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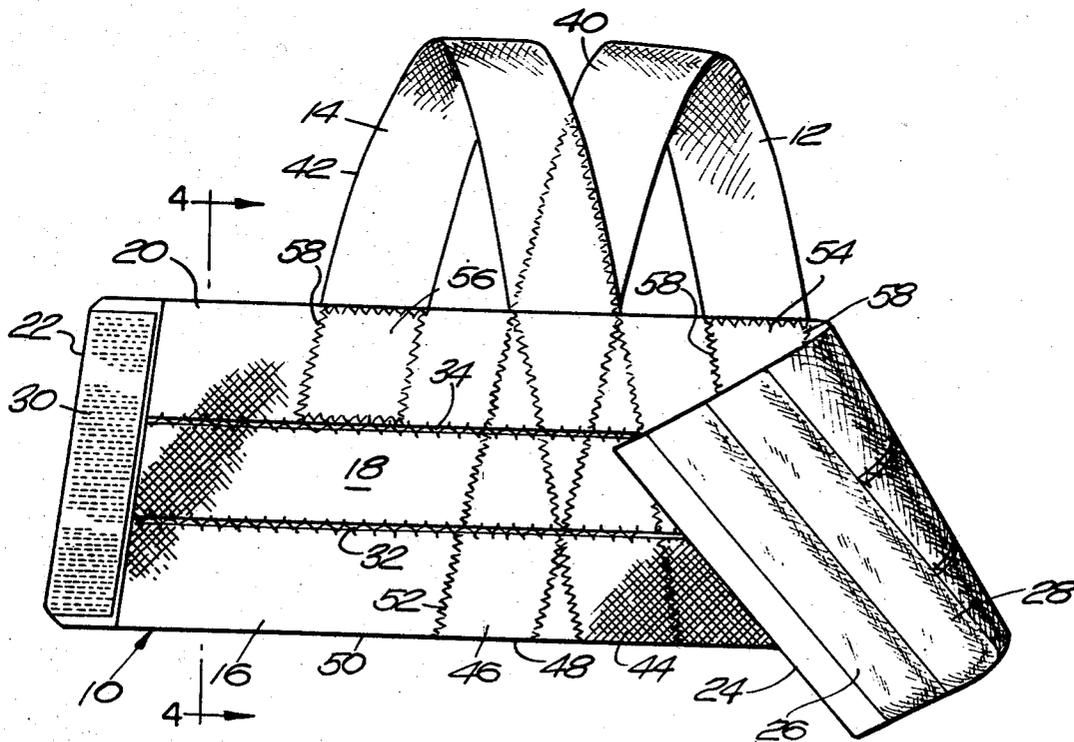
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[54] **BACK, SHOULDER AND STOMACH SUPPORT**  
 3 Claims, 6 Drawing Figs.

[52] U.S. Cl..... **128/78,**  
 128/537, 2/44, 128/426;  
 [51] Int. Cl..... **A61f 5/02,**  
 [50] Field of Search..... **128/78, 87,**  
 155, 157, 163, 537; 2/44, 45

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**ABSTRACT:** A body support having a body encircling member composed of a plurality of elastic panels made of webbing stretchable in a body encircling direction and having means at their ends for securing the member together in a body encircling form, the garment further having a pair of shoulder loops each made of the same type of elastic webbing as in the panels and secured at their ends to the body encircling member and adapted to extend from the back of the member, about the shoulders and under the arms to the sides of the member.



