

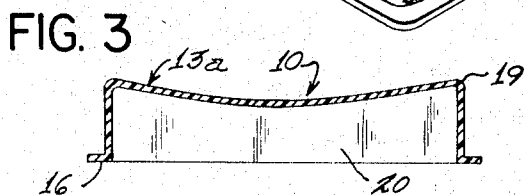
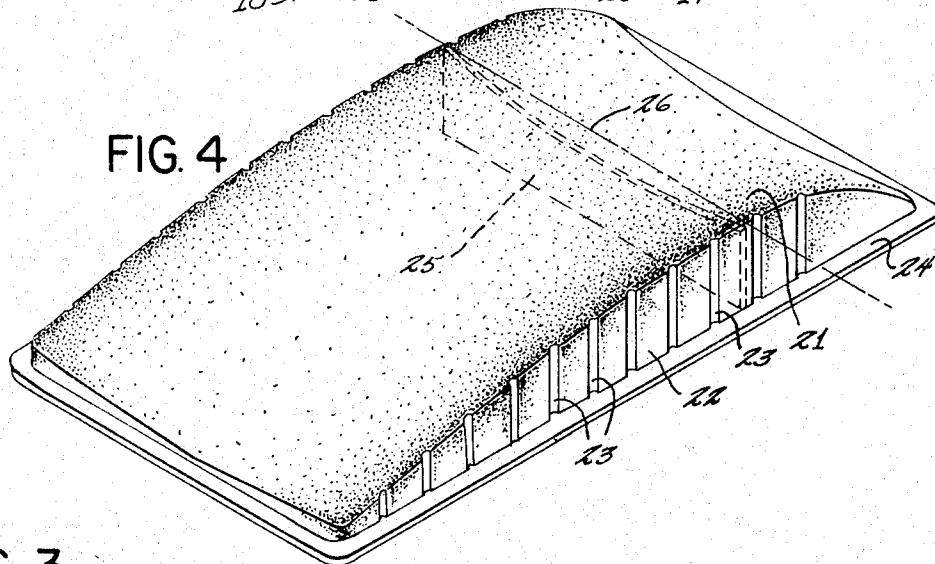
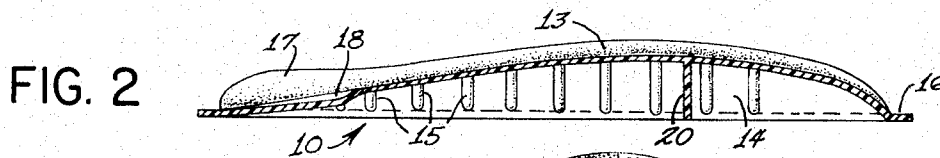
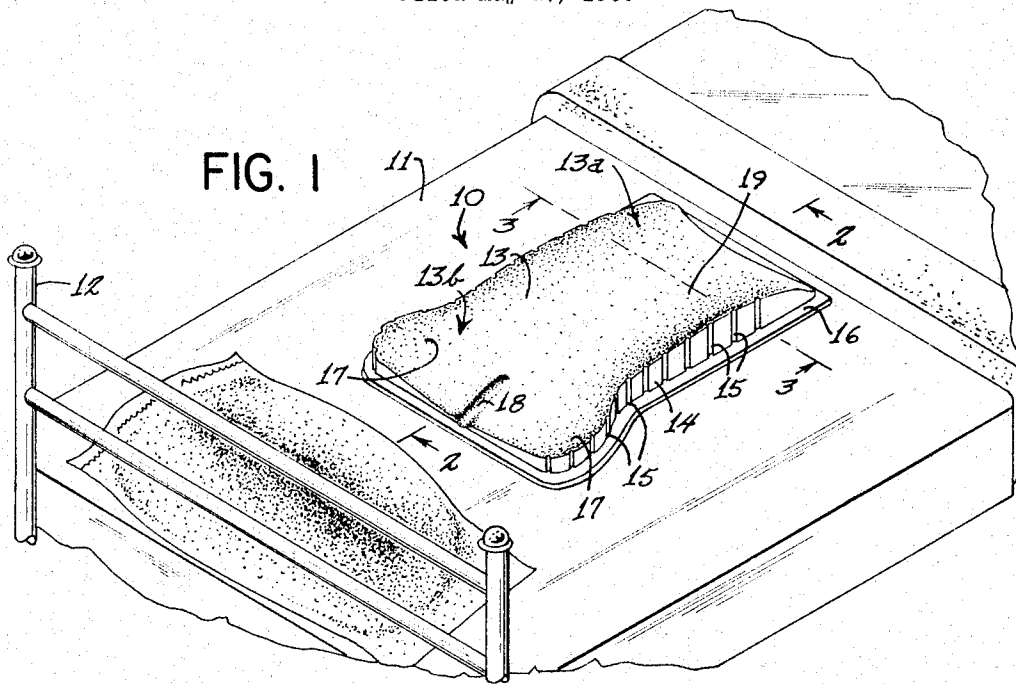
Dec. 26, 1967

L. C. ROGERS

3,359,577

BACK SUPPORT

Filed May 19, 1966



INVENTOR.

