Aug. 9, 1966

R. H. ROMNEY

3,265,260

PACK CARRIER

Filed July 8, 1964

2 Sheets-Sheet 1

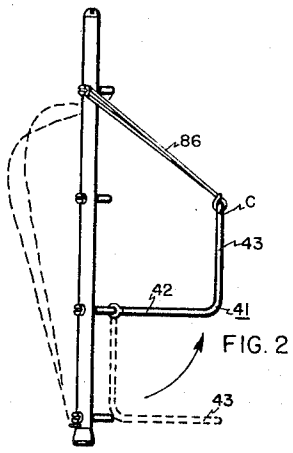


FIG. 2

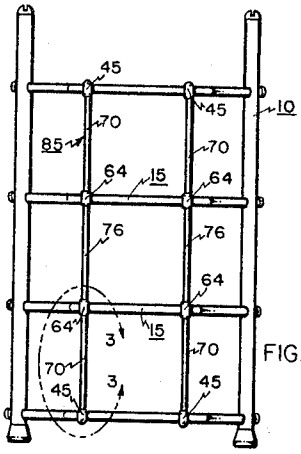


FIG. 4

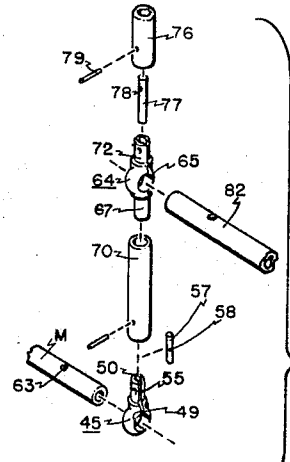


FIG. 3

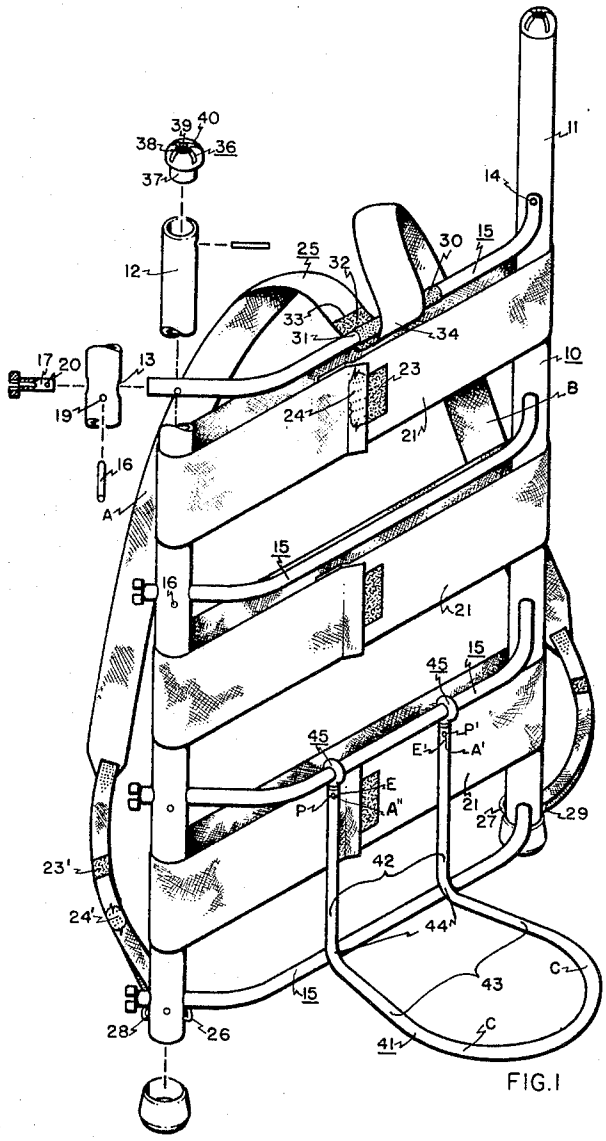


FIG. 1

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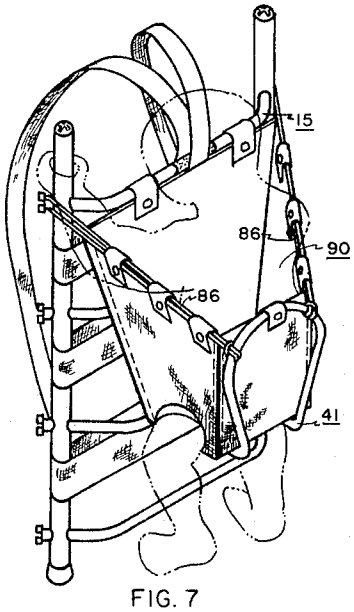


FIG. 7

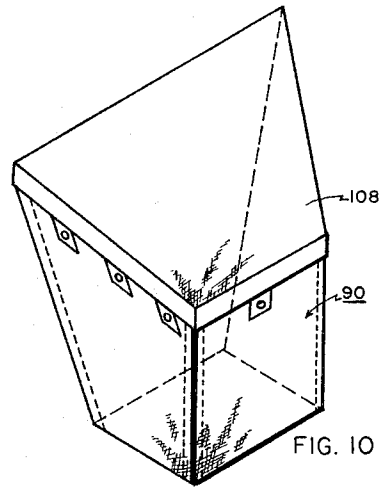


FIG. 10

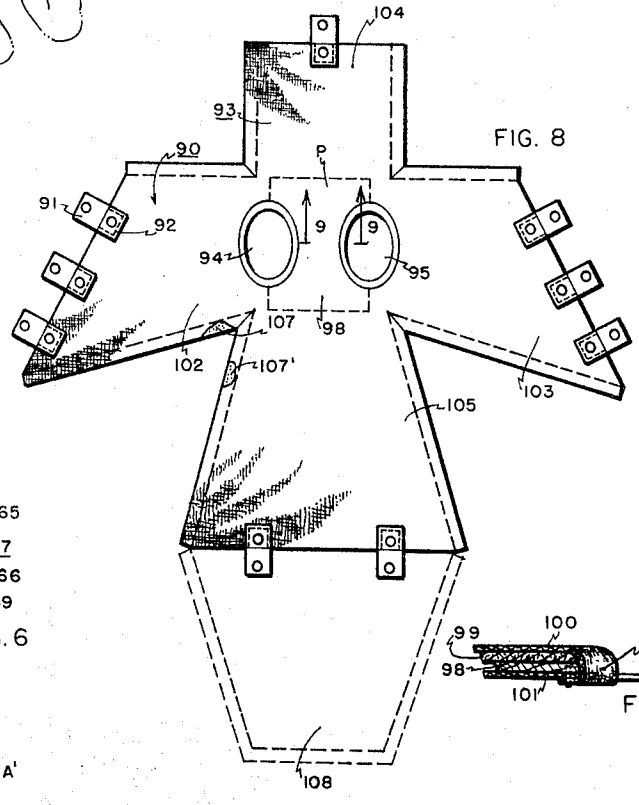


FIG. 8

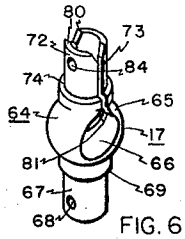


FIG. 6

FIG. 9

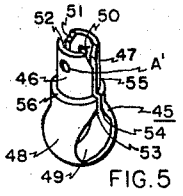


FIG. 5

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3,265,260

PACK CARRIER

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11 Claims. (Cl. 224—6)

The present invention relates to pack frames and associated structure and, more particularly, to a new and improved pack frame and allied structure which will be versatile in use, inexpensive to produce, and perform a variety of functions in the field.

Accordingly, a principal object of the present invention is to provide a new and improved pack frame and associated structure for field use.

A further object of the invention is to provide an improved pack frame having a utility support bracket which can be disposed in either of two conditions to perform a variety of functions.

A further object is to provide a pivotal shelf or bracket support for pack frames.