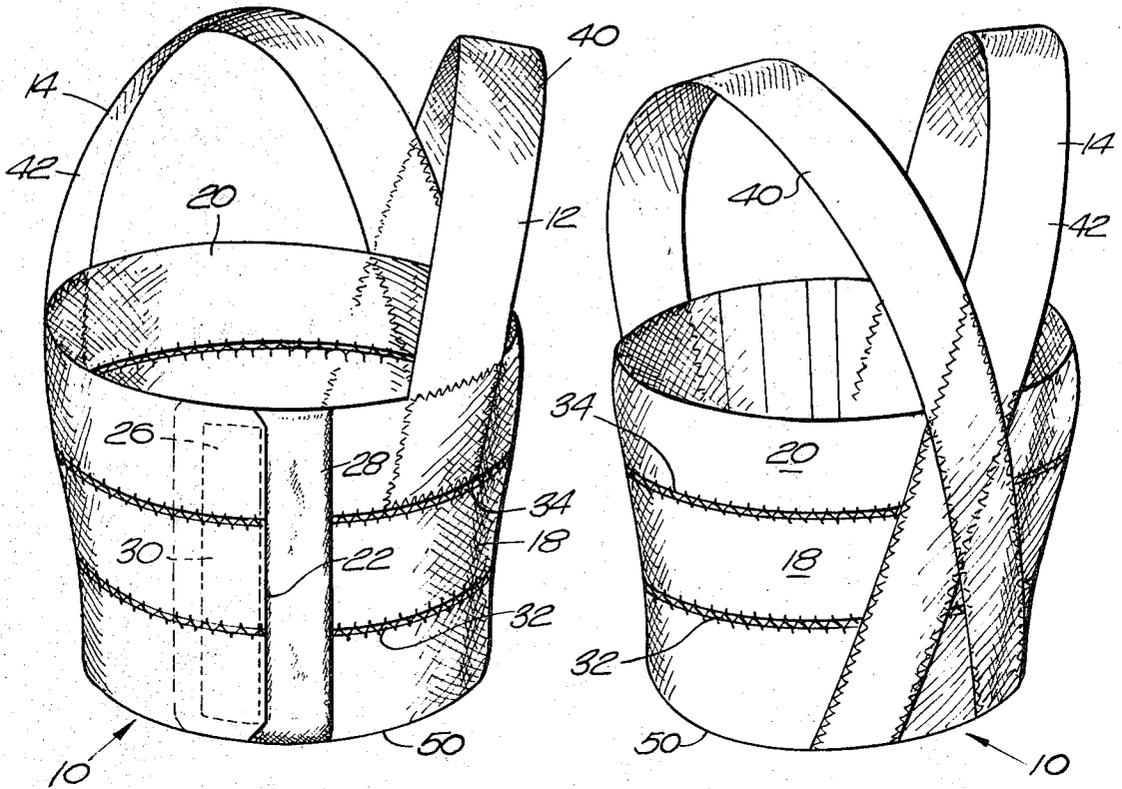


FIG. 1

FIG. 2

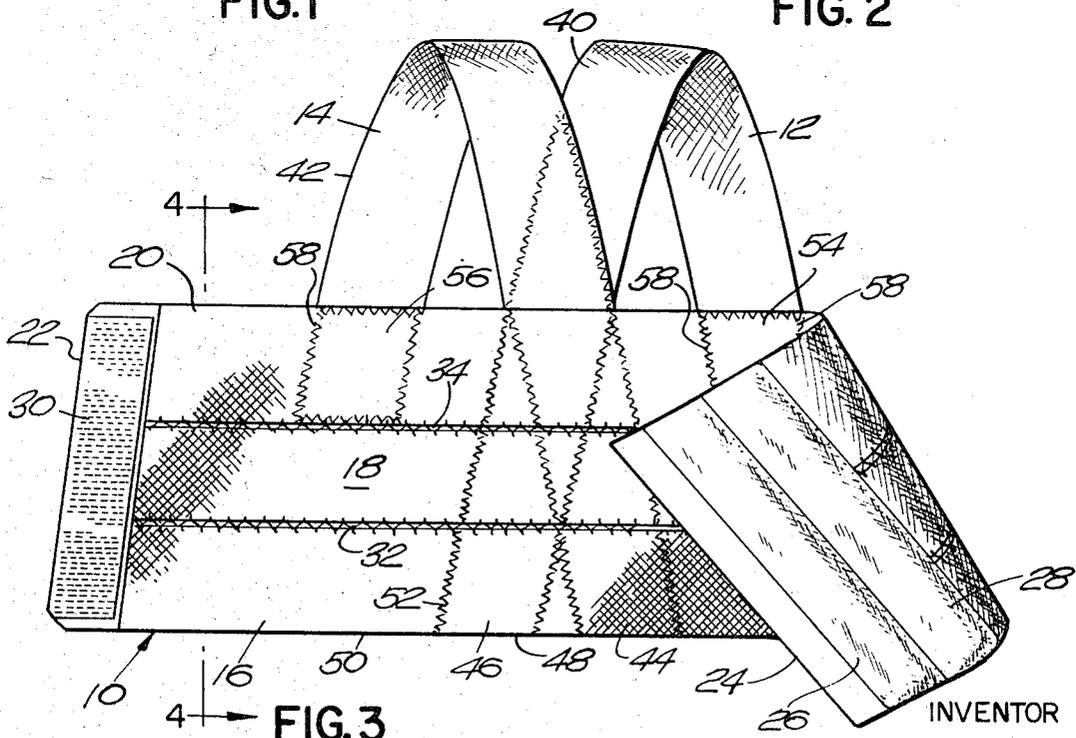


FIG. 3

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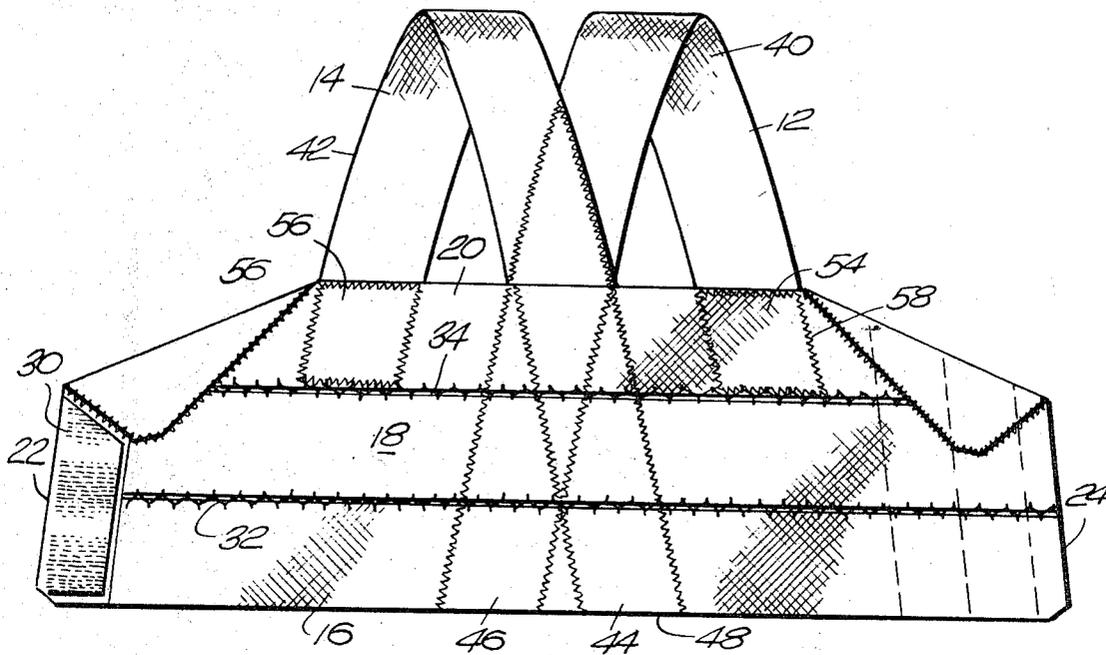


FIG. 6

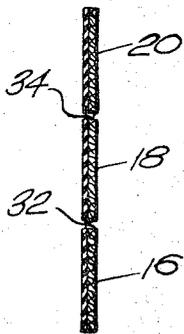


FIG. 4

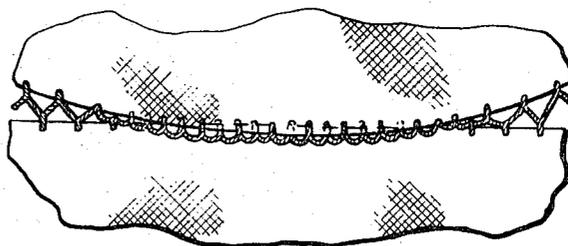


FIG. 5

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## BACK, SHOULDER AND STOMACH SUPPORT

This invention relates to body braces and supports and more particularly comprises a new and improved support garment which serves as a brace for the shoulders while it lifts the stomach and supports the back.

One important object of this invention is to provide a single garment which simultaneously provides a posture support for the stomach, shoulders, and back.

Another important object of this invention is to provide a garment which is capable of serving as body restraint for a patient in a wheel chair.

Yet another important object of this invention is to provide a garment which may usefully serve both a healthy person and a person having certain muscular control deficiencies.

Still another important object of this invention is to provide a support garment for the upper torso, which will not irritate the skin or shift on the body or cause rubbing of the skin when worn.

