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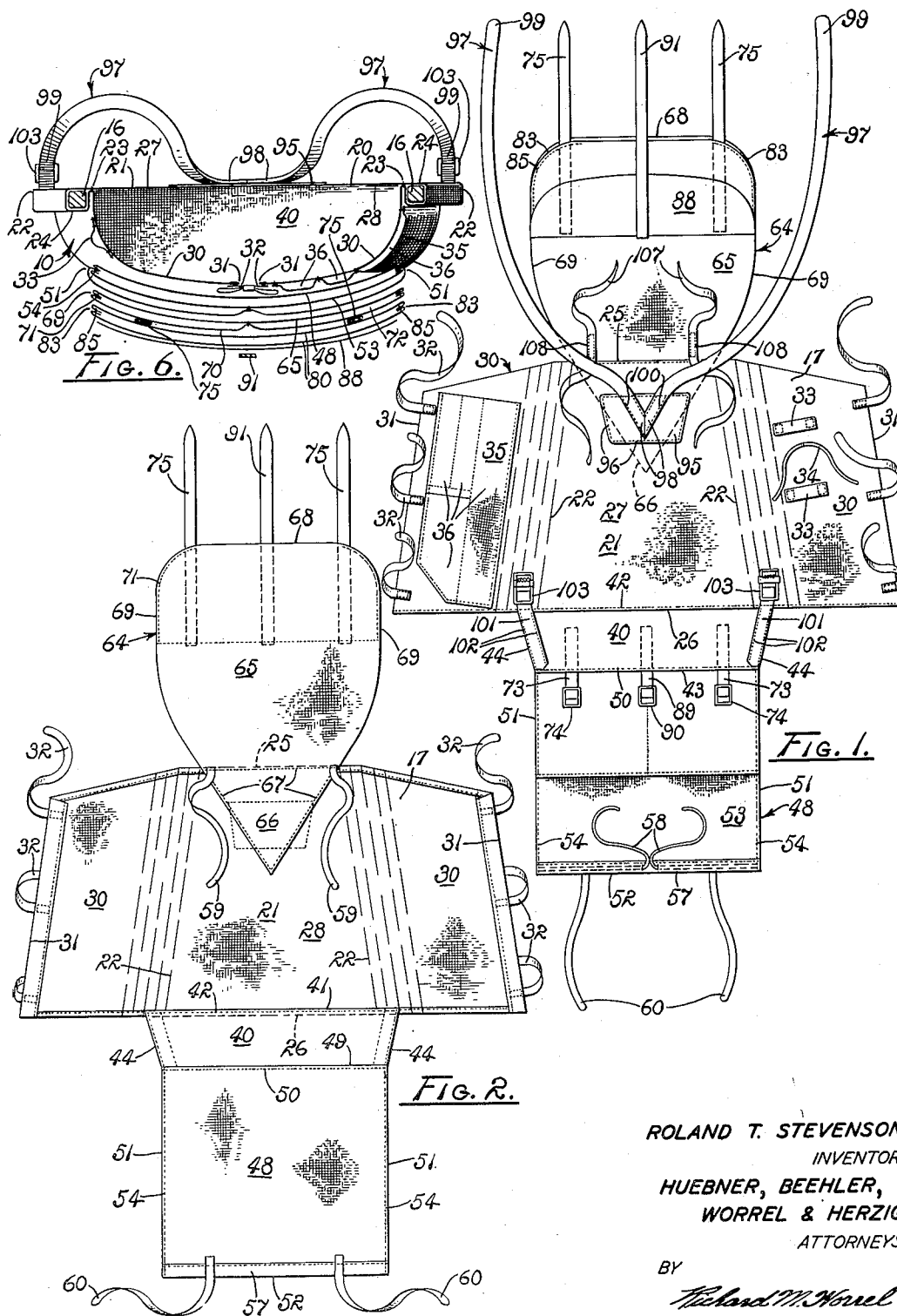
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CARRYING PACK

