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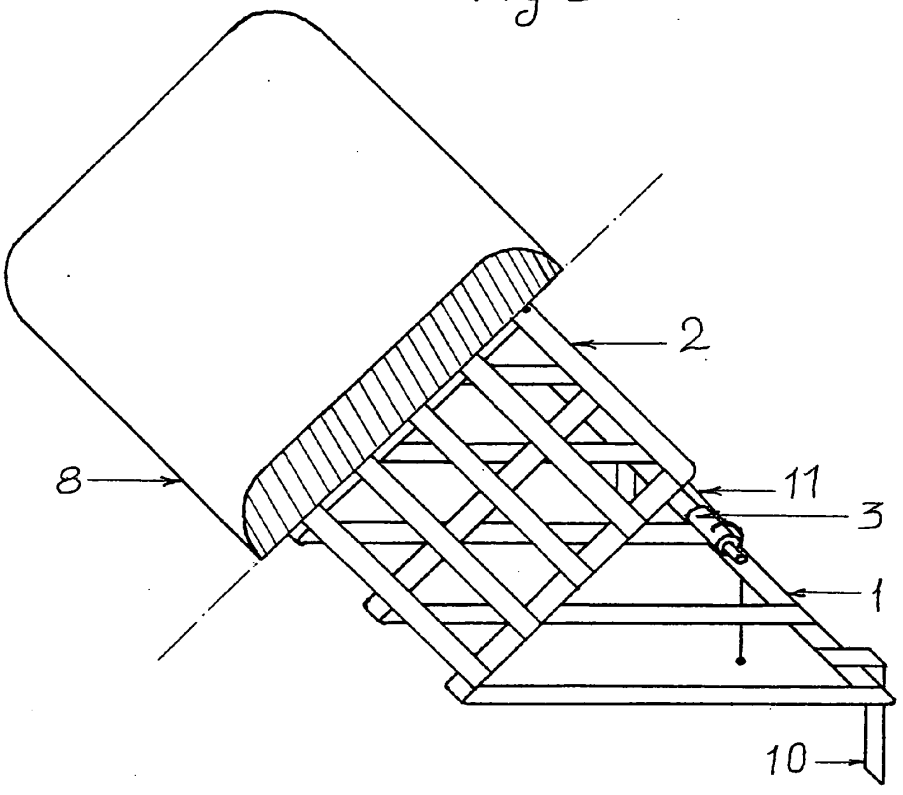
(54) Dynamic neck tension relief pillow

(57) The dynamic neck tension relief pillow is constituted from a movement mechanism and a common sleeping pillow (8), either placed onto the movement mechanism by the user himself, or permanently adjusted onto the movement mechanism, where the pillow's position should be balanced parallel to the neck through the circular eccentric movement due to the user's head and neck weight and the pillow's angle becomes 0 degrees.

Fig 3



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Description

[0001] This invention refers to a dynamic neck tension relief pillow consisting of a sleeping pillow.

[0002] The sleeping pillow is one of those commodities known to everyone without exception, which we can lay on top of the covers of any mattress on any bed for sleeping. Almost all of us use it when we lie down and rest our neck and head on it, either to relax or during our sleep for as long as we are sleeping. The sleeping pillow is simply a classic, whether non-anatomic or anatomic or ergonomic, it can be constructed from natural or synthetic fibres or from feathers or from natural or synthetic foam, and in general it comes in all sizes, kinds and qualities.

[0003] Almost all of us, when we go to bed to relax or to sleep, use one of those sleeping pillows which are known to everyone. Our neck and head, from the moment they touch the sleeping pillow, begin to form the arc of a circle, descending lower and lower until the moment they reach their greatest arc and their descending movement onto the sleeping pillow stops. Then the opposing force from the sleeping pillow has become equal and opposite to the weight of our head so that our head balances on the sleeping pillow and does not descend any lower. We observe for now that at the time we start to sleep or rest on our pillow certain forces have been created, the forces created by the descending progress of our head because of its weight and because of the path it followed, that is, the arc of a circle, and the opposing forces which were developed by the sleeping pillow, that is, the reaction to the weight of our neck and head and to the horizontal movement which our head and neck completed synchronously with the tracing of the arc of the circle. These forces are mainly at right angles to our neck as a reaction to the weight of our head, however there are also component forces as a reaction of the sleeping pillow to the horizontal movement which is created from the downward movement of the arc of the circle of our head and neck, which, when calculated, give us a resultant force which is horizontal in relation to our neck. The size of this horizontal force which, according to the situation, changes towards our neck, depends on the hardness of the pillow we are using, on the shape of the pillow, that is, if it is an anatomical or a simple non anatomical sleeping pillow, and on the difference between the height of the sleeping pillow and the size of the person using the sleeping pillow and his/her position in relation to the sleeping pillow. And so, from the moment that our head and neck, when we lie down on our bed to relax or to sleep, comes in contact with the sleeping pillow, until the moment when it finishes its descent and balances on top of the sleeping pillow, it traces an arc of a circle with its centre at the point where the flexibility of our neck begins. We divide this arc of the circle into two parts, the length of the route which is traced by our neck and head above the imaginary straight line of our spinal column and of the length of the route which is traced by our head and neck under the imaginary straight line of our spinal column. When the length of the upper route according to the above is greater than the length of the lower route in relation to the imaginary line of our spinal cord, our pillow creates as a reaction a resultant force which is horizontal in relation to our spinal column and with a direction towards our spinal column, lightly pressing on our spinal column throughout the duration of our sleep. The size of this horizontal pressure on our neck is analogous to the difference in length of the two upper routes which our head traces. If the route below the imaginary straight line of our spinal column is greater than the route which was traced by our head and neck above the imaginary straight line of our spinal column, then we again have the creation of a small horizontal force towards our spinal column, however in this case we have an opposite direction, that is, this small horizontal force has an opposite direction to the side of our spinal column, lightly pulling our neck for the whole duration of our sleep. When this happens it is good, but unfortunately it happens rarely. When this horizontal force to which I referred above has a direction towards our spinal column, in spite of the fact that our spine is constructed so that during the day it receives many and great loads without being damaged, at night when we sleep it is more vulnerable, and especially for someone who has the beginnings of a hernia in one or more of the vertebra of the neck, or if because of deformation of the muscles the space between the vertebrae of the neck has been reduced and the vertebrae press on the intermediary sliding material of cartilage or spinal marrow or some vessel for the transfer of liquids or blood or some nerve lightly at the beginning of deformation, then this horizontal compression stress does not permit the neck and the muscles of the neck to rest well, because they are deformed in our sleep.

