

United States Patent

Langhammer

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[54] SPINAL AREA BACK SUPPORTER AND MASSAGING DEVICE

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[51] Int. Cl. A61h 7/00

[58] Field of Search 128/67-69, 24; 5/327, 338

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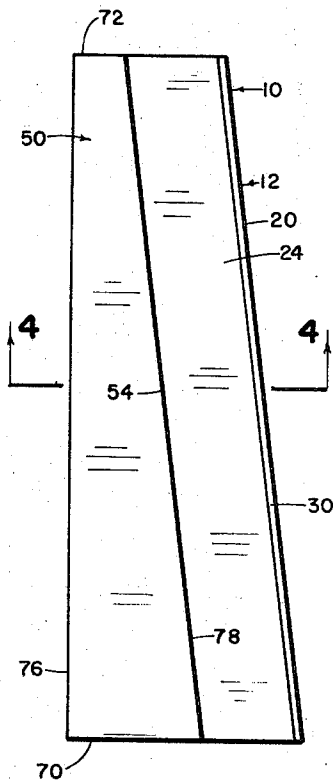
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[57] ABSTRACT

A central area back supporter and massaging device having an elongated and resilient central supporting portion, an intermediate means or rear portion attached to the central supporting portion, the rear portion being adapted to engage other parts of the back other than the vertically elongated spinal depression area, the central supporting portion protruding so far forwardly of the remainder of the device that when a user's back presses thereagainst substantial excess pressure will be felt by the user in the areas of the sides of the vertical spinal depression as compared with the pressure against the remainder of the user's back.

