 16), the thickness of said transparent protective layer (20) being greater than the size of said oil-repellant embroidery yarn (17).

2. A method of manufacturing a wooden decorative laminated sheet with an embroidered pattern, characterized by comprising the steps of:
bonding a liner (15) onto the rear surface of a large-sized veneer (13) via a thermoplastic sheet (14) by means of heating and pressurization; provisionally attaching a small-sized decorative veneer (16), processed into a specific configuration, to a surface (13A) of said large-sized veneer (13);
providing embroidery (18) on both of said veneers (13, 16) with oil-repellant embroidery yarn (17);
attaching said large-sized veneer (13) onto said baseplate (19) with said liner (15) placed therebetween; and
forming a transparent protective layer (20) on said both veneers (13, 16), the thickness of said transparent protective layer being greater than the size of said oil-repellant embroidery yarn (17).

FIG. 1

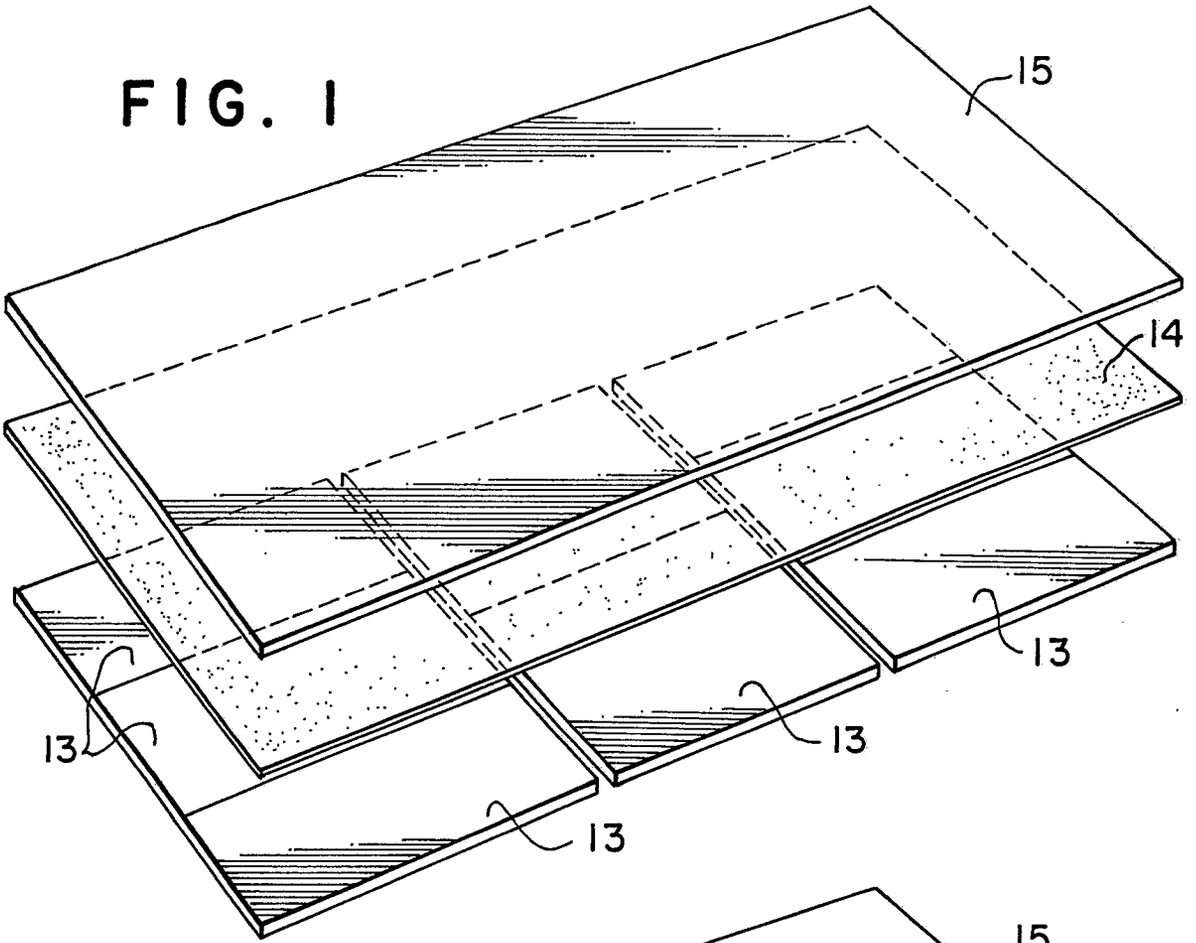
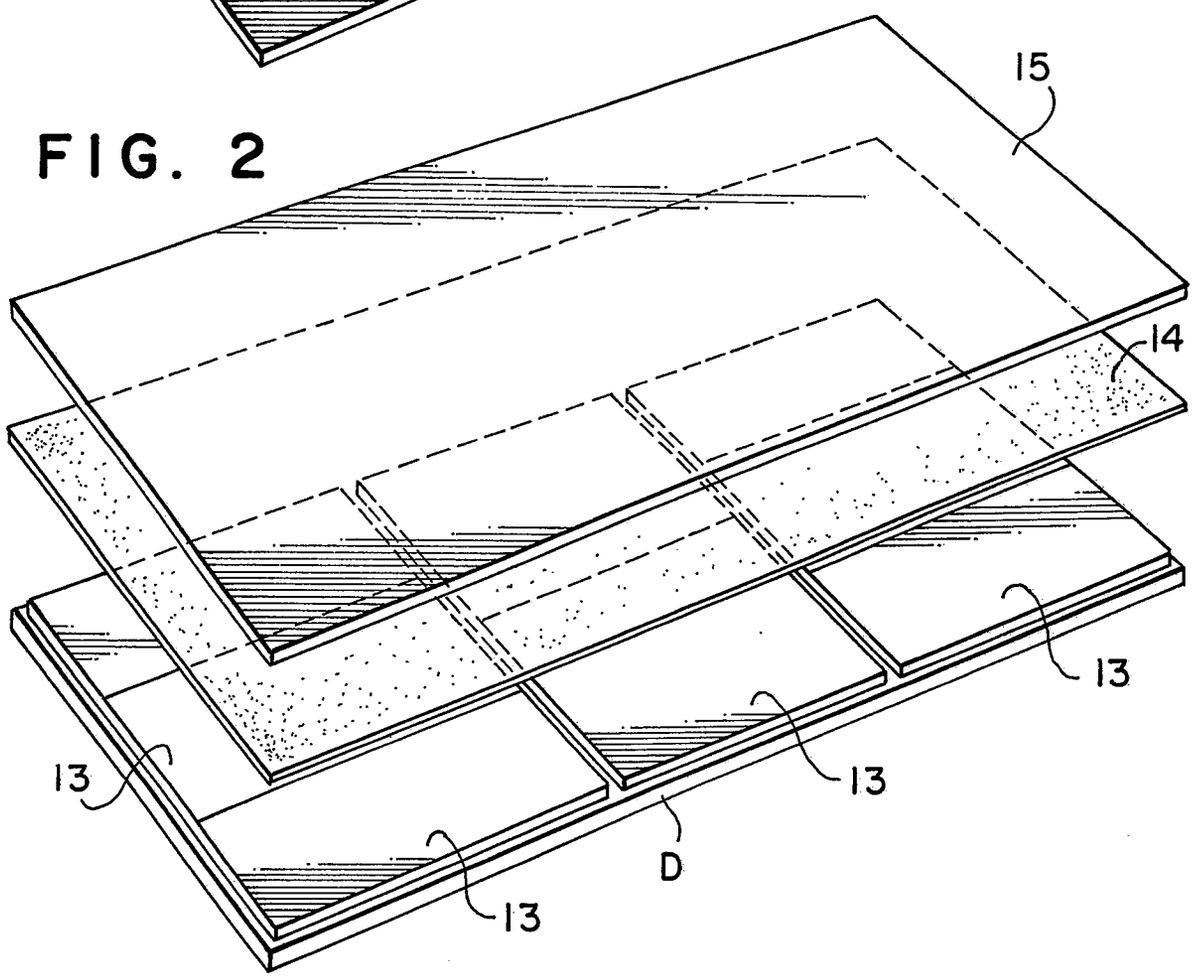