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2 Sheets-Sheet 1



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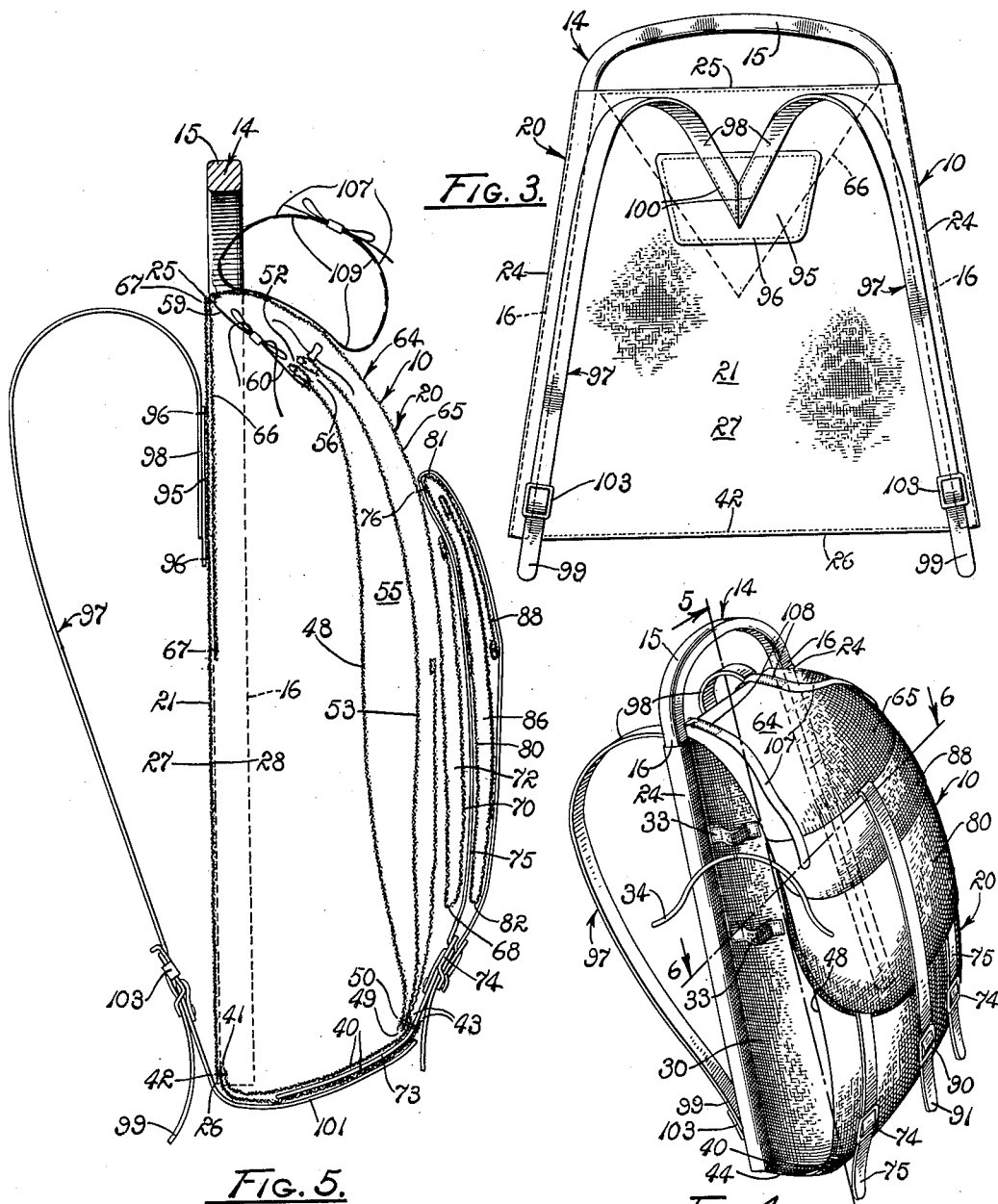
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CARRYING PACK

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14 Claims. (Cl. 224—8)

The present invention relates to packs and more particularly to packs of the character adapted to facilitate the carrying of food, clothing, bedding, cooking utensils, camping equipment, fishing equipment and the like by hikers, cyclists, military troops, and others desiring or required to carry loads on their backs.