[0004] Unfortunately when we sleep, most of the time this horizontal compression has an impetus against our spinal column because there is an attempt to choose a sleeping pillow so that during our sleep the imaginary line of our neck will coincide with the imaginary line of our spinal column, with the result that the route of the arc of the circle traced by our neck and head is greater than the upper part of the imaginary line of our spinal column. At the point where the flexibility of our neck starts, many times our neck is not in contact with the sleeping pillow when we are sleeping on our side. In this case two things happen:

a) Because the weight of our head and neck remains the same, it is distributed in this first case onto a smaller contact area with the sleeping pillow, so we have a greater pressure per cm^2, and the best thing for our health is for the same weight of our head and neck to be distributed over the greatest possible contact area with the sleeping pillow in order to minimalize as much as possible the pressure per cm^2 which we receive, in reaction from the sleeping pillow.

b) At the highest point, where our neck is not in contact with the sleeping pillow because of the weight

of our head and neck we have per cm^2 forces with energy perpendicular to our neck and with impetus towards the earth. I believe that these small perpendicular forces are capable of not allowing our muscles and our neck itself to rest as much as they need, because of the fact that the muscles of our neck and all the parts which make up our neck receive at this point, in this case, a slight bending which, with time, is enough to create deformation to the members which make up our neck.

[0005] We see that the classic, non-anatomic pillows which are familiar to all of us many times present the aforementioned problems and in spite of the fact that, along general lines, they are good, the people occupied with the evolution and improvement of technology invented the anatomic and the ergonomic sleeping pillows.

[0006] The anatomic pillows familiar to us all reduce this force which is horizontal to our neck, the compression stress in relation to the classic non-anatomic sleeping pillows familiar to us all comes into contact better with the whole length of our neck, greatly reducing the small forces vertical to our neck, which as I mention above had the tendency to compress our neck into bending. In this way we also reduce the pressure per unit of surface area because we increase the surface where our neck and head are in contact with the sleeping pillow. Of course, the simple non-anatomic sleeping pillows which are stuffed with natural fibres, with wool, cotton or synthetics, for instance polyester, or the feathers of birds, are also soft, our head sinks into them and since they have a large contact area, we have a reduce pressure towards the points of our neck and head per cm^2. When we sleep it is better for our body and neck to be compressed with the least possible load, which is moreover the reason why we sleep in a position parallel to the earth using a mattress and sleeping pillow which have been improved, and we are now also trying to improve the sleeping pillow even more so that during the period when we are lying down or when we are asleep we can get the best rest possible, because I believe that rest is the source of life.

[0007] According to the present invention, the dynamic neck tension relief pillow has the characteristic that it also includes a movement mechanism.

[0008] The dynamic neck tension relief pillow comes in two kinds:

In the first kind the sleeping pillow is constructed so that it is permanently incorporated with the movement mechanism.

[0009] In the second kind we simply place the sleeping pillow or even place it and hold it steady on top of the portable movement mechanism and we remove it from there whenever we want to.

[0010] The dynamic neck tension relief sleeping pillow is portable and in order to use it a person places it onto the horizontal level of a common mattress on whatever bed, in the same position where until today one placed and used an ordinary sleeping pillow.

[0011] The movement mechanism creates dynamic energy from the load of the weight of a person's neck and head, and every time it is released from the load of the weight of the person's neck and head, and for whatever height it is released, it returns the dynamic energy in a natural way by raising one of the 4 sides of the sleeping pillow to the same height as the height which it was released from the weight of the person's head and neck, and specifically, it raises the side of the sleeping pillow which is closer to the point where the mattress ends, tracing an ascending arc of a circle from a 0 degree angle minimum up to a 45 degrees acute angle maximum, and thus it remains waiting in this position while it forms an inclined plane onto the mattress, and in this position the sleeping pillow is ventilated over the whole area of its lower surface.

[0012] Every time a person lies down on the bed to rest or to sleep and lay their neck and head on the dynamic neck tension relief pillow with dynamic movement, it starts from the default angle which the person has set earlier and traces the length of a descending arc of a circle, while simultaneously it also covers the length of a horizontal movement towards the imaginary line of the person's spinal column and in a direction opposite to the side of the person's spinal column until the degrees of the angle of the inclined plane go to zero and the dynamic neck tension relief pillow becomes level or almost level above the mattress. The greater the length of the descending arc of a circle, the greater the length of the horizontal movement which the pillow covers, and the smaller the length of the descending arc of the circle, the smaller is the length of the horizontal movement which it covers towards the imaginary line of the person's spinal column.

[0013] Every time the dynamic neck tension relief pillow receives the load of weight from the person's head and neck when lying down on the bed and turning and resting their head and neck on it, and for as much length as it traces a descending arc of a circle until the default angle of inclination becomes 0 degrees and the sleeping pillow finishes its descent on the mattress, and the person's head and neck finish their descent and balance on the sleeping pillow, with an easy earlier adjustment of the default angle, each time it traces as great a descending arc of a circle as the horizontal length it covers, it copies in a natural way and is exactly the same as the horizontal length which the person's head and neck cover every time they go up or down on it. With this adjustment of the angle in the default position, it neutralizes all the horizontal forces which compress the person's neck and relieves the neck. Usually with this adjustment of the default position, a person uses it for the whole duration of their sleep.

