

Sept. 29, 1959

R. L. MYERS

2,906,260

BACK SUPPORT

Filed March 28, 1958

2 Sheets-Sheet 1

Fig. 1

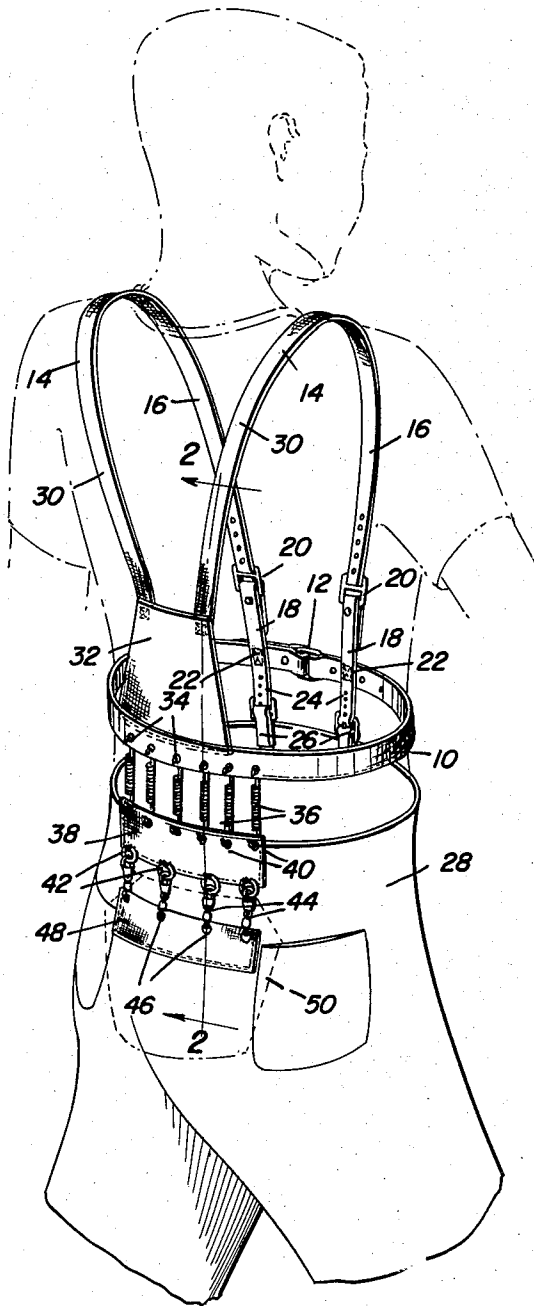
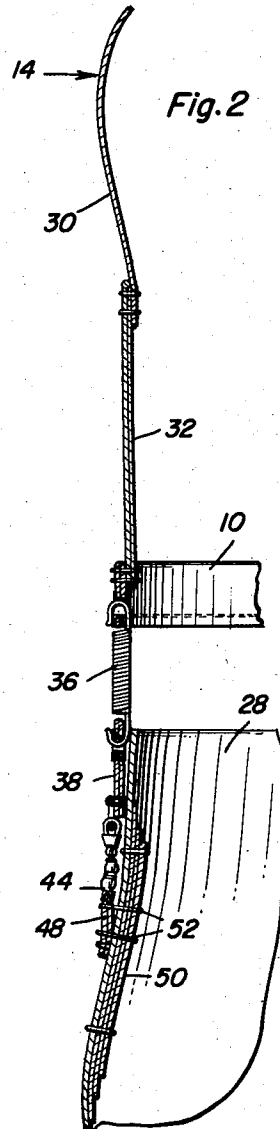


Fig. 2



Raymond L. Myers
INVENTOR.

