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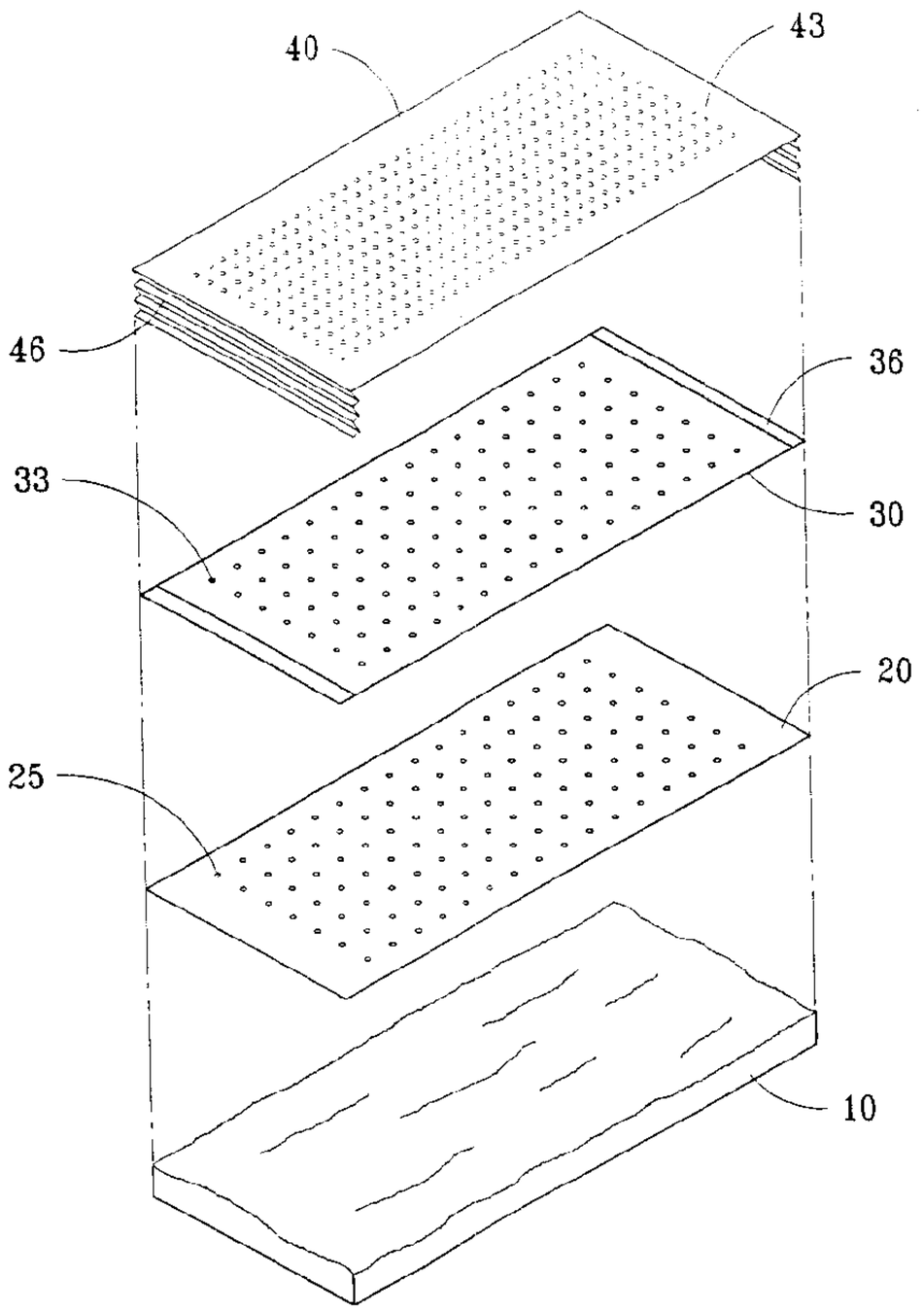
(54) Title: A NOVEL APPARATUS FOR CULTIVATING ORGANOVEGETABLES



(57) Abrégé/Abstract:
The invention relates to a novel apparatus for cultivating organovegetables, which comprises an organic medium layer, a vegetable seeds paper membrane, a position-fixing membrane and an insect-proof screen membrane, and which is formed by laminating in order of said organic medium layer, said vegetable seeds paper membrane, said position-fixing membrane and

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(57) Abrégé(suite)/Abstract(continued):
said insect-proof screen membrane. These components of the novel apparatus of the invention can be prepared into upright rolls which can be cut and applied according to the cultivating area. The novel apparatus according to the invention is used in combination with organic medium layer therein so that it is not restricted by land condition, and makes it an excellent invention having novelty, practicability and progressiveness. The organic medium layer may be eliminated, enabling the vegetable seeds paper membrane, the position-fixing membrane and the insect-proof screen membrane to be directly laid one above another on the land for cultivating organovegetables.

ABSTRACT OF THE DISCLOSURE

The invention relates to a novel apparatus for cultivating organovegetables, which comprises an organic medium layer, a vegetable seeds paper membrane, a position-fixing membrane and an insect-proof screen membrane, and which is formed by laminating in order of said organic medium layer, said vegetable seeds paper membrane, said position-fixing membrane and said insect-proof screen membrane. These components of the novel apparatus of the invention can be prepared into upright rolls which can be cut and applied according to the cultivating area. The novel apparatus according to the invention is used in combination with organic medium layer therein so that it is not restricted by land condition, and makes it an excellent invention having novelty, practicability and progressiveness. The organic medium layer may be eliminated, enabling the vegetable seeds paper membrane, the position-fixing membrane and the insect-proof screen membrane to be directly laid one above another on the land for cultivating organovegetables.

A NOVEL APPARATUS FOR CULTIVATING ORGANOVEGETABLES

BACKGROUND OF THE INVENTION

1. Field of the Invention

The invention relates to a novel apparatus for cultivating organovegetables, and in particular, a novel apparatus for cultivating organovegetables which enables normal growth of vegetables by just supplying suitable amount of water without necessity to sowing, loosing earth, weeds killing, animal pests killing, fertilizing and the like.