10 Claims, 5 Drawing Figures



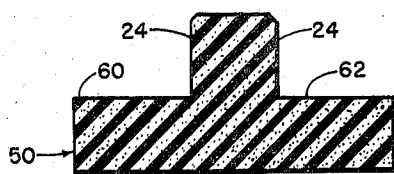


FIG. 4

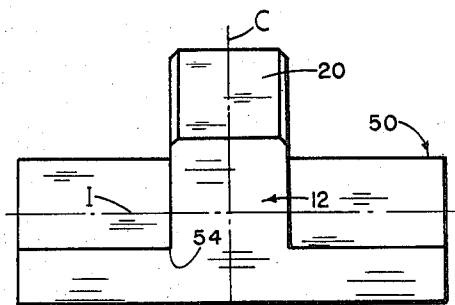


FIG. 3

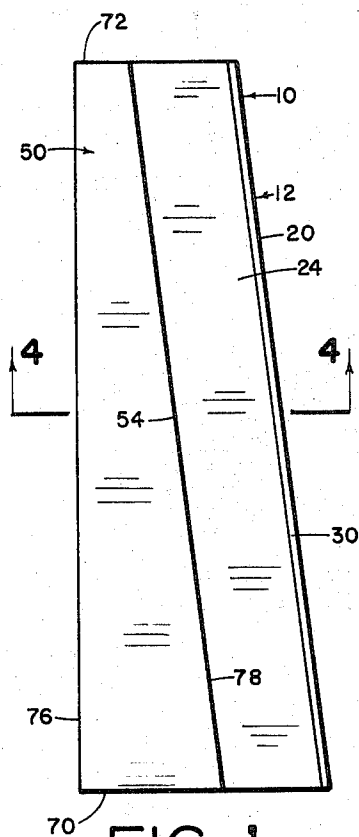


FIG. 1

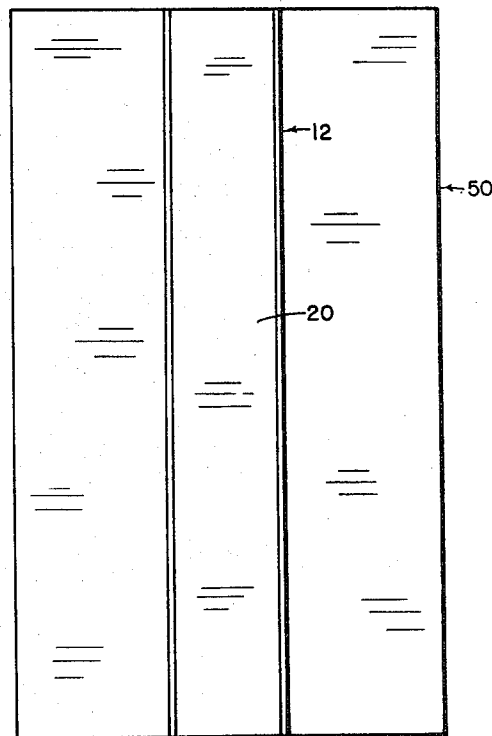


FIG. 2

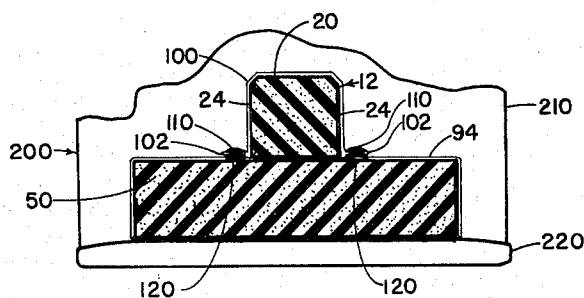


FIG. 5

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SPINAL AREA BACK SUPPORTER AND MASSAGING DEVICE

FIELD OF THE INVENTION

This invention is in the field of back rest devices for back support and massage.

DESCRIPTION OF THE PRIOR ART

Prior art back-supporting devices have been built into chairs and have been proposed for removable attachment to the backs of seats such as automobile seats.

Some of these have ignored the fact that a person's back has a vertically extending depression at the backbone and that it is important to supply support for that portion of the back which lies in this depression. Such proposals have usually involved pillow-like supports extending from left to right uniformly usually for the purpose of engaging what is often called the "small" of the back where the spine has a convex rearward surface at a person's waist.

Some back-supporting proposals have recognized a need for providing a forwardly protruding vertically elongated back support portion which is adapted to press into the vertical depression which is in the waist and shoulder areas of a person's body when they are using correct posture, when the shoulders are not slumped forward. In other words, for supporting the upper dorsal spine.

However, a mistake has been made in thinking that a back support should generally conform to the approximate curvatures of a person's back. By the words "generally conform," I mean that some have mistakenly thought that the perfect support would be a perfect fit, achieved, as nearly as possible, with resilient material in the supporting device so as to conform as well as possible to the variations in the back shapes of different users of a same support.

The reason this mistake has been made is possibly because if a person were lying on their back, then a perfect conformity to all areas of the back generally would give the most perfect support. But since such back-supporting devices are used by a person in a sitting position, then gravity has a completely different effect than it does on the person lying down.

Ribs are connected to the spine at the middle of the chest in ways permitting a pivoting at these connections so that the ribs at the sides of the body midway between these connections are adapted to move upwardly and downwardly as a person breathes. When the chest expands, the ribs move upwardly, pivoting about their ends.

Gravity pulls downwardly on the ribs so that when the many muscles that support the ribs are not supporting the ribs because they are relaxed, gravity pulls downwardly on the ribs causing extra strain on the ligaments that connect the ends of the ribs to the backbone and to the bone at the middle of the chest, causing pain and fatigue.

This is the most common cause of what is generally known as "backache," such backaches are not experienced as much by persons who are active so that their muscles are working and frequently relieving the weight of the ribs so that this extra strain does not fall on the ligaments.

But when a person is sitting in a chair over a long period of time, with the muscles inactive, such as is the case when driving an automobile, then the muscles are not helping to support the ribs and with the weight of the ribs carried almost entirely by the ligaments, the ligaments quickly tire and pain is experienced.

If the back is held up against a vertically extending back rest which gives the back uniform support, even the word "support," when used in this context, gives a false impression. A person must push his back very firmly up against such a general form-fitting back rest in order to have much effect. As a practical matter, a person sitting in a straight backed chair tends to press only very lightly against the back-rest, in great contrast to the amount of supporting pressure that would be provided if a person were lying down on a generally form-fitting surface.

SUMMARY OF THE INVENTION

A spinal area back supporter and massaging device having an elongated and resilient central supporting portion, an intermediate means or rear portion attached to the spine supporting portion, the rear portion being adapted to engage other parts of the back other than the vertically elongated spinal depression area, the central supporting portion protruding so far forwardly of the remainder of the device that when a user's back presses thereagainst substantial excess pressure will be felt by the user in the area of the sides of the vertical spinal depression as compared with the pressure against the remainder of the user's back.

The rear portion as seen in side elevation being thicker at its forward and rearward ends than at its upper end, the thickness of the central supporting portion being from 1 to 4 inches, and preferably approximate 2 inches, the horizontal width of the central supporting portion being 1 to 4 inches, and preferably being 3 inches.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a side elevation of a form of the spinal area back supporter and massaging device of this invention in which the device is part of a pillow.

FIG. 2 is a frontal elevation of the device of FIG. 1.

FIG. 3 is a top plan view of the pillow device of FIG. 2.

FIG. 4 is a sectional view taken along the line 4—4 of FIG. 1.