The carrying of adequate supplies is an onerous task confronted by most campers who participate in hikes and cycling trips. Even though requisite supplies are kept to a minimum their transporting by person is fraught with inconvenience and discomfort and is productive of fatigue seriously impairing anticipated pleasure. Although many types of packs have been devised their shortcomings are well-known. Even back-packs developed by careful research, such as those used by ground troops and paratroops to carry necessary paraphernalia, are difficult properly to load, create discomfort to the wearer by pressing against his back unyielding objects of the load, or of the pack structure itself, and do not permit access to articles of the load.

An object of the present invention is to provide an improved back-pack.

Another object is to provide a pack that is light in weight but durable.

Another object is to provide a pack that is made comfortable to wear by the avoidance of engagement of all rigid or unyielding parts thereof against the wearer.

Another object is to provide a pack adapted to support the major portion of its weight and that of its contents on a fabric panel tensioned against the back of a person carrying the pack.

Another object is to provide a pack that is speedy and easy to load with all unyielding objects removed from positions of bodily contact.

Another object is to provide a pack making provision for the expeditious access to all portions of a load contained therein.

Another object is to provide a pack of the character described that is easily disassembled for cleaning and/or repair purposes.

Further objects are to provide improved elements and arrangements thereof in a pack of the character described that is economical, adapted to production in a wide range of sizes, and that is fully effective in accomplishing its intended functions.

Still further objects and advantages will become apparent in the subsequent description in the specification.

In the drawings:

Fig. 1 is an outer face view of a fabric portion of the pack of the present invention.

Fig. 2 is an inner face view of the fabric portion of the pack, shown in Fig. 1.

Fig. 3 is a rear elevation of a complete pack embodying the principles of the present invention.

Fig. 4 is a perspective view of the pack in loaded condition.

Fig. 5 is a transverse vertical section through the pack, as taken along line 5—5 in Fig. 4 of the drawing.

Fig. 6 is a horizontal section through the pack, as viewed from line 6—6 in Fig. 4.

Referring in greater detail to the drawing:

The pack of the instant invention is indicated as a whole by the numeral 10 in Fig. 4 of the drawing. The

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pack 10 is provided with a stave 14 which is an inverted substantially U-shaped member conveniently made of wood. Other materials may be employed to form the stave but it has been determined that wood has the desired substantial rigidity with adequate resilience. It also is economical and possesses a desired low heat conductivity of advantage in extremely hot or cold climates. The stave is formed from an elongated piece of wood of square or rectangular cross section which is warped to its U-shape to provide an arcuate central portion 15 and a pair of opposite downwardly divergently extended substantially straight legs 16. The legs are preferably disposed in a common plane and diverge to a greater extent prior to mounting of the fabric portion 17 shown in Figs. 1 and 2 thereon. As will subsequently become apparent the fabric portion resiliently compresses the legs toward each other and a portion thereof is held in a taut condition for engagement with the back of a user by the legs.

The pack includes a foldable container indicated at 20 of fabric or other suitable durable and flexible material. The container employs a forward panel 21 which is of regular trapezoidal form having angularly related side edges 22. The side edges are return folded and sewed at 23 to form divergent tubular portions 24. The tubular portions are adapted to receive the legs 16 of the stave 14 with the legs compressed inwardly by the forward panel which is tensioned therebetween. The forward panel is further defined by an upper edge 25 spaced downwardly from the central portion 15 of the stave and a lower edge 26 parallel to the upper edge of the forward panel. The forward panel further provides a forward surface 27 and a rearward surface 28 which are designated for convenience in subsequent reference thereto.

