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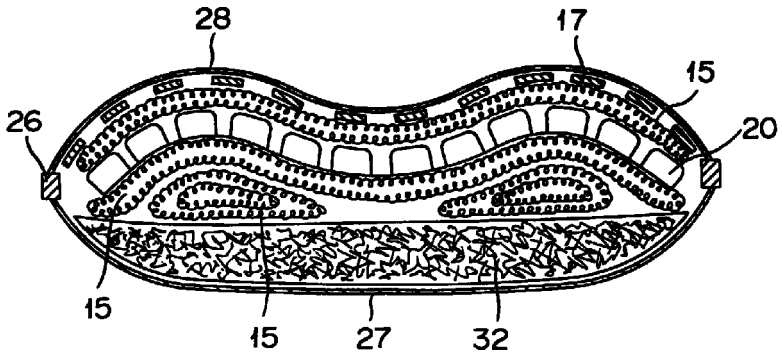
(54) Pillow for sound sleep

(57) This invention concerns a pillow for sound sleep which has a containing bag packed with one metallic web formed of helical metallic threads or a plurality of such metallic webs prepared in a superposed state.

The pillow for sound sleep is completed by spreading a plastic cushioning material on the bottom part of the containing bag, piling the metallic webs thereon, mounting a cooling medium further thereon, disposing a metallic web having magnets attached thereto in such a manner that the side thereof carrying the magnets may fall on the outer side, adjusting the metallic webs in position so as to conform to the prospective shape of the pillow, and closing fasteners of the container bag.

FIG. 10



EP 1 013 202 A2

Description

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] This invention relates to a pillow for sound sleep, having a containing bag packed with one metallic web formed of helical metallic threads or a plurality of such metallic webs prepared in a superposed state.

2. Description of the Prior Art

[0002] Heretofore, pillows produced by filling bags with such packing materials as cereal hulls, feathers, and sponge have been in popular use.

[0003] The pillows which are used cereal hulls as the packing material for their bags, however, entail such problems as affording poor ventilation of air because the bags are tightly packed to capacity with the cereal hulls and preventing the users thereof from feeling comfortable because the users' heads contact with the bags intimate by and consequently an inevitable rise of temperature occurs in the areas of such tight contact.

[0004] Very recently, therefore, pillows packed the materials incorporated with therein metallic powders that raw materials are procured readily and inexpensively and which promise improvement in the feeling of use have been developed. The pillows packed the materials incorporated with such metallic powders, though suffering from gain in weight proportionately to the weight of the metal so lodged, are best fit the use during the summer season or the use by a person suffering from a rise of body temperature because the metallic powders are capable of conferring improved ventilation of air on the pillows and preventing the pillows from easily rising in temperature.

SUMMARY OF THE INVENTION

[0005] It is an object of this invention to overcome the faults owned by the conventional pillows as described above and provide a pillow for sound sleep which affords fine ventilation of air and produces an excellent feeling of use as well.

[0006] The pillow of this invention for sound sleep is produced by bundling helically shaped metallic threads into a ribbon thereby giving rise to an aggregate of helical metallic threads, mutually weaving such aggregates of helical metallic threads or mutually connecting such aggregates of helical metallic threads parallel thereby forming a metallic web, and containing in a bag one such metallic web or a plurality of such metallic webs as laid in a superposed state.

[0007] When a proper number of metallic webs formed as described above are contained as superposed in a bag, a pillow which possesses excellent elastic force and restoring force and exhibits a stable cushioning property at any position will be produced. As a result, the pillow becomes fully adapted to the contour of the user's head and produces an improved feeling of use. Since the pillow further becomes improved ventilation of air and thermal conductivity, it serves the purpose of repressing the rise of temperature in the part of tight contact between itself and the head in spite of its full conformity to the contour of the head and producing a refreshing feeling and a bracing feeling.

[0008] The pillow of this invention for sound sleep permits to insert a cooling medium under the metallic webs contained in the bag. The bag is provided with a fastener for enabling the cooling medium to be moved into and out of the bag. The user of the pillow, when necessary, can insert the cooling medium into the pillow. The cooling medium so inserted is enabled to cool effectively the user's head through the medium of the metallic webs which have highly significant thermal conductivity, with the result that the user of the pillow will enjoy wonderful refreshing feeling and bracing feeling.