And still another important object of this invention is to provide a combination shoulder support, stomach brace and back support, which is free of excess straps or other encircling bands and which may be opened and closed on the body on a single opening.

To accomplish these and other objects, the support garment of this invention comprises a body encircling member stretchable in a body circling direction and being nonstretchable in a direction parallel to the axis of the member. Means are secured to the ends of the member for joining the ends together in a body encircling form. A pair of shoulder loops each made of elastic webbing and secured at their ends to the body encircling member are adapted to extend from the back of the body member, about the shoulders, and under the arms to the sides of the member. The member is free of bones, ribs or other inserts which would make the garment uncomfortable when worn, and it is free of any extra braces which are employed in certain prior art devices to lend local rigidity and support.

These and other objects and features of this invention along with its incident advantages will be better understood and appreciated from the following detailed description of two embodiments thereof, selected for purposes of illustration and shown in the accompanying drawing, in which:

FIG. 1 is a front perspective view of a support garment constructed in accordance with this invention;

FIG. 2 is a rear perspective view thereof;

FIG. 3 is a plan view of the support garment unfolded;

FIG. 4 is a cross-sectional view taken along the section line 4-4 of FIG. 3;

FIG. 5 is a fragmentary detail of the garment; and

FIG. 6 is a view similar to FIG. 3 and shown in another embodiment of this invention.

The embodiment of this invention shown in the drawing includes a body encircling member 10 and a pair of shoulder straps 12 and 14 secured at their ends to the body encircling member. The body encircling member 10 is composed of three parallel panels 16, 18 and 20 each made of an elastic webbing stretchable in a longitudinal direction, but the panels are not stretchable across their width. The outer surface of the body encircling member adjacent its end 24 is shown to carry a pair of parallel flocked strips 26 and 28 which form one half of a Velcro-type fastener, and the strip 30 on the other end 22 of the member is the complementary half. The strip 30 in the embodiment shown carries the hooklike pins of the fastener, and are fully adjustable in engaging the strips 26 and 28 at the other end. It will be appreciated that when the garment is worn, the end 22 of the member overlaps the end 24, and the strip 20 directly contacts the strip 26 and/or 28 at the other end, so that the support can be worn by persons having a variety of different builds.

Two rows of faggoting stitching 32 and 34 are shown in the drawing to join the adjacent edges of the panels 16 and 18 and panels 18 and 20. The faggoting stitching which joins the adjacent edges of the panels does not impair the elastic action of

the webbing, and the edges of the webbing may be stretched readily almost as if no stitching joined the adjacent edges. The faggoting stitching may be made of cotton yarn or some similar material but is not stretchable in itself. The rows of faggoting stitching permit each panel to move relative to the adjacent panel edge limited only by the length of the individual stitches.

In FIG. 5 the manner in which one panel may move transversely with respect to its adjacent panel is illustrated. In that FIG. a portion of panel 16 is shown to overlap the edge 36 of adjacent panel 18. It will be noted that the faggoting stitching 32 readily permits this overlapping relationship without causing the edges to curl. It will also be appreciated that the faggoting stitching will allow one panel to stretch while the adjacent panel remains in its unstretched condition.

For maximum comfort, the elastic webbing should be provided with an Helanca backing or lining 38 shown in FIG. 4, which does not impede the stretch of the webbing and which is most comfortable against the skin. The lining in addition may help to retain the garment in place; that is, the lining along with the relative movement permitted between the panels by the faggoting stitching causes the garment to remain in place when worn, even during very active movement of the wearer.

The shoulder loop 12 is shown in the drawing to be defined by a length of elastic webbing 40 which is preferably identical to the elastic webbing used in each of the panels 16, 18 and 20. Typically the strap 40 may be approximately 3 inches in width and preferably carry the same Helanca-type lining as used on the panels 16, 18 and 20. An identical strap 42 forms the other shoulder loop 14. The ends 44 and 46 of the straps 40 and 42 respectively are shown to traverse the entire width of the body encircling member 10 with the lower edges 48 of the straps being coincident with the lower edge 50 of the lowest panel 16. The straps 40 and 42 are inclined slightly from the vertical so as to be properly oriented to extend over the shoulders and down the side of the wearer while stretching evenly. That is, the two longitudinal edges of each strap stretched evenly. The ends 44 and 46 of the straps 40 and 42 which overlap the back of the body encircling member are each connected by rows of zigzag stitching 52, and the ends in turn overlap one another over the width of the upper panels 18 and 20 of the member 10. The zigzag stitching extends above the upper panel 20 so as to join the two straps 40 and 42 together above the member 10. Thus, an appreciable part of the midportion of the back of the member 10 comprises a triple thickness of the webbing, and because of the orientation of the straps 40 and 42 over the back of the member 10, substantially all stretching is prevented in the garment at that part. Some slight stretching is permitted at the portion 51 between the lower ends of the strap on the panel 16, but stretching is entirely eliminated in the panels 18 and 20 in the back region crossed by the ends 44 and 46.