The container 20 extends outwardly from the side edges 22 of the forward panel to provide quadrangular side panels 30 continuous with the tubular portions 24. The side panels have laterally extended side edges 31. Horizontally aligned tie tapes 32 are sewed at their ends along the side edges 31 for the purpose of tying the side edges together with the side panels folded rearwardly and inwardly of the forward panel. Vertically spaced support straps 33 are sewed at their ends to one of the side panels and are adapted to receive the handle of a hand axe or hatchet, not shown, therein. A tie string 34 is sewed between its ends in a position between the support straps 33 which may be tied around the handle of a hatchet in the support straps to preclude inadvertent removal of a hand axe from the straps. A sheet of pocket fabric 35 is sewed, as shown, to the outer face of the opposite side panel from the straps 33 and string 34 to provide multiple pockets 36.

The container 20 is enclosed at its bottom by a bottom panel 40 formed of double thickness sheet material of generally trapezoidal form and has an inner edge 41 continuous at 42 with the lower edge 26 of the forward panel. The bottom panel is also defined by an extended side edge 43 parallel to the inner edge and angular end edges 44.

A substantially square back panel 48 has an inner edge 49 sewed, as at 50, to the extended edge 43 of the bottom panel with the back panel further defined by parallel opposite side edges and an extended edge 52 parallel to its inner edge 49. The back panel is preferably of double thickness to provide an outer pocket member 53. The side edges 51 of the back panel are sewed together at 54 forming a pocket 55 which is open, as at 56, outwardly away from the bottom panel. A hem 57 is formed along the edge of the opening 56 with a draw string 58 strung therethrough whereby the opening may be closed. A pair of ties 59 are secured at their ends in spaced relation to the upper edge 25 of the forward panel. A like pair of spaced ties 60 are sewed at their ends to the extended

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edge of the inner fabric of the back panel. The ties 59 and 60 are adapted to be tied together to maintain the back panel folded upwardly and rearwardly of the forward panel with packed luggage located in the pocket 55.

The container is fabricated with a top flap 64 which comprises a larger cover portion 65 and a smaller triangular anchoring portion 66. The anchoring portion is sewed at 67 to the rearward surface 28 of the forward panel 21 downwardly from its upper edge 25 with the cover portion extending outwardly from the forward panel and terminating in an extended edge 68. The cover portion of the top flap is bounded by opposite substantially parallel side edges 69. The extended edge 68 of the top flap is return folded against its outer face and terminates substantially midway between the return fold and the upper edge 25 of the forward panel defining a pocket member 70. The pocket member is sewed at 71 to the side edges 69 of the top flap forming a top flap pocket 72. A pair of buckle straps 73 are secured between the double thickness bottom panels 40 in transverse spaced relation by the sewing 50 that attaches the back panel 48 to the bottom panel 40. A buckle 74 is attached to the extended end of each of the buckle straps 73. A pair of closing straps 75 are secured at one of their ends by sewing at 76 to the top flap. With the straps 75 anchored in the buckles 74, the top flap is held in rearwardly and downwardly folded position with the back panel pocket closed thereby.

A substantially rectangular auxiliary panel 80 is defined by an upper edge 81, a lower edge 82 and parallel opposite side edges 83. The upper edge of the auxiliary panel is sewed at 76 to the outer face of the top flap immediately above the top flap pocket 72. The lower edge 82 of the auxiliary panel is return folded rearwardly and upwardly in overlaying relation with the side edges sewed together at 85 forming an auxiliary pocket 86 that is open upwardly immediately below the sewing 76. The upper edge 81 of the auxiliary panel is return folded rearwardly and downwardly forming an auxiliary flap 88 which functions as a closure means for the auxiliary pocket 86. A single buckle strap 89 is secured similarly to the buckle straps 73 midway therebetween with a buckle 90 attached to its terminus. A single outer strap 91 is secured at one of its ends by the sewing 76 at a position midway between the closing straps 75. With the strap 91 attached to the buckle 90, the auxiliary pocket 86 and its auxiliary flap 88 are held inwardly against the top flap pocket 72 as best shown in Fig. 5 of the drawing.