2. Description of the Prior Art

Conventional vegetable planting methods are mostly operated according to a scheme comprising of loosing earth, sowing, weeds killing, animal pests killing, fertilizing, killing insects, harvesting and the like, with intervened tedious tasks as regular watering, weeds killing and the like, and thereby various vegetable scan be produced for edible purpose of mankind. However, owing to modern environmental sense and health considerations, uses of insecticide are extremely avoided, and hence organovegetables, being claimed as healthy, environmental protection, toxic-free, and free of residual chemical reagents, has become the most potential and popular vegetables in the 21st century. Furthermore, in a trend of eating PIY (plant-by-

yourself) pollution-free vegetables, the family fine agriculture is prevailing increasingly. Although such family fine agriculture can prevent effectively contamination of pesticides, tedious tasks such as loosing earth, animal pests killing, fertilizing and the like are still needed during cultivating. In particular, as for fertilizing, amount of fertilizer can influence directly the growth of the plant, which leads to a problem to be eagerly solved, that is, how to let a fresh learner who is completely strange in agriculture manage effectively the works of weeds and animal pests killing and the timing and dosage of fertilizing for normal growth of plants. Moreover, due to reasons stated above, growth of plants can not be effectively controlled which influences date of harvesting, and thus results in a disadvantage of irregular harvesting and hence being not able to enjoy fresh vegetables at any time. In addition, in conventional sowing and fertilizing, seeds and fertilizers are been grasped and spread on the soil by hands, which not only always dirties hands after each operation, but also leads to unevenly distribution of seeds and fertilizers in the soil, which can result readily in uneven growing. Further, traditional routes of vegetables cultivation are carried out mostly on a farm land needing a wide land area such that a land becomes essential to cultivation, and also, in some regions or countries, no fertile land can be provided for cultivating plants and vegetables

due to the barren earth quality therein, and thereby, the agricultural development in such regions is limited.

SUMMARY OF THE INVENTION

Accordingly, the object of the invention is to provide a novel apparatus for cultivating organovegetables, comprising an organic medium layer, a vegetable seeds paper membrane, a position-fixing membrane and an insect-proof screen membrane layer, wherein, said organic medium layer contains an appropriate amount of organic soil or organic medium for nourishing and also being the base for cultivating organovegetables, said vegetable seeds paper membrane consists of a lower paper membrane for placing organovegetable seeds on equal distance positions thereon while leaves suitable space and distance needed for their growth, and an upper membrane which covers said seeds and said lower paper membrane by being clamped therewith; and said position-fixing membrane and said insect-proof screen membrane are used through bonding therebetween, wherein, holes corresponding to the seeds on the vegetable seeds paper membrane are provided on said position-fixing membrane for supporting and directing the growth of the vegetable and the area without holes is provided to prevent growing of weeds; while fine venting holes are provided on said insect-proof screen membrane for passing air and water necessary for growth of vegetables and also for preventing insects.

The vegetable seeds paper membrane covers a layer of organic medium layer which provides nutrients essential to the growth of vegetable sees. Through adequate wetting, the vegetable seeds paper membrane will break and thus vegetable seeds therein can fall spontaneously into the organic medium layer which just can supply nutrients necessary for growth of vegetables, and therefore, vegetables can grow normally by supplying merely a suitable amount of water.

The position-fixing membrane provided on said vegetable seeds paper membrane can aid and direct the growth of vegetable, and also has an effect of inhibiting the growth of weeds surrounding the vegetable. Two edges of such position-fixing membrane is bonded adhesively onto corresponding lower faces of two edges of the insect-proof screen membrane. The position-fixing membrane and the insect-proof screen membrane are used in conjunction. The insect-proof membrane has a number of fine venting holes thereon for passing air and water necessary for the growth of vegetables.

As vegetable grows, seeds emerge through the organic medium layer and are directed and positioned by the position-fixing membrane. Thereafter, since the insect-proof screen membrane is a thin and soft membrane, vegetables can grow upwardly against the membrane during their growth without being

suppressed.

In addition, components in the novel apparatus for cultivating organovegetables according to the invention, namely, the organic medium layer, the vegetable seeds paper membrane, the position-fixing membrane and the insect-proof screen membrane are made by rolling into the form of a belt and stored in the form of a roll, and therefore, can be cut into a suitable size and used according to the requirement of cultivating space.

The organic medium layer used in the novel apparatus for cultivating organovegetables according to the invention can solve the problem of the land essential to the cultivation of vegetables, and can be used according to suitable place, area of cultivating region and the like are required by the cultivator. The insect-proof screen membrane and the position-fixing membrane can be used to prevent the growing organovegetables from damaging by insects and the growing of weeds, which is the most important topic in the cultivation of organovegetables. Folding portions of the insect-proof screen membrane can provide a space needed during the growth of organovegetables such that organovegetables can grow upwardly against the insect-proof screen membrane and will not be suppressed thereby.

Alternatively, the organic medium layer can be eliminated, i.e., the novel apparatus for cultivating organovegetables can be

comprised of a vegetable seeds paper membrane, a position-fixing membrane and an insect-proof screen membrane layer, and directly placed on the surface of the land for cultivating organovegetables without necessity to sowing, loosing earth, weeds killing, animal pests killing, fertilizing and the like.

While features and advantages of the invention has been described as above, it is the most outstanding in the use of the novel apparatus for cultivating organovegetables according to the invention that, it has progressiveness in that a fertilizing step can be eliminated through supply nutrients by using the organic medium layer. Also, the organic medium layer can be prepared from garbage and wastes, which makes possible the reuse of wastes, and which constitutes the environmental protection practicability and cost saving characteristic of the invention. Furthermore, during cultivating vegetables by using the apparatus according to the invention, none of herbicides or insecticides is needed for killing weeds and preventing insects so that soils, water and environment will not be polluted, and a nice cycle can be resulted. Moreover, the novel apparatus for cultivating organovegetables according to the invention can save cost of cultivation, simplify agricultural process and solves shortness of manpower in farm as well as can prevent cultivator and farmer from risks of toxic harm and, meanwhile, mankind can benefit well from vegetables free of

residual pesticides.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention, as well as its many advantages, may be further understood by the following detailed description and drawings in which:

Figure 1 is the exploded structural view of the novel apparatus for cultivating organovegetables according to the invention.

Figure 2 is a schematic view showing the use of the novel apparatus for cultivating organovegetables according to the invention.

Figure 3 is a partial enlarged schematic view of the novel apparatus for cultivating organovegetables according to the invention.

Figure 4 is an exploded view of an alternate form of the novel apparatus for cultivating organovegetables according to the invention.

Figure 5 is a schematic view of the vegetable seeds paper membrane which is used in the novel apparatus for cultivating organovegetables according to the invention and which is produced by rolling into the form of a roll.

Figure 6 is a schematic view of the position-fixing membrane and the insect-proof screen membrane which are used in

the novel apparatus for cultivating organovegetables according to the invention and which are produced by rolling into the form of a roll.