BY *Almonce A. O'Brien*
and *Harvey B. Jacobson*
Attorneys

Sept. 29, 1959

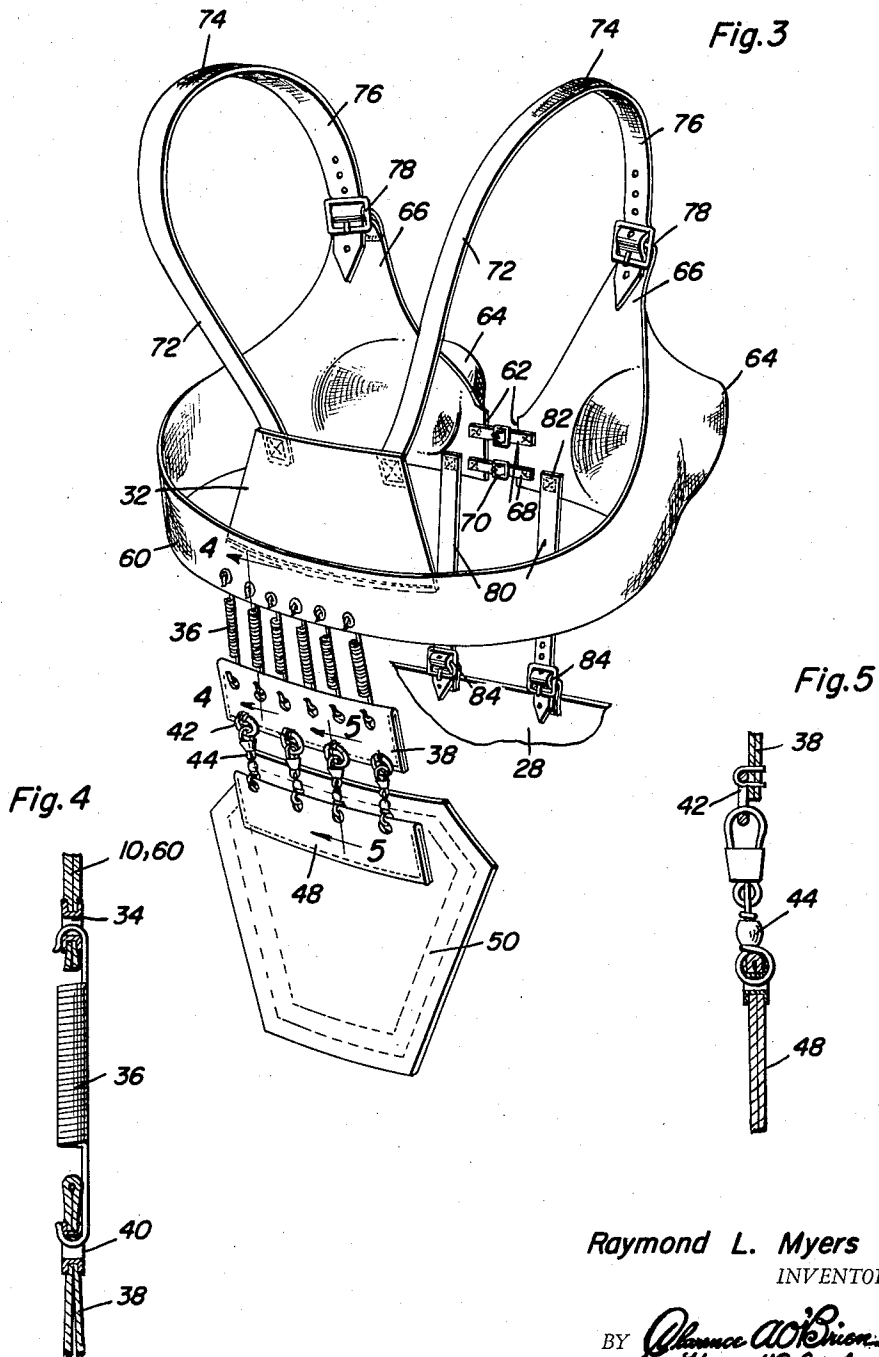
R. L. MYERS

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Raymond L. Myers
INVENTOR.

BY *Chance A. O'Brien*
and *Harvey B. Jacobson*
Attorneys

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2,906,260

BACK SUPPORT

Raymond L. Myers, Muse, Okla.

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10 Claims. (Cl. 128—78)

This invention comprises a novel and useful back support and more particularly relates to a support harness to strengthen and support the back against the strain and fatigue of stooping, bending and the like.

The primary object of this invention is to provide a back support, the principles of whose construction shall be equally adapted for use by men, women and children and shall function to apply a strengthening force to aid the back muscles in resisting fatigue, and to support weak backs.

A further object of the invention is to provide a device in accordance with the foregoing objects which may be easily applied and adjusted to the wearer and shall distribute the tensioning or reinforcing effect more uniformly across the back and front of the user.

Yet another object of the invention is to provide a back supporting device in the form of a harness or garment which shall be unobtrusive in appearance and yet effective and efficient in its operation.

A still further important object of the invention is to provide a back supporting device as set forth hereinbefore which shall apply a constant tensioning force between a shoulder strap assembly embracing and mounted upon the torso of a person and a nether garment at the rear portion thereof.