With reference to Figs. 1 and 3, a substantially rectangular reinforcing piece 95 of leather, plastic or fabric is preferably sewed at 96 to the forward surface 27 of the forward panel 21 slightly below the upper edge 25 thereof. A pair of shoulder straps of leather, plastic or fabric having upper ends 98 and lower ends 99 are attached at their upper ends 98 to the forward panel and the reinforcing piece by the sewing 100 at a position midway between the side edges 22 of the forward panel with the shoulder straps extending upward and divergently therefrom. A pair of buckle straps 101 are sewed at 102 against the end edges 44 of the bottom panel extending rearwardly therefrom. A shoulder strap buckle 103 is attached to the terminus of each buckle strap 101. With the lower end 99 of each shoulder strap secured to a respective buckle 103, the shoulder straps may be placed over the shoulders of a person whereby the pack may be conveniently carried.

A pair of optional tie tapes 107 are sewed at 108 to the outer surface of the top flap 64 adjacent to the upper edge of the forward panel. The auxiliary tie tapes are adapted to hold a raincoat or poncho 109 or other article, as illustrated in Fig. 5 in dash lines.

Operation

The operation and utility of the pack of the present invention are believed to be apparent from the foregoing description of its construction and are briefly summarized

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at this point. The legs 16 of the stave are inserted into the tubular side edges 22 of the container 20. This causes a transverse tensioning of the forward panel 21.

The pack may be quickly and easily loaded by placing the forward surface 27 of the forward panel downwardly on a supporting surface, not shown, with the side panels 30, the bottom and back panels 40 and 48, and the top flap 64 projecting outwardly from the forward panel and likewise resting on the supporting surface.

The most bulky articles of clothing, bedding, or other yielding objects to be loaded, not shown, are first placed on the forward panel. The articles thus positioned are preferably of a character constituting padding for other articles to be carried subsequently arranged in the pack.

The side panels 30 are thereafter folded inwardly over the bulky articles and the ties 32 secured to hold the articles between the forward panel and the side panels. The back panel 48 is then brought upwardly over the side panels with the bottom panel 49 closing the space between the lower edge 26 of the forward panel and the lower edges of the side panels. The ties 59 and 60 are secured to maintain the back panel in overlaying relation to the side panels. Other articles may be inserted into the pocket 55 with the draw string 58 thereafter drawn and tied to retain the articles.

The top flap 64 is folded downwardly over the back panel 48 and the pocket 55. Other articles, such as items of food, cooking utensils, or the like are inserted into the top flap pocket 72. The top flap is held downwardly and the top flap pocket is held closed by securing the pair of straps 75 to the buckles 74. Other small articles to be loaded are placed in the auxiliary pocket 86 and the auxiliary flap 88 brought downwardly over its opening. The single outer strap 91 is then secured to the single buckle 90 to hold the auxiliary pocket against the pack and in closed condition.

If a hand axe or hatchet is to be packed, its handle may be inserted downwardly through the support straps 33 and secured against inadvertent removal by tying the tie string 34 around the handle. Other small articles, such as first aid items, may be inserted into the multiple pockets 36 on one of the side panels 30. The pack is thus loaded and a raincoat or the like is rolled and tied on top of the top flap by the auxiliary tie tapes 107, as illustrated in the drawings.

The completely loaded pack is conditioned for manual carrying by attaching the lower ends 99 of the shoulder straps to the shoulder strap buckles 103 with the shoulder straps looped outwardly from the forward panel. The shoulder straps are thereafter fitted over the shoulders of a person with the forward panel against his back. Inasmuch as the forward panel is tensioned by the outward stretching of the legs of the stave, the pack rests comfortably against the back of the wearer with none of the articles of the pack causing discomfort. The stave serves not only to tension the forward panel but the arcuate central portion 15 thereof functions as a convenient carry handle when the pack is not in position on the back of a wearer.

