May 3, 1949. A. W. SCHENKER 2,469,084

BODY RESTING APPLIANCE

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Fig. 1.



Fig. 2.

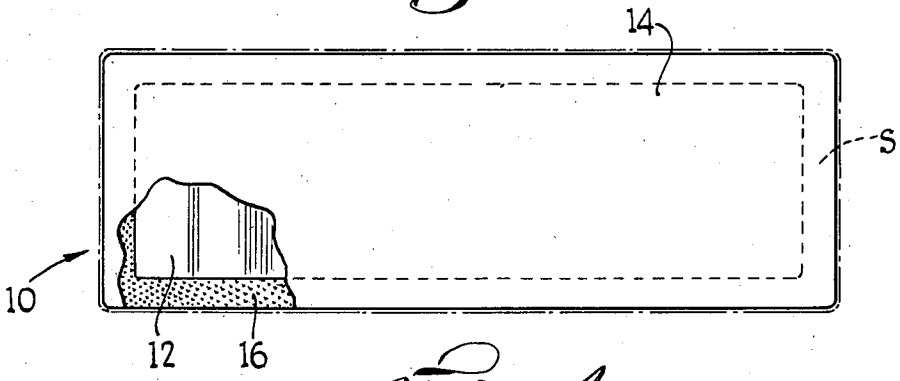
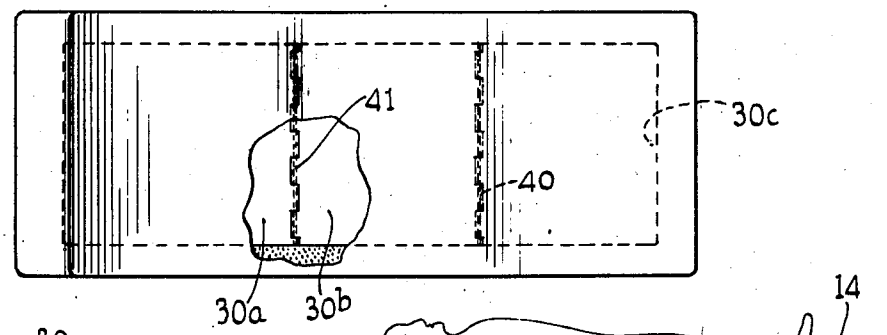


Fig. 4.



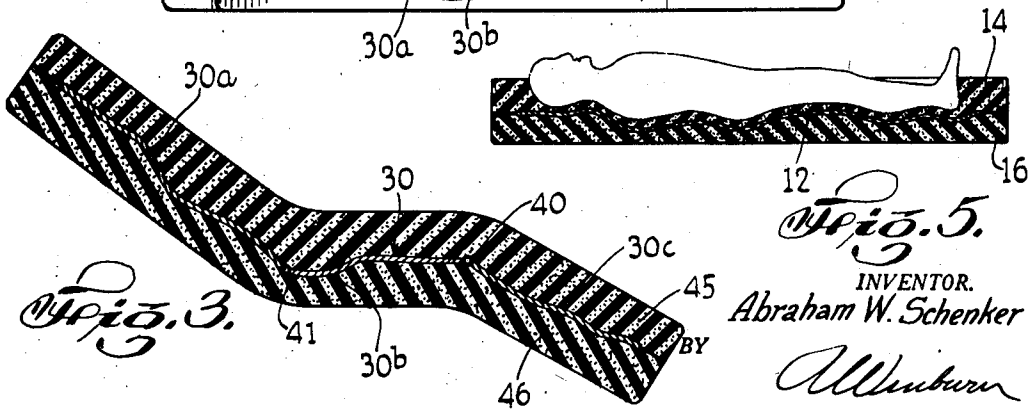


Fig. 3.

Fig. 5.

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Fig. 6



Fig. 7

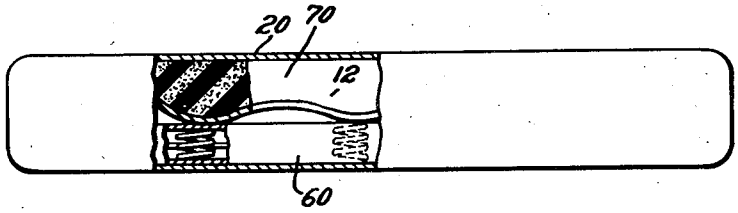
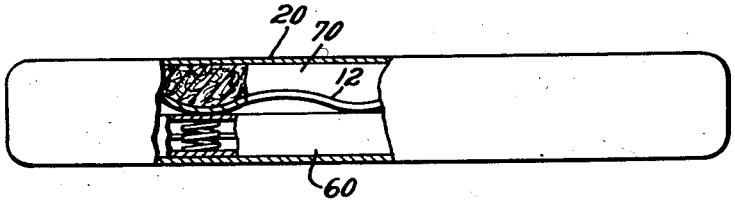


Fig. 8



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Patented May 3, 1949 2,469,084

UNITED STATES PATENT OFFICE

2,469,084

BODY RESTING APPLIANCE

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Application January 1, 1945, Serial No. 570,980

9 Claims. (Cl. 5—91)

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My invention relates generally to body resting appliances. More particularly my invention is concerned with an improved construction of body resting appliance adapted for therapeutic uses and designed to be used in place of the customary mattress or bed spring.