[0014] Or when it is necessary, a person pre-sets slightly greater incline in the dynamic neck tension relief pillow when it is in the default position so that when the

person uses it, it covers slightly greater horizontal length than the horizontal length which the person's head and neck cover and in the same direction. The additional horizontal length the person adjusts at whatever distance the person wants so that in practice the person feels as good as possible when having a problem with incipient hernias to their neck, and uses it throughout the duration of their sleep. The dynamic pillow's place, because it is softer than a person's neck, changes its shape temporarily and collects the additional horizontal length from the horizontal length given by the person's neck and head, and since it functions like a spring, it converts this into a force of reaction. It returns this force of reaction to the person's neck and head throughout the time when the person is resting or sleeping on it and with the passage of time, it relieves the person's neck from the compression stress. When the person feels better, brings back the earlier setting and uses it so that when sleeping the person's neck is not compressed by any horizontal force.

[0015] The dynamic neck tension relief pillow is constructed in two types is a spring all by itself, it creates dynamic energy in a natural way when it receives the load of the person's head and neck on top of it, every time for the whole length of the descending arc of a circle until the inclination of acute angle that forms from the degrees which the person set in the default position becomes 0 degrees and it comes back when it elevates by itself from the force of reaction accumulated for as much height as it is released from the person's head and neck every time and for as many times as the person raises and lowers their neck and head during sleep from the angle of 0 degrees of inclination to the greatest and 45 degrees angle of inclination, however it stops following the ascending length of the arc of a circle of the person's neck and head at the degree of angle of the default setting where the person had set and started the descending arc of a circle or until the angle's inclination from 0 to 45 degrees which balances on top of the mattress' level due to the inclination that the springs' angle is constructed in the movement mechanism.

[0016] In addition the movement mechanism consists of an additional supporting component, which a person can optionally place whenever the person wants between two levels of the movement mechanism. It stabilizes and does not allow the raised side of the dynamic neck tension relief pillow to move and to complete a descending arc of a circle, it strengthens the movement mechanism and makes it more resistant to the load of weight and allows the person to watch television or to converse or to read more easily while lying on it, because when the person lies down on it the upper side of the sleeping pillow remains raised.

[0017] The advantages of this invention are that the dynamic neck tension relief pillow is a sleeping pillow of the person's choice, any one of the sleeping pillows which are familiar to everyone, which circulate on the market, which everyone has selected and uses today in his/her sleep. If a person uses a sleeping pillow of their choice in conjunction with the movement mechanism, it becomes mobile and gives the advantage of eliminating all the defects which it had until now because of being fixed on top of the mattress. The person keeps all its advantages and new advantages are added, because in a natural way the invention gives movement to all the familiar sleeping pillows which circulate on the market, a movement equal to the arc of the circle and horizontal movement traced by the person's head and neck when lying down and sleeping on the dynamic neck tension relief pillow. It relieves the person's neck from horizontal forces which create compression stress and since the invention relieves their neck and throat of the energy of horizontal force in the direction of their spinal column, therefore it relieves the person's neck and throat of one of the reasons, because this horizontal force which presses on the muscles and the vertebrae of the person's neck in a direction towards the person's spinal column, or compression stress, is sometimes although not always a cause which creates or continues health problems to the person's neck and throat, since many times deformation is created to various members making up the person's neck and throat, with the passage of time, because it functions by adding.

[0018] The movement mechanism has the advantage that it converts the non-anatomic simple classical sleeping pillow to anatomic one, and this is an advantage because the person increases the surface area of their neck which comes in contact with the surface of the dynamic pillow. Thus we reduce the pressure which is vertical to the person's neck during resting or sleeping time per cm^2 and at the same time a person relieves the neck's point that did not come into contact with the surface of the pillow from minor but existing bending forces received in that specific point.

[0019] The dynamic neck tension relief pillow has the advantage that it becomes softer, it absorbs the sudden vibrations, the movements of a person's head and neck on top of it become calmer because it functions as a suspension and gives the person's neck and head the advantage of not receiving sudden compressions but softer ones, balancing on it in a position where it receives the least compression.

[0020] When we see the dynamic neck tension relief pillow on the mattress in the default position is set to allow a person to lie down on it, it forms an inclined surface. In this aforementioned default position I believe that the dynamic neck tension relief pillow has the advantage to be more tasteful to the lady of the house.

[0021] In addition in this higher default position the invention gives the sleeping pillow the advantage of being ventilated from the bottom side as well, something which I believe is also desirable to the lady of the house because the sleeping pillow becomes healthier for the person.

[0022] The movement mechanism converts the sleeping pillows to dynamic neck tension relief pillows in a natural way. The driving force is the load of weight from

a person's neck and head.

[0023] The great advantage of this invention is that in practice these movements of the dynamic neck tension relief pillow are the same as the horizontal movements which a person's neck and head make, when turning their neck and head and resting or sleeping on top of it. The person has the possibility, with the setting mechanism, to set it so that it gives exactly the same length of horizontal movement as their neck and head give and since it also has the same direction, with this setting a person has the possibility of neutralizing the difference in length of movements. In this way the invention achieves the same length of horizontal movement of the sleeping pillow as the horizontal length given by a person's head and neck, so it neutralizes the horizontal force which until today has acted on and compressed a person's head and neck into stress during the time we of resting or sleeping on a plain sleeping pillow without a movement mechanism. In many cases the horizontal force which acts on a person's neck with a direction toward their spinal column, with the passage of time and if the person's neck is prone to be sensitive, succeeds in overcoming the muscles' defences and if the person's does not use a dynamic neck tension relief pillow one or more than one vertebra give way under the pressure of compression stress, and then a temporary deformation to the various members which make up the person's head and neck begins, and although our organism is healthy, the quality of the person's life and of those around becomes ugly, like for instance, snoring, or when the root of a nerve is lightly pressured for the first time because the vertebrae have given way and because of the results of this giving way, the root of a nerve which gives orders for the functioning of the right hand, then the person has unbearable pain.

[0024] In these cases if a person uses the dynamic neck tension relief pillow as a tool in the service of their physician or organism, with the appropriate setting the person increases the horizontal movement which the dynamic neck tension relief pillow creates in order to make it greater than the horizontal movement given by their neck and head, the length of this additional horizontal movement is converted at the time the person lies down on top of the invention to a force which has an opposite direction to the side of our spinal column.