A further object is to provide improved shoulder strap means for unique attachment to a pack frame such that the shoulder strap may be conveniently removed and used as a one-piece utility strap or conveniently placed on the pack frame so that shoulder loops are retained during mounting.

A further object is to provide structural support for pack frames otherwise having simply transverse, structural cross-members.

An additional object is to provide structural interconnection means for accommodating both pivotal and fixed T constructions and also fixed cross constructions in pack frames and other structures.

A further object is to provide a bag for the pack frame of the present invention which may be conveniently attached thereto and to the elongate members securing the desired configuration thereof, for carrying any type of load from small children to other objects.

The features of the present invention which are believed to be novel are set forth with particularity in the appended claims. The present invention, both as to its organization and manner of operation, together with further objects and advantages thereof, may best be understood by reference to the following description, taken in connection with the accompanying drawings in which:

FIGURE 1 is a perspective view, partially exploded for convenience of illustration, of the pack frame utilizing particular principles of the present invention.

FIGURE 2 is a side elevation in reduced scale of the pack frame of FIGURE 1, shown in simplified view, wherein the bracket means for the pack frame is raised and retained in place in an alternate, bracket-means position.

FIGURE 3 is an exploded view, taken along the arcuate line 3—3 in FIGURE 4 of certain structure shown in the subsequent figure, FIGURE 4.

FIGURE 4 is a simplified view of the pack frame of FIGURE 1 wherein the same includes structural bracing means having unique T and cross connections.

FIGURE 5 is an enlarged perspective view of the lowermost structure member of T inter-connection member illustrated in FIGURE 3.

FIGURE 6 is an enlarged perspective view of the structual interconnection means, shown in middle portion of FIGURE 3, which is intended for use in cross structures.

FIGURE 7 is a perspective view, reduced in scale relative to FIGURE 1, wherein the pack frame in the condition shown in FIGURE 2 is used to support and retain a sack or bag enclosure accommodating transport of small children.

FIGURE 8 is a plan view of the bag of FIGURE 7 wherein the same is shown in developed form.

FIGURE 9 is an enlarged fragmentary section taken along the line 9—9 in FIGURE 8.

FIGURE 10 is perspective view of the bag including a top useable in the context of the present invention.

In FIGURE 1 pack frame 10 includes a pair of upstanding side uprights 11 and 12 each provided with a plurality of respective apertures 13 and 14 for receiving the extremities of horizontal cross members 15. Cross members 15 may be secured in place by case-hardened spring pins 16. If desired, lashing receiving inserts 17 may be inserted into the extremities of cross members 15 and retained in place by pin 16 in the manner indicated in the upper left-hand portion of FIGURE 1 and also in the applicant's co-pending case entitled "Multi-Purpose Pack Carrier," Serial No. 317,978. Aligned pin apertures 19 and 20 are of course provided to complete the securement.

For purposes of comfort, transverse straps 21 are provided and are looped around the upstanding side uprights 11 and 12 in the manner shown. There is a remarkable product on the market currently which is sold under the name "Velcro." Velcro comprises releasably inter-securing patches of material which can easily be glued or sewn to other flexible materials such as canvas, preferred in the construction of straps 21; one of the Velcro patches or strips is designated 23 and will include up-standing tufts of one type of material and which resembles small hooks. The other patch of material 24 includes tufts of small loops of closely positioned fibers. Pressing the two materials together causes a releasable securement therebetween. This material is ideally suited for securing the extremities of back straps 21 together in the manner shown in FIGURE 1.