Figure 7 is a schematic view of the novel apparatus for cultivating organovegetables according to the invention which is produced by rolling into the form of a roll.

meanings of reference numerals:

10 organic medium layer

20 vegetable seeds paper membrane

25 organovegetable seeds

33 holes

36 bonding portions

40 insect-proof screen membrane

43 fine holes

46 folding portions

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to Figure 1 through 3, which are the exploded, assembled and partial enlarged schematic views of the novel apparatus for cultivating organovegetables according to the invention, respectively. The novel apparatus of the invention comprises components of an organic medium layer **10**, a vegetable seeds paper membrane **20**, a position-fixing membrane **30** and an

insect-proof screen membrane **40**.

Wherein, said organic medium layer **10** contains an appropriate amount of organic soil or organic medium for nourishing and also being the base for cultivating organovegetables; said vegetable seeds paper membrane **20** consists of a lower paper membrane for placing organovegetable seeds **25** on equal distance positions thereon while leaves suitable space and distance needed for their growth, and an upper membrane which covers said seeds and said lower paper membrane by being clamped therewith; and said position-fixing membrane **30** and said insect-proof screen membrane **40** are used through bonding therebetween, wherein, holes **33** corresponding to the seeds **25** on the vegetable seeds paper membrane **20** are provided on said position-fixing membrane **30** for supporting and directing the growth of the vegetable, the part without holes **33** suppresses upward growing of weeds, and bonding portions **36** are provided on edges of two sides of the position-fixing membrane **30** for bonding adhesively onto the corresponding edges of the insect-proof screen membrane **40**, while fine venting holes **43** are provided on said insect-proof screen membrane **40** for passing air and water necessary for growth of vegetables and also for preventing insects, and folding portions **46** are provided on two sides of the insect-proof screen membrane for providing spaces

needed for growth of organovegetables during cultivating such that they can grow upwardly against the insect-proof screen membrane **40** without limiting on growth thereof.

The vegetable seeds paper membrane **20** covers a layer of organic medium layer **10** which provides nutrients essential to the growth of vegetable seeds. through adequate wetting, the vegetable seeds paper membrane **20** will break and thus vegetable seeds **25** therein can fall spontaneously into the organic medium layer **10** which just can supply nutrients necessary for growth of vegetables, and therefore, vegetables can grow normally by supplying merely suitable amount of water.

The position-fixing membrane **30** provided on said vegetable seeds paper membrane **20** can aid and direct the growth of vegetable. Bonding portions **36** provided on two edges of such position-fixing membrane **30** is bonded adhesively onto corresponding lower faces of two edges of the insect-proof screen membrane **40**. The position-fixing membrane **30** and the insect-proof screen membrane **40** are used in conjunction. The insect-proof screen membrane **40** has a number of fine venting holes **43** thereon for passing air and water necessary for the growth of vegetables. As vegetables grow, seeds **25** emerge through the organic medium layer **10** and are directed and positioned by the position-fixing membrane **30**. Thereafter, since the insect-proof

screen membrane **40** is a thin soft membrane, vegetables can grow upwardly against the membrane during their growth without being suppressed.

As an alternate form of the invention, the organic medium layer can be eliminated from the novel apparatus for cultivating organovegetables according to the invention, i.e., the novel apparatus for cultivating organovegetables can be comprised of a vegetable seeds paper membrane **20**, a position-fixing membrane **30** and an insect-proof screen membrane layer **40** (see Figure 4). Theses three components can be respectively made by rolling into the form of a belt and stored in the form of a roll, and then directly placed on the surface of the land with one above another for cultivating organovegetables without necessity to sowing, loosing earth, weeds killing, animal pests killing, fertilizing and the like.

In addition, referring to Figures 5, 6 and 7, either two or three or all of the components in the novel apparatus for cultivating organovegetables according to the invention, namely, the organic medium layer **10**, the vegetable seeds paper membrane **20**, the position-fixing membrane **30** and the insect-proof screen membrane **40**, can be made by rolling into the form of a belt and stored in the form of a roll, and therefore, can be cut into a suitable size and used according to the requirement of cultivating space.

The organic medium layer **10** used in the novel apparatus for cultivating organovegetables according to the invention can solve the problem of the land essential to the cultivation of vegetables, and can be used according to suitable space, area of cultivating region and the like as required by the cultivator. The insect-proof screen membrane **40** can be used to prevent the growing organovegetables from damaging by insects, which is the most important topic in the cultivation of organovegetables. Folding portions **46** of the insect-proof screen membrane **40** can provide a space needed during the growth of organovegetables such that organovegetables can grow upwardly against the insect-proof screen membrane **40** and will not be suppressed thereby.

Further, fine holes **43** provided on the insect-proof screen membrane **40** according to the invention have functions as venting, insect-proof and resistance to scrubbing by heavy rain, and hence can provide vegetable good environment and conditions for growing. The insect-proof screen membrane **40** is foldable which favors use thereof by users or storing thereof when it is not used.

Accordingly, the novel apparatus for cultivating organovegetables according to the invention, when used in the cultivation of organovegetables, has the following advantages:

1. Using of the novel apparatus for cultivating organovegetables according to the invention is not limited by cultivating land,

and can adapted to cultivation on deserts, stone lands or poor soils.

2. Using of the novel apparatus for cultivating organovegetables according to the invention can eliminate the step of sowing, and can carried out the cultivation by just assembling in once in the order of an organic medium layer, a vegetable seed paper membrane, a position-fixing membrane and an insect-proof screen membrane into the apparatus according to the invention.

3. Using of the novel apparatus for cultivating organovegetables according to the invention, the insect-proof screen membrane therein has functions as venting, insect-proof, and resistance to scrubbing by heavy rain, and hence can provide vegetables good environment and conditions for growing and thereby can have a good harvest.

4. Using of the novel apparatus for cultivating organovegetables according to the invention, the position-fixing membrane suppresses growing of weeds and eliminates consumption of fertilizers by weeds that influences the growing of organovegetables.

5. Using of the novel apparatus for cultivating organovegetables according to the invention, the step of fertilizing can be eliminated by supply nutrients through an organic medium layer, whereby, simplify cultivating process and thus exhibits

progressiveness.

6. Using of the novel apparatus for cultivating organovegetables according to the invention, the organic medium layer therein can be prepared from garbage and wastes, and thus, enables reuse of wastes, which exhibits environmental protection practicability and cost saving.

Many changes and modifications in the above described embodiments of the invention can, of course, be carried out without departing from the scope thereof. Accordingly, to promote the progress in science and the useful arts, the invention is disclosed and intended to be limited only by the scope of the appended claims.