[0025] This new force is distributed equally to every vertebra, kept small, is safe, and attempts to push back the vertebrae by exactly the same amount for each one, in a direction opposite to the side of the person's spinal column. Thus if we use the dynamic neck tension relief pillow during all the time they lie down to rest or to sleep, with the passage of time the vertebrae stop subsidence, their organism receives an advantage, and the person can feel the attempt to restore the circulation of functions in their members of the throat and neck and of their vertebrae to their natural form, position and functioning.

[0026] Putting the dynamic neck tension relief pillow to use as a tool in the service of a person's organism gives them an advantage for their organism but also to the doctor or physical therapist in their attempt to heal the person if the various members which make up the throat and the neck have undergone temporary deformation and not permanent, irreversible deformation.

[0027] When a person feels in practice that they have gotten better in their neck but also in their back, they reset it using the setting mechanism and return to the setting at which when they lie down on top of the invention, their neck does not receive any horizontal compression at all, whether stress or pulling.

[0028] The person has the possibility to choose the appropriate setting in practice for every case in order to improve as much as possible the health of their neck and throat and the person feels this improvement in practice.

[0029] The horizontal force which the dynamic neck tension relief pillow creates when a person has set it and it relieves their neck is lessened a great deal because the sleeping pillow, since it changes shape more easily than the person's neck due to its flexibility, absorbs the movement, undergoes temporary deformation and creates tension. Since however it wants to return to its natural shape as an external parallel force and transfers to the person's head and neck a small force of attraction by trying slightly to evenly stress it per length unit.

[0030] In addition the length of this horizontal movement which the dynamic neck tension relief pillow creates is small, a person can set it to whatever value they want. It is never transferred by itself, it maintains itself and is always distributed evenly per unit of length to the whole length of the person's neck and of course if the person finishes the process of relieving the neck from compression stress, then the person sets the angle of the sleeping pillow, approximately from 0 degrees to 25 degrees by withholding with the cord's length adjuster from 0cm to 11cm approximately between the movement mechanism's two levels in order to neutralize all horizontal forces that strain a person's neck, either these are compression or attraction forces and since a person realises in practice that their neck is released from all horizontal forces, then in this setting a person can use the dynamic neck tension relief pillow for unlimited time with absolute safety in order to preserve their neck and head's good health and in extent his/her quality of life.

Figure 1c shows a side view that hypothetically symbolizes a person's spinal column, neck and head by approach.

Figures 3d and 3e show two other side views of the movement mechanism with a sleeping pillow (8) permanently by its construction incorporated on top of it, and for brevity we call it the first kind, or also portable mechanism with another kind loaded onto it.

Figure 3 shows a movement mechanism in perspective which returns the movement by itself without additional means of raising because it is a unified bending spring.

Figures 3b and 3c show a perspective and a side view of the movement mechanism.

[0031] The movement mechanism in figure 3 is from its construction incorporated with any sleeping pillow (8) of the first kind or carries any sleeping pillow whenever a person wishes it to carry a sleeping pillow (8), which will be simply placed or withheld onto the second kind. Figure 3a is a side view of the movable neck tension relief pillow.

[0032] Figure 3i is a side view of the movable neck tension relief pillow. Figure 3k shows another side view of the dynamic neck tension relief pillow.

[0033] One way of using the invention is described with reference to the figures.

[0034] The dynamic neck tension relief pillow consists of a sleeping pillow (8) and a movement mechanism.

[0035] The sleeping pillow (8) is any one of the sleeping pillows, without exception, which exist and it does not need any more description because it is well known.

[0036] The other part from which this invention consists of is the movement mechanism of the sleeping pillow (8). It raises the side (M) of the sleeping pillow (8), tracing an ascending arc of a circle, while simultaneously it gives a length of horizontal movement.

[0037] In the perspective of figure 3b we see the component (5), which is optional to hold if a person wishes the sleeping pillow (8) on top of the second kind of movement mechanism. This holding component (5) is elastic and with preferably two plastic or elastic hooks on the edges or clips or self-adhesive clasp onto the movement mechanism's cover.

[0038] The movement mechanism in the first and second type in figure 3 functions as a unified spring (1) and (2) level of reintroduction of the movement which raises the side (M) of the sleeping pillow (8), increasing the acute angle (n) to 45 degrees maximum, consists of the cord (11) which connects levels (1) and (2), it is held on one level and based on the other level. At the point where the cord is based, a person fastens the setting mechanism (3) and by that this person can withhold more or less length of the cord (11) between levels (1) and (2), and in this way the person can withhold angle (n) of dynamic neck tension relief pillow from 45 to 0 degrees minimum at default position, usually however a person sets it and uses it at 0 degrees to 25 degrees. It consists of the protective stopper (10), is portable and a person places it or removes it whenever wishes in level (1), is placed between the bed and the mattress and is not visible. In this way, the dynamic neck relief pillow is stabilised on top of the bed.

[0039] Figure 3 shows the setting mechanism (3) in a different position than figure 3b. A person has this possibility when their work becomes better.

[0040] The scale at which I have figured the movement mechanism of the dynamic neck relief pillow is 1 to five on all the figures.

[0041] In the default position where a person lies down to rest or sleep, turns their neck together with head on top of the sleeping pillow (8). Level (2) of the movement mechanism from the weight that a person's head and neck have because of gravity, moves towards the earth tracing an arc of a circle with a downward direction until the angle (n) is decreased to 0 degrees and level (2) comes into parallel position with level (1) as in figure 3a, 3e and 3k, in this position forces are created which are equal and opposite to the weight of a person's neck and head, and their head and neck stop their downward movement and balance on top of the invention.

[0042] At the peak of angle (n) of levels (1) and (2) in position (A), figure 3c is the centre of the arc of a circle.

[0043] Of course it is not necessary for the descent to start from the default position (n) of 45 degrees, we can start the descent of level (2) from a default angle (n) which is much smaller than 45 degrees like in the figures 1c, 3d and 3e. However, this acute default angle (n) will be set by the person to the degrees that pleases him/her around from 0 degrees to about 25 degrees.

