

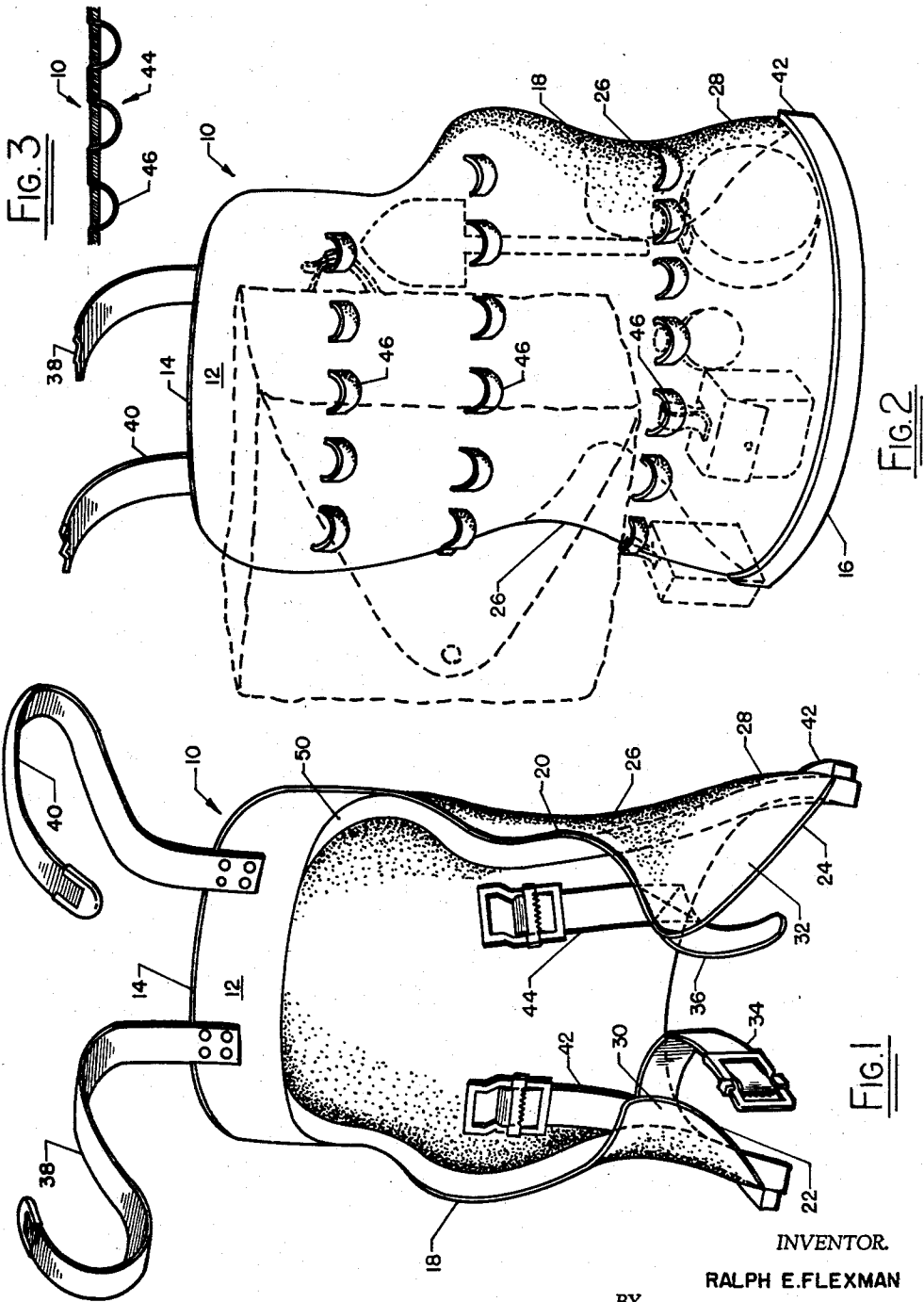
Dec. 17, 1963

R. E. FLEXMAN
PACK CARRIER

3,114,486

Filed Sept. 22, 1961

2 Sheets-Sheet 1



INVENTOR.