What is claimed is:

1. A novel apparatus for cultivating organovegetables, comprising:

an organic medium layer, containing an appropriate amount of organic soil or organic medium, being prepared by rolling into the form of an upright roll;

a vegetable seeds paper membrane, consisting of a lower paper membrane having one or more vegetable seeds disposed on equal distance thereon, and an upper paper membrane bonding and covering onto said lower paper membrane and clamping therebetween and being prepared by rolling into the form of an upright roll;

a position-fixing membrane, having holes provided thereon which correspond to the vegetable seeds on said vegetable seeds paper membrane, and having bonding portions provided on two sides thereof, and being prepared by rolling to the form of an upright roll;

an insect-proof screen membrane, being a fine mesh screen having a plurality of fine holes, and being prepared by rolling into the form of an upright roll, two sides thereof being able to fold into folding portions;

by means of the above structural design, during cultivating, placing directly said vegetable seeds paper membrane having vegetable seeds adsorbed thereon onto the surface of said organic

medium layer, wetting adequately said paper membrane with water to break it, and then covering the cultivating region by placing simultaneously both of said position-fixing membrane and said insect-proof screen membrane thereon to guide the growth direction of vegetables and exhibit functions of weeds-proof, insect-proof and wind resistance.

2. A novel apparatus for cultivating organovegetables as in claim 1 wherein said organic medium layer holds an amount of organic soil or organic medium and rolled into the form of an upright roll.

3. A novel apparatus for cultivating organovegetables as in claim 1, wherein said adhesives on said vegetable seeds paper membrane can be replaced by organic fertilizer and thereby, said upper and lower paper membranes can be bonded by said organic fertilizer to hold said vegetable seeds in position, and thus, can eliminate the afterward fertilizing step.

4. A novel apparatus for cultivating organovegetables as in claim 1, wherein several kinds of vegetable seeds can be held in said vegetable seeds paper membrane.

5. A novel apparatus for cultivating organovegetables as in claim 1, wherein a space is provided between said position-fixing membrane and said insect-proof screen membrane for facilitating air circulation and water passing.

6. A novel apparatus for cultivating organovegetables as in claim 1, wherein said insect-proof screen membrane, said position-fixing membrane, said vegetable seeds paper membrane and said organic medium layer are prepared into upright rolls and thus can be cut and applied according to actual cultivating area.