The pack is conveniently and economically fabricated from economical and readily available materials. The discomforts incident to carrying conventional packs are minimized by the engagement of the pack with a person carrying the pack only by the tensioned panel 20 which, when formed of fabric, conveniently conforms to such a person's back so as to distribute the load of the pack substantially evenly. The pack is conveniently and easily loaded and unloaded. The slidable association of the legs 16 of the stave 14 in the tubular side edges 24 of the container permits the convenient disassociation of the stave and container for cleaning and repair purposes.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A carrying pack comprising an inverted substantially U-shaped stave of substantially rigid material having an

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arcuate upper end and downwardly divergent spaced legs, the legs being resiliently compressible toward each other, a foldable fabric container having a forward panel providing tubular side edges threadedly receiving the legs of the stave with the panel tensioned therebetween, the legs being adapted to cushion pressures against the panel by resilient compressible movement toward each other, said panel having an upper edge in downwardly adjacent spaced relation to the upper end of the stave, and a pair of flexible shoulder straps having upper ends connected to the forward panel of the container adjacent to the upper edge thereof substantially midway between the legs of the stave and spaced lower ends individually connected to the container adjacent to respective lower ends of the legs of the stave.

2. In a carrying pack, the combination of a stave having an arcuate central portion and downwardly divergently extended substantially straight legs, the legs being located in a common plane and being resiliently compressible toward each other; and a foldable container having a forward panel providing an upper edge in downwardly spaced relation to the central portion of the stave, a lower edge adjacent to the extended ends of the legs, and divergent opposite tubular side edges threadedly received over the legs of the stave with said panel tensioned therebetween compressing the legs toward each other in their plane, the container also having a side panel continuous with each tubular side edge of the forward panel providing a laterally extended side edge, means releasably interconnecting the extended edges of the side panels in inwardly folded relation over the forward panel, a bottom panel continuous with the lower edge of the forward panel and providing an extended edge, means releasably interconnecting the upper edge of the forward panel and the extended edge of the bottom panel with the bottom panel folded upwardly over the inwardly folded side panels, a top flap secured to the forward panel adjacent to the upper edge thereof and providing an extended edge, and means releasably interconnecting the flap and the bottom panel with the extended edge of the flap folded downwardly over the upwardly folded bottom panel.

3. In a carrying pack, the combination of an inverted substantially U-shaped stave having an arcuate central portion and downwardly divergently extended substantially straight legs, the legs being located in a common plane and being resiliently compressible toward each other; a foldable fabric container having a forward panel providing an upper edge in downwardly spaced relation to the central portion of the stave, a lower edge adjacent to the extended ends of the legs, and divergent opposite tubular side edges threadedly received over the legs of the stave with said panel tensioned therebetween compressing the legs toward each other, the container also having a side panel continuous with each tubular side edge of the forward panel providing a laterally extended side edge, means releasably interconnecting the extended edges of the side panels in inwardly folded relation over the forward panel, a bottom panel continuous with the lower edge of the forward panel and providing an extended edge, means releasably interconnecting the upper edge of the forward panel and the extended edge of the bottom panel with the bottom panel folded upwardly over the inwardly folded side panels, a top flap secured to the forward panel adjacent to the upper edge thereof and providing an extended edge, and means releasably interconnecting the flap and the bottom panel with the extended edge of the flap folded downwardly over the upwardly folded bottom panel; and a pair of shoulder straps having upper ends secured to the forward surface of the forward panel adjacent to the upper edge thereof substantially midway between the legs of the stave and spaced lower ends individually connected to the container adjacent to respective lower ends of the stave.