RALPH E. FLEXMAN

BY

Beau, Brooks, Buckley & Beau

Dec. 17, 1963

R. E. FLEXMAN

3,114,486

PACK CARRIER

Filed Sept. 22, 1961

2 Sheets-Sheet 2

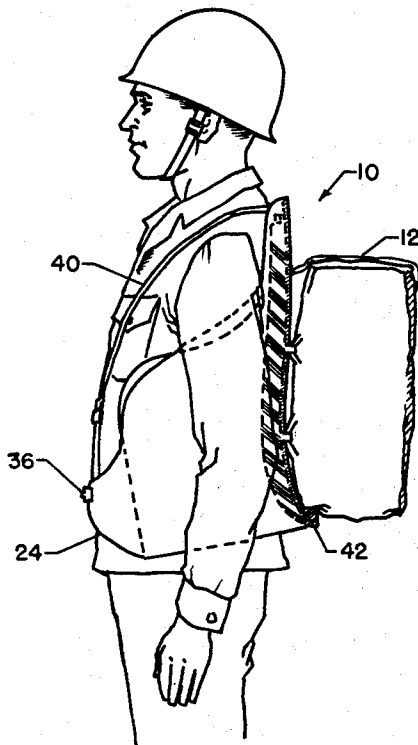


FIG. 4

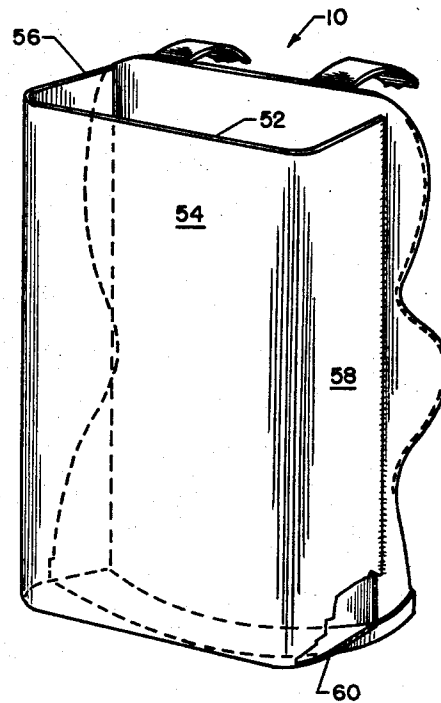


FIG. 5

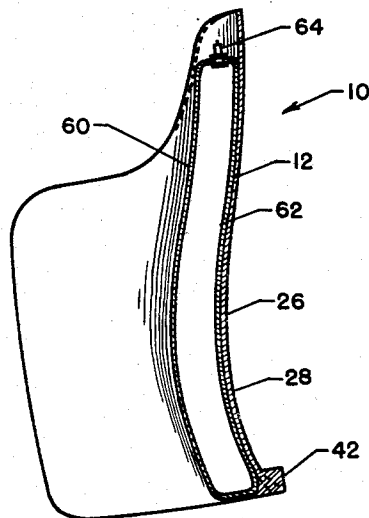


FIG. 6

INVENTOR
RALPH E. FLEXMAN

BY

Beau, Brooks, Buckley & Beau

1

3,114,486

PACK CARRIER

Ralph E. Flexman, Tonawanda, N.Y., assignor to Bell Aerospace Corporation, Wheatfield, N.Y.

Filed Sept. 22, 1961, Ser. No. 140,017

7 Claims. (Cl. 224-8)

This invention relates to load carrying devices and pertains more particularly to a corset like harness or frame assembly particularly adapted to increase the load carrying capability of a man.

The present invention has for a primary objective thereof the provision of means whereby a man can carry a load with relative comfort and with increased mobility by placing the load weight on the hips rather than on the shoulders. Specifically, this is accomplished by utilizing a properly contoured and padded corset or girdle that extends down from the base of the neck, partially around the torso and extending down to the hips. By utilizing such a harness as a foundation, loads may be attached to the device so as to distribute the weight thereof upon and around the hips in optimum fashion. Accordingly, the present invention utilizes that portion of the body including the skeletal and muscular aspects that are most appropriately designed for carrying heavy loads.

A further object of this invention is to provide a specially contoured girdle or corset assemblage which is characterized by the provision of ventral extensions or wings rigidly formed with the body of the girdle and which are provided with abdominal strap means for snugly fitting the corset assembly to the user's body.

A further object of this invention resides in the provision of a substantially rigid corset or girdle assemblage as aforementioned which is so contoured as to snugly fit upon a man's hips and wherein the corset is provided with a circumferentially extending load shelf disposed about the lowermost regions thereof to assist in placing the load of objects carried directly upon and in the region of the hips.

Other objects and advantages of the invention will appear from the description hereinbelow and the accompanying drawings wherein:

FIG. 1 is a front perspective view of a load carrying corset construction in accordance with the present invention and illustrating the ventral reinforcing wings or plates and showing also the manner in which both the abdominal strap means and the shoulder strap means are associated therewith;

FIG. 2 is a rear perspective view of the assembly shown in FIG. 1 showing further details of the contour of the load carrying corset and also showing means whereby loads may be more readily attached and secured to the assemblage, including the provision of the load shelf along the lower edge of the corset;

FIG. 3 is an enlarged horizontal section taken substantially along the plane of section line 3-3 illustrating the strap engaging members of the corset;

FIG. 4 is a side view, partly in section, illustrating the device applied to a man and illustrating the disposition of a load thereon;

FIG. 5 is a rear perspective view of a modified form of the invention wherein the same is provided with an integrally formed canister arrangement adapted to retain liquids, solids or the like; and

2

FIG. 6 is a vertical section taken through a further modified form of the invention illustrating the manner in which the device may be more readily adaptable to various size personnel.