FIG. 5 is a sectional view similar to FIG. 4 but taken of a modification of the device in which the device has its spinal supporting portion and its rear or intermediate portion provided with a cover means, and in which an upholding element upholding the intermediate or rear portion as well as the central supporting portion is a seat, and specifically a chair, a portion of the horizontal part of the chair being broken away.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The spinal area back supporting and massaging device of this invention is shown in a pillow form and generally indicated at 10 in FIG. 1 comprising an elongated spine supporting and massaging portion 12 formed of resilient material sufficiently resilient as to fit into the generally vertically elongated depression in a person's back in the backbone area thereof as a person presses against the central supporting portion 12, the central supporting portion 12 regaining its shape, meaning the shape it originally has, when the pressure thereon is released.

As best seen in FIG. 3, the preferred original shape of the central supporting portion 12 is to have a substantially flat forwardmost surface 20 disposed in a plane.

The central supporting portion 12 has side surfaces 24 which are each disposed in planes at a right angle to the plane of the forward surface 20.

The forward side 20 of the central supporting portion 12 adjoins at its right and left sides, the forward edges of right and left beveled surfaces 30, which latter incline rearwardly from the forward surface 20, each joining a respective side surface 24.

An intermediate means generally indicated at 50 and which can be also called a rear portion 50 extends across the rearward side 54 of the central supporting portion 12 and extends to the right and left sides of the central supporting portion 12 substantial distances respectively so that the forward surfaces 60 and 62 of the rear portion 50 can engage and support those parts of the back of a user which are midway between the spine and the sides of the back.

The distance between the side surfaces 24 defines the width of the central supporting portion and this width as measured horizontally is approximately 2 to 4 inches, and is preferably about 3 inches in dimension so as to place concentrated pressure on the areas of the back that lie on each side of the spine for purposely putting extra support pressure at the sides of the vertically elongated depression in a person's back, then pres-

sure against the back of the person generally, so as to provide support for the inner ends of the back parts of the ribs so as to substantially immobilize the ribs so as to relieve pressure on ligaments connecting the ribs to the spinal vertebrae in order to allow these ligaments to relax and cease to be a source of pain.

Conversely, the central supporting portion 12 is more fully called a central supporting and massaging portion because if the user moves his back up and down and from side to side for pressing thereagainst, the user will find that his back becomes more relaxed from the greater variety of positions of the ligaments and the greater variety of directions of forces on the ligaments, tending to offset the fatiguing effect of the gravity forces pulling downwardly on the ribs which excessively fatigue the ligaments from the excessively long time periods when they are called upon to resist these gravity forces by themselves.

The central supporting portion is at least 1 inch thick in its central 2 inches of width and can vary between that and 4 inches of thickness in its central 2 inches of width, approximately 3 inches of thickness in the central 2 inches of width being preferred, this dimension also having an importance in providing support pressure at the sides of the depression which extends vertically in a person's back in excess of the pressure on the remainder of the person's back and to achieve a relaxation of the ligaments as above described.

The central supporting portion 12 has an upright central reference plane extending forwardly and rearwardly therethrough midway between its right and left sides. This plane can be seen at C in FIG. 3 and it is important that the entire device 50 have no section disposed further than two inches from the central plane C, that is, to the right or left thereof, which section, although such section is nonexistent, extends further forwardly than an intermediate upright reference plane extending from right to left through the device at a right angle to the central reference plane and disposed farther than one inch from the rearward side of the spinal supporting portion, the intermediate upright reference plane referred to being shown at I in FIG. 3.

The importance of the last described dimension relating to the plane I is that if the device did have a section disposed further than 2 inches from the central plane C and which extends further forwardly than the intermediate upright reference plane I, then the sides of the vertical spinal depression in a person's back would not receive as much extra pressure as compared with the remainder of the back of the user since extra pressure is a function of the extent to which the spinal supporting and massaging portion 12 extends forwardly from any other back supporting elements that might engage other parts of the back substantially to the sides of the spinal area.

When the intermediate or rear portion 50 is in the form desired for a pillow, it is made of resilient material and can be formed of sponge rubber or material of like resiliency, and can be formed integrally with the spinal supporting portion 12, as seen in the cross-section shown in FIG. 4.

However, the intermediate or rear portion 50 can be separate from and indirectly attached to the spinal supporting portion 12 as will be described later in describing the modification of FIG. 5.

As best seen in FIG. 1, the rear portion 50 extends substantially from the top to the bottom of the central supporting portion 12 and the rear portion 50, when seen in side elevation, is thicker at its lower end 70 than it is at its upper end 72, for example, its lower end 70 can be 4 inches thick as measured from its rearward side 76 to its forward side 78, whereas the thickness of the upper end 72, likewise measured, is preferably 2 inches.

FIG. 1 shows the pillow modification and it is preferred for this modification that the height of the central supporting portion 12 as well as the height of the rear portion 50 be 20 inches.

