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(54) **FIVE SURFACE FORM CUSION**

(52) **U.S. Cl.** 5/630; 5/653; 5/648

(76) **Inventor: Shigeo Takizawa, Fujisawa-shi (JP)**

(57) **ABSTRACT**

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As the former triangle cushion is suitable for putting it between the body and the bed for body position changes at recumbency, effective for preventing bedsores, flexible enough to hold the correct position on the wheelchair for those who have difficulty in sitting upright, and it is helpful to sit straight, the five surface form cushion is used to avoid wear-out on vertex points of the triangle cushion without replacing hard materials.

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A47C 20/00

It is characteristic that a five surface form cushion is formed two plane surfaces (1) and (3) and (6) and (7) are set up in two of three vertex points of the triangle in order to avoid wear-out on flexible vertex points of the triangle cushion without replacing hard materials and does not adversely affect the advantage of the flexible triangular cushion that is easy to insert between the body and the bed without making the material of a hard substance.

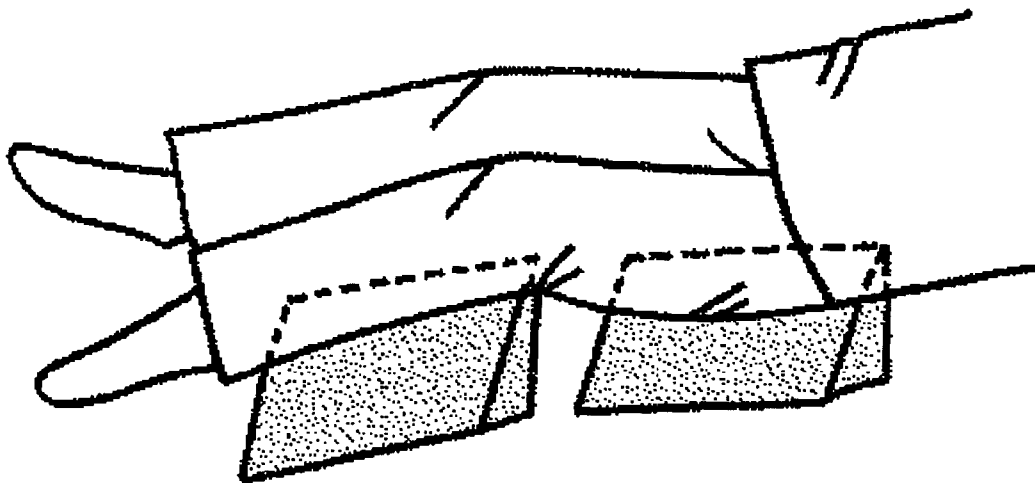


Figure 1

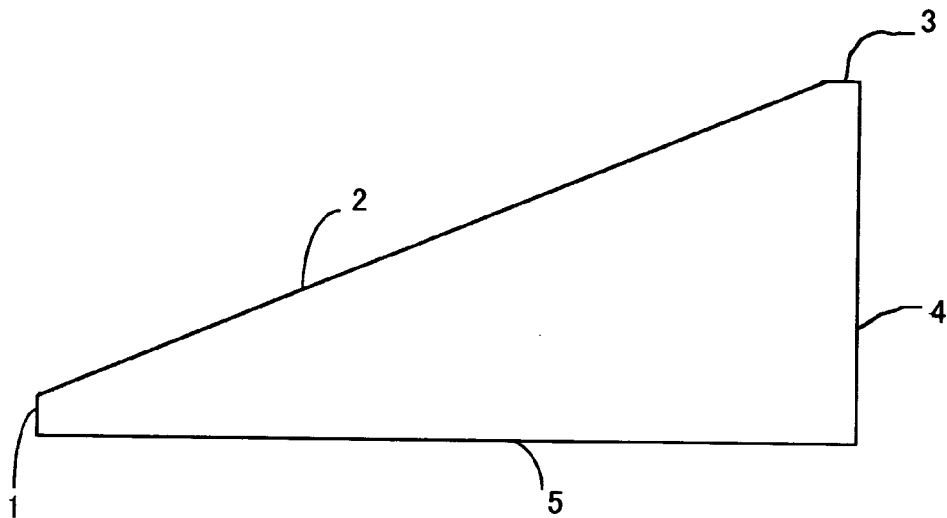


Figure 2

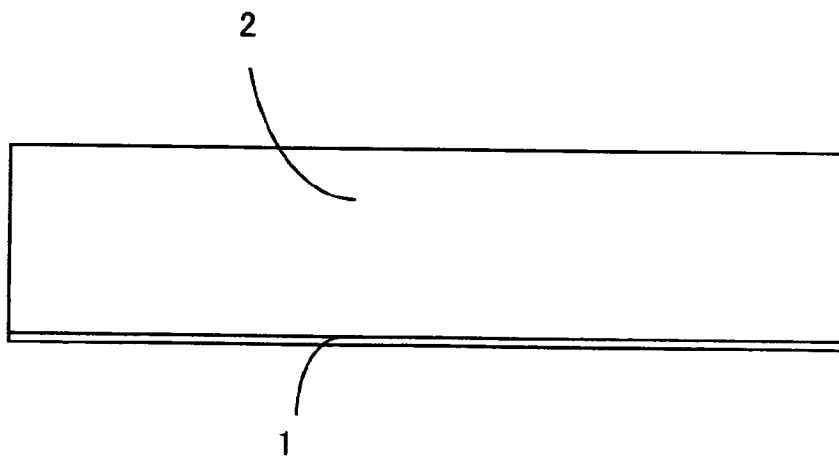


Figure 3