[0044] Figure 3d shows the sleeping pillow (8) in default position with acute angle (n) approximately 23 degrees, figure 3e shows the sleeping pillow (8) with angle (n) approximately 0 degrees.

[0045] With the load of the weight of a person's head and neck, if the dynamic neck tension relief pillow is forced to descend down and trace the length of the arc of a circle from the default angle (n) of 23 degrees shown by figure 3d to 0 degrees shown by figure 3e, then the sleeping pillow (8) on its upper side and a person takes the height (O), height (P), height (R), we also have the edge of the sleeping pillow (U) and the edge (M). When the sleeping pillow (8), from the default angle (n) of 23 degrees which is shown by figure 3d, descends and becomes horizontal in relation to level (1) or in relation to the mattress as in figure 3e and the angle (n) becomes 0 degrees at point (O) where the height is approximately 75 millimetres, on the upper level it will move (O_1) approximately 30 millimetres of horizontal movement because of its height, to point (P) where the height of the sleeping pillow (8) is approximately 75 millimetres, it will move on its upper surface (P_1) approximately 30 millimetres horizontally at point (R), the sleeping pillow will be moved horizontally on its upper surface when it becomes horizontal and comes into a position like that of figure 3e parallel with level (1) because of its height, which is approximately 75 millimetres, it will give a horizontal movement (R_1) of approximately 30 millimetres.

[0046] In figure 1c we compare, completely hypothetically, part of a person's spinal column with their head and neck.

[0047] We take hypothetically the lengths of 7 vertebrae which are equal to each other (Q, T, Y, F, X, W, V), we have hypothetically raised out head to an angle (n) 23 degrees in relation to a person's spinal column, if now the person lowers their neck and head to an angle (n) of 0 degrees then their head and neck come into an exact horizontal line with the imaginary line of their spinal column, measuring now the distances (Y, F, X, W, and V), we see approximately the horizontal length which corresponds to each separate vertebra when it traces the arc

of a circle in relation to the imaginary line of our spinal column, we have at point (Y) horizontal displacement equal to 2,5 millimetres. At point (F) horizontal displacement equal to 5 millimetres. At point (X) horizontal displacement is equal to 7,5 millimetres. At point (W) horizontal displacement is equal to 10 millimetres. At point (V) horizontal displacement is equal to 12,5 millimetres. We see also that the length of the horizontal movement is distributed equally in 2,5 millimetres to every equal length between the hypothetical vertebrae of the neck along all the length of the person's hypothetical neck and hypothetical head, which come into contact with the upper surface of the sleeping pillow (8).

[0048] A person can very easily, by means of the setting mechanism (3), which is fastened onto the cord (11), set and withhold the elevation of angle (n) at such an angle that we can use the horizontal movement of the movement mechanism to relieve, with complete safety, all the vertebrae of the neck up to a point in their spinal column of the smallest horizontal compression during our sleep, as we see in figures 1c, 3d and 3e.

[0049] Figure 3 shows in perspective a movement mechanism of the first and second kind, the perspective shows how the movement mechanism carries a sleeping pillow (8) on level (2), one of the sleeping pillows known to us all, simple, classical, non anatomic, in the default position with angle (n) 45 degrees.

[0050] Figure 3a shows at point (8a) the form which the sleeping pillow (8) takes when a person relaxes or sleeps on it at an angle (n) of 0 degrees, at point (8a) the sleeping pillow (8) has followed the arc (1a) of the above level (2) of the movement mechanism. A person has the possibility to change arc (1a) onto level (1) or level (2) when constructing the movement mechanism or even to cancel it by changing the area and shape of the spring's intersection. The arc (1a) allows someone to achieve as similar as possible arc in the sleeping pillow (8) in position (8a) with the arc that a person's neck forms that lies on top of it and supports evenly, without any gaps throughout its neck.

[0051] Nothing prevents the dynamic neck tension relief pillow from having different shapes, different dimensions, and being constructed from different materials, which are healthy and good for human beings.

Claims

1. A dynamic neck tension relief pillow comprising a sleeping pillow (8) which can be placed on the covers of any mattress on any sleeping bed, to be used by a person when said person lies down to rest or to sleep, the said sleeping pillow is simple, classical non anatomic or anatomic or ergonomic, is constructed from natural or synthetic fibres or from feathers of birds or from natural or synthetic foam material, and more generally it comes in all types, all qualities and all dimensions. A movement mechanism which has an accumulating tendency to rise when it is not loaded by the weight of said person's head and neck, and for whatever height it is relieved, it raises each time, in a natural way, one of 4 sides (M) of the sleeping pillow (8), tracing an ascending arc of a circle from an angle (n) of 0 degrees minimum to a 45 degree acute angle maximum in relation to the mattress when said sleeping pillow (8) is placed on the mattress and thus forming an inclined plane when it is above the covers of any mattress on bed in the default non loaded position, and to allow the lower side of the sleeping pillow to come into contact with the air of its environment as well, every time the dynamic neck tension relief pillow receives the load of said person's head and neck, it begins from the default angle (n) set with a setting mechanism (3) and trace a length of a descending arc of a circle simultaneously gives an accumulated length of horizontal movement, until angle (n) is neutralized and one of the 4 sides (M) of the sleeping pillow ends its descent over the mattress, the length of the horizontal movement (I_1 plus I_2, K_1 plus K_2, L_1 plus L_2, O_1 plus O_2, P_1 plus P_2, R_1 plus R_2, and M_2) according to the value of the setting of the default angle, the dynamic neck tension relief pillow, following each time the angle (n) set with the setting mechanism (3) with an analogous adjustment, and copying the arcs of a circle which said person's head and neck trace during descent or ascent or simultaneously following every arc of a circle and copying it in a natural way to give exactly the same horizontal length said person's head and neck give relieving said person's neck of all the horizontal compressions and usually used this way, or when necessary a greater angle (n) is previously set with the setting mechanism (3), giving every time a little greater horizontal length than the length of horizontal movement (T, Y, F, X, W, V, and N) which said person's neck and head give, accumulating the additional horizontal movement, converting it to horizontal force and returning it with the same direction of said person's neck for all the time said person sleeps on it, trying lightly to push it back, the dynamic neck tension relief pillow comes in two kinds being portable, in the first kind the sleeping pillow (8) is permanently incorporated with the movement mechanism, and is the second kind the sleeping pillow (8) is placed on top of the movement mechanism, the second kind of the movement mechanism also consists of the optional component (5), which withholds the sleeping pillow (8) onto the upper level (2), the movement mechanism is light and portable, level (1) is attached onto the bed-linen of any common mattress, on any common bed, levels (1) and (2) are bending springs constructed in acute angle (n) bind together, peak (A) of angle (n) of level (1) and level (2) is the centre of circle arc where level (2) is supported and traces, level (2) trying to return in acute angle (n) of construction, one of the four