FIG. 2



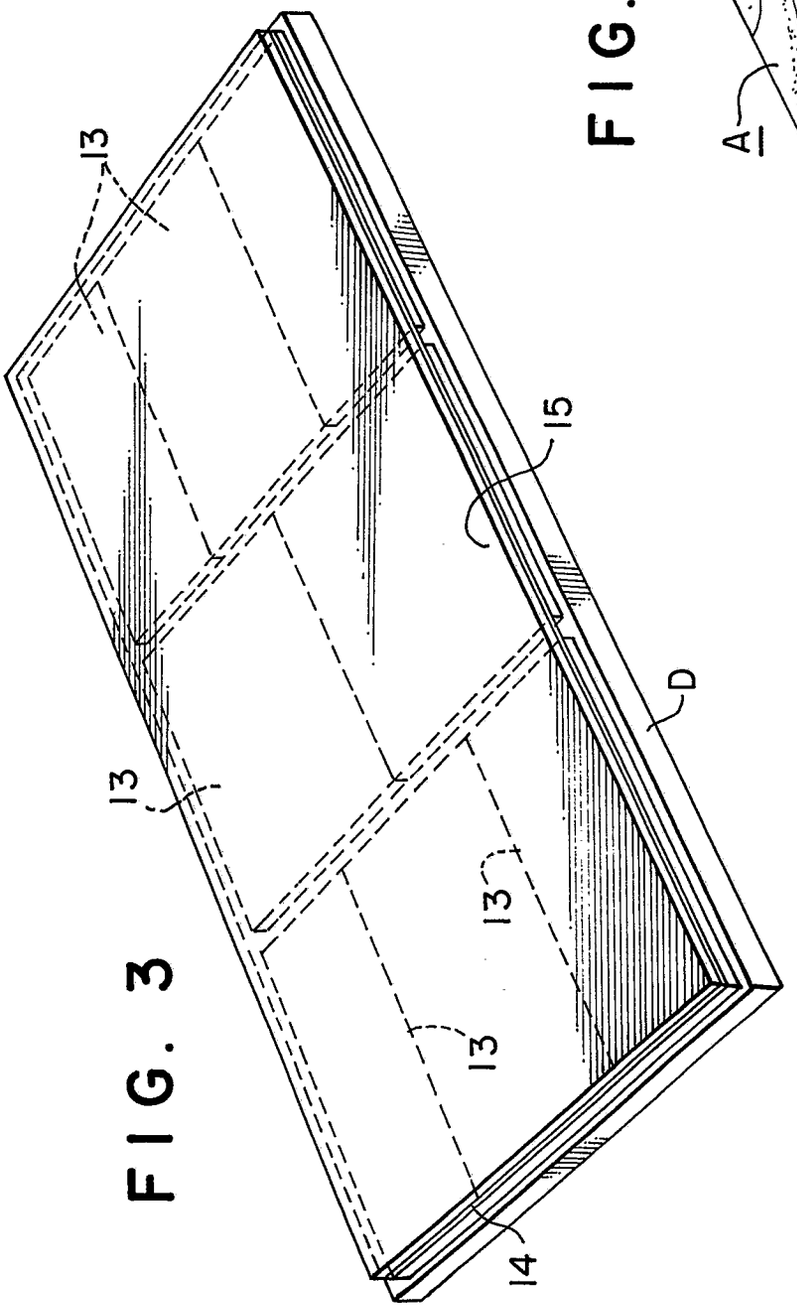


FIG. 3

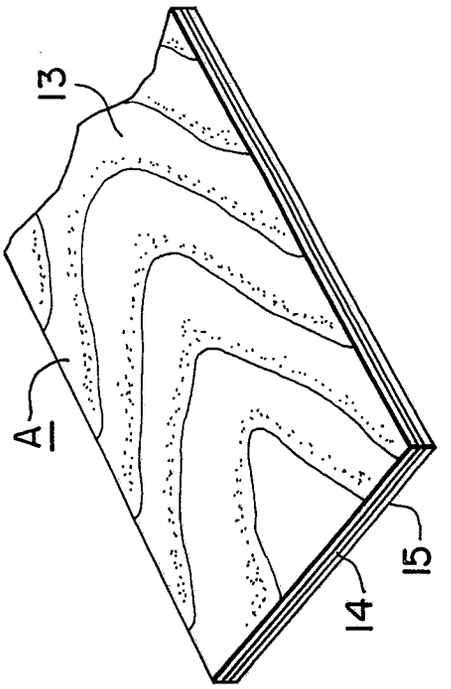


FIG. 4

FIG. 5

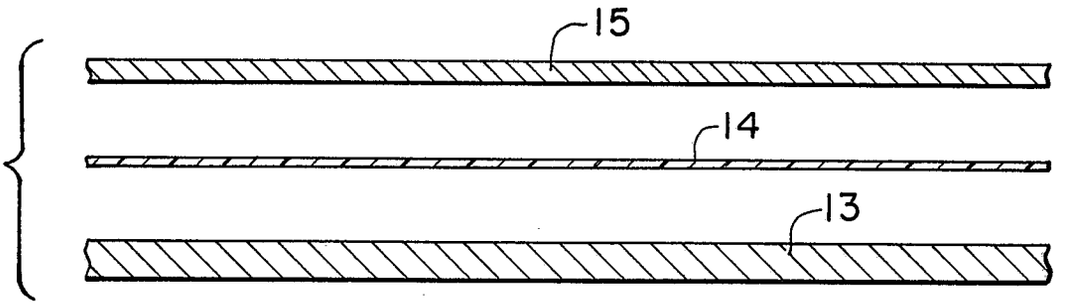


FIG. 6

