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PACK HARNESS

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FIG_1

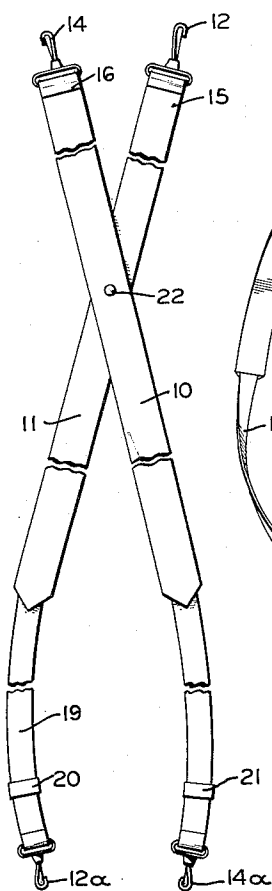
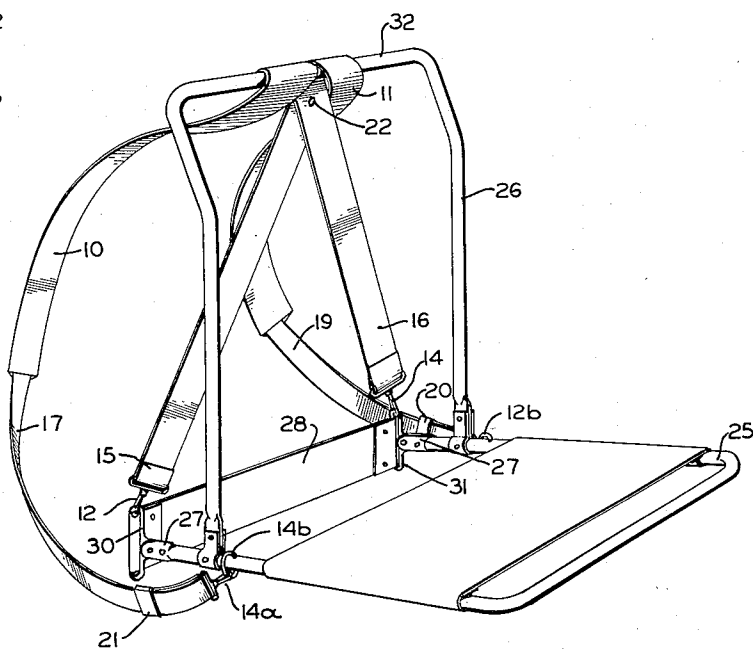


FIG_2



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PACK HARNESS

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3 Claims. (Cl. 224—5)

This invention relates to harnesses used for supporting and carrying freight of all types or any reasonable weight on a human's back. It is particularly useful in connection with back packs suitable not only for the average hiker, but also for the specific duties and rigors of Alpine and arctic field work.

It is well-recognized that in any sort of field work, whether professional or for recreation, where back packs are used, it is of extreme importance that the individual carry as much as he is physically able, with the maximum of comfort and convenience. Neither one of these considerations is more important than the other, as each might be a determining factor in survival. Accordingly, it is an object of the present invention to provide a pack harness which will support a load on a pack frame, regardless of its shape or nature, with maximum comfort and ease to the wearer.

It is also an object of the present invention to provide a pack harness in which the dead weight of the load is converted into live weight, which is more easily carried.

It is a further object to provide a harness which, when coupled to the frame, provides a floating shoulder adjustment to counteract the inertia generated under field conditions.

It is another object of the invention to provide a harness which pulls with floating adjustment from the base of the load with the pressure at the small of the back of the wearer and pulls forward at the base of the load support.

Another object is the provision of a harness where the shoulder straps are substantially one and the same continuous free slipping straps which make up the back support cradle straps in order to permit the weight of the load and the contour of the carrier to adjust both the shoulder straps and the back support straps simultaneously.

