

[54] **DORSAL LUMBO SACRAL SUPPORT**

3,441,027 4/1969 Lehman 128/78

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[57] **ABSTRACT**

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A support device for a person's back, thoracic and pelvic areas having a pair of panels adapted to be positioned about the person's back, a plurality of fastening members at the front edges of the panels for securing the panels together and a pulley system fastened to the rear edges of the panels with tapes extending to the front of the panels whereby upon a simple pull on the tapes, the support will render total alignment and proper adjustment at desired degree of support to the body of the support device. A hook and buckle fastened to the ends of the tapes will maintain the support at the desired degree of tightness about the person's back.

[52] **U.S. Cl.** 128/78; 128/518 R

[51] **Int. Cl.²** **A61F 5/02**

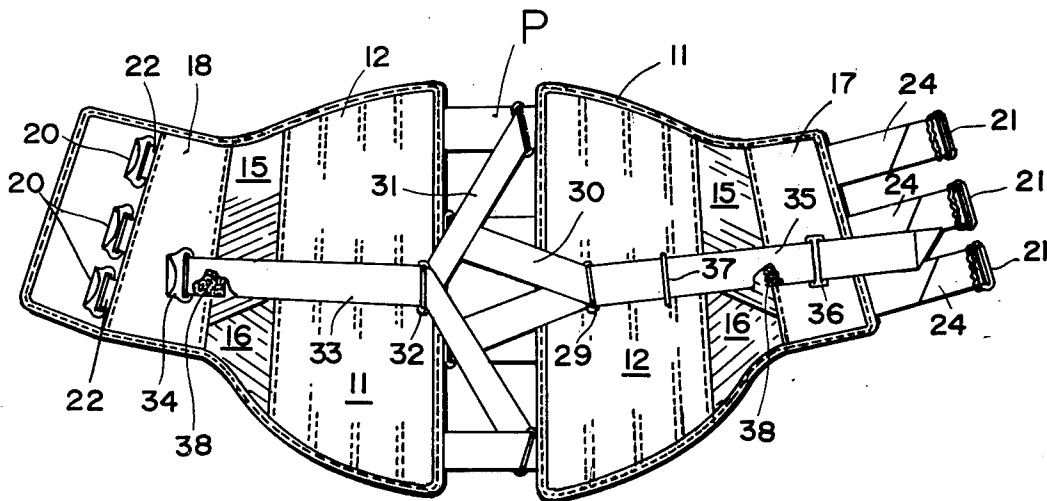
[58] **Field of Search** 128/78, 518, 541, 543,
128/545, 560, 561