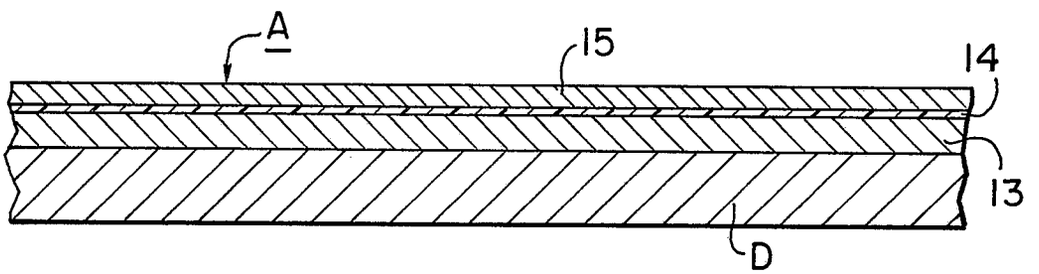


FIG. 7

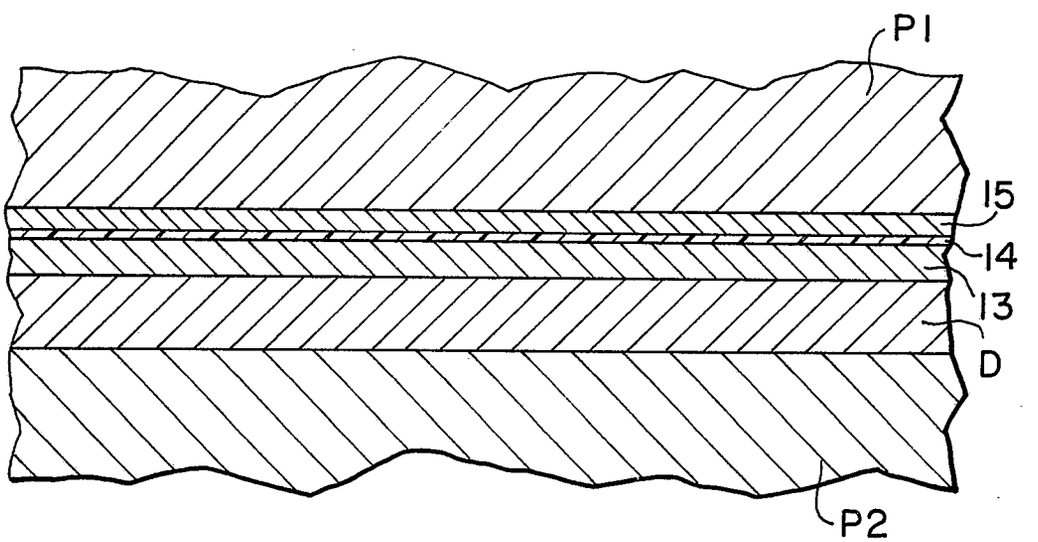


FIG. 9

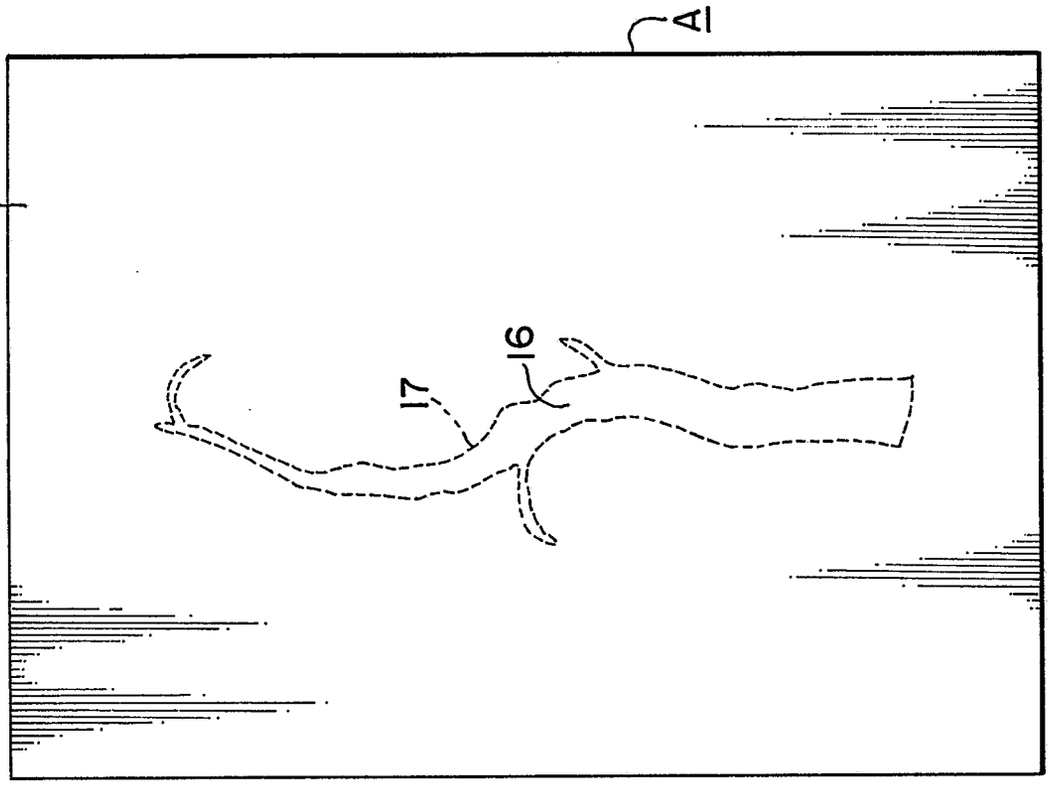


FIG. 8