It is a further object of this invention to provide a harness where the back support section continually adjusts to prevent the wearer's body from striking the pack frame or the load being carried. The greater the weight, the more the wearer is protected by the increasing tautness of these straps.

It is the further object of this harness that it develop dual lifting points, i.e., (1) beneath the center of gravity of the carried load and (2) at the inside base of the load nearest the wearer's back, to take advantage of the upthrust deliverance from the wearer's (carrier's) legs or at the lower curve of the back (above the buttocks).

It is a further object of the harness to provide continuous lift from over the shoulders continuing down and across the wearer's back to a point where the major lower back support of the back frame takes over the function of support and delivers upthrust to the load.

Further objects are to provide a construction of maximum simplicity, economy, and ease of manufacture, also such further objects, advantages and capabilities as will fully appear and as are inherently possessed by the device and the invention described herein.

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Invention further resides in the combination, construction and arrangement of parts illustrated in the accompanying drawings, and while there is shown therein a preferred embodiment thereof, it is to be understood that the same is merely illustrative of the invention and that the invention is capable of modification and change, and comprehends other details of construction without departing from the spirit thereof or the scope of the appended claims.

Referring to the drawings:

Figure 1 is a plan view of the harness of the present invention; and

Figure 2 is a perspective view of the harness as attached to a pack, showing the manner of use.

Referring now more particularly to the drawings, in which like reference numerals refer to like parts in the several views, and with particular reference to Figure 1, it will be observed that the harness is constructed with two relatively wide members 10 and 11, having snap hooks 12 and 14, or any other suitable attaching means, secured at one end designated 15 and 16, respectively. The members 10 and 11 may be leather, webbing or any other suitable strong, flexible material. The other ends of the strap members 10 and 11 have narrower continuations 16 and 17 attached thereto, with attaching clips 12a and 14a secured to the free ends thereof. Slide buckles 20 and 21 are provided to adjust the length of each of the said narrower portions so that the total length of the strap members may be fitted to the particular size, shape and comfort of the individual wearer.

It will be observed that the two wider strap portions 10 and 11 are crossed just short of their midway point toward the ends 15 and 16 and secured together by a rivet 22, which will permit pivotal movement to a limited degree.

With reference to Figure 2, the manner of carrying and attaching the pack is shown and demonstrated. Particular reference is made to my copending application, filed May 31, 1955, and serially numbered 511,859, now Patent No. 2,822,117, showing a type of frame which is particularly useful in connection with packs, and particularly useful when used with this type of harness. It will be observed from Figure 2 that the upper guard frame has been eliminated and that the type of back and seat covering for the pack frame has been eliminated and that the type of back and seat covering for the pack frame has been altered slightly. However, it is to be observed that any type of pack frame may be employed with the harness of this invention so long as it consists of a bottom or horizontal support member or frame 25 and a substantially vertical member or frame 26. If desired, the back member may be substantially solid, provided, however, there is a sufficient through opening at the top center thereof to permit the free passage of the harness members there-through, and a rod-like or crossover member closing the opening so as to provide suitable movement of the straps therearound for the purposes hereinafter disclosed. Superior results are achieved when the pack frame has horizontal extensions adjacent the bottom of the back member or frame 26, which extensions are here numbered 27. Stretched between the two extensions 27 from slotted hangers 30 and 31 is a flexible and yielding back member 28 which is intended to bear against the small of the back just above the waist of the wearer.

The releasable clip fastening means 12 and 14 are attached to the slotted hangers 30 and 31 adjacent the ends of the back support 28. The strap members 10 and 11 are brought up behind the back portion 26 of the carrier in the normal crossed position shown in Figure 1, over the top thereof and back underneath the top bar or rail 32. It will be seen from Figure 2 that the wider strap portions 10 and 11 pass at either side and forwardly so that the same freely ride over and around the bar 32. A large

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loop is formed at either side and forward of the pack, when the spring clips 12a and 14a, or any other suitable fastening means, are secured adjacent the juncture of the back 26 and the horizontal support 25. These loops at either side, of course, provide the arm loops through which the arms of the wearer pass, so that the broad or wider portions of the straps 10 and 11 pass over the top of the back and shoulders of the wearer, leaving the narrower strap portions 16 and 17 to pass under the arms.

