March 20, 1962 F. M. ROSENBERG 3,025,859

SHOULDER LOAD CARRYING STRAP

Filed Sept. 18, 1959

Fig. 1

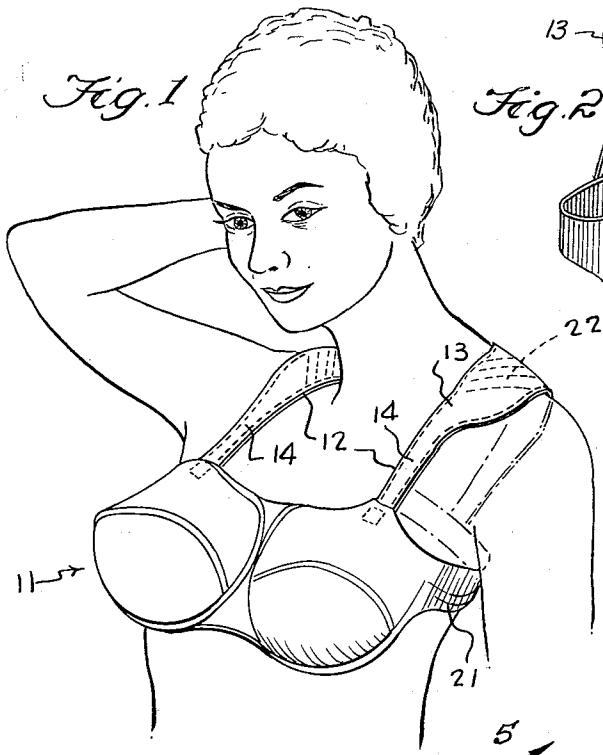


Fig. 2

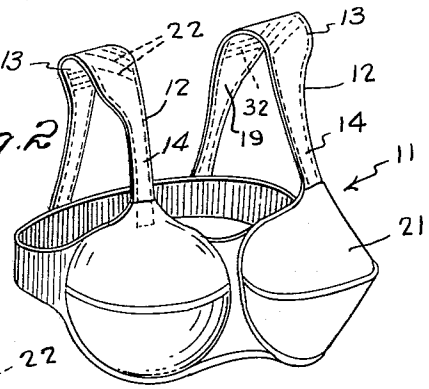


Fig. 5

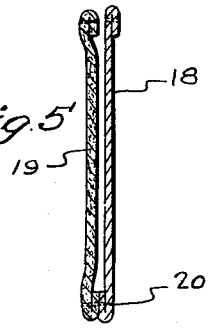


Fig. 3

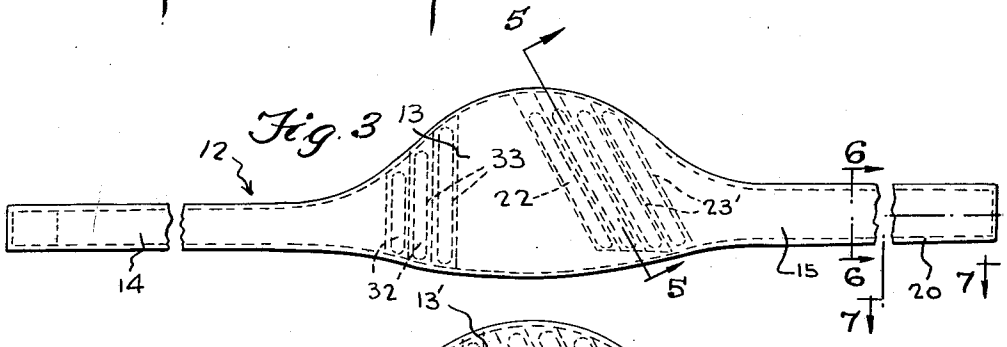


Fig. 4

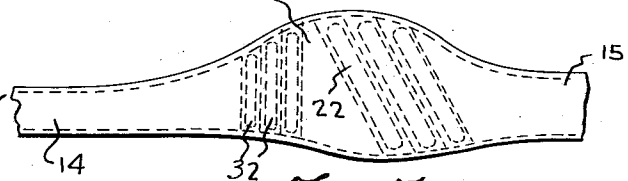


Fig. 6

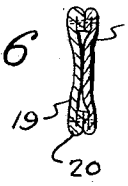


Fig. 7



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SHOULDER LOAD CARRYING STRAP

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1 Claim. (Cl. 128—510)

This invention relates to shoulder load carrying strap constructions, and more particularly to an improved shoulder load carrying strap for brassieres, foundation garments, artificial limbs, plaster casts, knapsacks, and similar types of shoulder load carrying or shoulder supported articles.

A main object of the invention is to provide a novel and improved shoulder carrying strap construction which involves simple components, which provides increased comfort in supporting loads on the wearer's shoulders, and which prevents interference of the strap with arterial or venous drainage.

A further object of the invention is to provide an improved shoulder load carrying strap suitable for brassieres, foundation garments, and various other articles supported on the wearer's shoulders, the strap construction providing a structural bridge incorporated therein giving a substantial load distribution and which enables the load to be supported on natural load-carrying parts of the human body, avoiding concentrated loading on portions of the body containing nerve centers, blood vessels and sensitive tissues.

A still further object of the invention is to provide an improved shoulder strap which enhances freedom of shoulder motion and rotation of shoulder elements, reducing pain and discomfort from the carrying of shoulder loads, and enabling heavy loads to be comfortably carried on the wearer's shoulders.

Further objects and advantages of the invention will become apparent from the following description and claim, and from the accompanying drawings, wherein:

FIGURE 1 is a view showing an improved brassiere provided with load-supporting shoulder straps according to the present invention.

FIGURE 2 is a front view of the brassiere shown in FIGURE 1.