[0009] The cooling medium is obtained by filling a plurality of blocks formed by partitioning a pouch of soft sheet each with an antifreezing fluid or a colloidal coolant having a large specific heat.

[0010] The cooling medium, therefore, is deformed so as to conform intimately to the contour of the metallic web and consequently enabled to cool effectively the head through the medium of the metallic web of good thermal conductivity. Even when the head shifts the center of gravity thereof, the pillow readily changes the contour thereof in concert with the shift of the head and conserves a stable state constantly. The pillow keeps the feeling of use intact even when the cooling medium is inserted therein.

[0011] A plurality of magnets are disposed on one of the opposite sides of the metallic web. Consequently, the magnetic effect of these magnets induces the user of the pillow to fall into deep sleep and enjoy a good influence on his health.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012]

Fig. 1 is a diagram schematically illustrating the shape of a helically shaped metallic thread.

Fig. 2 is a diagram illustrating an aggregate of helical metallic threads formed from helically shaped metallic threads of the construction shown in Fig. 1.

Fig. 3 is a schematic diagram of cores of the aggregate of metallic metal threads shown in Fig. 2.

Fig. 4 is a diagram illustrating an aggregate of helical metallic threads formed as fixed on the cores shown in Fig. 3.

Fig. 5 is a diagram illustrating a metallic web formed by interweaving such aggregates of helical metallic threads shown in Fig. 4.

Fig. 6 is a diagram illustrating a metallic web formed

by bundling aggregates of helical metallic threads shown in Fig. 4 parallel with ribbons.

Fig. 7 is a diagram illustrating a metallic web having magnets attached thereto.

Fig. 8 is a diagram illustrating the construction of a cooling medium to be inserted in a pillow for sound sleep.

Fig. 9 is a diagram illustrating the construction of a bag for containment as a component for the pillow for sound sleep.

Fig. 10 is a cross section of the pillow for sound sleep.

DETAILED DESCRIPTION OF THE INVENTION

[0013] Now, this invention will be described in detail below with reference to the diagrams illustrating one preferred embodiment of the invention.

[Process for formation of metallic web]

[0014] First, the process for forming a metallic web by arraying a plurality of aggregates of helical metallic threads will be described.

[0015] Fig. 1 is a diagram schematically illustrating the shape of a helical metallic thread as the basis for the metallic web.

[0016] A helical metallic thread 1 is produced by rolling a stainless steel wire into a strip, 0.6 mm in width and 0.02 mm in thickness, and helically curling the strip.

[0017] This helical metallic thread 1 is coiled into some tens of loops of a diameter of about 10 mm and then bundled in a tucked state as corrected in shape so as to give birth to a slender belt-like bundle 2 of helical metallic threads, about 500 mm in length, as illustrated in Fig. 2.

[0018] To a core 5 which has the same length as the bundle 2 of helical metallic threads as illustrated in Fig. 3 and is formed by fixing soft beads 4 (optionally formed of rubber) of a diameter of 5 mm in a slip-proof state as spaced regularly on a string 3 of nylon, for example, about 0.5 mm in diameter, the bundle 2 of helical metallic threads illustrated in Fig. 2 is fixed with the aid of bundling bands 6 as illustrated in Fig. 4.

[0019] As a result, the bundle 2 of helical metallic threads 2 having no stable shape is fixed to the core 5, with the result that an aggregate 7 of helical metallic threads so reinforced as to avoid being laterally elongated or contracted will be formed. Further, something like a cord may be optionally wound entanglingly on the aggregate 7 of helical metal threads lest the aggregate should stretch.

[0020] The aggregates 7 of helical metallic threads formed as described above and then arrayed in longitudinal and lateral lines are interwoven till an area corresponding to the expected shape of a pillow for sound sleep to form such a metallic web piece 10 as illustrated in Fig. 5. Then, the terminals, about 20 mm in length, of both the lateral lines 10A and longitudinal lines 10B of the metallic web piece 10 are respectively bound with the adjoining terminals throughout the entire periphery of the web. This work completes the formation of a reinforced, unstretchable, and softly resilient metallic web 15.

[0021] This metallic web 15 may be alternatively formed as follows.