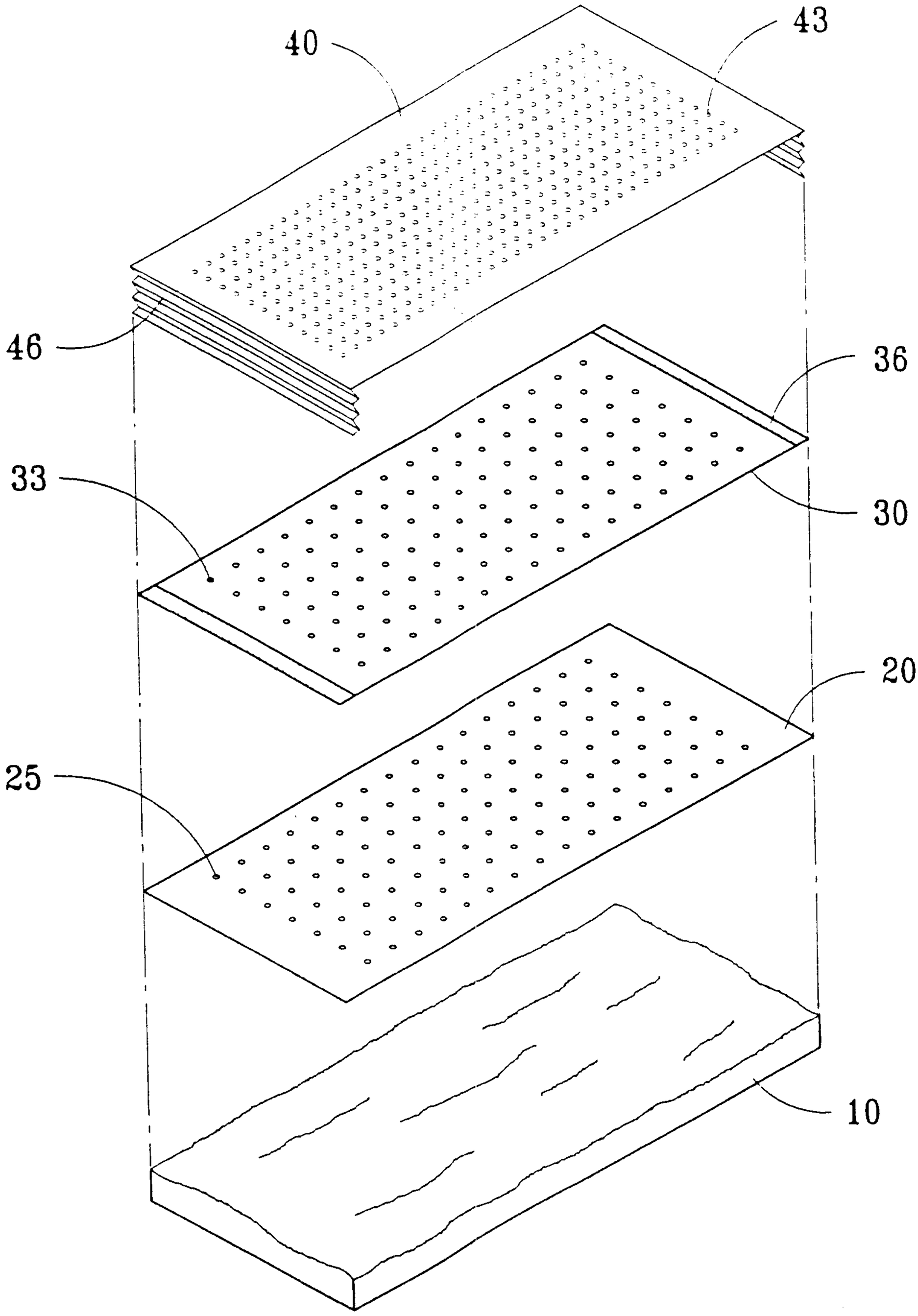


FIG. 1

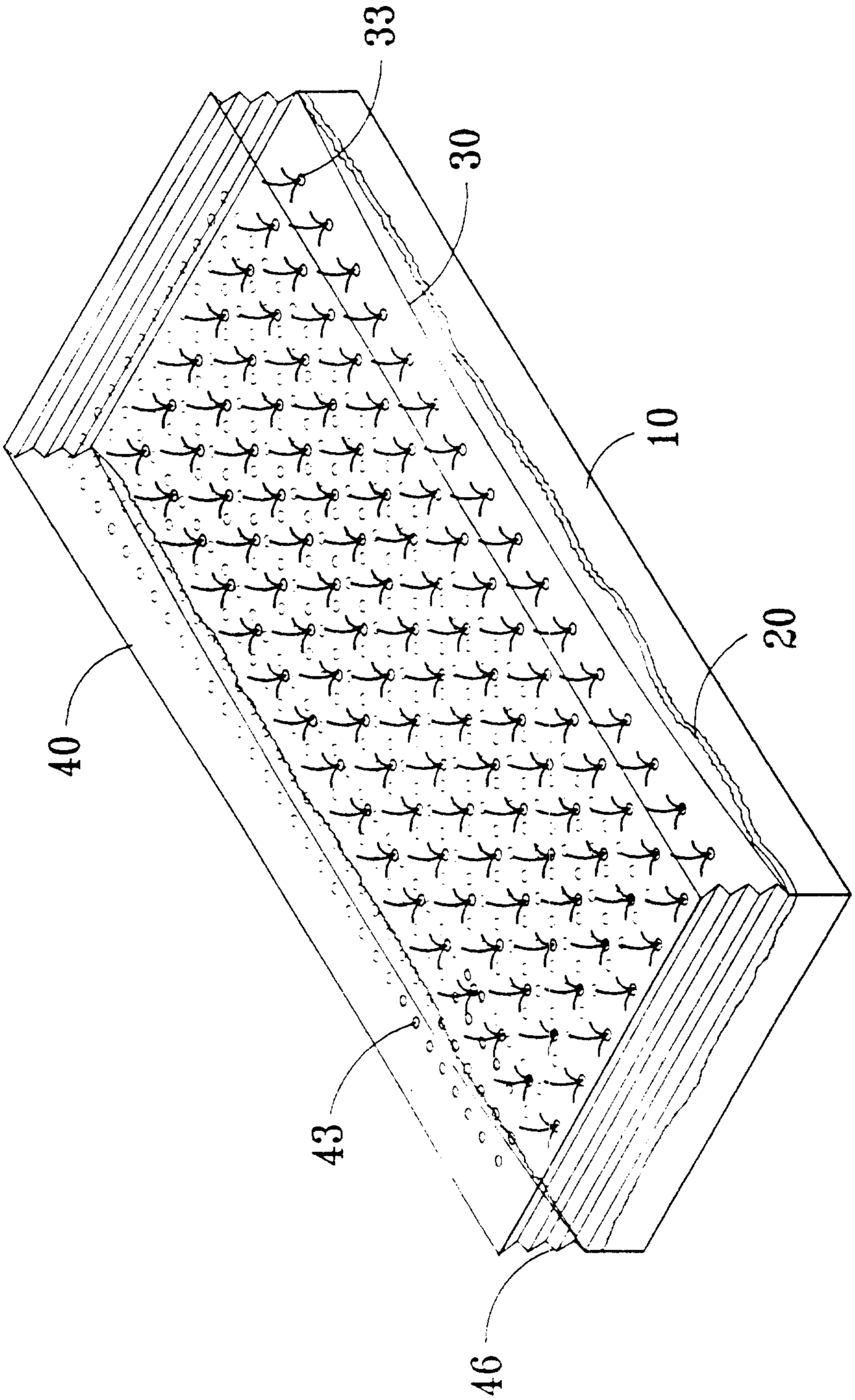


FIG. 2