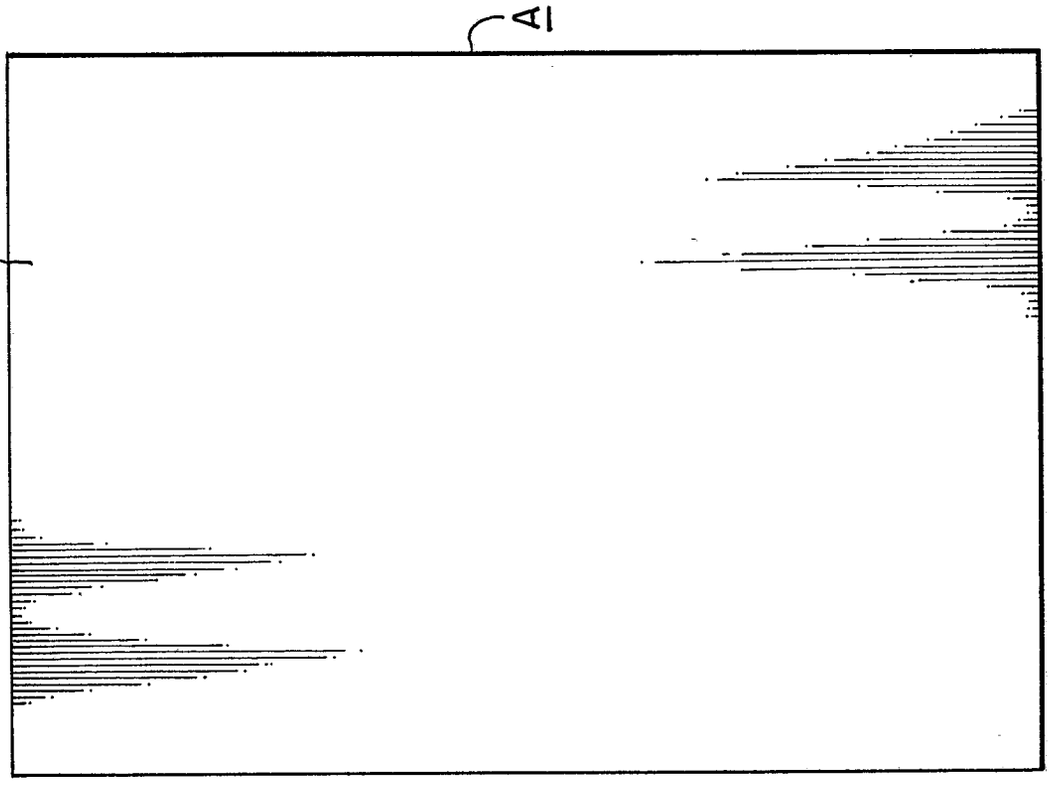


FIG. 10

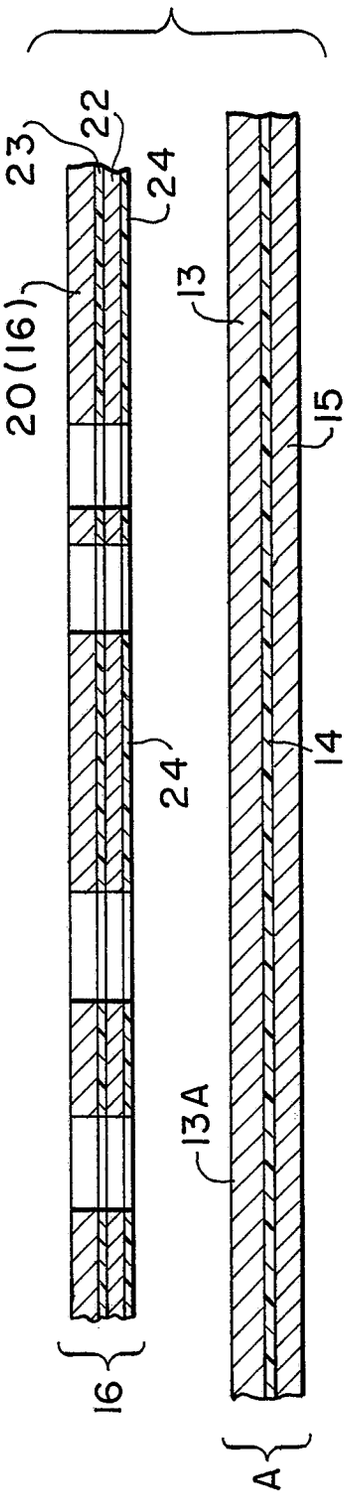


FIG. 11

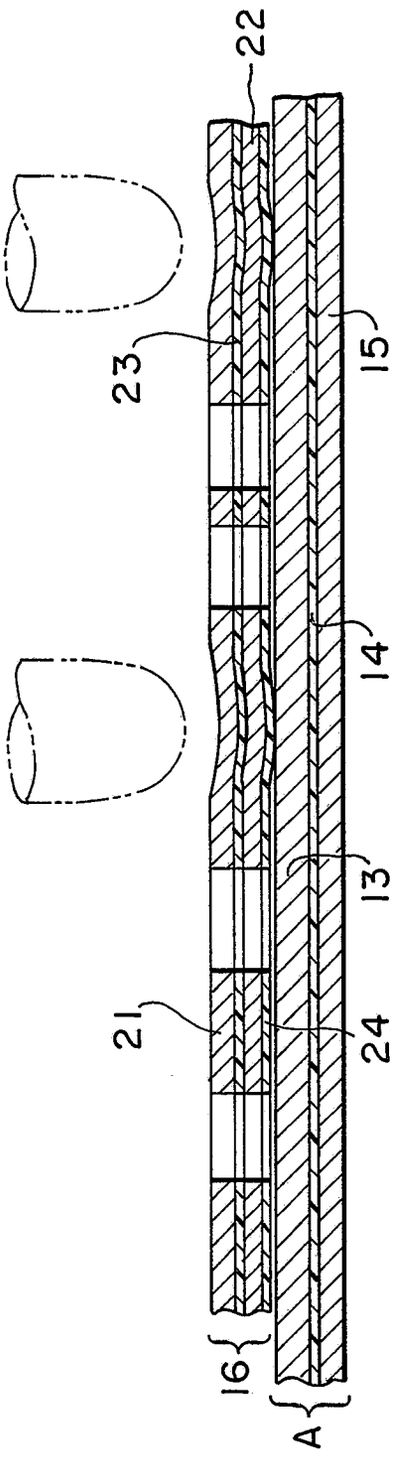


FIG. 13

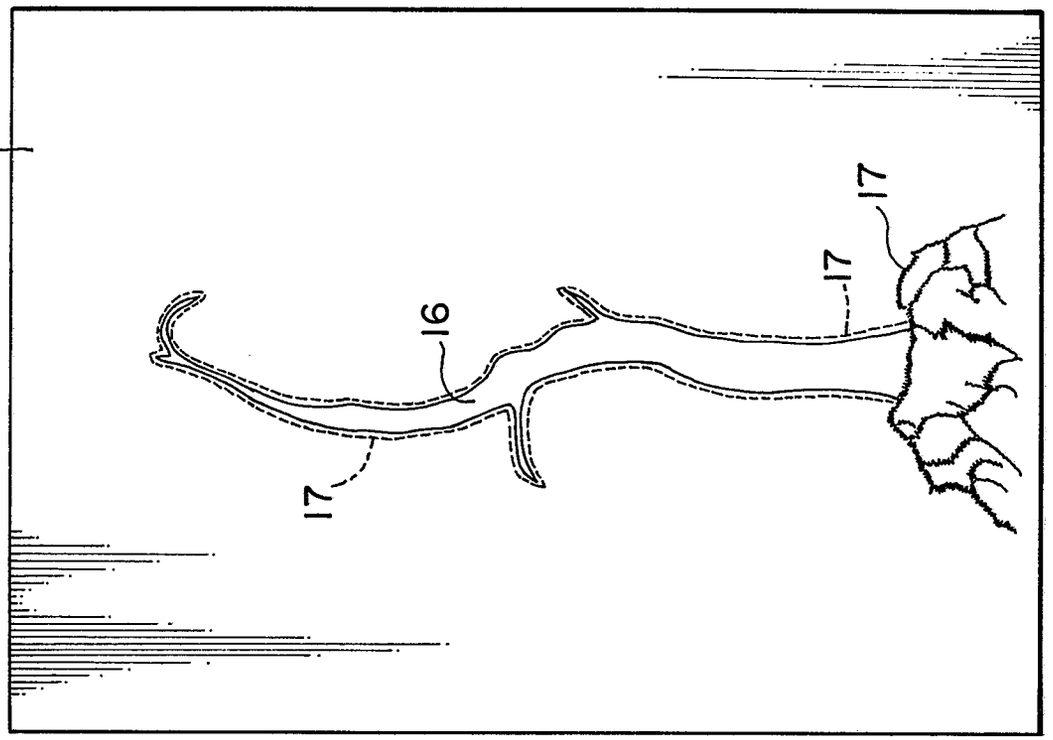