sides (M) elevates of sleeping pillow (8) in default position, the sleeping pillow (8) balances elevated in default position, it contains a flexible cord (11), it is linked with one level, whereas it is based onto the other level and on top of it the setting mechanism (3) is clasped by withholding shorter or longer length of the cord, the said cord (11) withholds smaller or greater height in side (M) of sleeping pillow (8) by withholding the compressed tension of level (2) to be elevated in order to set the default angle.

2. The dynamic neck tension relief pillow according to claim 1 further comprising a protective stopper (10) to be placed in the gap between the place where the mattress ends and the skeleton of the bed, to stabilize the dynamic neck tension relief pillow from unwanted displacements.

3. The dynamic neck tension relief pillow according to claims 1, 2 further comprising a supporting component which sets and stabilizes the angle (n) in cooperation with the setting mechanism (3) to different degrees, strengthens the upper level (2) and base (1) so that said person's head can be held raised when said person wants to watch TV or discuss or read lying on the bed and using the dynamic neck tension relief pillow.
This component support which stabilizes the angle (n) at the degrees which we want is optional, portable and we place it if and when we want.

4. The dynamic neck tension relief pillow according to claims 1 and 2 is **characterized by** the fact that whenever force is practiced deriving from the load of a person's head and neck weight, whereas level (2) moves circularly and downwards, it forms a temporary arc (1a), the sleeping pillow (8) follows this arc (1a) onto level (2) and forms an arc (8a) similar with the arc that a person's neck forms when sleeping on it by reducing the strain on the said person's neck when bending whilst supports it throughout its length softly, evenly without gaps.

Fig 1c

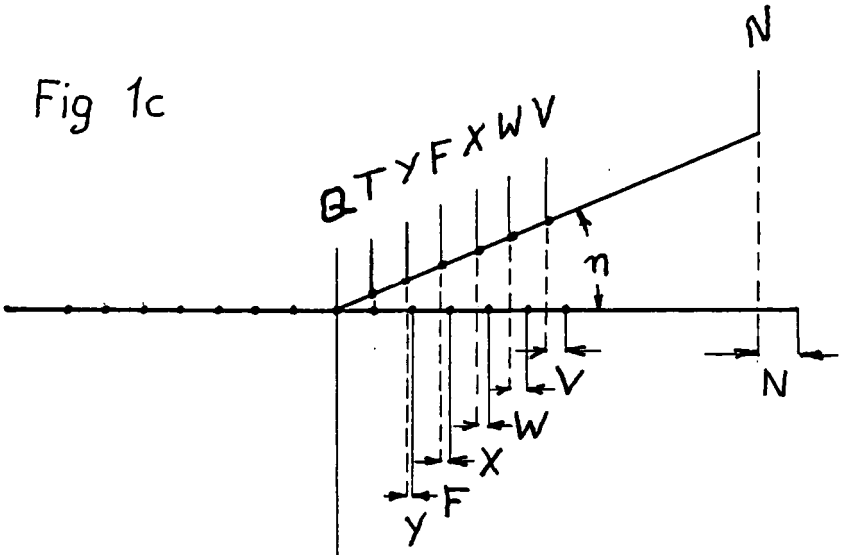


Fig 3d

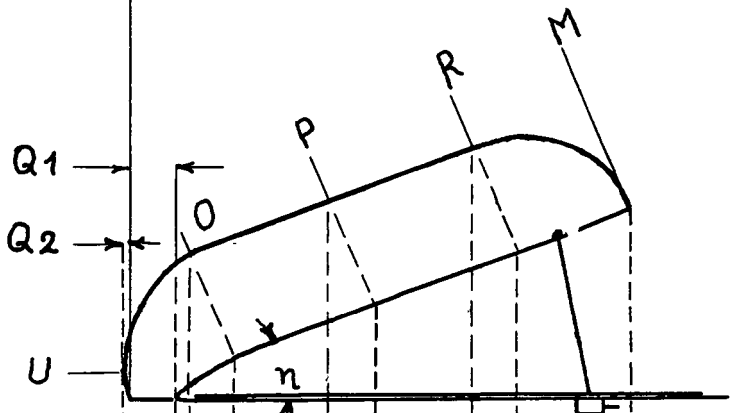
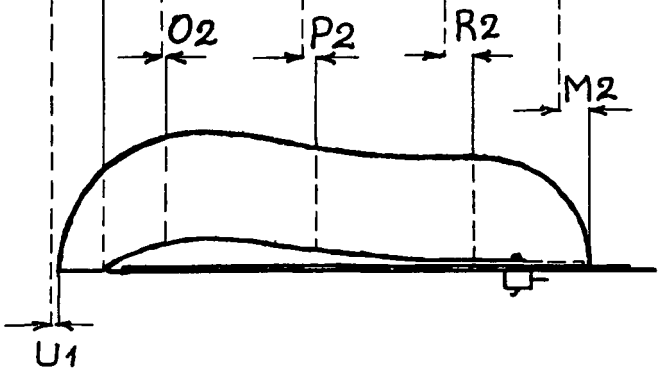