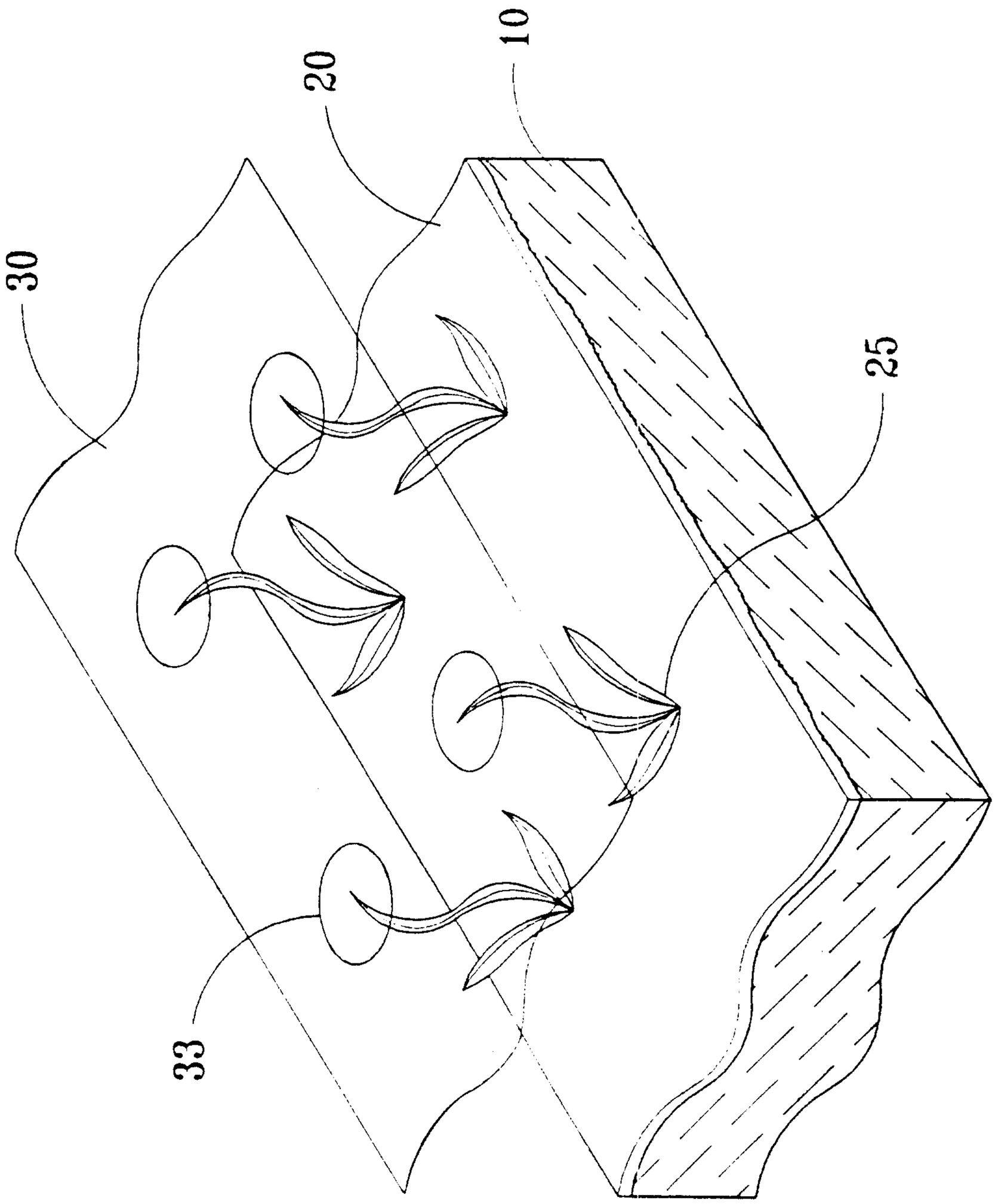


FIG. 3

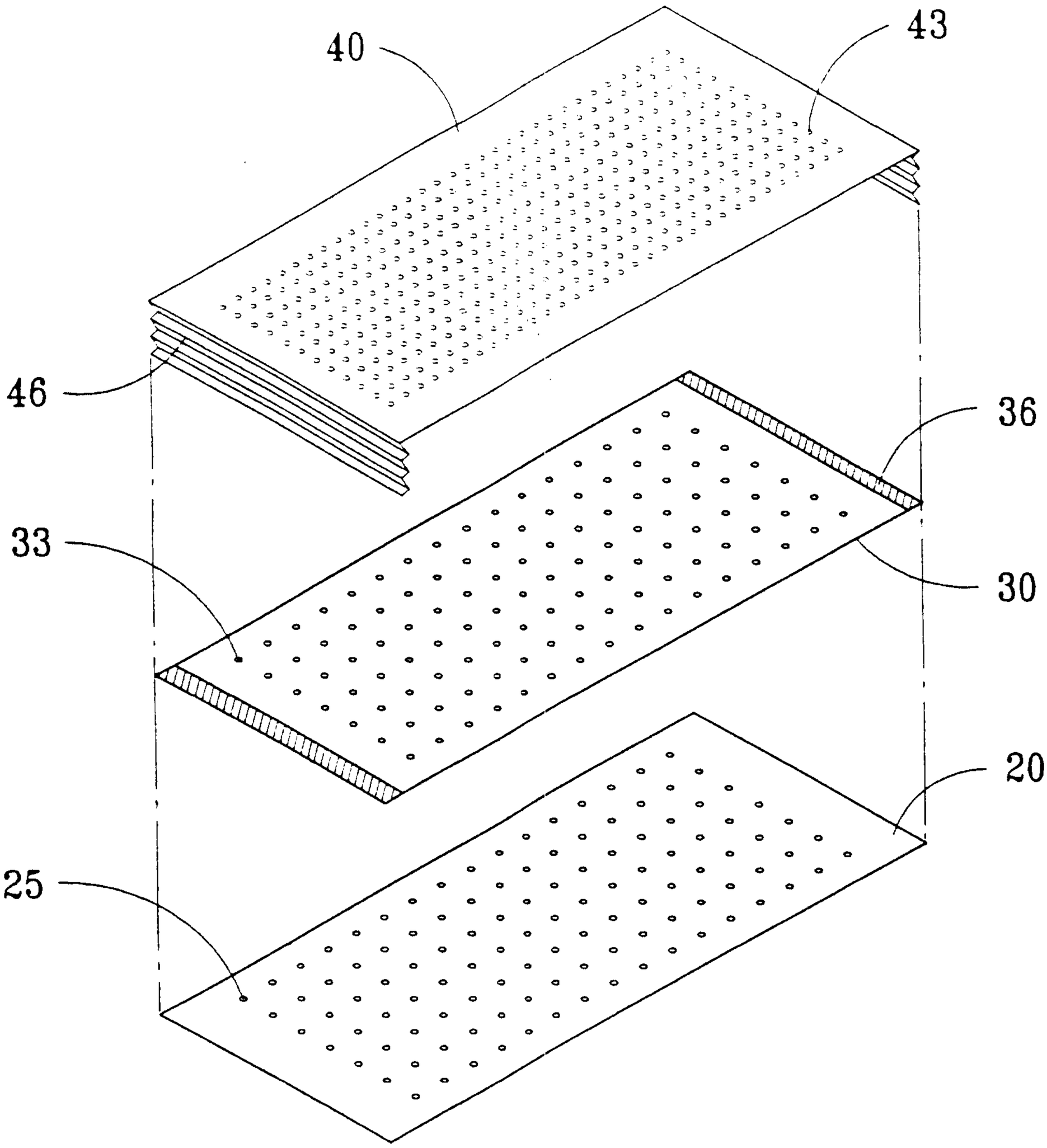


FIG. 4