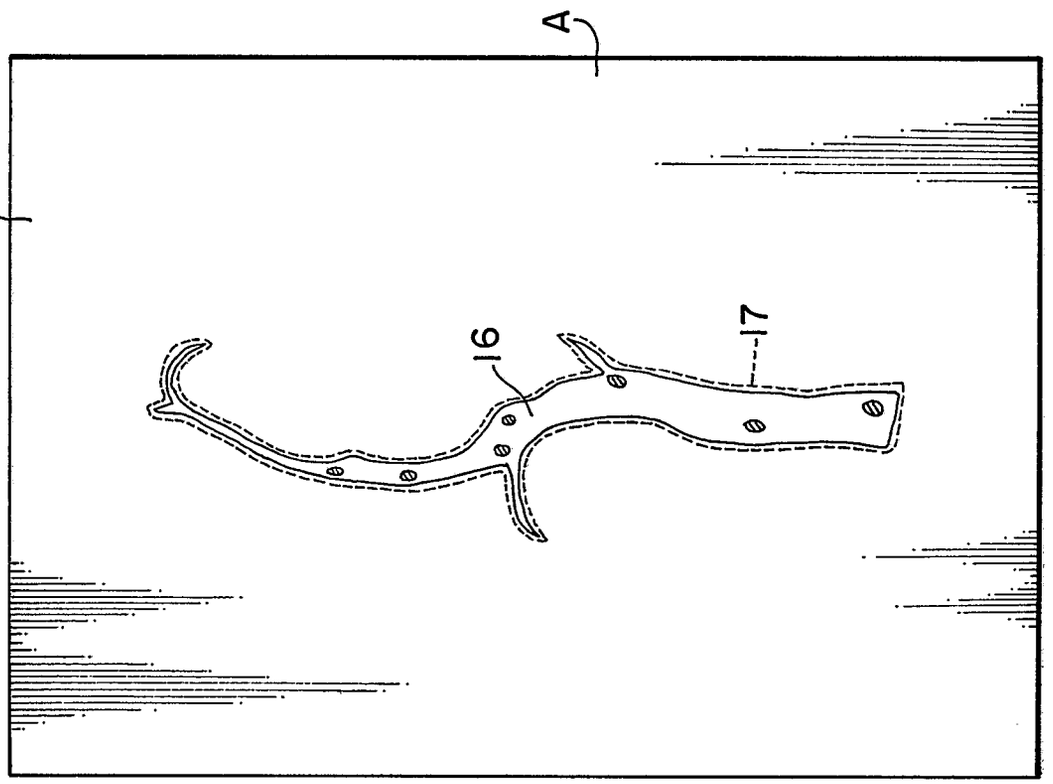


FIG. 12



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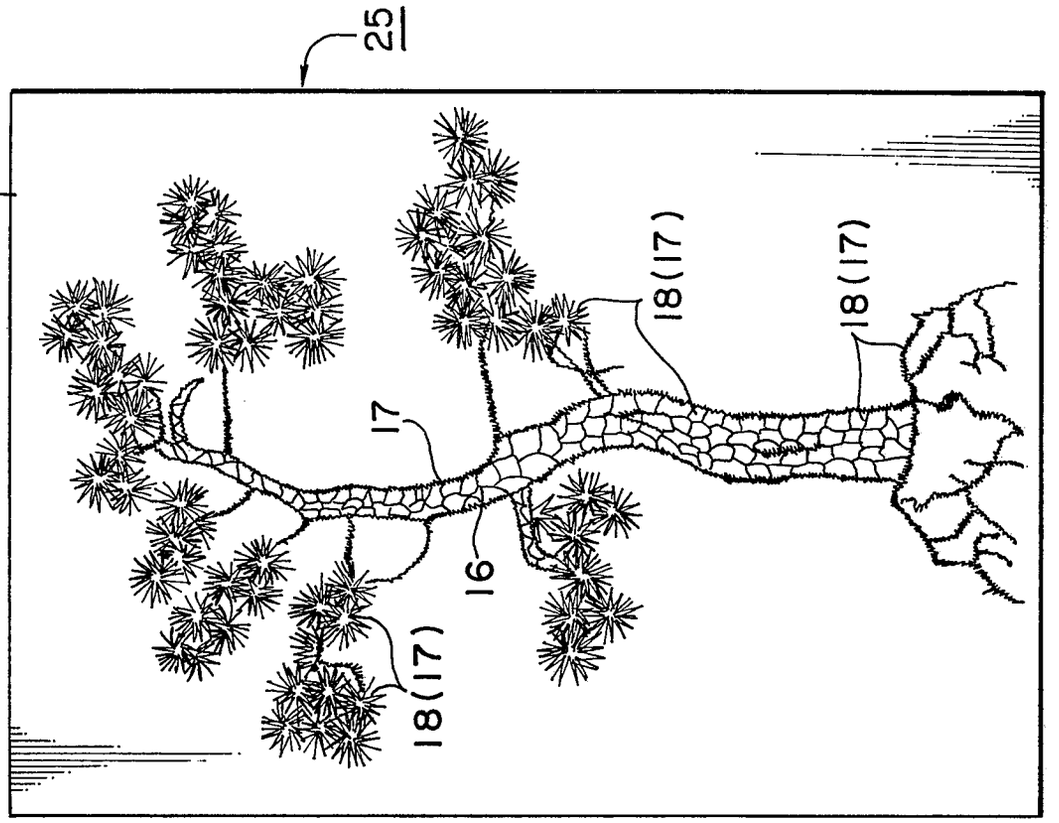

