United States Patent [19]

Demaline

[11] **3,881,644**

[45] **May 6, 1975**

[54] **CONVERTIBLE AND COLLAPSIBLE BACKPACK**

[76] Inventor: **Donald R. Demaline,** 2245 University Hill Blvd. Apt. 205 B, Toledo, Ohio 43606

[22] Filed: **Feb. 14, 1974**

[21] Appl. No.: **442,759**

[52] **U.S. Cl.** ..... **224/25 A;** 224/5 R; 224/6

[51] **Int. Cl.** **A45f 3/10**

[58] **Field of Search** ..... 224/25 A, 8 R, 6, 26 G, 224/5 Q, 5 MA, 5 B, 5 A, 5 P, 5 R

[56] **References Cited**

UNITED STATES PATENTS

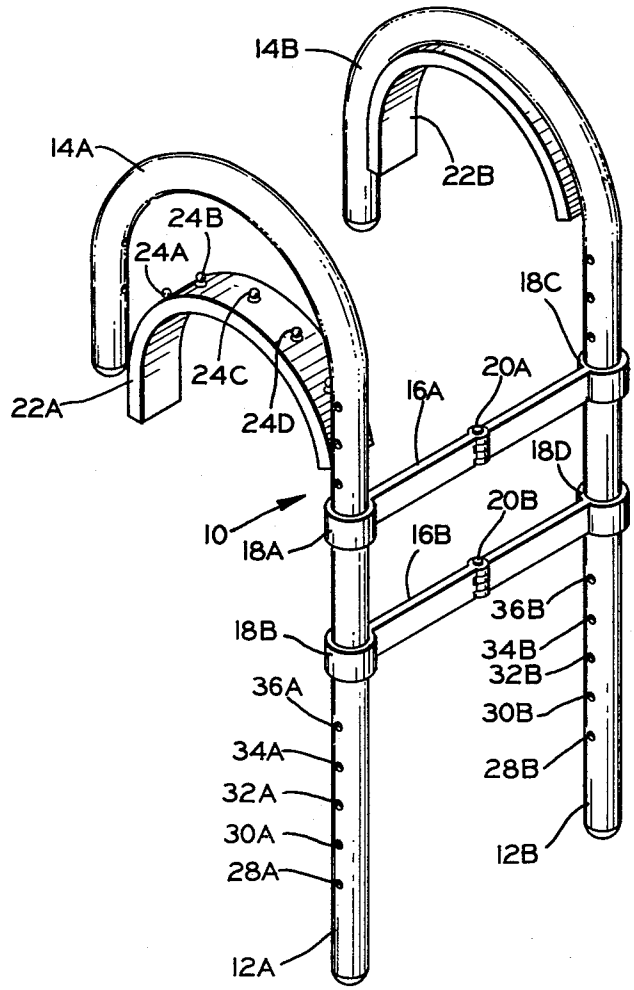
2,208,962	7/1940	Finetti	224/25 A
3,563,431	2/1971	Pletz	224/25 A
3,620,428	11/1971	Silverthorne	224/25 A

Primary Examiner—Robert J. Spar
Assistant Examiner—Jerold M. Forsberg
Attorney, Agent, or Firm—George R. Royer

[57] **ABSTRACT**

A convertible and collapsible backpack adapted for shoulder support for persons to carry various types of loads on their backs while walking, said backpack being comprised of a pair of elongated J-shaped members of hollow tubular construction, said J-shaped members being conjoined by two mutually parallel collapsible bars extending in a perpendicular fashion from the middle portion of said J-shaped bars; said J-shaped members having on their respective axial lengths a plurality of holes extending therethrough which are capable of receiving therethrough a series of pins which lock onto corresponding positions on the respective J-bars the fastening ends of various carrying members such as a baby pouch, or a knapsack support, or alternately, a tray member for eating meals when at rest.