4. A pack comprising an inverted substantially U-shaped wooden stave having an arcuate central portion

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and downwardly divergently extended substantially straight legs; a foldable fabric container having a forward panel providing divergent tubular side edges threadedly received over the legs of the stave and tensioned therebetween, said panel having an upper edge in downwardly adjacent spaced relation to the central portion of the stave, predetermined forward and rearward surfaces, and a lower edge in substantially parallel relation to the upper edge, the container also having a side panel continuous with each tubular side edge of the forward panel providing a laterally extended side edge, ties secured to the side edges of the side panels releasably interconnected to secure the side panels in rearwardly and inwardly folded relation over the forward panel, a bottom panel continuous with the lower edge of the forward panel and providing an extended edge, said bottom panel being of double thickness to define a pocket therebetween having an opening disposed toward the extended edge of said bottom panel, ties secured to the upper edge of the forward panel and to the extended edge of the bottom panel releasably interconnected to tie the bottom panel in upwardly and rearwardly folded position over the side panels, a top flap secured to the forward panel adjacent to the upper edge thereof and providing an extended edge and opposite side edges, the extended edge being return folded upon itself and the side edges secured in overlaying relation to define a pocket open toward the portion of the flap secured to the panel, strap means releasably interconnecting the flap at a position intermediate the pocket therein and the portion thereof secured to the forward panel and the bottom panel in overlaying relation to the return folded extended edge of the flap and securing the flap in downwardly and rearwardly folded position over the bottom flap and the side flaps, an auxiliary panel having an upper edge, a lower edge, and opposite side edges secured to the flap at a position intermediate the pocket therein and the portion thereof secured to the forward panel with a central portion overlaying the flap pocket and the lower edge return folded outwardly and upwardly against the auxiliary panel with the side edges secured in overlaying relation defining an auxiliary pocket open toward the upper edge thereof, said upper edge being folded downwardly in overlaying relation to the auxiliary pocket, and strap means releasably interconnecting the flap and the bottom panel in overlaying relation to the folded upper edge of the auxiliary panel and auxiliary pocket; and a pair of shoulder straps having upper ends secured to the forward surface of the forward panel adjacent to the upper edge thereof and substantially midway between the legs of the stave and spaced lower ends individually connected to the container adjacent to respective lower ends of the stave.

5. In a carrying pack having means whereby the pack is supported on a wearer and rested against the back of the wearer, the combination of a substantially U-shaped stave providing downwardly extended legs having outer spaced apart positions and appreciably resiliently compressible toward each other from said positions, and a back engaging member of flexible material tensioned between the legs of the stave and holding the legs under resilient compression inwardly toward each other relative to said outer positions whereby the flexible material is resiliently tensioned for cushioned support against the back of the wearer and so that pressures against the back engaging member are absorbed by resilient compressible movement of the legs toward each other.

6. In a pack, the combination of an inverted substantially U-shaped stave having an arcuate central portion and downwardly divergently extended substantially straight legs normally spaced apart a predetermined distance, the stave being of spring-like material and the legs being free so as to be resiliently compressible inwardly toward each other, and a foldable back engaging member having tubular side edges received over the legs of the

stave tensioned between the legs and holding the legs inwardly toward each other so as to be spaced less than said predetermined distance.

7. In a pack, the combination of an inverted substantially U-shaped wooden stave having an arcuate central portion and divergently extended legs, the central portion and the legs being integral and the legs being resiliently compressible toward each other, and a flexible panel having tubular side edges secured to the legs and tensioned therebetween resiliently compressing the legs toward each other so that shocks imposed on the panel are absorbed by inward flexing movement of the legs.

8. In a pack, the combination of an inverted substantially U-shaped stave providing an arcuate central portion and downwardly divergently extended substantially straight legs having normal outer positions and being appreciably resiliently compressible inwardly toward each other from said outer position, a flexible panel having tubular side edges secured to the legs and tensioned therebetween resiliently compressing the legs inwardly toward each other from said outer position, the legs being automatically resiliently returnable to said outer positions upon removal thereof from the panel, and shoulder straps connected to the flexible panel between the legs of the stave adapted to support the pack with the flexible panel resiliently tensioned against a wearer's back by resilient flexing of the stave.