LEE C. ROGERS

BY

Williamson, Palmeter & Baine
ATTORNEYS

1

3,359,577

BACK SUPPORT

Lee C. Rogers, 3147 California St. NE.,
Minneapolis, Minn. 55418

Filed May 19, 1966, Ser. No. 551,425

4 Claims. (Cl. 5—327)

ABSTRACT OF THE DISCLOSURE

An elongate back support device including an elongate back supporting member having a supporting framework integrally formed with and depending from the peripheral portions of said back support member. Said back support member and supporting framework defining a convex-concavo structure. Said back supporting member having a convex contour along the longitudinal axis thereof and having a concave contour transversely of the longitudinal axis thereof. An outturned bearing flange integrally formed with the lower peripheral edge of the depending framework and a transverse supporting member integrally formed with the back support member or framework intermediate the ends thereof.

This invention relates to a back support and more particularly relates to back support adapted for use on a resilient pressure absorbing structure such as a bed.

It is oftentimes desirable to support ones back, when lying in bed, in a position which relieves stress on particular portions of the skeletal structure. Those confined to bed for a long period of time, or those afflicted with periodic back discomfort find relief in a change of position. The change of position reorients the stress pattern on the skeletal structure relieving the sore or troublesome areas. Further, a position change which stretches the vertebrae may separate the cushioning discs thereby relieving pressures which may be set up by discs pressing against the spinal column. Back discomfort is oftentimes found in the lumbar region of the back and may be relieved by proper support and bed rest.

An object of my invention is to provide a new and improved back support of simple and inexpensive construction and operation.

Another object of my invention is the provision of a back support which is particularly adapted to use on a soft, resilient surface such as a bed.

Still another object of my invention is the provision of a back support with a curvature built in adapted to properly support and stretch the skeletal structure and reorient stresses within the back.

A further object of my back support is to provide a support which aligns the user in proper position as the support to relieve the maximum therapeutic affect of my invention.

These and other objects and advantages of my invention will more fully appear from the following description made in connection with the accompanying drawings wherein like reference characters refer to the same or similar parts throughout the several views and in which:

FIG. 1 is a diagrammatic sketch showing a typical usage of my back support on a soft, resilient surface.

FIG. 2 is a longitudinal section taken along the line 2—2 of FIG. 1.

FIG. 3 is a transverse section taken along the line 3—3 of FIG. 1.

FIG. 4 is a perspective view of an alternate embodiment of my invention.

The back support of my invention is shown in FIG. 1 and is indicated by numeral 10. The support is shown resting on a soft, resilient mattress 11 supported by bed frame 12. The back engaging portion 13 is convex along

2

the longitudinal axis and is concave transversely of the longitudinal axis thereby forming a compound curved surface. Surface 13 is sharply contoured at 13a, the portion which supports the lumbar region and gently contoured at 13b, the portion which supports the upper back areas. The longitudinal convex curve aligns the spinal column while the transverse concave surface cradles the back orienting the user's spinal column along the longitudinal axis.

The back supporting portion 13 is supported by a substantially upright supporting framework 14 depending therefrom about the periphery of the surface 13. Supporting portion 14 includes upright ribs 15 spaced at predetermined intervals about the peripheral depending portion 14 supplying added strength to the supporting member. A flange portion 16 projects outwardly from the lower portion of supporting frame 14 and is affixed thereto. Supporting flange 16 is of a predetermined width suitable to support the back support on a soft, resilient surface, and determines the plane upon which the supporting portion 13 is positioned.

Back supporting portion 13 includes a shoulder receiving portion 17 adapted to receive and cradle the shoulders of the user. The cradle action at the shoulders aids in locating the user in the proper position centered along the longitudinal axis of the back support 10. The vertebrae of the user, when the user is properly positioned on the back support, contact the vertebrae receiving depression 18 at the back of the user's neck. This provides additional comfort to the user when cradled in the back support by the widened portions 17. Cradle action at the shoulder, as well as the vertebrae receiving portion 18 urges the user to position the lower portion of the back on the highest elevation of the back support, indicated in general at numeral 19 along the transverse section line shown in FIG. 1.