One of the objects of my invention is to provide a novel and highly improved body resting appliance of the character described which shall be constructed and arranged in accordance with the best current medical knowledge in order to obtain a maximum of relaxation for the user and which, at the same time may be adapted for the purpose of bringing therapeutic relief for persons suffering from spinal or other bony ailments, especially backache due to arthritides, spondylolisthesis, herniated nucleus pulposus, sacroiliac disorder, sciatic syndrome, due to other causes, etc.

Another object of my invention is to provide a novel and highly improved body resting appliance of the character described which shall be provided in the form of a single unit with the necessary combination of resilience in certain parts thereof and rigidity in other parts, the said rigid parts being shaped in accordance with the individual's anatomical configuration so as to render the same comfortable and at the same time maintain said configuration.

A further object of my invention is to provide a body resting appliance which shall be characterized by the simplicity of its construction and which at the same time shall represent a substantial improvement in the art.

Other objects of my invention will hereinafter be pointed out or will become apparent in the following description thereof.

In the accompanying drawings,

Fig. 1 is a longitudinal vertical sectional view of a body resting appliance constructed and arranged in accordance with my invention;

Fig. 2 is a top plan view thereof with a portion broken away to disclose the interior construction;

Fig. 3 is a longitudinal vertical sectional view similar to Fig. 1 but illustrating a modified form of my invention;

Fig. 4 is a top plan view thereof with a portion broken away to disclose the interior construction;

Fig. 5 is a sectional view similar to Fig. 1, but of smaller size and illustrating the action of the same while a subject is resting thereon; and

Figs. 6, 7 and 8 are further modified forms of my invention.

Referring now in detail to the drawings, I have illustrated in Figs. 1 and 2 thereof, a body resting appliance 10, which as can be noted has the appearance of the usual type of inner spring mattress and comprises a substantially rectangular shaped sheet 12 of rigid and unyielding material to resist bending or sagging. The said sheet 12 is disposed between two relatively thick layers 14 and 16 of resilient or elastic material in the nature of sponge or foam rubber. The sheet 12 is preferably, but not necessarily, made smaller in size than the layers 14 and 16 leaving a marginal space S surrounding the said sheet 12. The adjacent surfaces of the layers 14 and 16 may be suitably permanently joined by vulcanizing the said adjacent surfaces in the marginal space or by the use of adhesive 15 as shown. It is thus seen from the above description that the rigid sheet 12 is held captive between the layers 14 and 16. If desired the opposite surfaces of the sheet 12 may be adhesively secured to adjacent surfaces of said layers 14 and 16.

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While in Figs. 1 to 5 of the drawings I have illustrated the rigid sheet 12 as being held captive between two layers of sponge or foam rubber it is noted (as shown in Fig. 6) that the said rigid sheet may be embedded in a solid block of sponge or foam rubber during the process of the manufacture thereof. It is also contemplated as within the scope of my invention to substitute for the lower layer 16, a standard well known type of inner spring mattress 60, as shown in Fig. 7, while at the same time the upper layer 14 may be in the form of a cotton kapok or hair mattress 70, as in Fig. 8. In the latter type of construction, the said lower inner spring mattress and the said upper mattress may be made to conform to the shape of the adjacently disposed surfaces of the rigid sheet 12.

To present the appearance of a customary rectangular-shaped inner spring mattress a covering 20 completely enveloping the layers 14 and 16 may be employed. This covering or ticking 20 may be of any suitable material well known to the art.

The applicant, a physician, specializing in the treatment of spinal or other bony ailments, especially backache due to the arthritides, spondylolisthesis, etc., has found that it is inadvisable for patients suffering from these back ailments to lie on surfaces which are soft and therefore yield unevenly to the weight of the body.

It is therefore noted that in the present invention as above described, when the user lies down on the top layer 14 there will be a certain degree of softness and yield due to the material thereof, but the amount of yield will be limited

because of the rigid sheet 12 of unyielding material, so that no portion of the body will be permitted to sag abnormally. A more complete relaxation may thus be obtained. While the user is thus relaxing, a certain amount of resilience is had due to the supporting layer 16, which permits the entire sheet 12 to yield resiliently as a unit without permitting relative portions of the body to yield with respect to other portions.

I have found that in certain instances where therapeutic treatment is indicated, beneficial results are obtained when my rigid sheet 12 is preformed with longitudinal waves and curves (as shown in the drawings) of predetermined contour with respect to the body of a particular user. One of the reasons for the symptoms of backache from any cause is the spasm set up in the muscles of the back due to uneven stress distribution. This is minimized if the patient in the fully recumbent, supine position lies on a rigid surface so formed as to correspond to the relaxed contours of the posterior aspects of the patient's body. The resilient layer 14 is interposed between the body and the preformed rigid sheet in order to accommodate the soft tissues of the back. In this way all portions of the body will be permitted to exert their weight evenly.