3 Claims, 4 Drawing Figures



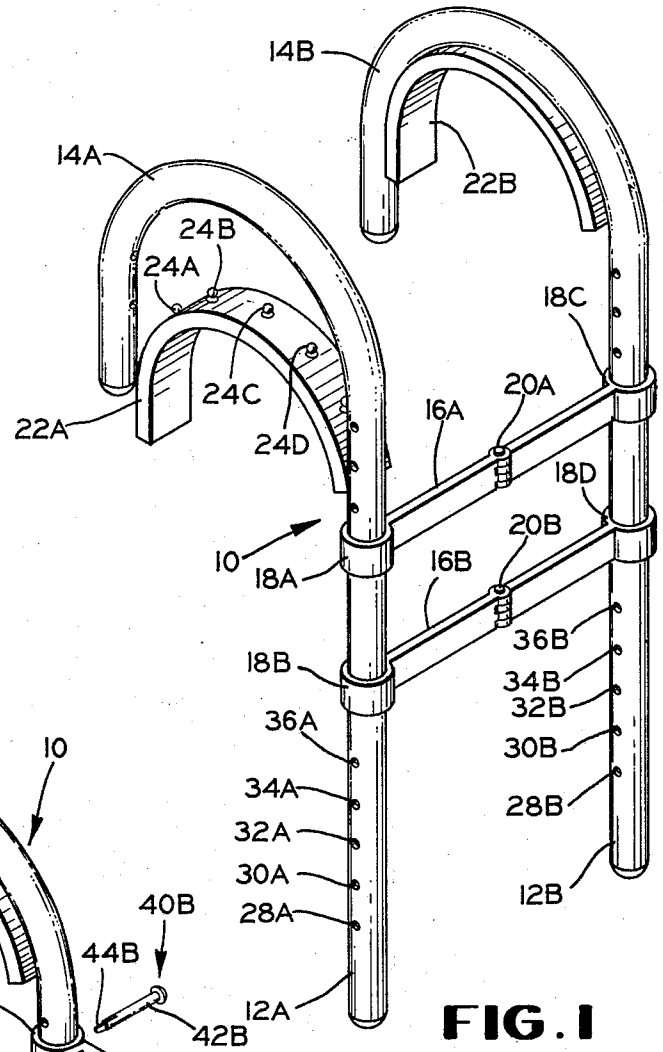

14B
14A
22B
24B
24A
18C
24C
20A
22A
16A
24D
18D
20B
10
18A
16B
36B
18B
34B
32B
36A
30B
34A
28B
32A
30A
12B
28A
12A

FIG. 1

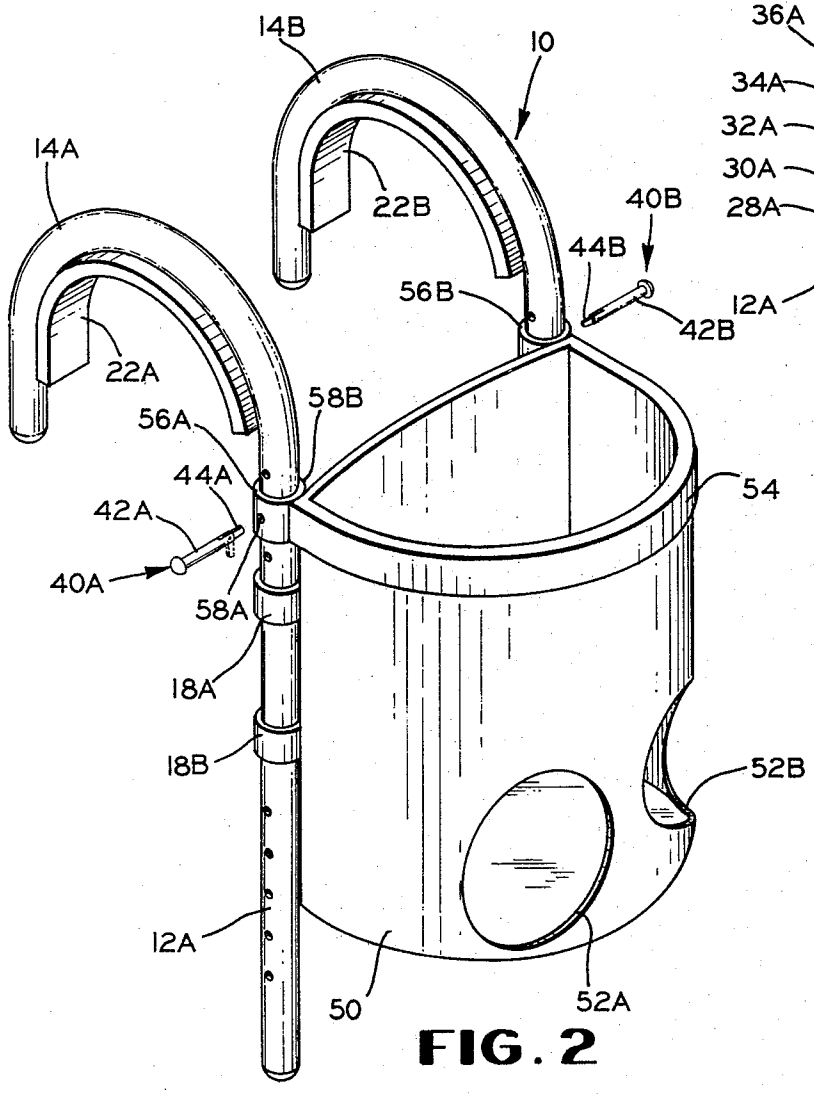

14B
10
14A
22B
40B
44B
56B
42B
22A
58B
56A
54
44A
42A
40A
58A
18A
18B
52B
12A
50
52A

FIG. 2

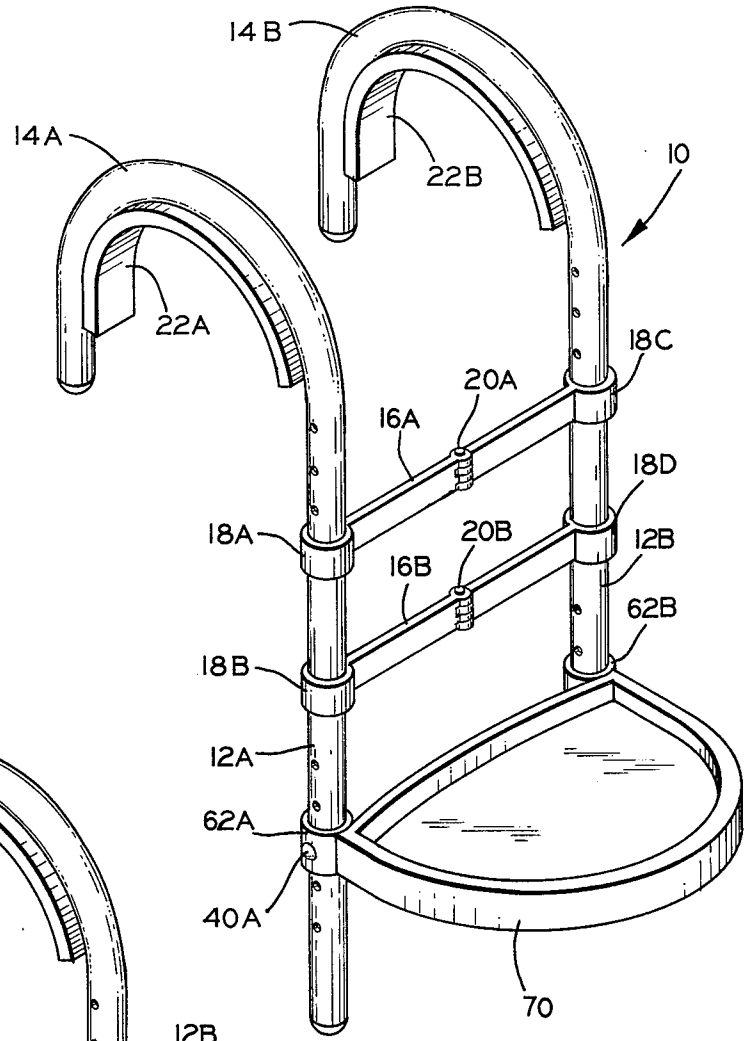

14B
14A
22B
10
22A
18C
20A
16A
18D
18A
20B
12B
16B
62B
18B
12A
62A
40A
70

FIG. 3

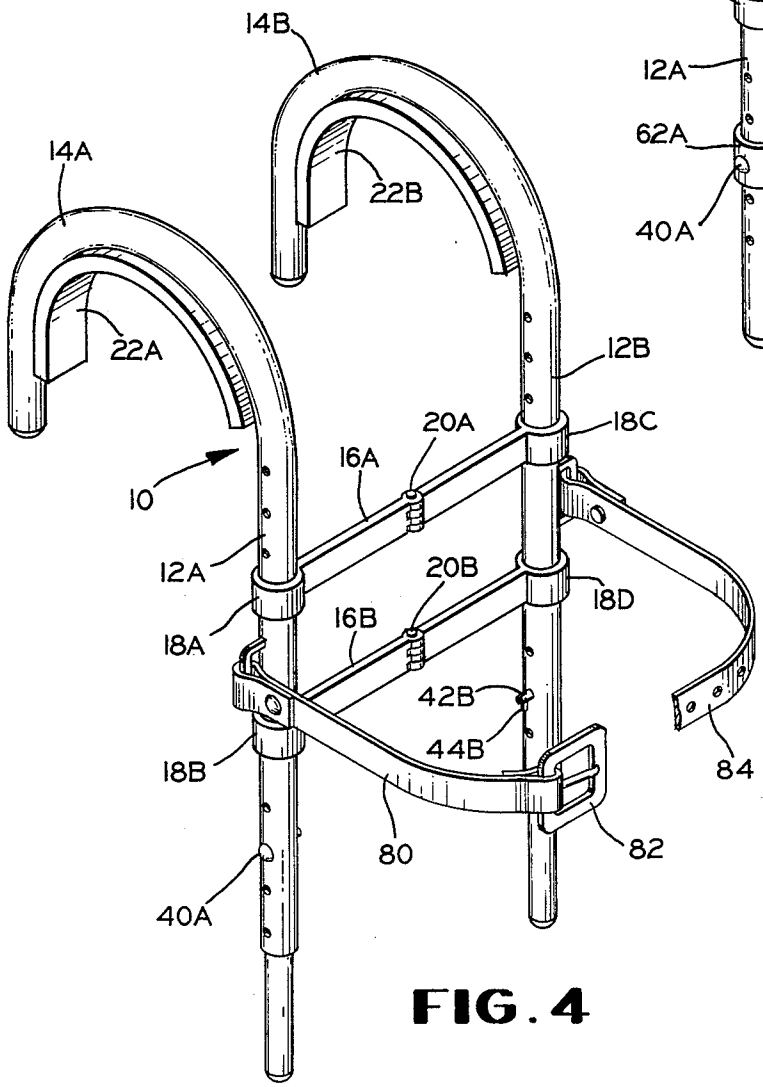

14B
14A
22B
22A
12B
20A
18C
16A
10
12A
20B
18D
18A
16B
42B
44B
84
18B
80
82
40A

FIG. 4

CONVERTIBLE AND COLLAPSIBLE BACKPACK

KNOWN PRIOR ART

None known.

BACKGROUND OF THE INVENTION

Backpacks carried by hikers over their shoulders are a common phenomena particularly in view of the trend of both youths and adults using hiking as a recreation. Now with the crunch of the energy crisis hiking will become an even more popular recreational diversion. By far the most common type of backpack used in former times, as well as today, is the simple arrangement of a bundle, called a knapsack, being attached to looped shoulder harnesses. There are evolutions of this arrangement which have become more complex adapted for more variable and heavy duty hiking purposes. However, it appears that one of the shortcomings and disadvantages of the array of backpack types known in the art is the lack of a backpack which is collapsible and also convertible from one functional use to another. Versatility and need for convertibility dictate a need for such a backpack invention.

In view of the foregoing, it is therefore an object of this invention to provide an improved backpack;