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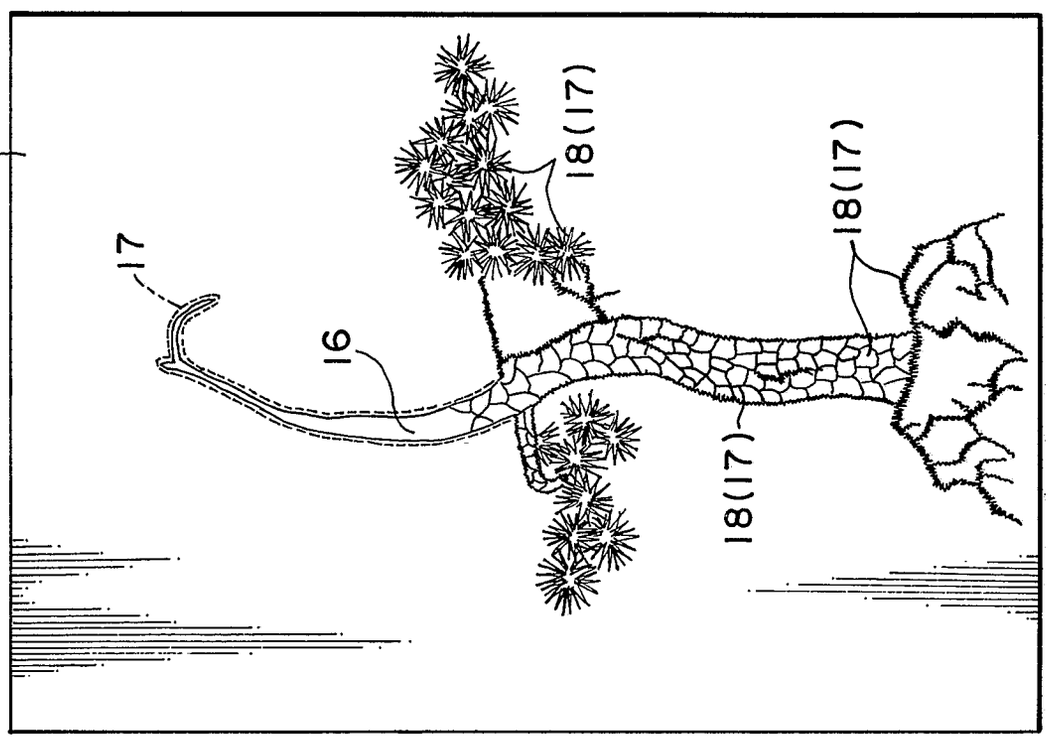

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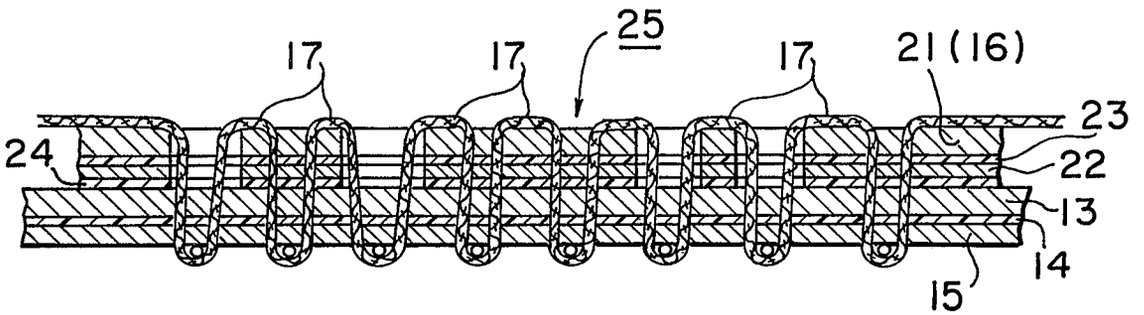
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FIG. 17

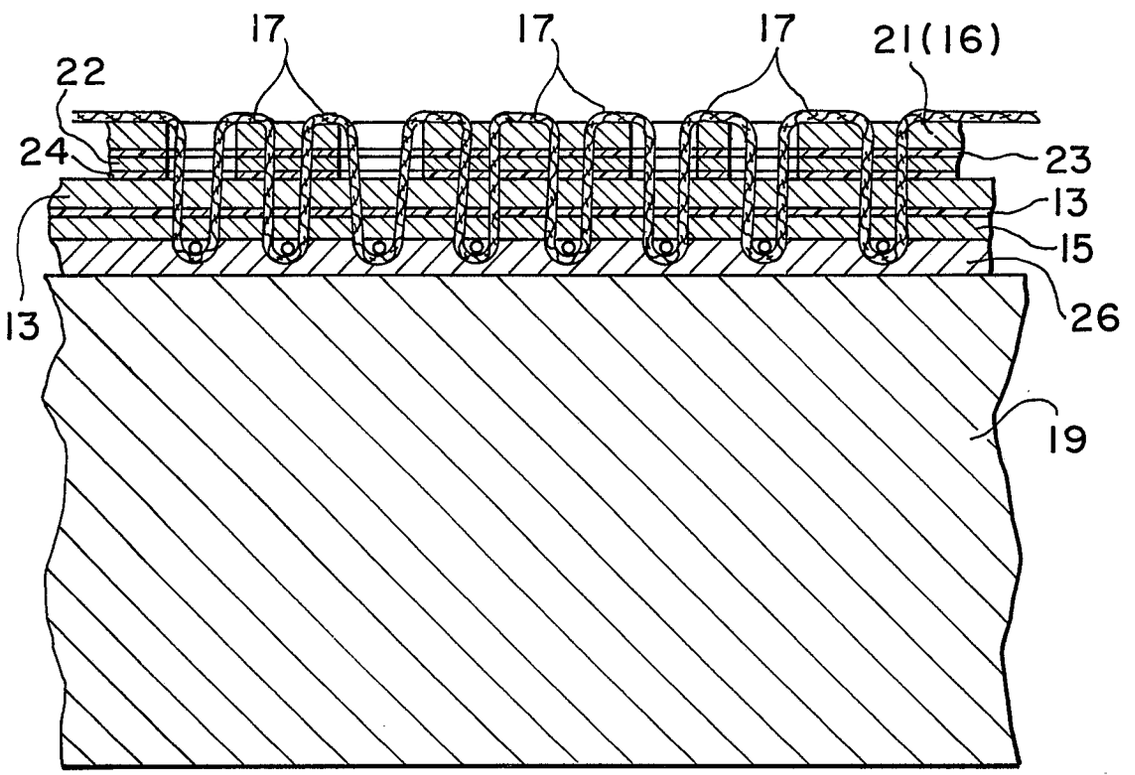
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FIG. 18