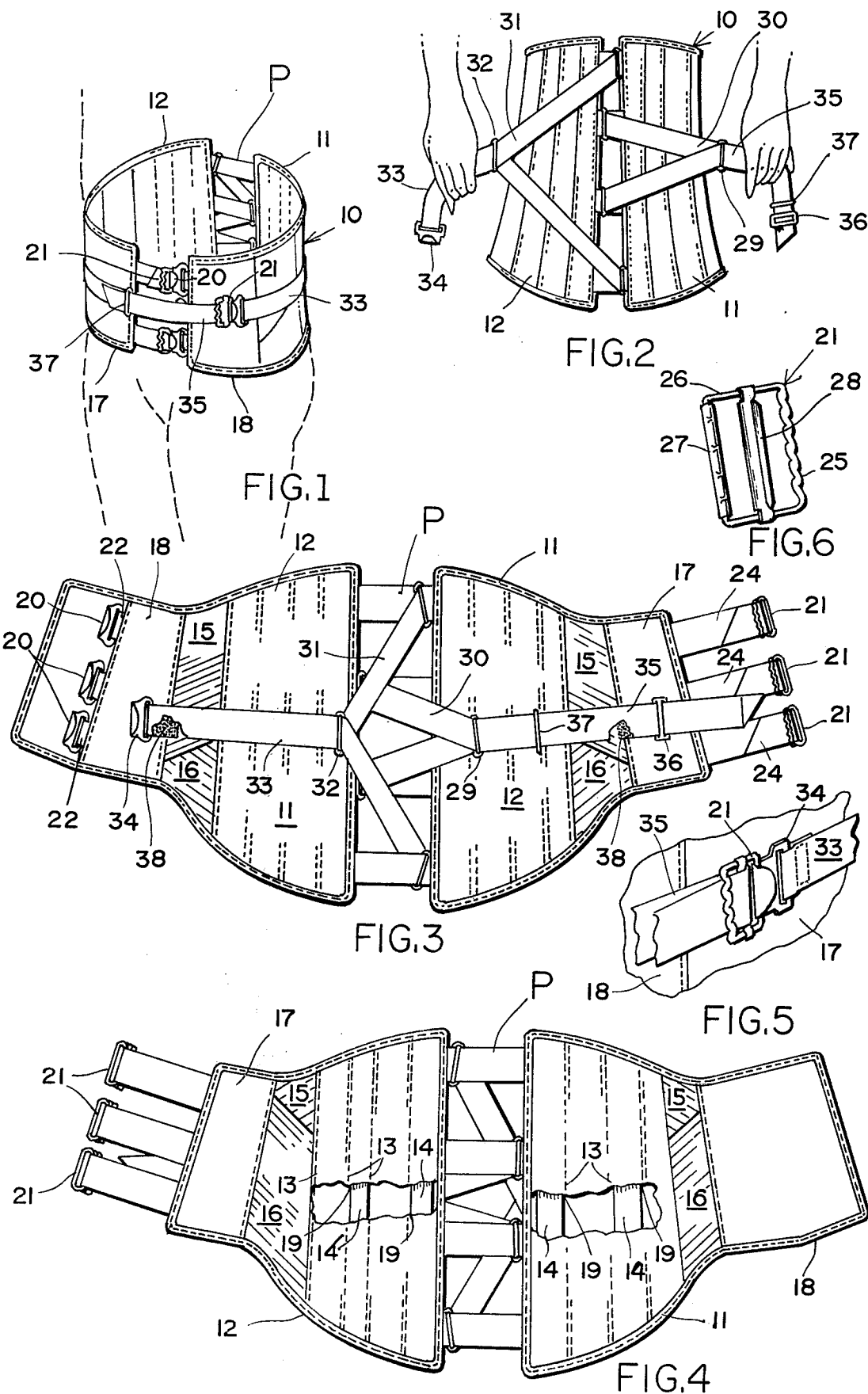
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3 Claims, 6 Drawing Figures





DORSAL LUMBO SACRAL SUPPORT

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to a medically oriented garment for supporting a person's back and is more particularly directed to one which offers a maximum support with total alignment and adjustment by a single pull on its pulley system.

2. Description of the Prior Art

The conventional garments for supporting a person's back, lumbar and sacrum consist of a multiplicity of strings and tapes with which to attempt to adjust the support properly about a person's body whereby the user must be assisted in the placing and adjusting of the garment on his body. In most of these support garments, the support must first be adjusted to an approximate condition and then after placing the garment on a person's body, the adjusting members have to be readjusted. Besides, each time that the support is removed and replaced on the person's body, the same effort and procedure has to be followed to readjust the support. At no time can the support be adjusted for the particular individual's requirements and that adjustment be maintained so each time the garment is applied to the person's body, he obtains the same support for his back, etc. In addition, the conventional supports are found that they do not provide equal support along its full length at all times, since lacings and tapes when tightened have a tendency to bind, thereby causing the support to provide a non-aligned adjustment in its support function. The present invention contemplates avoiding all of the above objections.

SUMMARY OF THE INVENTION

Therefore, a principal object of the present invention is to provide a support garment for a person's dorsal, lumbar and sacrum, which can be readily placed in position by the user about his own body and fasten same to be properly supported each time he removes and replaces the support on his body.

Another object of the present invention is to provide a back support which affords a firm support at all times while in position on his back effecting total alignment without the garment losing its adjustment as to its firmness of support.

A further object of the present invention is to provide a medically oriented support garment for one's back with convenient front buckle adjustments and a built-in opposing pulley system that can be easily manipulated to secure the garment about the person's body at the same time attain the proper and desired adjustment as to the amount of support desired.

With these and other objects in view, the invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawing forming a part of this specification, with the understanding, however, that the invention is not confined to any strict conformity with the showing of the drawing but may be changed or modified so long as such changes or modifications mark no material departure from the salient features of the invention as expressed in the appended claims.