The front ends 54 and 56 of the straps 40 and 42 are secured to the outer surface of the panel 20, but are shown not to overlap the other panels. Thus, the manner in which the straps are secured provides more stretching at the bottom of the member 10 than at the top. This additional stretching is desirable particularly at the bottom of the body member, which encircles the hips and which ordinarily are larger in dimension and subjected to more movement than the abdomen. The ends 54 and 56 are shown in the drawing to be secured to the member by zigzag stitching 58 along four sides of the rectangular portions that overlap the panel 20.

The shoulder straps at their crossed ends 44 and 46 make the back of the garment very rigid so that when the garment is worn the back is supported firmly by the member 10. Very slight give is incorporated into the body encircling member at the back in the lowest panel 16 for reasons stated above. The front of the garment which covers the abdomen is relatively free of the shoulder straps 40 and 42 and retains substantial flexibility. Nevertheless, the garment serves to lift the abdomen and assist the abdominal muscles. Simultaneously, the shoulder straps 40 and 42 which extend over the shoulders

from the back and terminate beneath the arms at the upper panel 20 firmly brace the shoulders.

It will be apparent that the garment performs the various functions attributed to it in the introduction, and it will also be appreciated that the garment when worn is not bulky and will yield to body movement. The two shoulder loops operate independently of one another and to not depend on any other part of the garment for effective operation. That is, the shoulder straps provide the brace for the shoulders without regard to how tightly the body encircling part is worn so long as it remains in place. Without the aid of ribs, inserts or other stiff members which could cause irritation, sufficient rigidity is provided in the garment while minimizing bulk. The lining of the garment both on the shoulder straps and the body encircling member provides maximum comfort.

In the embodiment shown in FIG. 6 the upper edge of the body encircling member is shown rolled down at each end in the manner shown in applicant's earlier application Ser. No. 582,692 filed Sept. 28, 1966. This enables the garment to be worn more comfortably by a female by extending below the bust line as is explained more fully in that application. It is sufficient to state here that the upper edges, of the body encircling panel may be folded as taught in that earlier application without interfering with the three fold function of the garment.

Because numerous modifications may be made of this invention without departing from its spirit, it is not intended to limit the breadth of this invention to the embodiments illustrated and described. Rather, it is intended that the scope of this invention be determined by the appended claims and their equivalents.

I claim:

1. A support garment comprising:

A body encircling member stretchable in a body encircling direction and being nonstretchable in the direction parallel to the axis of the member;

means secured to the ends of the member for joining the ends together in a body encircling form;

a pair of shoulder loops each made of elastic webbing and secured at their ends to the body encircling member and adapted to extend from the back of the body encircling member around the shoulders and under the arms of the wearer to the sides of the member to pull back the shoulders of the wearer;

the ends of the loops at the back of the member overlapping substantially the full width of the body encircling member and overlapping each other on the member;

said member including a plurality of parallel panels of elastic webbing secured together along their adjacent parallel edges by stitching that allows some relative movement of the adjacent edges;

said member and loops being made of the same material; a soft lining secured to the inner surface of the member and the loops;

the ends of the loops overlapping at least a portion of the member at approximately a right angle to the body encircling direction and substantially eliminating the stretch of the member at the center of the back; and

the ends of the loops at the front overlapping only the top portion of the member so as not to appreciably reduce the stretchability of the member at the front.

2. A support garment in accordance with claim 1 wherein:

said lining is made of Helanca yarn;

said elastic webbing in the panels and in the loops being approximately 3 inches in width with said panels being secured together by faggoting stitching; and

three such panels comprising the body encircling member.

3. A support garment in accordance with claim 2 and further characterized by the top edge of the member at the front being folded down at the bust line to provide additional comfort for a female wearer.

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