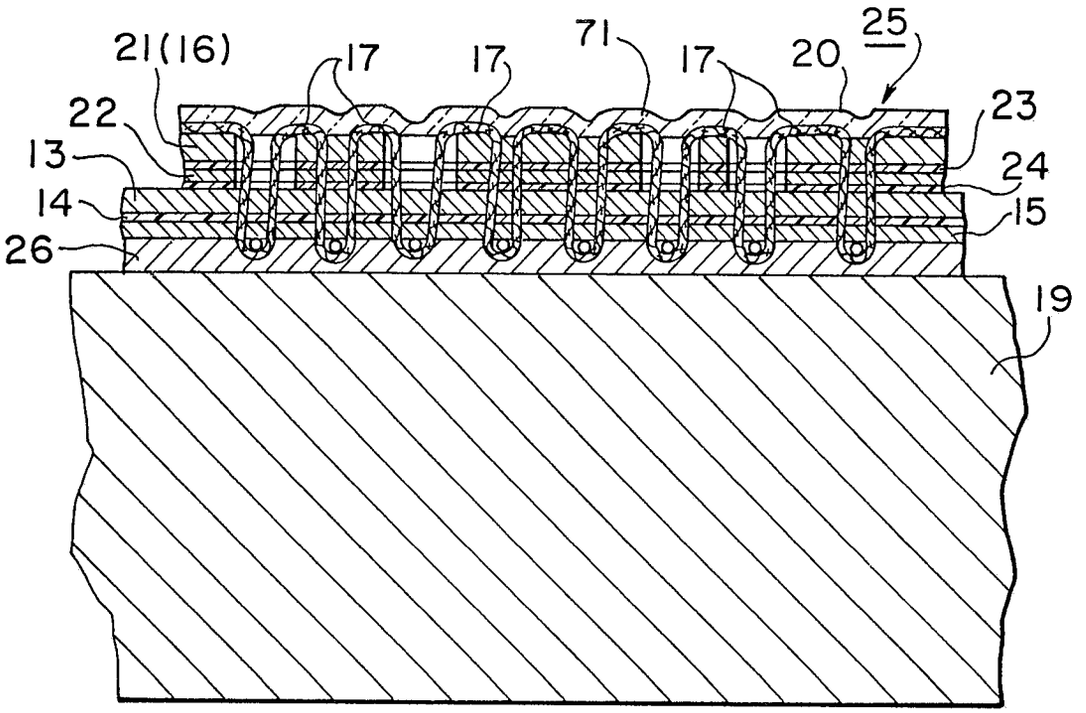
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FIG. 19

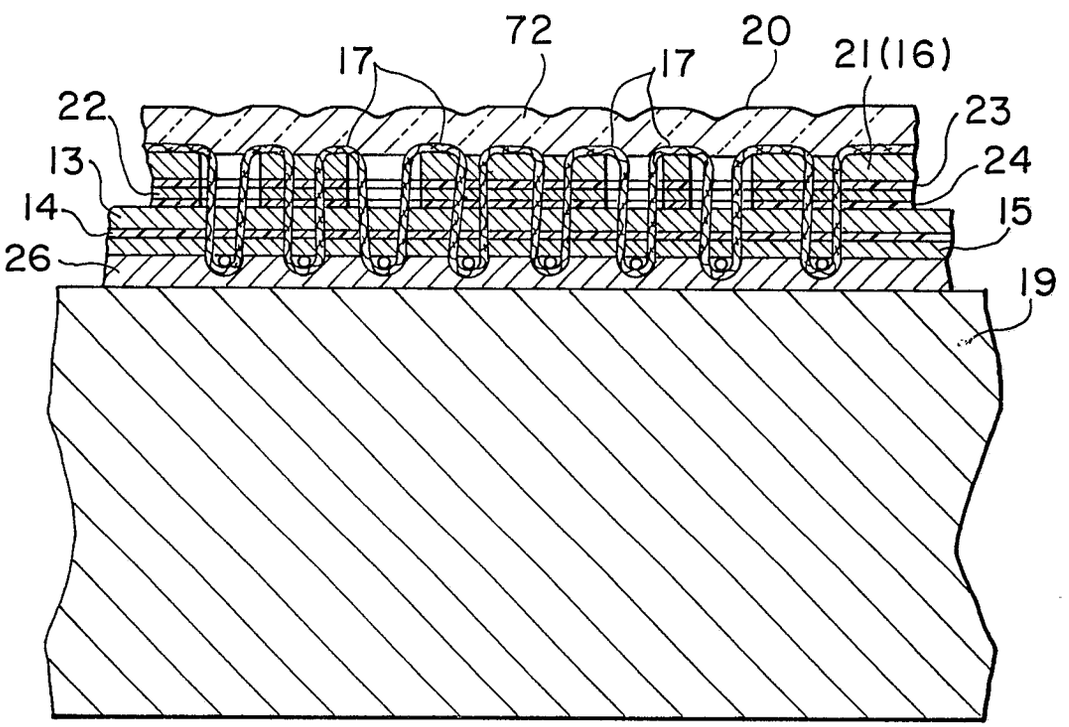
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FIG. 20

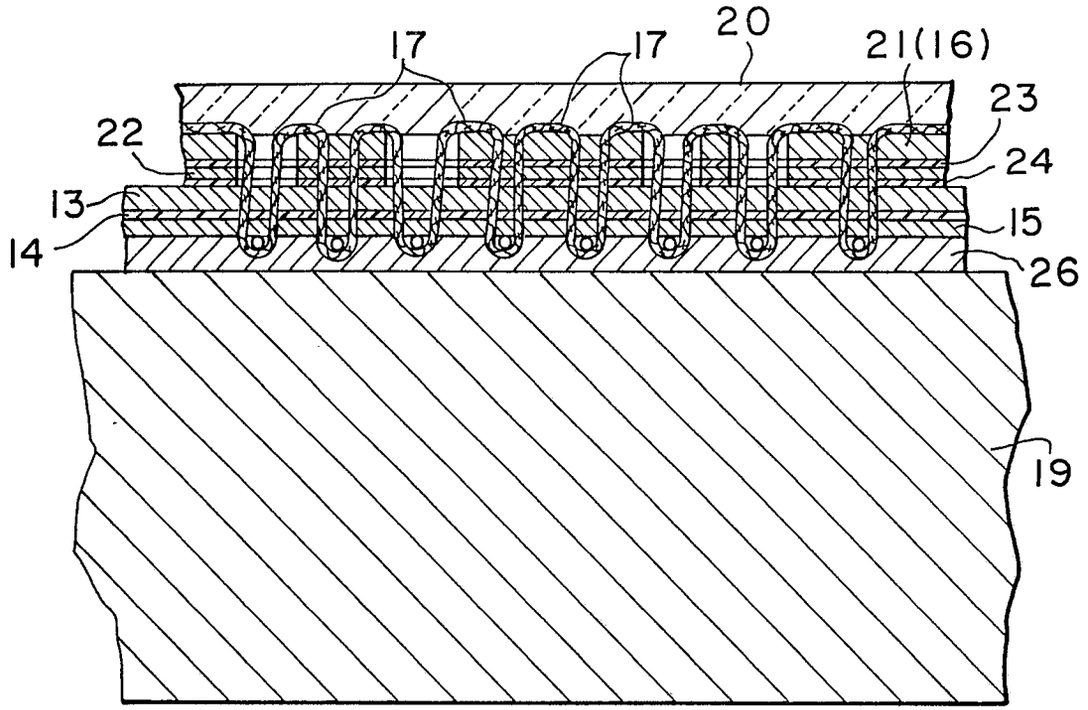
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FIG. 21