Referring at this time more particularly to FIGS. 1 and 2, the corset or girdle assemblage is indicated generally therein by the reference character 10 and will be seen to consist of a vertically elongate dorsal plate 12 of generally curvilinear form in horizontal section and, in vertical section, the plate is curvilinear to the extent necessary to generally conform to the dorsal contour of the body. The back portion 12 is, at its upper edge 14, adapted to be disposed substantially at the base of the user's neck and extends vertically downwardly therefrom to the lower or bottom edge portion 16 thereof which is disposed in the hip region. Integrally formed with the dorsal plate 12 are the oppositely disposed lateral plate portions 18 and 20 and, in turn joined integrally thereto in the lower region of the assemblage are the girth wise extending ventral reinforcement plate portions 22 and 24. The entire assembly hereinabove described is preferably formed of substantially rigid material as for example glass fiber reinforced synthetic resin material which, although the assembly is capable of some degree of flexibility, is substantially rigid. In connection with this, it will be appreciated that the girth wise extending valley 26 and the outwardly flaring, girth wise extending hip portion 28 lend a substantial degree of rigidity and resistance to flexure in the vertical plane whereas opening or spreading of the girdle to separate the two hip portions 30 and 32 of the ventral reinforcement plates or wings 22 and 24 is more or less readily permitted so that a man may easily engage the assembly in encompassing relationship to his body wherein the two hip portions 30 and 32 are relatively closely spaced. The assembly can then be drawn snugly girth wise against the user's body by means of the abdominal strap means which may consist simply of a single buckle strap 34 attached to one of the wings 22 or 24 and a tongue strap element 36 attached to the other wing or plate 22 or 24.

The wings or plates 22 and 24 form a particular feature of the present invention inasmuch as it has been found that their presence materially improves operator proficiency, the user being capable of carrying loads with greater stability and comfort than is possible without the use of these ventral reinforcement plates or wings 22 and 24.

It is another particular feature of the present invention that the shoulder straps 38 and 40 which are attached as shown in FIG. 1 to the upper extremity of the dorsal plate 12 and adapted to extend over the shoulders and down for attachment to corresponding strap members 42 and 44 secured to the wings 22 and 24 in the manner shown, are relieved of any substantial duty of supporting the vertical component of weight. This is particularly advantageous inasmuch as it has been found that supporting heavy weights at the user's shoulders materially increases discomfort and hastens fatigue. Thus, by strapping in this assembly or girdle by the straps 34 and 36, to thus snugly engage the same with the user's body to provide support by the girth wise extending portion 28, cooperating with the valley 26, substantially all of the vertical component of the load is placed directly at the user's hips.

3

It is a further particular feature of the present invention to provide a load shelf extending girth wise at the lower extremity of the corset, such load shelf being indicated generally by the reference character 33 and the extent of which can be seen best in FIG. 2. Such shelf can be formed efficiently by simply building up the lower edge 16 of the corset in the manner illustrated so as to provide a substantially flat upwardly facing shelf extending in a girth wise direction as aforesaid and of suitable width whereby the load may rest thereupon, see particularly FIG. 4 wherein this relationship is more graphically illustrated.

As for the manner in which the loads may be attached to the harness or corset assembly 10, any suitable means therefor may be provided. However, in the specific embodiment shown, see particularly FIG. 3, suitable strap elements 44 may be woven through a series of slots formed in the corset 10 to provide spaced loops 46 which serve as convenient attaching points for straps, hooks or the like whereby loads may be most advantageously located so as to be placed low and carried by the hips of the user. In this respect, it is to be noted that the heavier the load, the more care should be taken to distribute the same low on the corset and to distribute the same around the region of the user's hips for the ultimate in comfort and load carrying capabilities with a minimum of fatigue.

In order to adequately cushion the corset assembly 10, the same is provided on its inner side with a suitable layer of padding material 50 which may conveniently be made of foam rubber or the like. Preferably, this padding material is adhesively or otherwise suitably secured directly to the corset 10 and is of such shape and size as to generally conform to the contours of the corset as shown most clearly in FIG. 1. It will be appreciated that by virtue of the girth wise flexibility of the harness 10 as hereinbefore set forth, the same may be constructed in several basic sizes which are capable of girth wise deformation in each case so as to accommodate for a wide variety of individual sizes although it is to be appreciated that in any event, the corset 10 should as closely conform to the shape of the user's body as is possible, particularly in the regions of the valley 26 and the bulge 28 as well as the ventral plates 22 and 24. In this fashion, the greatest degree of comfort and load carrying capability is provided for.