In the use of the pillow modification shown in FIG. 1, the user will find comfort in using it for a period of time in the position shown in FIG. 1 in which the thicker end of the entire device is disposed downward, then later reversing the pillow so that its thicker end is upward. This reversal gives the back a variety of pressure, first concentrating greater pressure on the lower central area and then later concentrating greater pressure on an upper back area, as is a variety that causes the area adjacent the sides of the spine of the body to relax and feel very good, even to tingle.

Referring to FIG. 5, in the modification of the device there shown, the spinal supporting and massaging portion 12 is not connected to, but is separate from, the intermediate or rear portion 50.

The intermediate or rear portion 50 of the modification of FIG. 5 has a cover 94 surrounding it and having the cover 100 of the spinal supporting portion 12 extending around the sides and the forward surface 20 of the central supporting portion 12.

The cover 100 can also have right and left outwardly extending portions 102 which are provided with forward half portions of snap buttons attached thereto, rearward half portions of snap buttons are shown at 120 and are attached to the cover 94 of the rear portion 50 in positions registering with the forward snap button portions 110 so that when they are mated and snapped together, the central supporting portion 12 will be held in the position shown in FIGS. 1, 2, and 5 with respect to the rear portion 50.

In the modification of FIG. 5, an upholding element is there shown at 200 and it is illustrated in FIG. 5 as a chair, which is, therefore, given the number 200 also.

The chair 200 has a horizontal or seat portion 210, which latter extends under and engages the undersides of the attached central supporting portion 12 and rear portion 50, the seat or chair 200 further having an upright portion 220 firmly fixed to the seat portion 210 and against which the backside of the rear portion 50 is received.

While the dimensions discussed herein will work with foam rubber, yet the preferred material for both the central supporting and massaging portion 12 and the rear portion 50 for working with the dimensions proposed herein is known as Polyurethane foam.

I claim:

1. A spinal area supporter and massaging device comprising an elongated central supporting and massaging portion formed of resilient material sufficiently resilient for a section of it to fit into the generally vertically elongated depression in a person's back in the backbone area as a person presses against said supporting portion and to regain its shape when said pressure is released, a rear portion attached to said central supporting portion and supporting said central supporting portion, said rear portion itself being adapted to be upheld by an upholding element, said central supporting portion substantially having a thickness from its forward to its rearward side of between 1 to 4 inches and a horizontal width substantially of approximately 2 to 4 inches so as to place concentrated support pressure on the areas of the back that lie on each side of the spine to achieve a relaxation of the ligaments for relief of fatigue thereof caused by the downward pull of gravity on the user's ribs while the user's back is erect, said central supporting portion being at least 1 inch thick in its central 2 inches of width, said central supporting portion having an upright central reference plane extending forwardly and rearwardly therethrough midway between its right and left sides, said device being free of any section disposed farther than 2 inches from its said central plane which section extends farther forwardly than an intermediate upright reference plane extending from right to left therethrough at a right angle to said central reference plane and disposed farther than 1 inch from the rearward side of said central supporting portion, said rear portion extending beyond the right and left sides of said spine supporting portion a substantial distance for supporting those parts of the back of the user which are midway between the spine and the sides of the back.

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- 2. The combination of claim 1 in which said rear portion extends substantially from the top to the bottom of said spine supporting portion and in which said rear portion when seen in side elevation is thicker from its forward side to rearward side than at its upper end.
- 3. The combination of claim 1 in which said central supporting and massaging portion has a forward surface for engaging the spinal area which is disposed substantially at an inclination from its top to its bottom with respect to the rearward surface of said rearward portion.
- 4. The combination of claim 1 in which said forward and rearward surfaces of said central supporting and massaging portion and of said rear portion all extend much more upright than horizontal for effective use by a person sitting with his back upright.
- 5. The combination of claim 1 in which said width measurements of said spinal supporting portion are taken as measured substantially at its forward side.
- 6. The combination of claim 5 in which the thickness of said

- spine supporting portion as measured substantially at its forward side is approximately 2 inches.
- 7. The combination of claim 5 in which the thickness of said spine supporting portion as measured substantially at its forward side is approximately 3 inches, said forward sides of said central portion and said rearward portion both extending much more upright than horizontal for the support of a person with his back erect.
- 8. The combination of claim 1 in which said spinal supporting portion 2 to 4 inch width being in all portions thereof disposed within 2 inches of its forward side.
- 9. The combination of claim 1 in which said rear portion has a resilient forward section.
- 10. The combination of claim 1 in combination with a seat adapted to support an adult person in sitting position with the calf and shin portions of his legs approximately upright, said seat having an upright back portion to which said rear portion of said device is attached.

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