It will be observed that in use the size and shape of the wearer is accommodated by adjusting the movable buckles 20 and 21 along the narrow straps 16 and 17. However, even when the size is adjusted properly, when the load is mounted on the pack the free movement of the strap portions 10 and 11 over and around the bar 32, the top of the back support permits the load with the pack to adjust itself to the back of the wearer. Also, as the wearer moves, the lack of rigid attachment at the top of the pack carrier permits a rolling accommodation around the rod or crossover 32 to the various movements of the individual, to provide floating action. Thus, it is apparent that a self-adjusting floating action is provided both under static conditions to adjust inertia and under moving conditions to compensate for various movements of the wearer.

It will be observed that the pull or support asserted by the harness of the present invention commences at a point adjacent the small of the back of the wearer and spaced from the supporting rack proper, and due to the wrap-around at the top rail 32, pulls the top portion of the load and pack toward the shoulders of the wearer, thence over the shoulders of the wearer, and then down to a point outwardly from the point of the beginning so that the pull there is exerted inwardly toward the waist of the wearer. In this manner the pack, load and harness become an additional part of the wearer, with the pull of the load and the support of the load directed carefully to the proper portions of the human anatomy, which enables the user to carry heavier loads more comfortably without tiring and without producing early exhaustion.

Thus, it will be observed that all of the objectives hereinbefore set out, as well as many others, have been accomplished by the harness of the present invention.

I claim:

1. A pack frame and harness comprising in combination a pack frame having a substantially horizontal support member and a U-shaped back member joined to the support member substantially at right angles thereto, said support member having inwardly directed extensions beyond the juncture with said back member with a yielding back support affixed to and extending between said extensions, and a harness including a pair of crossed straps each having a wide portion and a narrow portion, safety snap hooks at the free ends of said wide and narrow portions, said straps being secured together at the crossing, the hooks at the free ends of the wide portions being attached to the free ends of said support extensions, said straps extending up between the wearer and the frame,

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above the crossover of the back member, then over, around and under said crossover forming a self-adjusting engagement therewith, and having the narrow portions passing under the arms of a user, for attachment to the frame by means of the said hooks at the free ends thereof, outward of the juncture of the support and back member.

2. A harness and pack frame comprising in combination a pack frame having a substantially horizontal support member, a substantially vertical U-shaped back member joined to said support member, inwardly directed extensions at either side of said support member and a yielding back support affixed to and extending between said extensions, and a harness comprising a pair of straps each having corresponding wide portions and narrow portions, and safety clasps at the free ends of said wide and narrow portions, said straps being crossed and riveted in such position, said harness having its wide portions attached at their free ends to the said extensions and passing up between the wearer and the frame, above the crossover of said back member, over around and under the said crossover, forming a self-adjusting engagement therewith, and having its narrow portions adapted to pass under the arms of a user, and attach to the frame at their free ends outward of the juncture of said pack frame members.

3. A harness and pack frame comprising in combination a pack frame having a substantially horizontal U-shaped support member, a substantially vertical U-shaped back member joined at the legs thereof to said support member, inwardly directed extensions at either side of said support member and a yielding back support affixed to and extending between said extensions, and a harness comprising a pair of straps each having corresponding wide portions and narrow portions, adjustable means for changing the length of said narrow portions, and safety clasps at the free ends of said wide and narrow portions, said straps being crossed and riveted in such position with limited pivotal movement, said harness having its wide portions attached at their free ends to the said extensions and passing up between the wearer and the frame, around and under the crossover of the said back member, forming a self-adjusting engagement therewith and having its narrow portions adapted to pass under the arms of the user, and attach to the frame at their free ends outward of the juncture of said pack frame members.

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