Yet another object of this invention is to provide a versatile backpack;

Still another object of this invention is to provide a portable and convertible backpack;

Other and further objects of the invention will become apparent from a reading of the description taken in conjunction with the following drawings, in which:

FIG. 1 is a perspective view of the basic framework of the backpack invention comprising a pair of parallel J-bar members conjoined together as shown;

FIG. 2 is a perspective view of the basic framework of the invention as shown in FIG. 1 showing the baby pouch addition as one of the several convertible features of the invention;

FIG. 3 is a perspective view of the basic backpack framework member showing one of the alternate convertible attachments as a tray member;

FIG. 4 is a perspective view of the backpack frame member with the addition of a belt to be worn about the waist of the user as an aid for holding the backpack on the wearer or as a means of securement of articles to the frame.

SUMMARY OF THE INVENTION

The invention is both a portable and convertible packpack carrier which can be converted into multiple carrrying usages such as a child carrier, or a normal knapsack carrier, or a tray table for outdoor usage. The basic frame member of the backpack is comprised of two conjoined, parallel disposed J-shaped members which are constructed so that the curved, hooked portions of these two members are adapted to fit over the left and right shoulders of the bearer. Joining the two J-shaped members together are two mutually parallel cross brace members which are connected to corresponding areas on the straight portion of the two J-shaped members. The two cross brace members are hinged in the middle portions thereof so as to render the frame member collapsible. Located in the J-shaped bar member are holes adapted to receive pin members for locking semipermanently unto the J-shaped bars the fastening portions of the various convertible attachments such as the baby carrying pouch.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings in which a preferred embodiment is shown, a backpack frame **10** is shown in FIG. **1.** This backpack frame **10** is comprised of two parallel and identically shaped conjoined J-shaped members **12A** and **12B** respectively. The curved portions **14A** and **14B** of the respective J-shaped members **12A** and **12B** are adapted to be worn over the left and right shoulders of the wearer respectively. These J-shaped members serve as the main support members of the backpack frame **10** and are conjoined to one another in parallel alignment by two mutually parallel cross brace members **16A** and **16B.** Cross brace members **16A** and **16B** are connected to the J-shaped bar members on the straight portions thereof as shown in FIG. **1.** The preferable method of attaching the cross brace members **16A** and **16B** is by means of looped members **18A, 18B, 18C** and **18D** as shown. These looped members can be permanently welded onto the J-shaped bar member or alternately can be attached by temporary pin means so that the brace members **16A** and **16B** can slide on or off the J-shaped members when desired.