In Figs. 3 and 4, I have shown a modified form of my invention in which the body resting appliance is adapted for use with types of beds known as "adjustable hospital beds" in which certain parts along the length of the beds are angularly adjusted. To this end my appliance comprises the rigid sheet 30, similar in function and purpose to the sheet 12 but which is divided into a plurality of sections. For the purposes of illustration, I have shown the sheet 30 divided into the three sections 30*a*, 30*b* and 30*c*, interconnected by suitable hinges 40 and 41 transversely disposed with respect to the length of the said sheet 30. Layers 45 and 46 of sponge or foam rubber, similar to the layers 14 and 16 hold the sheet 30 captively embedded therebetween in the same manner as the Figs. 1 and 2 form of my invention. It is seen therefore that by the above described construction, the body supporting structure of my invention may be used to replace the cumbersome adjustable type hospital bed now in common use.

In the forms of my invention illustrated and described herein, the rigid sheets 12 and 30 may be made of any suitable plastic material or any of the light metals, such as for example aluminum.

In accordance with the provisions of the patent statutes, I have herein described the principle and operation of my invention, together with the apparatus which I now consider to represent the best embodiment thereof, but I desire to have it understood that the apparatus shown is only illustrative and that the invention can be carried out by other means. Also, while it is designed to use the various features and elements in the combination and relations described, some of these may be altered and others omitted without interfering with the most general results outlined, and the invention extends to such use.

Having described my invention, what I claim and desire to secure by Letters Patent is:

1. A mattress structure of the character described comprising a sheet of unyielding material embedded in yieldable material for the purposes set forth, said sheet being preformed with longitudinal waves and curves in conformity with the posterior aspect of the body of the user when in supine position, said sheet comprising a plurality of sections hingedly interconnected for the purposes set forth.

2. In a therapeutic body supporting structure of the character described, a sheet of unyielding material, said sheet being preformed with longitudinal waves and curves in conformity with the contoural aspect of the body of a particular user, a layer of sponge rubber overlying said sheet, a layer of sponge rubber underlying said sheet, said overlying and underlying layers and said sheet being joined into a unitary structure, said sheet comprising a plurality of sections hingedly interconnected so that said body supporting structure may be used in place of an adjustable hospital bed as set forth.

3. A therapeutic body resting structure of the class described designed to support a body in supine position comprising a relatively rigid member of unyielding material having its upper surface formed with longitudinal waves and curves in conformity with the posterior aspect of the body of the user, a layer of relatively soft rubber material overlying the said upper surface of said rigid member, the upper surface of said rubber layer being normally at uniform level without undulations and means for resiliently supporting said rigid member, the said contour of the said surface of said rigid member being characterized by the fact that there is provided a portion adapted to support the knees at a higher level than that of the back of the user.

4. A therapeutic body resting structure of the class described designed to support a body in supine position comprising a relatively rigid member of unyielding material having its upper surface formed with longitudinal waves and curves in conformity with the posterior aspect of the body of the user, a layer of relatively soft rubber material overlying said upper surface of said rigid member, the upper surface of said rubber layer being normally at uniform level without undulations, the lower surface of said rubber layer adjacent to said rigid member having a contour corresponding to the said upper surface of said rigid member, and means for resiliently supporting said rigid member, the said contour of the said surface of said rigid member being characterized by the fact that there is provided a portion adapted to support the knees at a higher level than that of the back of the user.

5. A structure according to claim 4 in which the said rigid member and said rubber layer are permanently joined as a unit.

6. A structure according to claim 3 in which the said rigid member comprises a plurality of sections hingedly connected together so that the said structure may be utilized as an adjustable hospital bed.

7. A therapeutic body resting structure of the class described designed to support a body in supine position comprising a relatively rigid member of unyielding material having its upper surface formed with longitudinal waves and curves in conformity with the posterior aspect of the body of the user, a layer of relatively resilient material overlying the said upper surface of said rigid member, the upper surface of said resilient layer being normally at uniform level without undulations and means for resiliently supporting said rigid member.

8. A therapeutic body resting structure of the class described designed to support a body in supine position comprising a relatively rigid member of unyielding material having its upper

surface formed with longitudinal waves and curves in conformity with the posterior aspect of the body of the user, a layer of relatively resilient material overlying the said upper surface of said rigid member, the upper surface of said resilient layer being normally at uniform level without undulations and means for resiliently supporting said rigid member, the contour of said unyielding member being characterized by the fact that there is provided a portion adapted to support the knees at a higher level than that of the buttocks of the user.

9. A unitary mattress structure of the character described comprising a member of unyielding material embedded in yieldable material for the purposes set forth, said member being preformed with longitudinal waves and curves in conformity with the posterior aspect of the body of the user when in supine position, the contour of said unyielding member being characterized by the fact that there is provided a portion adapted to support the knees at a higher level than that of the buttocks of the user.

ABRAHAM W. SCHENKER.

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