Similar material as at 23' and 24' may be mutually spaced apart and employed to secure the extremities of composite elongate shoulder strap 25 to D-rings 26 and 27, the latter being secured in place through aligned apertures 28 and 29 provided therefor. In a similar manner, and most important, one type of the Velcro material may be fabricated as a rolled patch 30 glued or otherwise secured to medial portion 31 of the uppermost cross-member 15. The patch of the cooperating Velcro 32 is secured by adhesive or other means 33 to medial portion 34 of shoulder strap 25. With the medial portion being wrapped around the Velcro patch 30, the shoulder loops A and B are conveniently formed so that when one is mounting the pack on his back the shoulder loops A and B will not be altered when the first arm is slipped through one and, subsequently, the remaining arm is slipped through the other loop. Were there no releasable securement means at the medial portion of the upper cross-member 15 and corresponding medial portion 34 of the shoulder strap, then the loops would slip and it would be difficult to mount the pack on the back of the user. Furthermore, by this unique construction the shoulder strap can be completely removed and used as a utility strap for any one of several purposes. Hence, rivets and other metal parts are avoided, the shoulder strap 25 may be completely removed from the pack frame for use, and yet the same is easily mounted to a pack frame to accommodate shoulder mounting and transport in an optimum manner.

Lashing receiving insert 36 includes an insert portion 37 and a head 38 provided with central apertures 39 and perforation slits 40. Insert 36 is ideally suited for receiving the knotted end of lashing for accommodating the releasable securement thereof, preliminary to lashing a load onto the pack for transport.

Of primary importance is a tubular utility bracket 41. While this bracket may take any conventional form,

it is highly preferable that the same be of tubular construction and include an elongate attachment portion **42** and an elongate extremity portion **43** integral therewith and laterally extending therefrom as shown. The lowermost cross-member **15** and the cross-member to which the bracket means **41** is pivotally secured, and also the bracket means **41** are all preferably constructed and arranged that the curved junction area **44** of portions **42** and **43** engage medial portion **15'** of the associated cross-member **15**. This, of course, tends to support loading of the utility bracket **41**, to preclude further clockwise pivotal displacements of the elongate attachment portion **42** about cross-member **15** to which it is pivotally secured.

The manner of pivotal securement of bracket means **41** to its respective cross-member **15** is preferably accommodated by employment of a suitably contoured, hairpin-configured engagement member **45** which is constructed to be spreadable apart for mounting purposes. See FIGURES 3 and 5. Member **45** is shown therein to include a pair of leg means **46** and **47**, see FIGURE 5, and a head integral therewith, delineated **48**, and including a hollow open area **49**. Pin receiving bore **50** is supplied between the two leg means. Chamfered areas **51** and **52** and also **53** and **54** may be supplied a member to accommodate easy insertion and, of an external member through slit **55**, contiguous with the aforementioned leg means **46** and **47** and finally into hollow area **49**. The structure also includes an abutment shoulder **56** serving as a stop abutment for a tubular member slipped over the leg means **46** and **47**.

In practice, the part **45** is preferably made of plastic such as Delrin. The parts **45** are first pivotally mounted over the associated cross-member **15** by the leg means being spread apart so that the hollow area **49** may conveniently receive the associated cross member **15**. Subsequently, the upper extremities E and E' of tubular bracket means **41** are inserted over the legs **46** and **47** to abut shoulder **56**. Finally, securement pins P and P' are inserted through aligned pin apertures A'' and A' to retain the securement of the pivot means or members **45** to the respective extremities E and E' of bracket means **41**.

A pin **57** including aperture **58** may also be included and thrust into the internal bore **50** of member **45** so as to reinforce the fixed securement of member **45** to extremities E and E'.

Member **45**, it will be seen, is in fact a T construction member for accommodating either pivotal of fixed T connections. Where pin insert **57** is sufficiently long enough then the aperture **58** thereof suitably placed, then the same may in fact be inserted in the wall aperture **63**, see FIGURE 3, of member M (such as cross member **15**) so that member M is precluded from turning within hollow area **49**. This will not be the case, however, in connection with the pivotal securement enjoyed by the pack frame in FIGURE 1 relative to bracket means **41**.