BRIEF DESCRIPTION OF THE DRAWING

In the drawing:

FIG. 1 is a perspective view of a dorsal lumbo sacral support constructed in accordance with my invention and shown positioned on the partial outline of a person's body.

FIG. 2 is a rear view showing the functioning of its pulley system.

FIGS. 3 and 4 are outside and inside plan views.

FIG. 5 is a fragmentary perspective view of the adjustment belts.

FIG. 6 is a perspective view of a buckle as seen removed from its strap.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to the drawing wherein like numerals are used to designate similar parts throughout the several views, the numeral 10 refers to my combined support for the dorsal, lumbar and sacrum of a person's body consisting of a pair of panels 11 and 12, each being of somewhat the same shape and size being widest at the inner end portions that engage the back of the person using my support and tapering to a lesser width which lies across the stomach of the person. The panels 11 and 12 that are fabricated of double layered white brocade are hemmed along their outer edges and are connected at the end portions to elastic side panels 15 and 16 that conform to and engage firmly the thoracic and pelvic areas of the person about whom the support 10 is positioned.

By virtue of transversely extending stitchings 13 along the full width of the panels 11 and 12 elongated slots 19 are formed for receiving heavy galvanized back steel slat bars 14 for supporting the user's back in an upright position.

Attached to each of the outer edges of the panels 11 and 12 are the pairs of elastic side panels 15 and 16 which overlap with each other and are positioned so that their elastic threads of one panel extend at about 60° angle with the other of the pair of panels 15 and 16. The reason for this construction is to cause the outer edges of the back support 10 to spread in a direction away from the main body of the support 10 as a force is applied thereon as is explained hereinafter, causing the back support to be smooth without wrinkles whereby each portion of the back support 10 bears smoothly and evenly against the body of the user. Secured to each of the pairs of panels 15, 16 are the panels 17 and 18 that carry the fastening devices which consist of hooks 20 and buckles 21 of which there are three in number of each type. The hooks 20 are fastened symmetrically along the width of the panel 18 by means of short lengths of tape 22 which are folded on themselves to form loops with their ends sewn to the narrow band 23 that is in turn sewn across the width of the panel 18 while a portion of panel 18 extends beyond the position of the hooks 20 protect against the hooks 20 bearing against the user's body when the device 10 is in place about the person's body.

At the other end of my support 10 there is a plurality (three in number) of straps or tapes 24 sewn at one end to the panel 17 and extending outwardly in alignment with the hooks 20. Slidably positioned on each of the straps 24 is the buckle 21 that are each adapted to engage the hooks 20 when the support 10 is placed about the person's body in preparation of placing the support tightly and securely about his body as is explained hereinafter. The buckles 21 are conventional in construction consisting of a rod 26 formed into a somewhat

rectangular shape with the ends joined together by a crimped tubing 27 that receives the ends of the rod. The other edge portion 25 is flattened and given a toothed shape to form a tape gripping edge portion. A slide bar 28 that is slidably mounted along the side portions of the rod 26 permits the tape 24 to be threaded therethrough as shown best by FIG. 5. The free end of tape 24 is first passed through the space between the tubing 27 and the slide bar 28, passing over the latter to be folded on itself and returned between the slide bar 28 and edge portion 25 to be beneath the main body portion of the tape 24. The buckle 21 is now positioned with the toothed edge portion 25 free of the tape 24 and adapted to be engaged by the hook 20. The pulling force applied by the hook 20 on the tape 24 causes the slide bar 28 to slide in the direction of the toothed edge portion 25 and grip the tape 24 tightly so that it cannot slip or slide through the buckle 21. The support 10 is provided with a pulley system -P- for tightening the support 10 to the desired degree with little effort and which distributes the supporting force equally about the person's body as best shown by FIGS. 1 and 2. At the inner edge portion of each of the panels 11 and 12 are non-elastic tapes 30 and 31, respectively. The tape 31 has its ends sewn to the panel 12 adjacent the outer edges of the panel 12, while the ends of the tape 30 are sewn to the panel 11 closer to the mid-portion of the inner edge thereof. A metal loop 32 fastened to one end of an elastic tape 33 is slidably positioned over the tape 31 and has a hook 34 secured to the other end. The other tape 30 is provided with a slidable loop 29 that is sewn to the end of an inelastic tape 35 at whose other or free end portion is a buckle 36 identical in construction to the buckles 21 as described hereinabove. A further loop 37 is slidably mounted on the tape 35 for the purpose of receiving the free end of the tape 35 beneath the main body of the tape 35 thereby locking the 35 against sliding movement in the buckle 36.