[0022] Reinforced aggregates 7 of helical metallic threads constructed as illustrated in Fig. 4 are parallel arranged as shown in Fig. 6 and bundled in situ by interweaving ribbons 12 therethrough at several portions to form a metallic web piece 10 of an area corresponding to the shape of a pillow for sound sleep. Then, the opposite terminals, about 20 mm in length, of the metallic web piece 10 are superposed respectively on the adjoining terminals and bundled with bundling bands 6. This work completes the formation of a reinforced, unstretchable, softly resilient, and undeformable metallic web 15.

[0023] On the obverse surface or the reverse surface of the metallic web 15 formed by either of the methods described above (Fig. 5 or Fig. 6), about 30 magnets 17 having magnetic power of about 200 mT are disposed and fixed in such a manner that the N pole and the S pole of the adjacent magnets may be separated by a prescribed space. This metallic web 15 is disposed on the uppermost site in the pillow for sound sleep. The magnets 17 attached hereto are intended to improve the circulation of blood due to ionization, ensure promotion of health, and manifest an effect of inducing sound sleep.

[0024] The metallic webs 15 to be piled up inside the pillow for sound sleep are formed as described above.

[Process for formation of cooling medium]

[0025] Now, the process for forming the cooling medium to be inserted into the pillow for sound sleep will be described below.

[0026] As the cold retaining material for forming the cooling medium, a medium of the form of unfrozen liquid which is not easily frozen in a domestic refrigerator is used optimally. As concrete examples of the medium answering this description, polyhydric alcohols such as propylene glycol and ethylene glycol and derivatives thereof and silicone oil having a large specific heat may be cited. These media may be used either singly or in the form of a mixture of two or more members. The coolants prepared by adding water partly or adding a freezing point lowering agent to such media may be used instead. The polyhydric alcohol which is a coolant of large specific heat and which, once cooled, is not easily warmed can be expected to manifest the effect of retaining the cold for a long time.

[0027] A cooling medium 20 is formed by welding a soft sheet 21 in the form of a block on a surface by

means of high frequency wave or ultrasonic wave and partitioning this block into a plurality of blocks 22 as illustrated in Fig. 8 and filling the plurality of blocks 22 to formed with the coolant described above. This coolant exhibits flowability because it avoids being frozen to such low temperatures as -30°C. Owing to the use of the plurality of blocks partitioned as described above, the coolant is not shifted when the head or the neck is placed on the pillow for sound sleep. The cooling medium 20, therefore, smoothly conforms with no feeling of extraneousness to the contour of the head, exalts the effect of cooling the head and the neck, and induces sound sleep especially during the season the atmospheric temperature is high. It also enables the user to acquire an effect of alleviating fever as when the user is suffering from cold.

[Process for forming pillow for sound sleep]

[0028] A containing bag 25 for the pillow for sound sleep, as illustrated in Fig. 9, is provided with two both ends-opening fasteners 26 serving the purpose of dividing the containing bag 25 along the center excepting one lateral side thereof (the side behind the containing bag in the bearings of the diagram) into an upper part and a lower part. With the fasteners 26 as the boundary, the lower side of the containing bag 25 is formed of an ordinary cloth 27 of fine mesh with a view to bringing the effect of retaining warmth and the upper side thereof formed of a gauzy cloth of coarse mesh in consideration of air ventilation and thermal conductivity.

[0029] In the case of producing the pillow for sound sleep, the fasteners 26 are opened to separate the upper part and the lower part of the containing bag 25 as illustrated in Fig. 9 and a plastic cushioning material 32, about 30 mm in thickness, shaped with a cross section illustrated in Fig. 10 is laid in the bottom part of the containing bag 25. Incidentally, this cushioning material 32 is intended to function as a heat insulator for exalting the effect of retaining warmth.

[0030] Then, metallic webs 15 are piled on the cushioning material 32 in as many plies as are required for conferring a required shape on the pillow for sound sleep. A metallic web 15 having magnets 17 disposed as illustrated in Fig. 7 is contained in the upper layer part of the pile in such a manner that the surface thereof bearing the magnets may fall on the upper side. The component metallic webs 15 are adjusted in position so as to assume the shape of the pillow and the fasteners 26 are closed to form the pillow. Finally, a facing cover not shown in the diagram is attached to this pillow to complete a pillow for sound sleep.