And a final important object of the invention is to be specifically enumerated herein resides in the provision of a back supporting device which shall be fabricated from inexpensive, lightweight, comfortable and readily washable materials.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a perspective view showing an embodiment of the back supporting device in accordance with this invention which is specifically adapted for use by males and is shown applied in a position for use;

Figure 2 is a vertical transverse sectional view taken substantially upon the plane indicated by the section line 2—2 of Figure 1 and showing certain structural details and details of the arrangement of the device;

Figure 3 is a perspective view of a second embodiment of the device specifically adapted for use with females; and

Figures 4 and 5 are detail views taken respectively upon the planes indicated by the section lines 4—4 and 5—5 of Figure 3 and illustrating respectively the resilient means and the swivelling means forming an essential part of both forms of the invention.

Certain occupations such as the picking or harvesting of crops and other pursuits which require considerable stooping impose unusual and prolonged strains upon the back of a person due to the fatigue of the back muscles. It is the primary purpose of this invention to provide a device in the nature of a harness or garment which will

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alleviate this condition by providing a resilient reinforcing action for the tired back muscles, and which will also perform the same function for persons having a weak back condition.

In both forms of the invention it will be observed that there is provided a band adapted to encircle and be secured to the torso of the wearer together with a shoulder strap assembly connected to this band. By a means to be subsequently set forth, the band at its rear portion is connected to a nether garment at the back side thereof and below the waist band and adjacent the seat portion of the garment, whereby a resilient tensioning force is applied between the shoulder straps and the nether garment which will strengthen and support the back muscles of the wearer. The tensioning means itself and the manner in which the same is operatively connected to the nether garment is identical for both forms of the invention, certain changes to be hereinafter set forth in detail being necessary in the band and shoulder strap assembly to specifically adapt the device for use by males or females.

Referring now first to the embodiments of Figures 1 and 2 in which the supporting means specifically adapted for use by males is illustrated, it will be seen that the device includes a band 10 comprising a belt adapted to closely encircle and embrace the torso of the wearer as at the waist thereof, there being provided the customary buckle 12 at the front portion of the belt. A pair of shoulder straps 14 are provided having loops intermediate their ends adapted to overlie the shoulders of the wearer and exert a thrust thereon. The front portions of these straps are provided with upper sections 16 together with lower sections 18, these two sections being adjustably secured together as by conventional buckles or other fastening members 20. Intermediate the ends the lower sections are fixedly secured as by sewing 22 to the front portion of the belt 10 upon the inside surface thereof, that portion of the lower sections 18 which depend beneath the belt and which are shown by the numeral 24 constituting a support means having fasteners 26 at their lower ends whereby they may be removably attached to the upper front portion or waist band portion of a nether garment 28.

In applying the principles of this invention it will be understood and appreciated that the nether garment 28 may be of any desired type, as for example a pair of shorts, an undergarment or even trousers and the like.

The rear portions 30 of the shoulder straps 14 are fixedly secured at their lower ends as by stitches or other suitable fasteners to the opposite corners of the upper edge of a preferably trapezoidal shaped panel 32. The lower edge of this panel which is of greater length than the upper edge is sewed or otherwise fixedly secured to the rear portion of the belt 10 in order that the thrust of the straps may be distributed along a considerable portion of the circumference of the belt.

The belt is provided with a plurality of circumferentially spaced apertures which may comprise eyelets or the like as at 34 and into which are detachably secured the hooked upper extremities of a plurality of resilient or tensioning members 36 as coil springs or the like. As will be readily understood, any desired number of these eyelets and resilient members may be employed, depending upon the actual force which it is desired to apply by this device for strengthening the back of the wearer.

A second panel 38 comprising a tension equalizing panel is provided having along its upper edge laterally spaced apertures or eyelets 40 into which the lower hook ends of the springs 36 are detachably secured. By this means the intermediate or equalizing panel 38 is resiliently connected to the belt 10 over a considerable hori-

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zontal or circumferential extent of both the belt and the panel.

At its lower end the equalizing panel 38 is provided with a series of rings 42, each of which as shown best in Figure 5 has a swivel connector 44 of any conventional design secured to and depending therefrom. At their lower ends, these swivel connections 44 in turn are secured to eyelets 46 provided in laterally spaced relation in the upper edge of an anchoring panel 48.

At this point it should be observed that each of the panels previously mentioned and of the reinforcing panel 50 to be subsequently described will be formed of any suitable pliable material, preferably consisting of a fabric such as duck or the like. The actual weight, strength and size of the panel is subject to variation within the spirit of this invention, it being preferred to form each panel as by folding over the material forming the same, as will be readily apparent from Figure 2 and Figure 3.