My back support is typically constructed from a plastic material and is of a molded one piece construction. The unit is relatively rigid and of sufficient strength to support the user without flexing or otherwise changing shape.

Referring to FIG. 2, the convex contour of my back support is shown along the longitudinal axis of the support. The high point is generally indicated at 19 and the vertebrae receiving groove is shown at 18. The shoulder cradle is shown at 17 and supporting ribs 15 are shown on side wall 14. Flange 16 is also shown as is a portion of the back supporting portion 13.

Referring to FIG. 3, a cross-section taken along the transverse line which represents the highest point 19 of the structure. At this point a transverse brace 20 is included to insure rigidity of the unit. Much of the weight of the user is concentrated at this point and for maximum therapeutic value of the support must be particularly rigid when contacting the lumbar region of the user's back. Further, the brace 20 aids in distributing the load thereby further preventing "sinking" of the back support in the resilient surface. The contour of the unit is shown and it should be noticed that this contour is concave and adapted to substantially cradle the user urging the user to the longitudinal center line of the unit. This provides centering of the spinal column along the longitudinal axis of the back support thereby resulting in optimum results from the back support as well as optimum comfort when relieving stresses on the back skeletal structure and muscles.

An alternate form of my invention is shown in FIG. 4. A back supporting surface portion is indicated at 21 and consists of a convex surface along the longitudinal axis and a concave surface transverse thereto. The unit is supported by depending, substantially upright supporting walls 22 having ribs 23 therein. Supporting wall 22 is joined to a bearing pressure flange 24 which surrounds

3

the unit determining the relative position of surface 21 with respect to the resilient surface upon which flange 24 rests. A brace 25 is indicated by the dotted lines and is positioned at the highest area of the unit along the transverse line indicated by 26. The concave surface cradles the user with the vertebrae along the general longitudinal center line of the back support. The longitudinal convex surface is then generally in contact with the vertebrae positions, the vertebrae in the optimum position to achieve the desired result, relieving stresses at the users back, providing the user with comfort and thereapeutic value.

From the foregoing it will be seen that I have provided a new and improved back rest of relatively simple and economic construction adapted for use in the home, rest homes and hospitals. The device is rigid and has a back supporting surface designed to relieve stresses along the spinal column and muscle soreness. The unit is designed to cradle the user on the support positioning the spinal column along the longitudinal center line to achieve optimum therapeutic results. Further, the unit is so designed that maximum support and therefore optimum results, is maintained in that the back supporting surface is maintained in a relatively predetermined stable plane with respect to a resilient surface, upon which the unit is typically placed, due to the flanges which provide a stable bearing surface contacting the resilient surface and the transverse support at the high point of the back engaging surface.

It will, of course, be understood that various changes may be made in the form, details, arrangement and proportions of the various parts without departing from the scope of my invention.

What is claimed is:

1. A back support device for use in engaging the back of a user when in a reclining position, said device including an elongate back support member, a supporting framework integrally formed with and depending from the peripheral portions of said back support member, said back support member and framework defining a convex-concavo structure, said back support member having an upper surface extending longitudinally from one end thereof progressively upwardly to a high portion and

4

then being progressively curved downwardly in a longitudinal direction to the other end thereof, said one end defining a shoulder supporting portion and said high portion serving to engage and support the lumbar region of a user's back, said upper surface of the back support member being transversely concave throughout the length thereof, a bearing flange integrally formed with the lower edge of said framework and extending outwardly therefrom and a transverse supporting member integrally formed with said back support member and said framework and extending transversely of said back support member at said high portion.

2. The back support device as defined in claim 1 wherein the distance from said one end of said back support member to said transverse supporting member is substantially greater than the distance from said other end of said back support member to said transverse supporting member.

3. The article of claim 1 wherein said depending supporting framework includes generally upright reinforcing ribbing.

4. The article of claim 1 wherein said back supporting surface includes a vertebrae receiving groove generally disposed at the back receiving portion adapted to receive neck portion of the user thereby positioning the user along the longitudinal axis of said back support.

References Cited

UNITED STATES PATENTS

30	1,904,039	4/1933	Bruder	128—69	X
	2,470,398	5/1949	Hayes	5—338	X
	2,769,185	11/1956	Biederman	5—338	
	2,838,771	6/1958	Goodman et al.	5—345	
35	2,839,766	6/1958	Hull	5—338	
	2,933,738	4/1960	Whelan	5—338	
	3,145,054	8/1964	Sopko	5—327	X

BOBBY R. GAY, *Primary Examiner.*

40 DAVID J. WILLIAMOWSKY, *Examiner.*

R. D. KRAUS, *Assistant Examiner.*