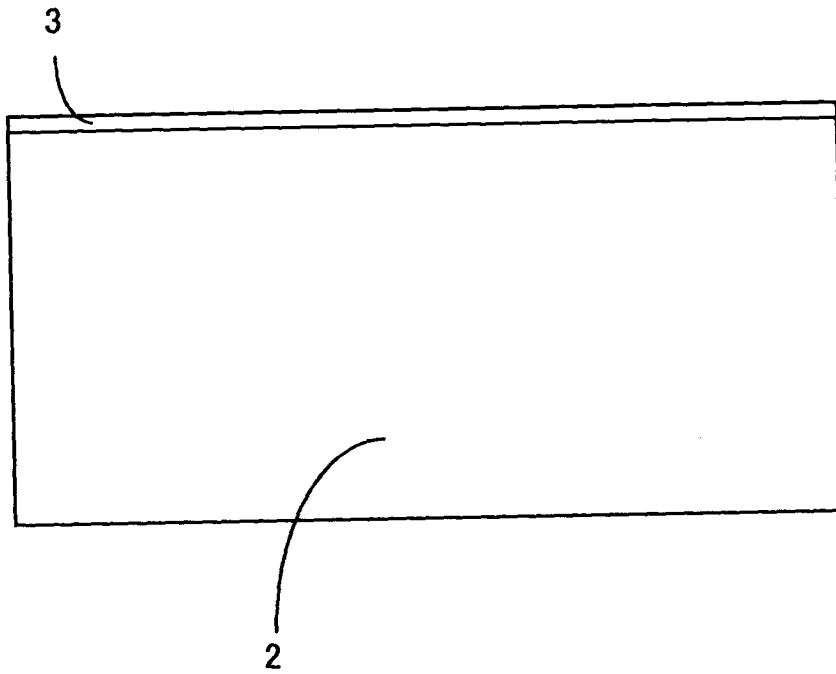


Figure 4

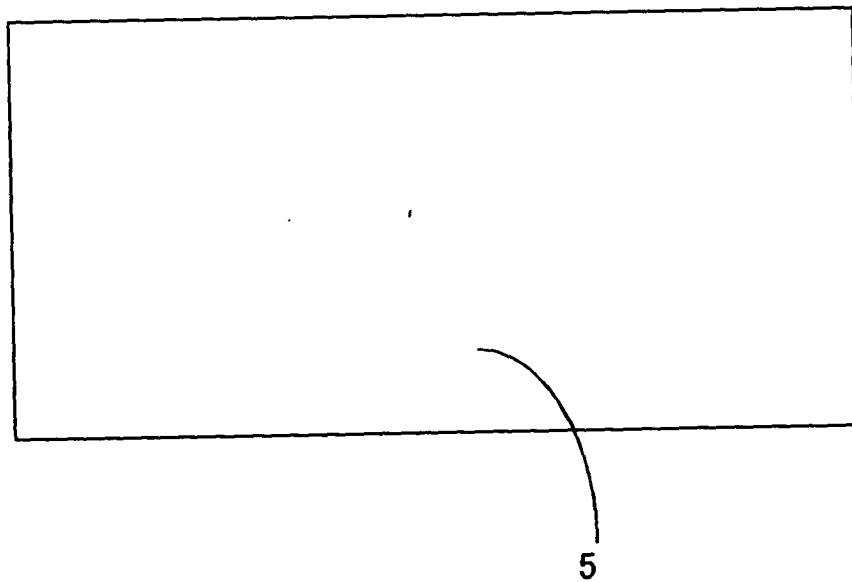


Figure 5

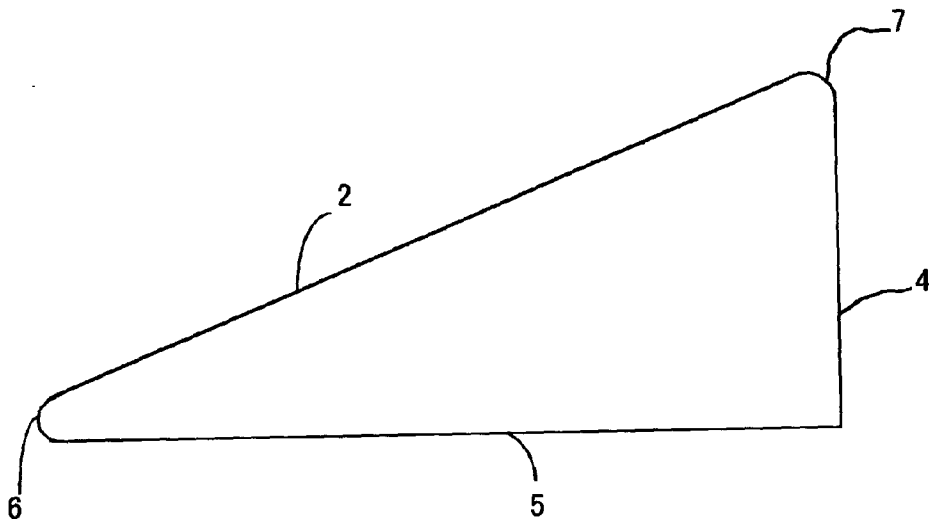


Figure 6

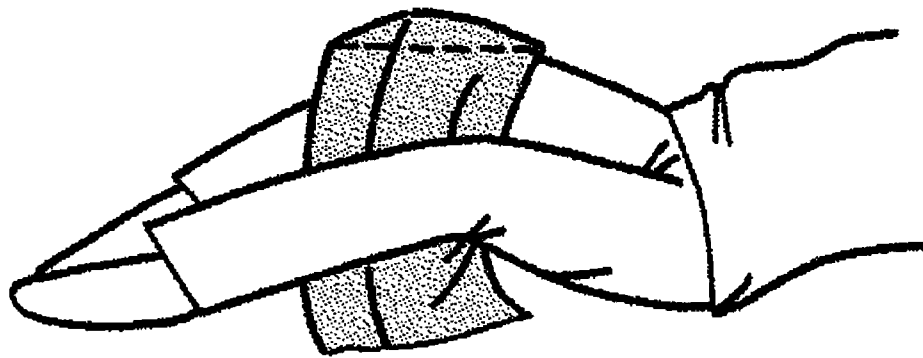


Figure 7

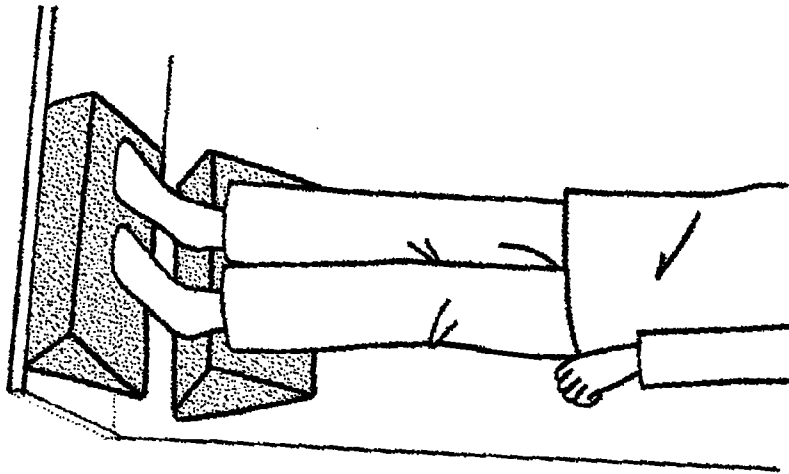


Figure 8

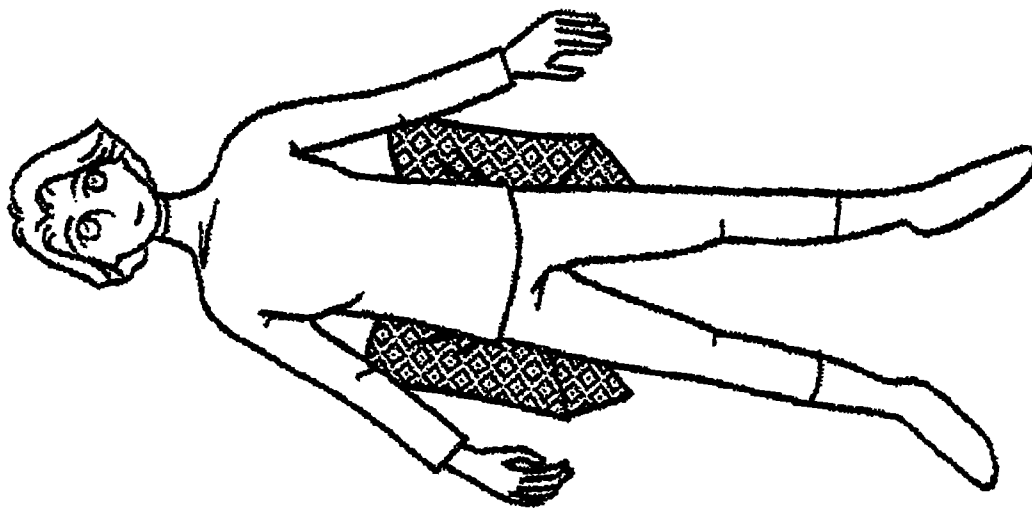


Figure 9

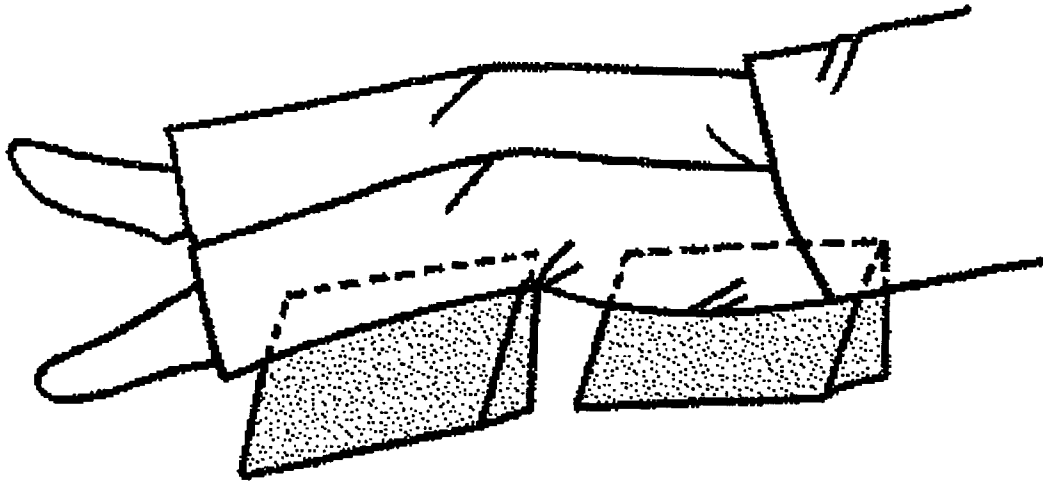


Figure 10



Figure 11

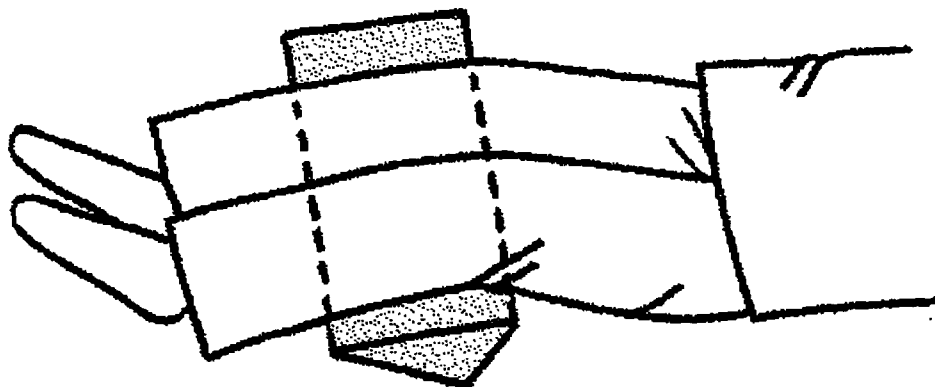


Figure 12

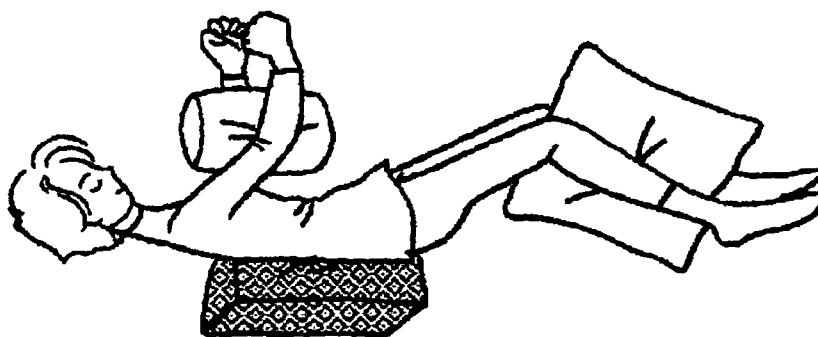


Figure 13

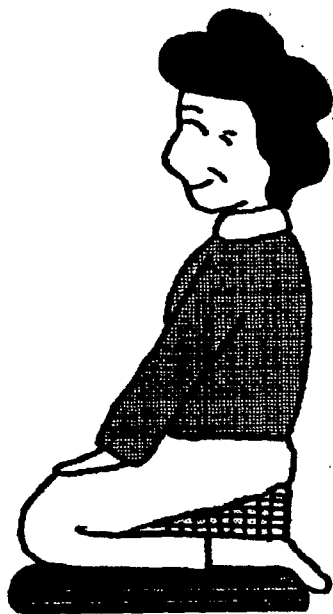
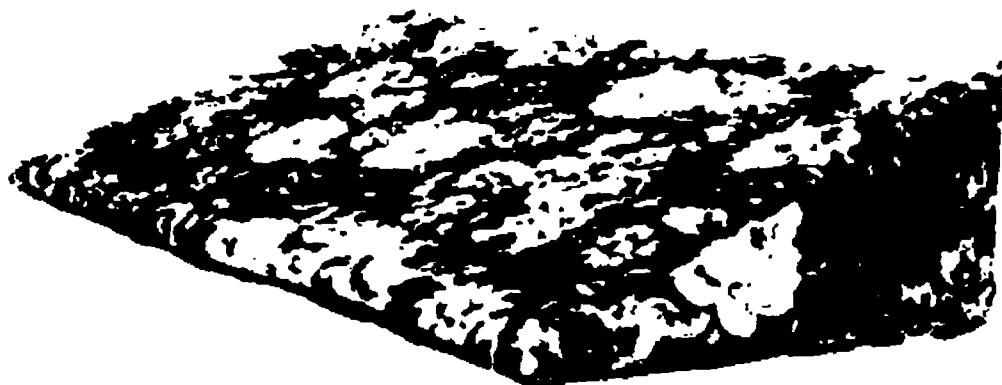


Figure 14



FIVE SURFACE FORM CUSHION
CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application makes JP U3094139 the base of the claiming priority

BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] This invention is related to a high-flexibility cushion, which is suitable for changing body postures, an effective prevention of the bed sore and suitable in maintaining long periods of wheelchair sitting, and also to improve good posture of Japanese style sitting.

[0004] The Inventor developed and sold the triangular shape and high-flexibility cushion that had been suitable for changing body postures, as an effective prevention of bedsores, suitable in maintaining good posture while sitting in wheelchair seats, and also to improve good posture of Japanese style sitting.

[0005] The triangular shape and high-flexibility cushion was effective in changing body postures, prevention of bedsores, maintaining good posture while sitting in wheelchair seats, and to improve good posture of Japanese style sitting.

[0006] Due to long hours of continuous use, the vertex point of the triangular cushion wore down and requires customers buy a new one due to its inadequacy and the fact that the new cushion is more flexible and does not obstruct blood circulation.

[0007] Hard triangular shaped cushions are also used for the prevention of bedsores and to change body posture, but it was difficult to use for long periods of time except for the prevention of bedsores due to the hard compression of the body part it contacts.