Fig 3e



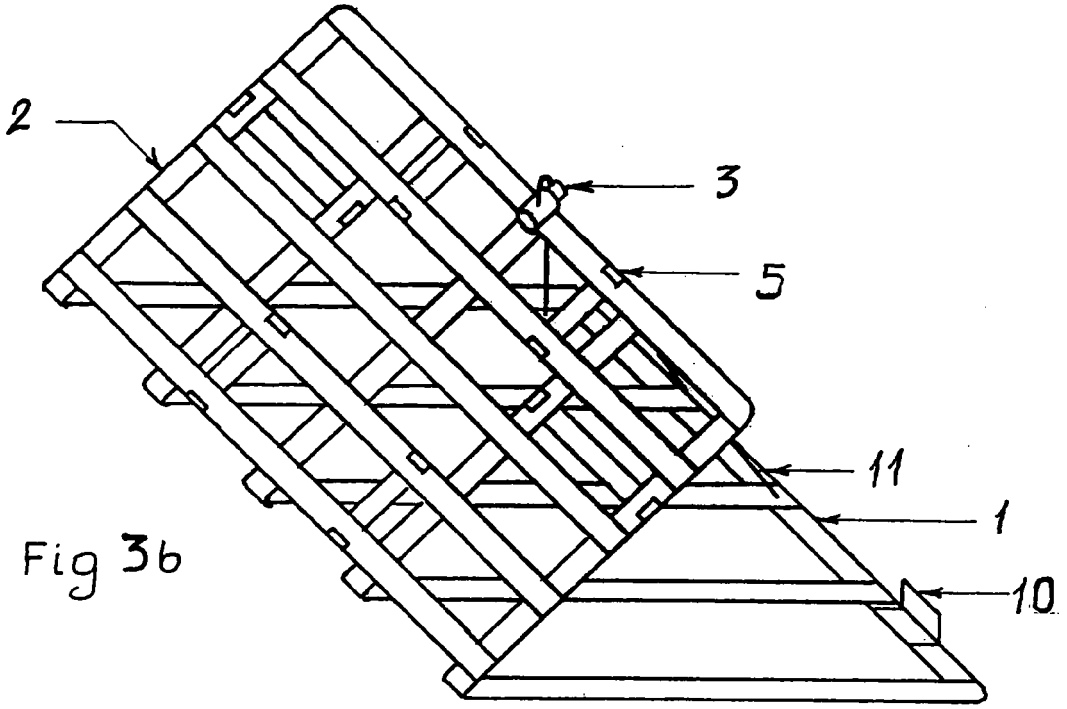


Fig 3b

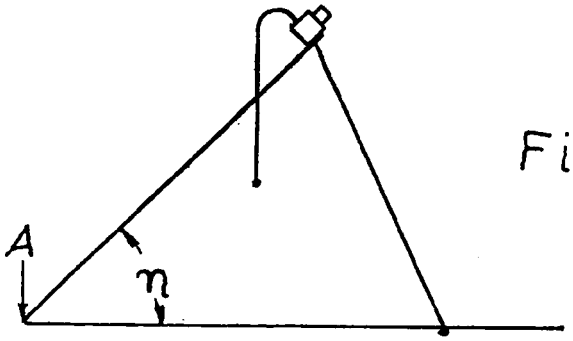
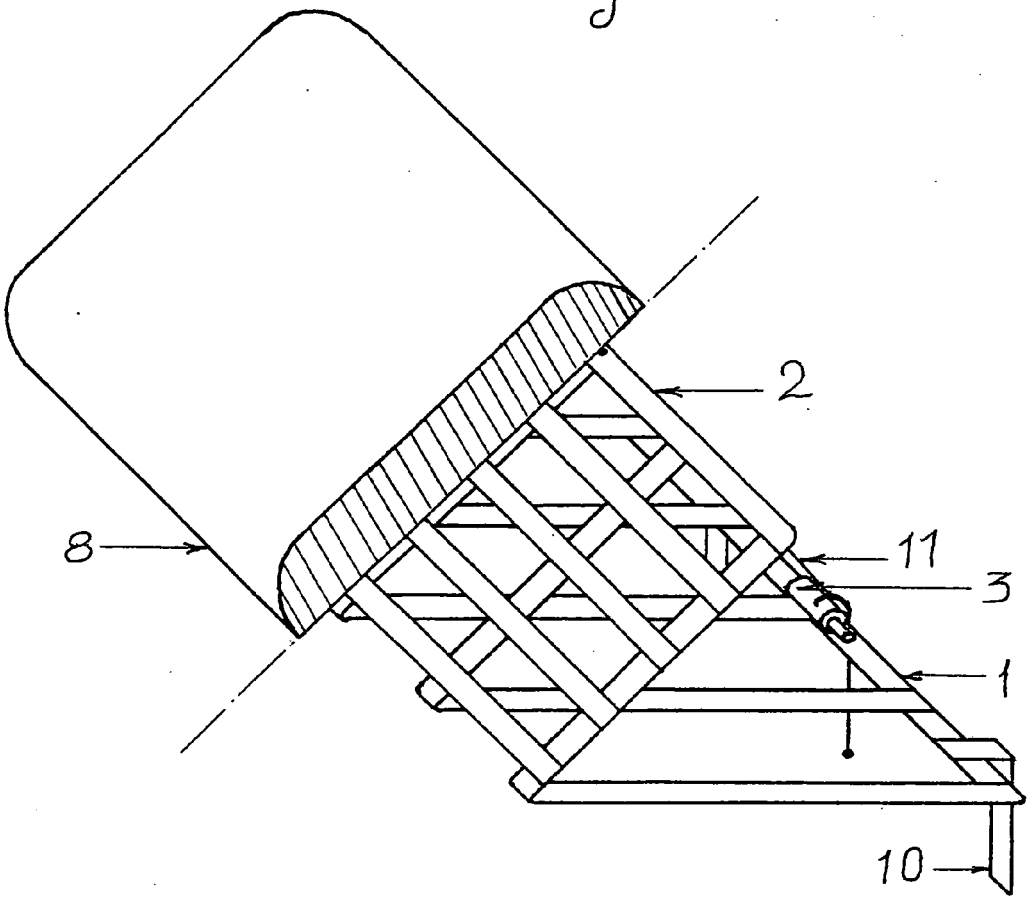