The anchor panel 48 is preferably disposed upon the exterior rear surface of the nether garment 28 closely adjacent the seat thereof and vertically spaced beneath the upper edge or waist band of this garment. The reinforcing panel 50, see Figure 2, is disposed upon the interior side of the nether garment, in a position to underlie that portion of the rear surface of the nether garment which is adjacent to the anchor panel 48, and suitable fastening means such as the thread or sewing 52 extends through the anchor panel 48, the reinforcing panel 50 and the material of the nether garment therebetween to securely and fixedly attach these elements together. As shown in Figure 2, the reinforcing panel may extend a considerable distance downwardly from the anchor panel and into the seat portion of the garment in order to distribute more uniformly throughout the material of the nether garment the resilient force applied thereto by the springs 36.

Referring now specifically to Figure 3 it will be seen that the form of the invention adapted for use by females is essentially of the same general construction as that of Figures 1 and 2. However, in this instance the band instead of consisting of a belt 10 as in the former embodiment comprises the band 60 of a brassiere which at its front has open end portions 62, brassiere cups 64 together with upwardly tapering extensions 66. A pair of fastening straps 68 provided with conventional buckles or fasteners 70 secures the open end 62 of the band 60 in closed position. As in the preceding embodiment, there is provided an upper panel 32 fixedly secured at its lower edge as by stitching or the like to the rear portion of the band 60, and at its upper edge having fixedly secured thereto the lower ends of the rear portions 72 of shoulder straps 74, the front portions 76 of which are provided with conventional buckles or fasteners 78 for attachment in an adjustable manner to the upwardly projecting extensions 66.

Supporting means comprising straps 80 are fixedly secured as by sewing 82 at their upper ends to the band 60 at the front part of the same adjacent the open end 62 thereof. The depending supports 80 are provided with suitable fasteners 84 at their lower ends which are adapted to engage the upper front waistband portion of the nether garment 28.

As in the preceding embodiment, there is provided a reinforcing panel 50, the anchor panel 48, the tension equalizing or intermediate panel 42 together with the same spring means 36 and swivel connector means 44 previously described. Inasmuch as the manner of securing these last mentioned elements to the band 60 and to the nether garment 28 is identical with that previously described, a repetition of the same is deemed to be unnecessary.

It will be observed that the support means provided by this invention is light and compact in nature, unobtrusive

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in appearance, and may be readily adjusted to the individual, and will with a minimum of discomfort provide the desired supporting or bracing action for the back muscles. Obviously by varying the number of the springs 36, the magnitude of the supporting force may be likewise controlled and varied to meet individual needs.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A back support comprising a band for encircling a person's torso, shoulder straps having front and back portions secured to said band at the front and back thereof, an anchor panel secured to the back portion of a nether garment, a tension equalizer panel positioned between said band and said anchor panel, swivel connectors securing said anchor panel to said equalizer panel, resilient means attached to said band and to said equalizer panel for exerting tension between said shoulder straps and said nether garment whereby to brace the wearer's back.

2. The combination of claim 1 including a reinforcing panel inside the back portion of said nether garment, said anchor panel being on the exterior of the latter, fastening means securing said anchor panel, reinforcing panel and said back portion of said nether garment together.

3. The combination of claim 1 including an upper panel having its lower edge fixedly secured to the back of said band, said straps having their back portions fixedly united to the upper panel at the upper edge thereof.

4. The combination of claim 1 wherein said anchor panel is secured to the exterior of the rear portion of said nether garment adjacent the seat thereof and in spaced relation below the waist band thereof.

5. The combination of claim 1 including support means secured to the front of said band and depending therebeneath and having fasteners at their lower ends engaging the front and upper portion of said nether garment.

6. The combination of claim 1 including support means secured to the front of said band and depending therebeneath and having fasteners at their lower ends engaging the front and upper portion of said nether garment, the front portions of said straps comprising upper and lower portions connected adjustably by buckles.

7. The combination of claim 6 wherein said lower portions are fixedly secured intermediate their ends to said band, said support means being constituted by that part of said lower portions which extend downwardly from said band.

8. The combination of claim 1 including support means secured to the front of said band and depending therebeneath and having fasteners at their lower ends engaging the front and upper portion of said nether garment, said band comprising a bra.

9. The combination of claim 8 wherein said bra is open at the front and fasteners securing the open ends of said bra.

10. The combination of claim 9 wherein said support means are fixedly secured to said bra at the open ends thereof.

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