[0031] The pillow for sound sleep is very light when the cooling medium 20 has not been inserted therein. Since this pillow for sound sleep excels in air permeability and thermal conductivity, it exhibits a fine ability to absorb body temperature due to the effect of radiating heat through the thermal conduction of metal and consequently enables the user to enjoy a wonderful refreshing feeling even when the cooling medium 20 is not inserted in the pillow.

[0032] The pillow of this invention for sound sleep which is formed as described above exhibits fine air ventilation, appropriate elasticity, and outstanding thermal conductivity and, owing to the use of the metallic web 15 fitted with magnets, induces the user readily to fall into sound sleep by producing a peculiar cushioning property tending to stimulate the effective points of the head for reception of pressure and enjoy a refreshing feeling.

[0033] The fact that the pillow supports the head and the vertebrae cervicales at appropriate heights has a significant effect on the soundness of sleep. Since these appropriate heights have large individual differences, this pillow for sound sleep is capable of adjusting the height thereof by varying the amounts of the metallic webs 15 and cushioning materials (now illustrated) to be contained therein.

[0034] When the user is in a mentally excited state or when the user is prevented by a high atmospheric temperature from falling into sleep, the cooling medium 20 is refrigerated to about -20°C in a domestic refrigerator and the refrigerated cooling medium 20, after the fasteners 26 of the containing bag 25 have been opened, is inserted between the metallic web 15 in the upper layer part and the metallic web 15 in the lower layer part. After this insertion of the refrigerated cooling medium 20, the fasteners 16 are closed. When the refrigerated cooling medium 20 is inserted into the pillow for sound sleep, the cold is effectively transmitted through the metallic webs 15 to the head and spent in cooling the head because the bottom side of this pillow for sound sleep is thermally insulated by the cushioning material 32.

[0035] Since the cooling medium 20 possesses the cushioning property as mentioned above, the pillow for sound sleep is enabled to adapt the shape thereof to the contour of the head. The part of the head which contacts the pillow for sound sleep is cooled to a temperature about 6°C lower than the ambient temperature. The user, after having the head thereof cooled consequently, acquires a refreshed feeling and falls easily into sound sleep. He is enabled to enjoy a lasting comfortable refreshed feeling because the coolant used therein is not easily warmed. When the pillow for sound sleep which has the cooling medium 20 inserted therein is actually measured for temperature, the temperature of the upper side of this pillow is found to be about 6°C lower than the ambient temperature. The pillow offers the refreshed feeling continuously for 5 to 6 hours.

[0036] If the cooling medium is used in a frozen state, the head will acquire a rugged feeling of extraneousness and fail to rest stably on the pillow because the center of gravity of the head is prevented from sinking evenly into the pillow. In contrast, the pillow of this invention for sound sleep is enabled, even when the head

shifts the center of gravity thereof, to assume a shape fit for absorbing the shift and allow the head to rest stably thereon because the cooling medium has elasticity. Unlike the conventional pillow, therefore, the pillow of this invention is incapable of suffering the materials thereof to be unilaterally dislocated by a shift of the center of gravity of the head and consequently compelling the user to develop pains in the head or the neck.

[0037] Further, owing to the disposition of the magnets 17 on the metallic web 15, the metallic webs 15 are wholly magnetized and the magnetic effect consequently generated therein serves the purpose of further exalting the effect of inducing the user to fall into sound sleep by smoothing the circulation of blood and slackening stiff muscles.

[0038] As the pillow of this invention for sound sleep is packed by piling metallic webs 15 in the manner described above, it is enabled to produce a highly satisfactory cushioning action and exhibit an excellent restoring force. The pillow, therefore, produces a stable cushioning property at any position because it readily conforms to the contour of the head and prevents the metallic webs 15 from being easily moved inside the pillow.

[0039] The user of the pillow, owing to the excellent cushioning property plus the bracing feeling and the refreshing feeling, is enabled to build up the habit of getting easily to sound sleep. The magnetic effect brought about by the pillow serves the purpose of adding to the depth of sleep, alleviating the stiffness of the neck and the shoulders, and promoting the general health.

Claims

1. A pillow for sound sleep, having a containing bag (25) packed with one metallic web (15) formed of helical metallic threads (1) or a plurality of such metallic webs prepared in a superposed state.