[0008] The problem, which it tries to solve, is to hold the vertex points of the triangular cushion longer to reduce the wear-out, but it is just as important not to substitute a harder material for this solution.

SUMMARY OF THE INVENTION

[0009] To improve above problems, plane surfaces were formed on vertex points of a flexible triangle cushion as shown (1) and (3) in FIG. 1.

[0010] This invention's characteristics are to avoid the wear-out by cutting off vertex points of the triangle cushion and form plane surfaces.

[0011] To improve above problems, abbreviated half-circle surfaces were formed on vertex points of a flexible triangle-cushion as shown (6) and (7) in FIG. 5.

[0012] This invention's characteristics are to avoid the wear-out by cutting off vertex points of the triangle cushion and form approximately half-circle surfaces.

[0013] In addition, the right-angled corners can be made into semicircles.

[0014] The outer cover of the cushion is made with cotton and molded into a five surface form or abbreviated five surface form which is as accessible as the triangle-shape in order to avoid wear-out.

[0015] Also the outer cover of a cushion can be made with silk, synthetic fiber, or wool according to the individual taste.

[0016] It is also possible to use the cushion without the outer cover.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] FIG. 1 is the side view of a five surface form cushion.

[0018] FIG. 2 is the front view of a five surface form cushion.

[0019] FIG. 3 is the two dimensional diagram of a five surface form cushion.

[0020] FIG. 4 is a ground plan of a five surface form cushion.

[0021] FIG. 5 is the side view of the five surface form cushion when the apexes of a cushion are formed into semicircle.

[0022] FIG. 6 shows how to improve an adduction and inner rotation contracture of hip joint and a contracture of knee joint with a five surface form cushion.

[0023] FIG. 7 shows how to prevent pressure sores on heels with five surface form cushions.

[0024] FIG. 8 shows how to remove body pressure to a part of the rump bone and a part of the coccygeal bone with five surface form cushions.

[0025] FIG. 9 shows how to prevent and improve an abduction and external rotation contracture of hip joint with five surface form cushions.

[0026] FIG. 10 shows how to prevent and to improve the pressure and contracture and to maintain the functional position by using a five surface form cushion.

[0027] FIG. 11 shows how to improve a flexion contracture of knee joint with a five surface form cushion.

[0028] FIG. 12 shows how to change the body position with a five surface form cushion FIG. 13 shows how to prevent lower back pain and gonalgia by making Japanese style sitting easy with the five surface form cushion

[0029] FIG. 14 is a reference figure of the five surface form cushion with cotton outer cover.

[0030] The explanation of the sign 1 to 7 is shown as following,

[0031] 1 A surface, which forms the five surface form cushion.

[0032] 2 A surface, which forms the five surface form cushion.

[0033] 3 A surface, which forms the five surface form cushion.

[0034] 4 A surface, which forms the five surface form cushion.

[0035] 5 A surface, which forms the five surface form cushion.

[0036] 6 An approximately half-circle surface, which forms the five surface form cushion.

[0037] 7 An approximately half-circle surface, which forms the five surface form cushion.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0038] FIG. 1 shows a side view of a device of the first embodiment.

[0039] The width is 420 mm, the height of the taller side is 100 mm, the height of the lower side is 10 mm, and the depth is 225 mm. It has a rectangular surface of 420 mm×10 mm on each apex except for the right angles and the acute angles about 22.7 degrees were made with urethane when 10 mm is not cut off from the height.

[0040] As shown in FIG. 1 of the first embodiment, (1) and (3) are plane surfaces that are formed in order to avoid wear-out, where the surface of 10 mm were formed on the two vertex points of the former triangle cushion.

[0041] As shown in FIG. 5 of the second embodiment, an abbreviated semicircle surface (6) is formed with the radius of 5 mm instead of a vertex point of the former triangle cushion and an abbreviated semicircle surface (7) is formed with the radius of 8 mm instead of a vertex point of the former triangle cushion in order to avoid wear-out.

[0042] The length of 10 mm in the length and the size of the rectangular surface of 420 mm×10 mm of (1) and (3) shown in the first embodiment are not restricted.

[0043] For example, the surface with the size of 420 mm×15 mm can be used as it doesn't block the advantages of the triangle.

[0044] The radius of the abbreviated semicircle surface to avoid wear-out with the radius (6) of 5 mm and the radius (7) of 8 mm shown in the second embodiment are not restricted.