In the normal use of my support 10, a person will grasp the ends of the panels 17 and 18 stretch the support to a flat condition and then swing it about his body until it is in position at his back. He then grasps each of the buckles 21 as shown by FIG. 2, and slips the tubing portion 27 of the three buckles 21 over the hooks 20 to be engaged thereby to fit about the person's body. The buckles 21 can be individually adjusted to permit the support to fit properly about the person's body. Then the person grasps the tapes 33 and 35 at their free ends and brings them around to the front of the support 10. He then draws tightly on these tapes 33 and 35 until he has the support engaging his torso at the desired degree of tightness. He will slide the buckle 36 along the tape 35 until he is able to secure it to the hook 34 thereby maintaining the support 10 about the body at the preselected amount of support being imparted to the person's body. The free end of the tape 35 will be threaded through the loop 37 to maintain the support 10 at the desired setting of tightness about his body, which setting will remain the same no matter how often the support 10 is removed and replaced on the body unless the person decides to effect a change in degree of support. For the sake of convenience of being able to locate the ends of the tapes 33 and 35 by the user while placing the support about his body, the ends of the tapes 33 and 35 and the panels 17 and 18 are provided with conventional mating fibrous entanglement fasteners 38 such as

the Velcro type. When the user removes the support 10 from his body, he will fasten the tapes 33 and 35 to their respective panels so that the tapes 33 and 35 will be positioned on the support 10 as shown by FIG. 2 and be readily reached and grasped by the user without fumbling in spite of the fact that these tapes 33 and 35 extending about his back will have the ends secured to the support 10 in front of him.

It is to be noted that the support 10 is normally placed loosely about the person's body upon the hooks 20 being engaged by the buckles 21. Then a simple pull on the tapes 33 and 35 will draw the two halves of support 10 together evenly and smoothly rendering total alignment and proper adjustment to the person's back. The steel bars 14 provide the back with the proper upright support force being required and the two pairs of elastic side panels 15, 16 will automatically conform to the thoracic and pelvic areas of the user.

What I claim as new and desire to secure by Letters Patent is:

1. A support for a person's back comprising a pair of panel members adapted to be fitted about a person's torso at the position of his back, a plurality of fastening members mounted along one edge portion of each of said panel members for securing said panels at the front portion of the torso, a pair of loops mounted on the other edges of each of said panels, said loops of one of said panels being positioned in proximity of a top and bottom edge portion of said panel and substantially equidistant from a longitudinal center line of said panels, said loops of the other of said panels being positioned in proximity of said mid-portion of said panel and substantially equidistant from said longitudinal center line of said panels, a pair of elongated tape members having end portions, said end portions of one of said pair of elongated tape members being secured to said loops positioned in proximity of said top and bottom edge portions, said end portions of the other of said pair of elongated tape members being secured to said loops positioned in proximity of said mid-portion of said panel, a second pair of loops, one of last named loops being slidably mounted on each of said elongated tape members intermediate their end portions, a pair of further tape members secured at one end to each of said second pair of loops, adjustable fastening members secured to the free ends of said further tape members whereby upon drawing said further tape members about said panels to the front portion of said torso and fastening said adjustable fastening members equal pressures will be exerted by said panels in supporting said torso.

2. The structure as recited by claim 1 taken in combination with a plurality of further panel members and substantially elastic connecting means joining each of said first named panel members to said further panel members, each of said elastic connecting means comprising a pair of elastic members in substantial overlapping relation with the elasticity thereof set at an obtuse angle with relation to each other.

3. The structure as recited by claim 2 taken in combination with a plurality of elongated metal supports imbedded in said first named panels and said fastening members consisting of an adjustable buckle mounted on one of said tape members and a hook mounted on the other of said tape members.

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