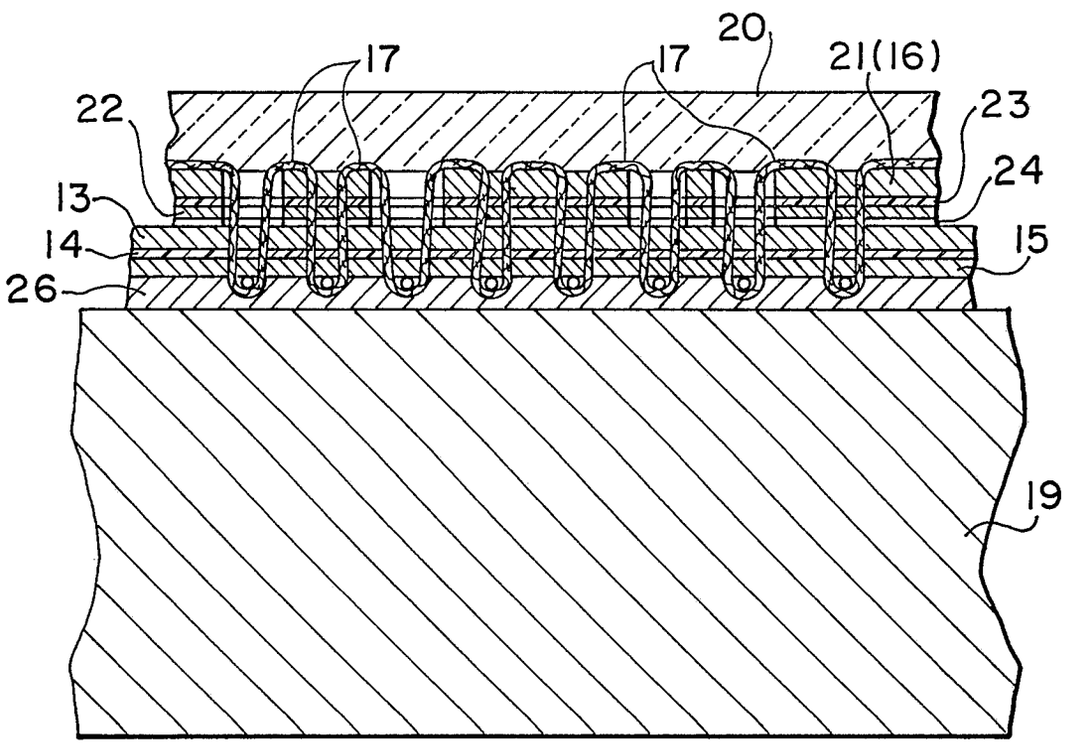
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FIG. 22

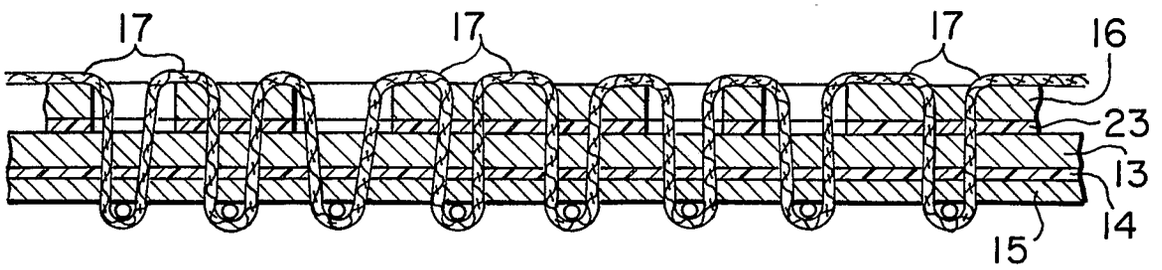

FIG. 23

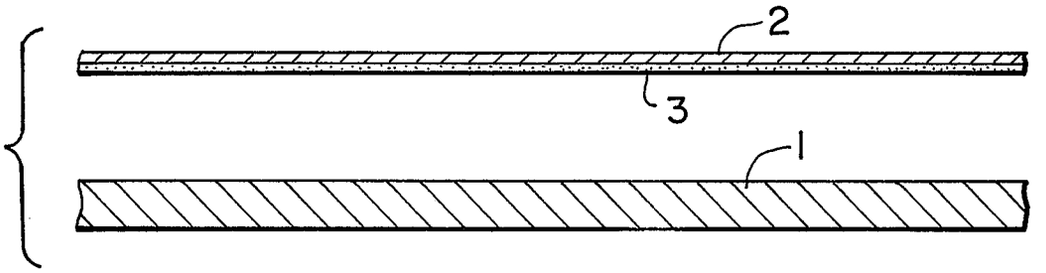

FIG. 24

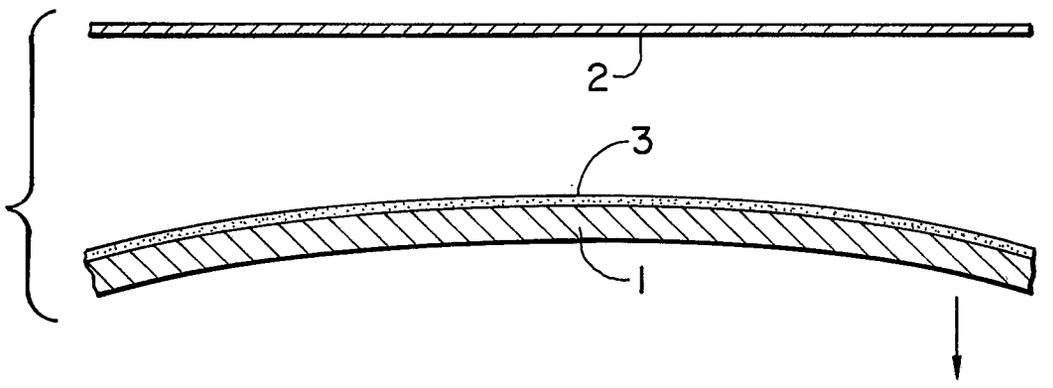

FIG. 25