Another structural member **64** may be used in the construction; it is ideally suited as well to other types of constructions wherein structural crosses are to be fabricated. See also FIGURE 6 as regard the details of this member. The structural interconnection means **64** is shown in FIGURE 6 to include a medial portion **65** having hollow area **66**. A first structural member engagement portion **67** is integral therewith, includes pin aperture **68** and, further, offers a shoulder abutment **69** for fixing the end placement of a first external member **70** to be thrust upon portion **67**. A second structural member engagement portion **70** to is likewise integral with medial portion **65**, includes a slit **73** communicating with hollow area **66**, and likewise is provided with a shoulder **74** serving as a stop abutment for a second external structural member **76**. Reinforcing pin **77** having aperture **78** for the reception of pin **79** may be included to fixidly key external structural member **76** to the interconnector means **64**. Preferably, chamfered areas **80** and **81** are provided to facilitate the insertion of a cross-member **82**, see FIGURE 3, through the slit **73** and into the hollow area **66**. Pin aperture **84** is provided to accommodate pin **79** in FIGURE 3. The slit **73** may be considered to be of nominally, normally closed construction which is openable by virtue of the material of the interconnection means **64**, preferably Delrin, so that the member may be inserted through the slit and into hollow area **66** and come to rest.

FIGURE 4 illustrates the manner in which the structure shown in FIGURES 3, 5, and 6 is used as structural bracing means **85** which structually reinforces the pack frame **10** and, additionally, precludes members from slipping through areas between cross members **15**. In FIGURE 4 the vertical structural members are numeraled in accordance with the code given in FIGURE 3.

FIGURE 2 illustrates that when the bracket means is elevated normally 90 degrees then the elongate extremity portion **43** is upstanding and the elongate attachment portion **42** now becomes nominally horizontally disposed. An elongate connector **86** is preferably looped, comprises cord lashing, and is looped around the corner areas C of bracket means **41** and looped over their respective inserts **17** as indicated. Although the employment of other types of lashing is feasible, that shown is emanently preferred, and the looped elongate members **86** are disposed on both sides of the structure, see FIGURE 7, providing suitable structure for performing any one of a number of functions.

In FIGURE 7 a sack or bag **90** is included in the enclosure defined by elongate members **86** and bracket means **41**. The bag **90**, shown in the flat in FIGURE 8, includes peripheral snap attachments **91** secured by stitching or other means **92** to spaced portions along the periphery of bag member **93** of which bag **90** is primarily comprised. The various, self-snapping portions **91** may be looped over the elongate members **86**, the bracket means **41** and the uppermost cross-member **15**, and snapped against themselves, for retaining the bag in position as shown in FIGURE 7. Where leg cut-outs **94** and **95** are provided, the same may form leg access holes for receiving the legs of a child, see FIGURE 7. FIGURE 9 illustrates that the seat is preferably reinforced by Masonite or other material **98** disposed in the seat or bottom of the bag, the same being covered with padding **99** and finally by canvas or other flexible outer material **100**, the latter looping over the rough edges of the leg cut-outs and being secured by staples or other means **101** to the rigid panel **98**.

The various segments of the bag member, i.e. sides **102** and **103**, back **104** and front **105** may be secured in place by marginal strips of Velcro **107** and **107'**, of mutually inter-cooperating character, sewn or glued to the margin of the sides, back and front indicated. Of course, the bag may be simply stitched together as illustrated in FIGURE 7 where a permanent bag form is intended. Top **108** may likewise be provided where it is intended that the bag be covered during transport as, for example, where hole apertures are not employed. The bag **90** formed by bag member **93** has proven very versatile in use for transporting children and other loads. It will be seen that the structure of the applicant's invention is such so that a conventional pack load may be carried by the pack and supported by bracket means **41** when the latter is in a disposition shown in FIGURE 1; correspondingly, the bracket means may be pivoted and raised to a condition shown in FIGURE 7 for the purpose of including a bag or other type of load. Again, the elongate members **86** ideally serve to secure the bag in position.

While particular embodiments of the present invention have been shown and described, it will be obvious to those skilled in the art that changes and modifications may be made without departing from this invention in its broader aspect, and, therefore, the aim in the appended claims is to cover all such changes and modification as fall within the true spirit and scope of this invention.