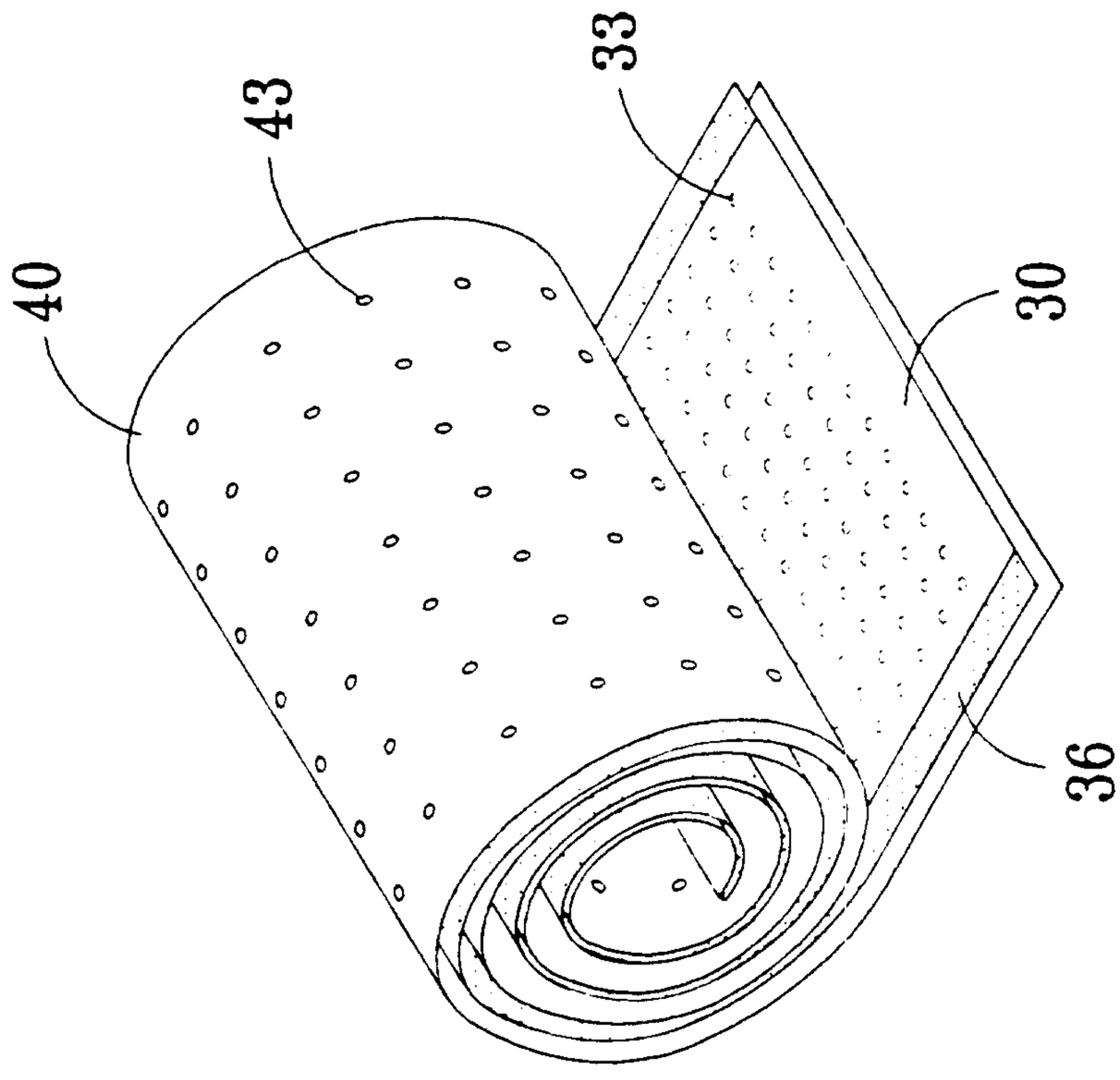


FIG. 6

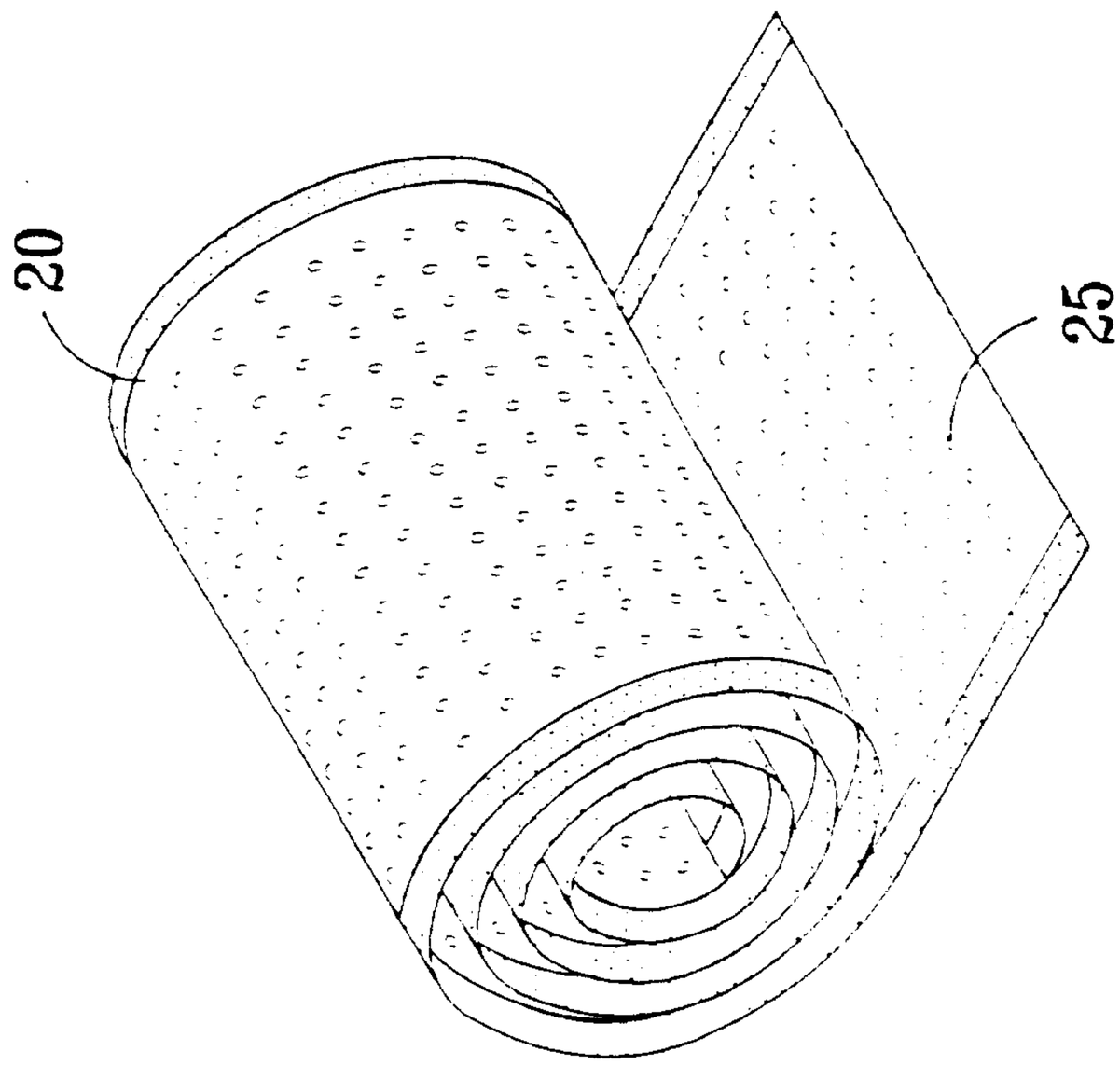


FIG. 5

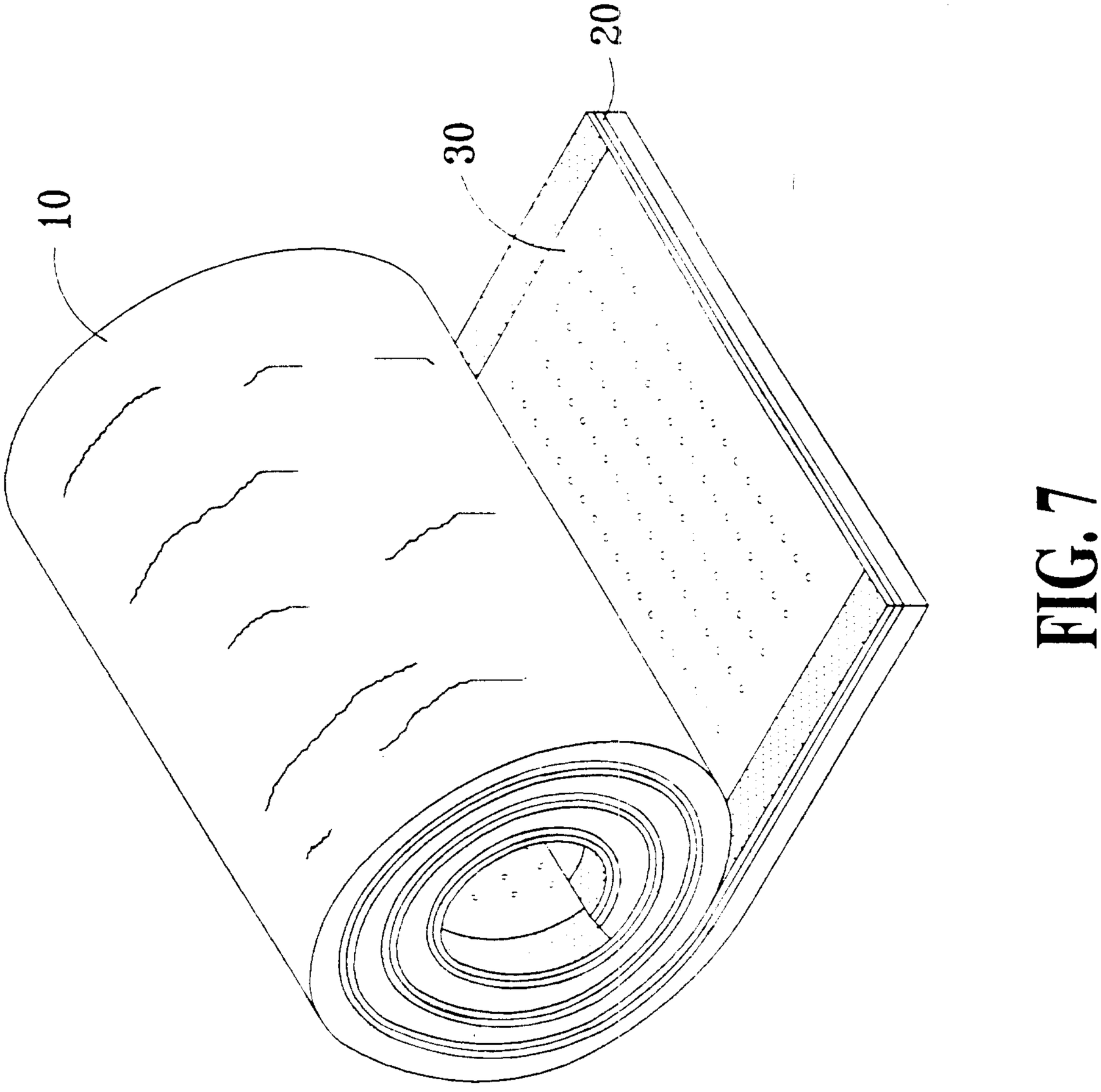