[0045] For example, the radius of the abbreviated semicircle surface with the radius of 10 mm can be used, as it doesn't block the advantages of the triangle such as the former triangle cushion.

[0046] The size and the form of fields of (1) and (3) in the first embodiment and (6) and (7) in the second embodiment are adjustable because they are the fields to avoid wear-out, as long as they don't block the advantages of the former triangle cushion.

[0047] The angle of the acute angles is set to 22.7 degrees in (2) and (5) in both of the embodiments but it can be adjusted between 20 degrees and 30 degrees. One angle is a right angle but it is not necessary to be a right angle.

[0048] The size of the device in this embodiment is just one case that the width of the device can be broadened or reduced according to the physical constitution of the user and also the other elements such as the side surfaces can be adjusted with the proportion to the changed element.

[0049] (1) to (5) in FIG. 1 show each side surface of urethane and two surfaces shown in (1) and (3) are the main element of this device.

[0050] In the same way, two abbreviated semicircle surfaces (6) and (7) shown in FIG. 5 are the main elements of this device.

[0051] With this invention, cushion wear-out is able to be avoided even with constant use due to the flexible urethane triangle-shaped cushion.

[0052] The urethane form used in the experiment is lower reaction and has an ECS specific gravity of 0.022.

[0053] Within the urethane known at present, the urethane with a specific gravity 0.016 to 0.026 has the suitable flexibility for practical use.

[0054] The ECS specific gravity in this specification can be indicated as density (kg/m^3). In this case, ECS specific gravity 0.022 is indicated as density 22. Also, specific gravity 0.016 through 0.026 is indicated as density 16 through 26.

[0055] The improvement of the level of wear-out was measured and confirmed with the experiment. The thickness of the cushions was measured after 14 days of constant loading. There was a difference in 2.36 mm between the result of the triangle cushion, 6.43 mm, and the five surface form cushion, 4.07 mm.

[0056] After the constant loading test, the cushions were left without any weight and 14 days later the thickness was measured. There was also a difference in 0.45 mm between the result of the triangle cushion, 1.13 mm, and the five surface form cushion, 0.68 mm. There was no complaint about wear-out in the experiment for use in daily life.

[0057] As explained above, a five surface form cushion of this invention can delay and avoid wear-out of the cushion material by adding two more surfaces to the former triangle cushion.

[0058] In other words, a five surface form cushion is proof against wear-out and body position changing. It also improves resiliency and solved the inconvenience of the users replacing the cushion frequently.

[0059] Furthermore, the five surface form cushion is still as flexible and accessible as the former triangle cushion. The five surface form cushion is suitable for putting it between the body and the bed for body position changing at the recumbency. Also the five surface form cushion is effective in preventing bedsores, flexible enough to hold the right position on the wheelchair for those who have difficulty in sitting upright, and it is helpful in sitting straight.

[0060] The copyrights of the explanatory diagrams shown in FIG. 6 through FIG. 11 belong to a publishing company (Civil incorporated company) where the applicant works as the representative since April 1996 but the applicant has secured the permit.

[0061] The copyright of the explanatory diagram shown in FIG. 12 belongs to a manufacture company (Rehabiliadi Corporation) where the applicant works as a representative since April, 1996 but the permit has been secured.

Use Possibility in Industry

[0062] As explained above, a five surface form cushion of this invention can avoid wear-out of the cushion material by adding two more surfaces to the former triangle cushion. Therethrough it also conforms to body position change and is improved to stay in its form solving the inconvenience of the user having to replace the cushion frequently.

[0063] Furthermore, the five surface form cushion is still as flexible and accessible as the former triangle cushion.

[0064] The five surface form cushion is suitable for putting it between the body and the bed for body position changing at the recumbency.

[0065] Also the five surface form cushion is effective in preventing bedsores, flexible enough to hold the right position on the wheelchair for those who have difficulty in sitting upright, and it is helpful in sitting straight.

What is claimed is:

1 A cushion by making a Flexible Polyurethane Form (ratio of under 0.038), which has five surfaces by making two vertex points of the triangle cushion into plane surfaces.

2 A cushion by making a Flexible Polyurethane Form (ratio of under 0.038), which has two abbreviated half-round shapes on the two vertex points of the triangle cushion and three plane surfaces.

3 A cushion in request claim 1 and 2 by making the same flexibility as the material mentioned in claim 1 and 2.

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