9. In a pack, the combination of a substantially U-shaped member having a central portion and legs outwardly extended from the central portion located in a substantially common plane, the legs having spaced apart outer positions and being appreciably resiliently compressible inwardly toward each other, a back engaging member of flexible material attached to the legs of the U-shaped member and tensioned in taut relation therebetween compressing the legs inwardly toward each other so that the back engaging member holds the legs in positions inwardly spaced from their outer positions and so that the back engaging member is held resiliently tensioned by the legs as a cushioned support for the pack whereby pressures against the back engaging member cause the legs to flex inwardly, the legs of the U-shaped member being adapted automatically to return to their outer position when the back engaging member is released therefrom.

10. In a pack, the combination of a substantially rigid arched pack supporting member having a central portion and a pair of elongated legs of lengths greater than the central portion integrally extended from the central portion in a substantially common plane, the legs having outer positions and being resiliently flexible and free longitudinally thereof to move inwardly toward each other when placed under compression, and a body engaging member of flexible sheet material attached to the legs of the pack supporting member in tensioned relation therebetween compressing the legs inwardly toward each other from said outer positions whereby pressure variations against the body engaging member tend to flex the legs inwardly and outwardly relative to each other and whereby the legs return automatically to their outer positions when disassociated from the body engaging member.

11. A carrying pack comprising an inverted substantially U-shaped stave having downwardly extended legs spaced a predetermined distance apart when free of compressive force exerted thereagainst and located in a substantially common plane, the legs being appreciably resiliently compressible toward each other in the plane, a back engaging member of flexible material releasably attached to the legs of the stave and tensioned between said legs to hold the legs under resilient compression toward each other so that the back engaging member is held resiliently tensioned as a cushioned support for the pack and the legs are drawn closer together than said predetermined distance, the legs being adapted when the

pack is in use to flex inwardly toward each other when pressure is placed against the back engaging member and being automatically returnable to increased spaced relation when released from the back engaging member, article holding means mounted on one side of the back engaging member, and a pair of shoulder straps connected to the back engaging member on the side thereof opposite to the holding means.

12. In a carrying pack, the combination of an inverted substantially U-shaped stave of substantially rigid somewhat resilient material having an arcuate upper end portion and downwardly extended legs having outer spaced apart positions, a back engaging member of flexible material removably connected to the legs of the stave and tensioned in taut condition therebetween to hold the legs resiliently compressed toward each other at positions inwardly spaced from said outer positions whereby the back engaging member is tensioned, the legs being adapted when the pack is in use to flex inwardly toward each other when pressure is placed against the back engaging member and being adapted resiliently to return to their outer positions upon removal of the back engaging member therefrom, the arcuate upper end portion and the legs of the stave lying in a common plane substantially parallel to the plane of the back engaging member, article holding means mounted on one side of the back engaging member, and a pair of flexible shoulder straps having upper ends secured to the back engaging member substantially midway between the legs of the stave and at the side of the back engaging member opposite to the article holding means and spaced lower ends secured to the back engaging member individually adjacent to respective lower ends of the legs of the stave.

13. A carrying pack comprising an inverted substantially U-shaped stave of substantially rigid somewhat spring-like material having an arcuate upper end and downwardly extended spaced legs resiliently flexible for movement relatively toward and from each other, a container of flexible material having a forward panel interconnecting the legs of the stave in tensioned relation therebetween providing an upper edge in downwardly spaced adjacent relation to the arcuate upper end of the stave, the legs being adapted to cushion pressures against the panel by flexing movement inwardly and outwardly relative to each other, and a pair of flexible shoulder straps having upper ends secured to the forward wall of the container adjacent to the upper edge thereof substantially midway between the legs of the stave and spaced lower ends secured to the container individually adjacent to respective lower ends of the legs of the stave.

14. In a pack, the combination of a substantially rigid arched pack supporting member having a central portion and a pair of elongated legs of lengths greater than the central portion integrally extended from the central portion in a substantially common plane, the legs having outer positions and being resiliently flexible for movement inwardly toward each other when placed under compression, said legs defining an open space therebetween, and a body engaging member of flexible sheet material attached to the legs of the pack supporting member in taut relation therebetween whereby shocks imposed against the body engaging member flex the legs inwardly relative to each other and the shocks are absorbed thereby.

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