Referring to FIG. 5, a modified form of the invention is shown therein. In this case, the basic corset unit 10 as previously described may have simply added thereto a canister extension indicated generally by reference character 52 which may take the form of a vertical rear wall member 54 having opposite side walls 56 and 58 which are integrally formed with or otherwise suitably secured to the main body of the corset 10, the assemblage 52 also having a bottom wall 60 disposed in the region of the lower extremity of the corset 10 and rigidly affixed thereto. Thus, the assembly 52 forms, in conjunction with the corset 10, a canister or pouch opened at its top particularly well adapted and suitable for carrying liquids, under which provision, it will be appreciated that the assembly is to be substantially water tight. The assembly as shown in FIG. 5, it will be appreciated, need not be limited to carrying liquids but solids and other objects may as well be carried thereby.

Referring to FIG. 6, a further modification of the invention is illustrated therein. This form of the invention is concerned with the provision of means for accurately fitting the corset 10 to the contours of the user's body and to make the same more readily adapt for various sizes and individuals. To this end, the corset 10 is provided on its inner surface with a flexible bag assembly indicated generally by the reference character 60 whose rear wall 62 may be rigidly affixed to the inner surface of the assembly 10 as shown. The bag 60 is provided with a suitable pressure inlet nipple or connection 64 by means of which the bag can be more or less inflated so

4

as to accommodate for the particular size and shape of the individual wearing the corset 10. In this way, one size of corset 10 may readily accommodate for a very wide range of individual sizes.

It is to be understood that either or both the corset or girdle and the padding therefor may be provided with vents, air passages, voids, or the like so as to provide ventilation for the user's body, particularly in the waist region. It will also be appreciated that the padding material may be of cellular material or otherwise constructed so as to be buoyant so that the assembly may act as flotation gear. Likewise, it may be desirable to form the assembly, particularly the corset, of bullet and shrapnel resistant material. In this instance, alternate layers of nylon and fiberglass, for example, may be used, in which case, the corset would provide protection for the user's back as well as front. Additionally, loose segments of armor material could be attached to or suspended from the basic corset assembly.

It is to be understood that certain changes and modifications as illustrated and described may be made without departing from the spirit of the invention or the scope of the following claims.

I claim:

1. A load carrying attachment for personnel, comprising

a corset-like body having a substantially continuous surface open at the front and formed of a substantially rigid material capable of slight horizontal flexure to open and close about a human body, said corset-like body including:

a dorsal portion having a vertical length to extend from adjacent the base of a user's neck down to the level of his hip region,

forwardly projecting, outwardly flared, hip covering portions integral with the dorsal portion at the opposite sides thereof below waist level each terminating in an integral, forwardly extending ventral portion, a girthwise extending, valley portion integral with said dorsal portion at the level of the small of the back, means for drawing together and securing said ventral portions to snugly engage said valley portion at the waist level of the user with said outwardly flared portions resting upon the user's hips, and

means located on at least one of said dorsal, valley and hip covering portions for attaching loads to the corset-like body.

2. The load carrying attachment as defined in claim 1 wherein the last mentioned means are in the form of strap like loop members, and there being a load carrying shelf integral with said dorsal portion extending girthwise at the lower extremity of said girdle.

3. The load carrying attachment as defined in claim 1 wherein the last mentioned means are in the form of an open top canister integrally formed with said dorsal portion.

4. The load carrying attachment as defined in claim 1 wherein a cushioning pad is secured to the inner surface of said dorsal portion.

5. The load carrying attachment as defined in claim 1 wherein a cushioning means in the form of an inflatable bag is secured to the inner surface of said dorsal portion.

6. A load carrying attachment for personnel as defined in claim 1 wherein shoulder strap means is connected to the upper part of said dorsal portion and securable to said ventral portions for retaining the dorsal portion against the back of a wearer.

7. A load carrying attachment for personnel comprising

a shell-like member open at the front and having a substantially continuous surface at the back and sides curved in both vertical and horizontal planes and extending from adjacent the base of a user's neck down to the level of his hip region,

a girthwise extending portion integral with said mem-

5

ber for at least partially surrounding the hips of a user,
 said member having a C-shape in horizontal section at the waist level for partially surrounding the abdomen of a user,
 said member being curvilinear in vertical section to conform generally to human body hip and back region contours,
 said member being formed of sufficiently rigid material to inherently maintain the stated sectional shapes but having sufficient flexibility to be both opened up and constricted in the horizontal plane, and

5

10

6

means located on said member for attaching loads to the member.

References Cited in the file of this patent

UNITED STATES PATENTS

995,458	Harriman	June 20, 1911
2,611,519	Utterstrom	Sept. 23, 1952

FOREIGN PATENTS

459,923	France	Sept. 19, 1913
95,498	Germany	Nov. 18, 1896
675,838	Germany	May 19, 1939