Fig 3c

Fig 3



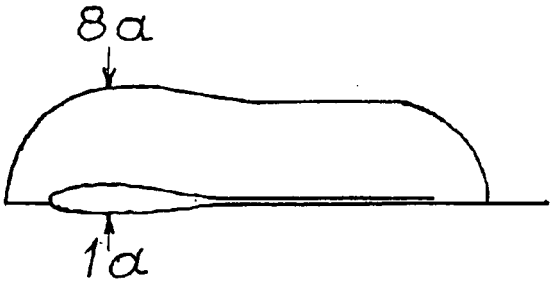


Fig 3a

Fig 3i

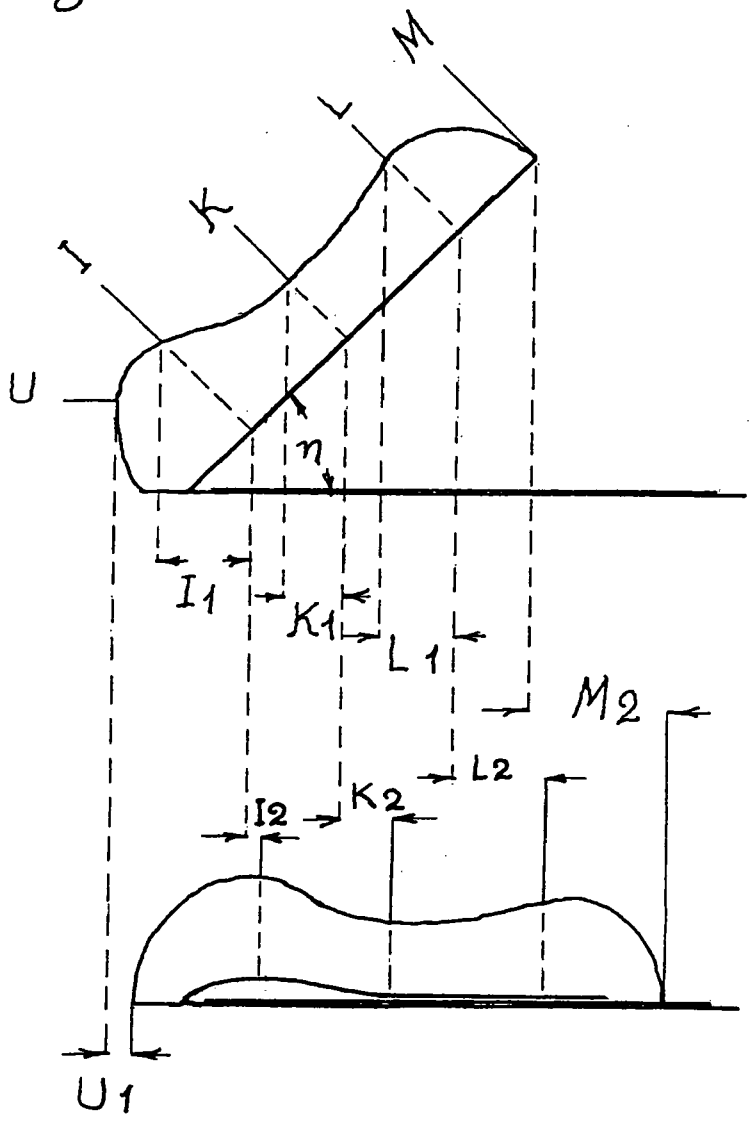


Fig 3k

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PARTIAL EUROPEAN SEARCH REPORT

under Rule 62a and/or 63 of the European Patent Convention. This report shall be considered, for the purposes of subsequent proceedings, as the European search report

Application Number
EP 11 00 0732

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	JP 2003 052489 A (MASADA TOSHIO; MASADA HIROSHI; MASADA KENTARO; MASADA YOHEI) 25 February 2003 (2003-02-25)	1,3	INV. A47C20/04
Y	* abstract; figures 1-7 *	1-3	
Y	KR 2008 0008427 A (KIM HEUNG YONG [KR]) 23 January 2008 (2008-01-23) * abstract *	1,3	
Y	GB 2 287 401 A (MANGAR INTERNATIONAL LTD [GB]) 20 September 1995 (1995-09-20) * abstract; figures 2,5 *	2	

TECHNICAL FIELDS SEARCHED (IPC)

A47C
A47G

INCOMPLETE SEARCH

The Search Division considers that the present application, or one or more of its claims, does/do not comply with the EPC so that only a partial search (R.62a, 63) has been carried out.

Claims searched completely :

Claims searched incompletely :

Claims not searched :

Reason for the limitation of the search:

see sheet C

Place of search	Date of completion of the search	Examiner
The Hague	9 March 2011	Longo dit Operti, T

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

1

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INCOMPLETE SEARCH
SHEET C

Application Number
EP 11 00 0732

Claim(s) completely searchable:
2-4

Claim(s) searched incompletely:
1

Reason for the limitation of the search (non-patentable invention(s)):

Claim 1 searched incompletely

Further limitation of the search

Claim(s) completely searchable:
2-4

Claim(s) searched incompletely:
1

Reason for the limitation of the search:

Claims 1 and 3 are drafted in multiple sentences. The syntax wording makes it impossible to determine the subject-matter for which protection is claimed, because it is impossible to determine the technical features. According to rule 43(1) EPC, the definition for which protection is sought shall be in terms of the technical features of the invention. Claims 1 and 4, however, mainly contain statements relating to therapeutical advantages for the user and other non technical matters. For example is the expression of claim 1 lines 10-11 "consisting of a movement mechanism which has an accumulating tendency to rise" linked to the claimed invention or part of the prior art ? What is to be understood by accumulating tendency ?
Therefore claims 1 and 3 are not clear in the sense of Article 84 EPC.

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 11 00 0732

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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09-03-2011

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JP 2003052489 A	25-02-2003	NONE	
KR 20080008427 A	23-01-2008	NONE	
GB 2287401 A	20-09-1995	NONE	

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82