I claim:

1. Pack frame structure including, in combination, a pack frame comprising a pair of vertically disposed, mutually spaced, side uprights plural, horizontally disposed cross-members mutually spaced vertically and fixedly engaging said side uprights shoulder strap means fixedly disposed with respect to said side uprights for transporting said pack frame on the back of the wearer; and load-supporting bracket means having an elongate attachment portion pivotally secured along a horizontal pivot axis to said pack frame and an elongate extremity portion integral with said attachment portion, laterally extending therefrom and directed horizontally rearwardly when said attachment portion depends normally vertically from said pack frame when upstanding.

2. Structure according to claim 1 wherein said bracket means is pivoted from a respective one of said cross-members, engages another and lower one of said cross-members when in one load-supporting position, and is constructed and arranged for securement in another load-supporting position nominally ninety degrees related to said one, load-supporting position wherein said elongate attachment portion now becomes nominally horizontal and said elongate extremity portion becomes upstanding; said pack frame structure also including elongate means secured to and between said pack frame and said bracket means for retaining the latter in position with respect to the former.

3. Structure according to claim 1 wherein said bracket means is pivoted from a respective one of said cross-members, engages another and lower one of said cross-members when in one load-supporting position, and is constructed and arranged for securement in another load-supporting position nominally ninety degrees related to said one, load-supporting position wherein said elongate attachment portion now becomes nominally horizontal and said elongate extremity portion becomes upstanding; said pack frame structure also including means for selectively retaining said bracket means in one of plural positions with respect to said pack frame.

4. Structure according to claim 1 wherein said bracket means is pivoted from a respective one of said cross-members, engages at the junction region of said attachment and extremity portions another and lower one of said cross-members when in one load-supporting position, and is constructed and arranged for securement in another load-supporting position nominally ninety degrees related to said one, load-supporting position wherein said elongate attachment portion now becomes nominally horizontal and said elongate extremity portion becomes upstanding; said pack frame structure also including means for retaining said pack frame in raised, load-supporting position with respect to said pack frame.

5. Structure according to claim 3 wherein said cross-members have medial portions off-set rearwardly with respect to the plane including said uprights, said bracket means being pivotally secured to said medial portion of a respective one of said cross-members.

6. In combination, a pack frame including at least one cross-member and a pair of attachment means, an elongate, integrated shoulder strap secured at its opposite extremities to said attachment means and medially looped around a medial portion of said cross-member, releasably adhering, tufted, first means fixedly disposed to and around a medial portion of said cross-member, and releasably adhering, tufted second means cooperable with said first means and secured to a medial portion of said elongate shoulder strap and cooperable with the said first means for releasably securing said shoulder strap medial portion thereto, to form a pair of shoulder strap loops on opposite sides thereof.

7. Structure according to claim 6 wherein said elongate, integrated shoulder strap includes at its extremities mutually spaced, intercooperable, first and second tufted means for releasably securing said extremities about said attachment means.

8. In combination with a pack frame, a rearwardly extending, selectively horizontally pivotal, support bracket secured to said frame, and elongate means secured to and between said support bracket and said pack frame for retaining the former in support position; a person-receiving bag including a bag member having means secured to margins of said bag member and looping around said elongate means, bracket, and at least one selected portion of said pack frame, for retaining said bag in position between said elongate means to rest upon said bracket, said bag member, including leg holes constructed and arranged so that the person riding therein may position his legs therethrough and straddle said bracket.

9. Structure according to claim 8 wherein said bag includes seat reinforcing means disposed at the bottom thereof.

10. In combination with a pack frame, a rearwardly extending, selectively horizontally pivotal, support bracket secured to said frame, and elongate means secured to and between said support bracket and said pack frame for retaining the former in support position; a load-receiving bag including a bag member having means secured to margins of said bag member and looping around said elongate means, bracket, and at least one selected portion of said pack frame, for retaining said bag in position between said elongate means to rest upon said bracket.

11. Structure according to claim 10 wherein said bag member includes a top portion releasably securable over the top thereof.

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