2. A pillow according to claim 1, wherein said metallic web (15) is formed of an aggregate (7) of helical metallic threads reinforced in advance for protection against lateral stretching and said aggregate (7) of helical metallic threads is formed of a plurality of bundles (2) of helical metallic threads each to be produced by coiling helical metallic threads (1) a plurality of times.

3. A pillow according to claim 1, wherein said metallic web (15) is formed by interweaving aggregates of helical metallic threads (7) or by parallel joining aggregates (7) of helical metallic threads.

4. A pillow according to claim 1, wherein a plurality of magnets (17) are disposed on one side of said metallic web (15) in such a manner that the polarities thereof are alternated between the adjacent magnets.

5. A pillow according to claim 1, wherein a cooling body (2) obtained by filling a plurality of blocks (22) formed by partitioning a soft sheet (21) with an antifreezing fluid or a colloidal coolant having a large specific heat is interposed in the lower layer of the metallic webs (15).

FIG. 1

FIG. 2

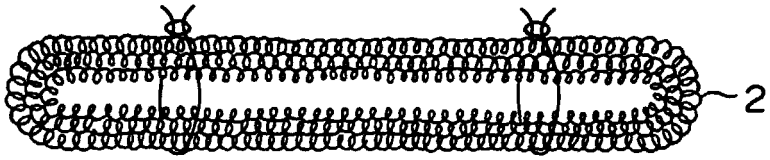


FIG. 3

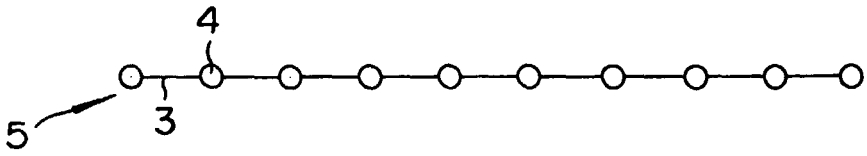


FIG.4

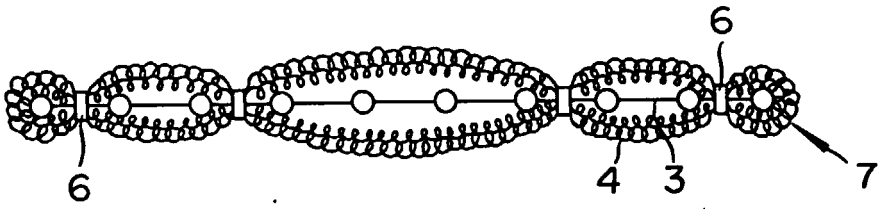


FIG.5

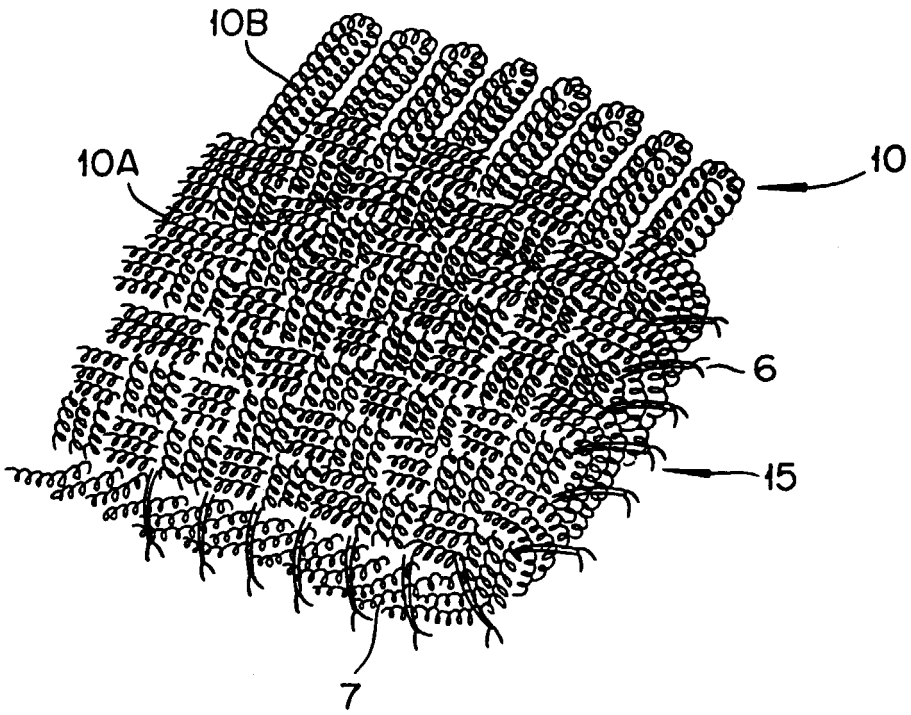


FIG.6

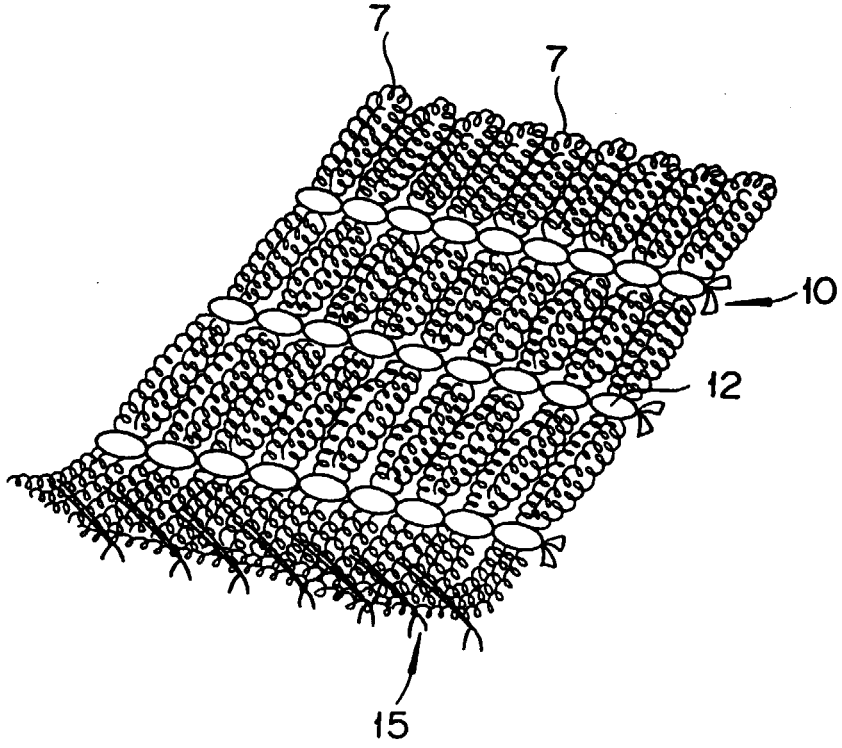


FIG.7

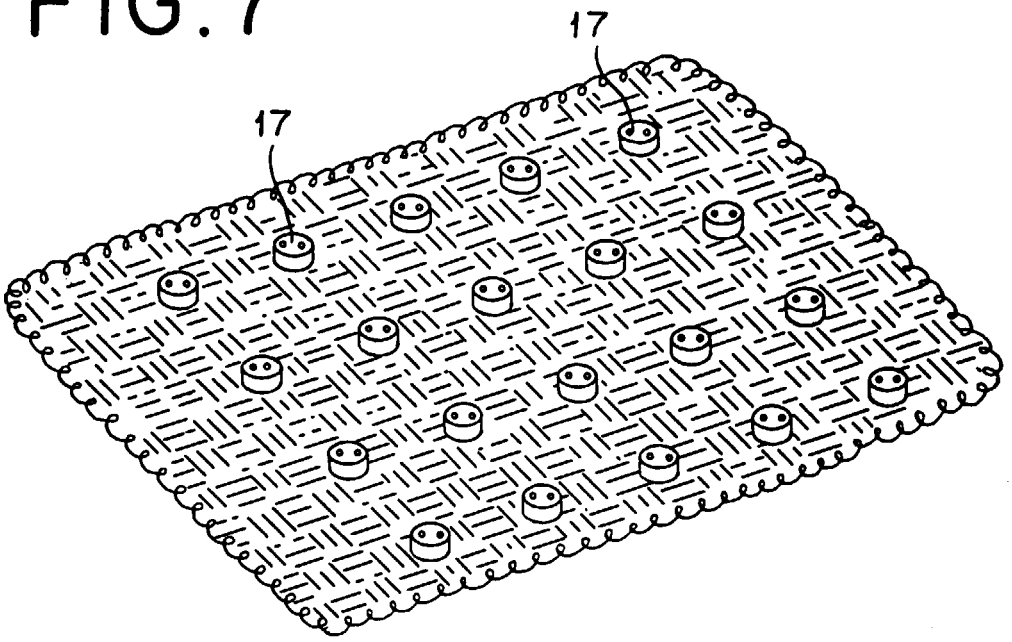


FIG 8

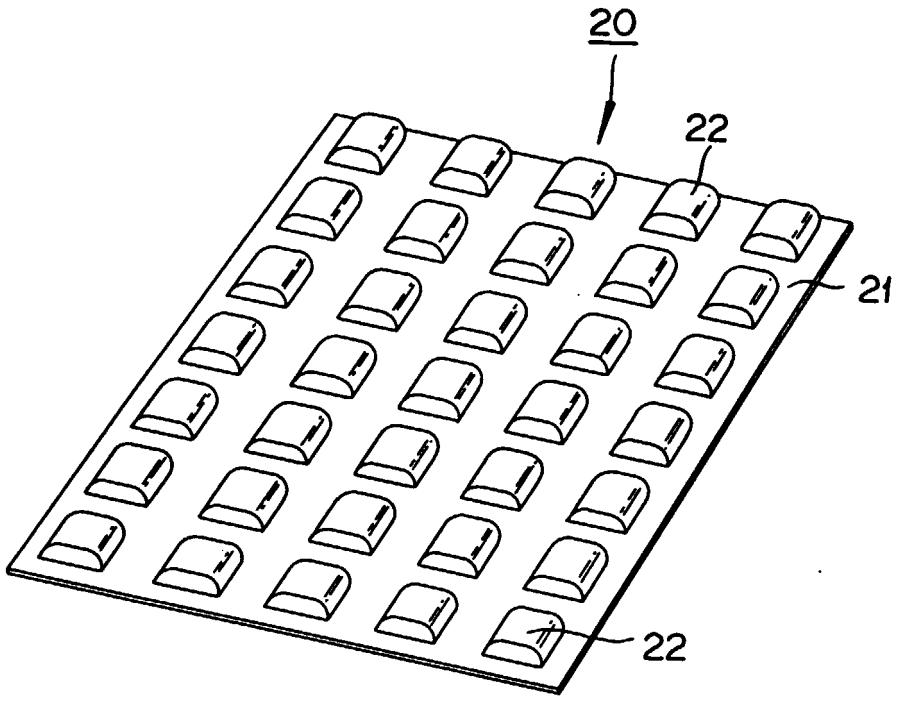


FIG.9

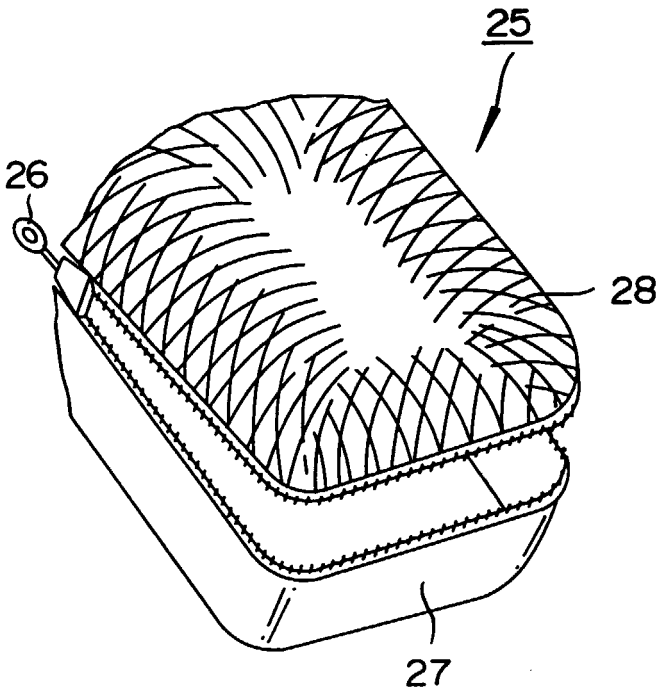


FIG.10