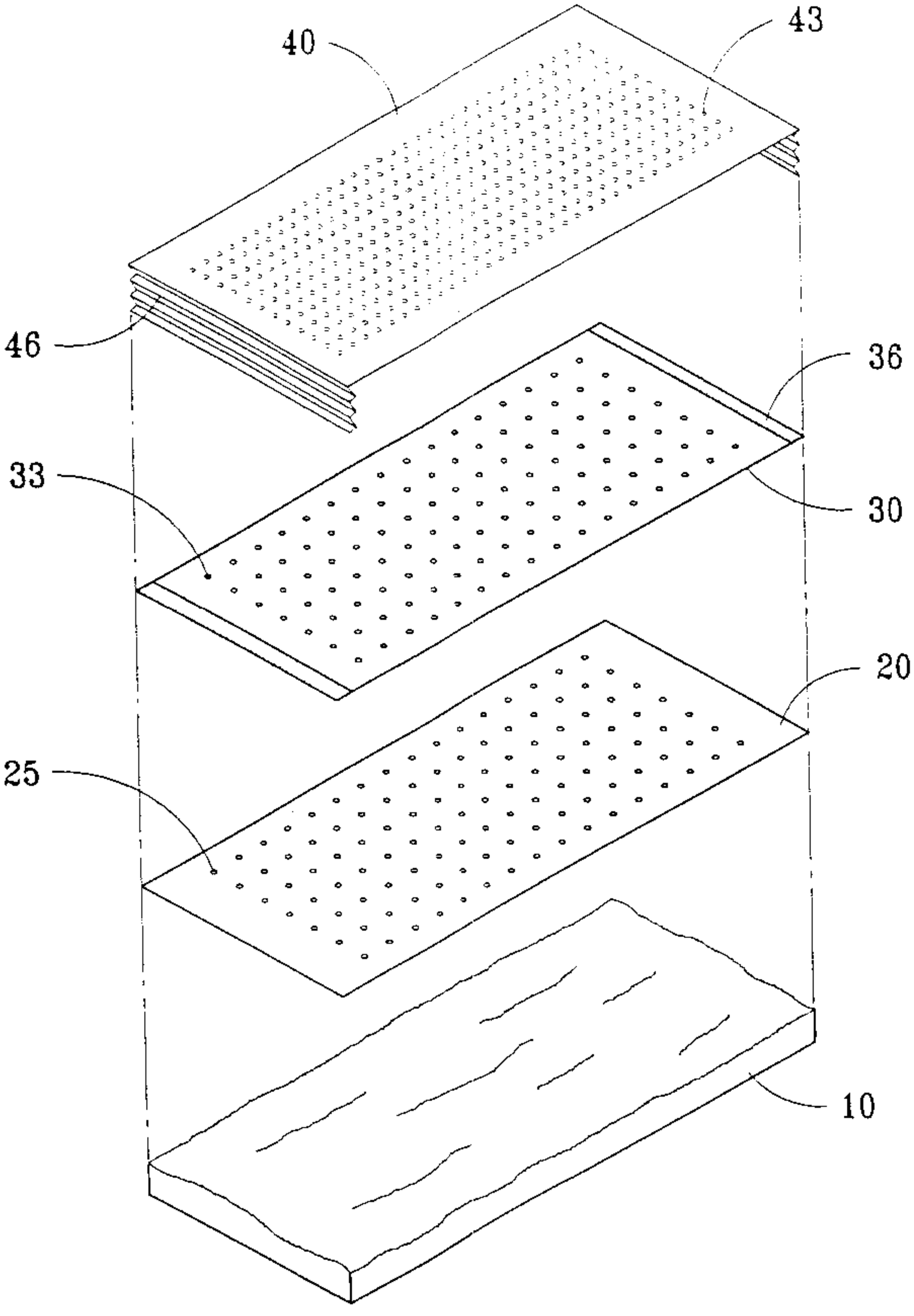


FIG. 7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