FIGURE 3 is an enlarged top plan view of one of the shoulder straps employed in the brassiere illustrated in FIGURES 1 and 2.

FIGURE 4 is a fragmentary top plan view of a modified form of shoulder strap according to the present invention, smaller in size than the strap illustrated in FIGURE 3.

FIGURE 5 is an enlarged cross sectional view taken substantially on the line 5—5 of FIGURE 3.

FIGURE 6 is an enlarged cross sectional view taken substantially on the line 6—6 of FIGURE 3.

FIGURE 7 is an enlarged cross sectional view taken substantially on the line 7—7 of FIGURE 3.

Referring to the drawings, 11 generally designates a brassiere provided with a pair of shoulder straps 12, 12, the straps being constructed in accordance with the present invention.

Each strap 12 comprises a relatively wide intermediate supporting portion 13 which is integrally connected to the respective end strap elements 14 and 15. The shoulder strap 12 thus comprises a flexible elongated main strap portion having a widened flexible intermediate portion 13. As shown in FIGURES 5, 6 and 7, the strap comprises a flexible outer layer of fabric or other similar material, designated at 18 and a relatively soft flexible inner layer 19 which is adapted to be in engagement with

the wearer's body and which preferably comprises relatively soft yieldable cushioning material of substantial thickness. The layers 18 and 19 are stitched together at their edges, as shown at 20, the stitching 20 extending continuously around the peripheral margin of the strap.

The end portions 14 and 15 are respectively stitched to the front and rear sides of the main supporting portion 21 of the brassiere, said main supporting portion 21 being of conventional construction.

The widened intermediate portion 13 of each shoulder strap 12 contains a plurality of relatively stiff, spaced parallel flat stay members 22, said stay members being disposed diagonally, as is clearly shown in FIGURE 3, and being disposed in pockets defined by diagonal rows of stitches 23, as shown. The straps 12, 12 are secured to the main supporting portion 21 of the brassiere with the stay members 22 directed so that they converge toward the front of the brassiere, as is clearly illustrated in FIGURES 1 and 2.

A plurality of additional stay members 32 are provided in the widened intermediate portion 13 of each shoulder strap 12, said stay members 32 being disposed transverse to the portion 13 and being disposed in transverse, side-by-side pockets defined by transverse rows of stitches 33. As shown in FIGURE 3, the transverse stay members 32 are spaced rearwardly from the diagonal stay members 22 on the portion 13 by a distance depending upon the width of the intended wearer's shoulder, namely, on the size of the person intended to wear the strap.

The additional stay members 32 prevent the strap from slipping laterally and provide additional dispersement and distribution of the weight on the garment at the rear of the shoulder.

FIGURE 3 illustrates a form of the invention wherein four frontal stay members 22 are employed and wherein the widened intermediate portion 13 of the strap is relatively large. FIGURE 4 illustrates a modification showing a smaller version of the strap, the widened intermediate portion 13' thereof being smaller than the portion 13 of the strap shown in FIGURE 3, and wherein only three frontal stay members 22 are employed.

The stay members 22 and 32 may be made of any suitable material, such as bone, plastic, or resilient metal, the stay members 22 being angularly placed, as above described, and being so located with respect to the center line of the strap and of suitable length that the load applied thereto by the main portion 21 of the brassiere is supported by a bridging structure (defined by the parallel stay members 22 and their retaining pockets) which substantially engages over the scapula (shoulder bone) and the clavicle (collar bone) of the wearer's shoulders. This provides a relatively large load bearing area, which efficiently distributes the load attached to the straps, eliminating discomfort in the area between the shoulder and collar bone. This distribution of the load thus prevents interference with arterial or venous drainage, prevents pressure being exerted on the auxiliary arteries and veins and their branches, and prevents excessive pressure on the brachial plexis area as well as on the adjacent tissues and muscles. Thus there is no interference with the function of the nerves, blood vessels or tissues of the subjacent portions of the wearer's shoulders. Furthermore, shoulder motions may be freely made without chafing or discomfort from the load carried by the device.

As above mentioned, different sizes of straps may be employed, in accordance with the amount of load to be supported. The improved shoulder straps above described may be employed in conjunction with any type of supporting structure adapted to be carried by the wearer's shoulders, such as brassieres, foundation gar-

ments, mechanical limbs, plaster casts, knapsacks, or the like.

While certain specific embodiments of an improved shoulder load carrying strap have been disclosed in the foregoing description, it will be understood that various modifications within the spirit of the invention may occur to those skilled in the art. Therefore, it is intended that no limitations be placed on the invention except as defined by the scope of the appended claim.

What is claimed is:

In an article of the character described adapted to be worn on the shoulders, a supporting portion adapted to extend around the upper part of the wearer's body, said portion having a substantially continuous upper margin, respective shoulder straps secured to opposed front and rear points on said upper margin spaced substantially symmetrically on opposite sides of a longitudinal vertical central plane through said supporting portion, said shoulder straps each comprising a flexible elongated main strap having a widened intermediate portion

located to overlie a shoulder of the wearer, and a plurality of relatively stiff spaced parallel flat stay members of substantial width secured in the central portion of each of said intermediate portions and extending substantially diagonally across the major part of the widths of said intermediate portions, the parallel stay members of the respective intermediate portions being inclined forwardly and in convergent relation to said vertical central plane and being inclined substantially symmetrically relative to said plane, the stay members being of sufficient length and being located to substantially bridge the scapula and clavicle of each of the wearer's shoulders without interfering with arterial or venous drainage of the shoulders.

References Cited in the file of this patent

UNITED STATES PATENTS

1,797,890	Wurm	Mar. 24, 1931
2,654,887	Hookstatten	Oct. 13, 1953
2,763,866	Anderson	Sept. 25, 1956