Cross brace members **16A** and **16B** are hinged in the respective middle portions thereof with integral hinges **20A** and **20B.** Because of this hinging relationship the two support members can be folded together in a collapsible manner for storage purposes when not in use. In this collapsed condition the backpack frame is rendered portable and can be easily transported around or stored in a compact condition.

On the under surfaces of the curved portions of the J-shaped members are a pair of pads **22A** and **22B** for resting on the shoulder of the carrier so that the metal surface of J-shaped members **12A** and **12B** does not rub on the shoulder. These shoulder surface pads **22A** and **22B** are made to snap on and off of the metallic main support members with snap members **24A, 24B, 24C, 24D,** as shown.

Interspersed at fixed intervals along the straight portion of J-shaped bar member **12A** are a plurality of openings **28A, 30A, 32A, 34A, 36A.** These latter openings extend through the diametrical extent of J-shaped bar **12A.** Similarly, J-shaped bar **12B** has a plurality of such openings **28B, 30B, 32B, 34B, 36B.** These openings are adapted to receive temporary bolt members **40A** and **40B** which extend through J-shaped bar members **12A** and **12B** respectively. These bolt pins **42A** and **42B** are adapted with hinged locks **44A** and **44B** as shown in order that the bolts **42A** and **42B** can be temporarily locked.

The backpack frame **10** is adapted by the foregoing structural arrangement to carry various carrier members. The first type of carrier which can be fitted onto frame **10** is a baby pouch **50** as shown in FIG. **2.** This baby pouch is as shown, a pouch-like member having two openings **52A** and **52B** at the bottom through which the legs will protrude. The upper open portion of the pouch **50** is rimmed by a circumferentially extending metal rim **54** of solid construction.

Integrally attached to the respective corners of the semicircular rim **54** are semicircular loops **56A** and **56B,** which are at least a 200 degree span and which

are adapted to either slide up upon the straight portion of respective J-shaped bar members **12A** and **12B** or alternately be clipped upon the J-shaped bar member through the open portion of the loop member. Located on diametrically opposite positions of the respective looped members **56A** are openings **58A** and **58B** and openings **60A** and **60B**, not shown, on looped member **56B**. Openings **58A**, **58B**, **60A** and **60B** are of the same size as the plurality of openings in the J-shaped bars and are aligned diametrically with the openings on the respective J-shaped bar members. By virtue of the foregoing constructional arrangement, the pouch **50** can be lifted on and off the frame member **10**. Once the pouch is lifted onto the frame it can be locked unto frame **10** by inserting a bolt **42A** into openings **58A** of loop **56A** and thence through opening **58B** on the opposite side of loop **56A**. Once inserted completely through the appropriate openings **58A** and **58B**, the bolt is locked by drawing upwardly about a pivotal axis pin **44A** on the one end of the bolt **42A**. By similar construction and methodology the bolt for loop **56B** is used to lock this latter loop so as to complete the process of affixing the pouch **50** to the frame **10**. The relative height position of the pouch **50** on frame **10** can be adjusted by inserting bolt members **42A** and **42B** in one of the lower or higher openings on the J-shaped bar **12A**, as compared to the position used in FIG. **2**.

Another conversion arrangement that can be used with the subject device is a portable tray arrangement as shown in FIG. **3**. In this adaptation a semicircular metallic tray **70** is used as a portable table which can be stabilized on the ground by inserting the bottom portions of J-shaped bars **12A** and **12B** into the ground. In this arrangement, a set of slidable loops **62A** and **62B** are used to affix the tray to the J-shaped bars. These loops **62A** and **62B** are of similar construction to loops **56A** and **56B** and are locked by a similar methodology as described above.

In similar fashion any other attachment such as a knapsack can be attached to the frame member **10** as described for the foregoing adaptation. In one embodiment of the invention the ends of a belt **80** are linked to the respective J-shaped bar members as shown in FIG. **4**. This belt **80** can be used for dual purposes, one of which further secures the frame to the wearer by strapping and locking the belt around the middle girth of the user. For this latter purpose the belt **80** is drawn around to the front of the frame **10** so that the belt buckle **82** and its mating end **84** are situated beneath the curved portions of J-shaped bar members **12A** and **12B**. On the other hand, belt **80** can be used on the rear portion of frame **10** so as to secure to frame **10** a knapsack or other similar bundle for carriage by the bearer. The various other possible carriage uses of the frame **10** are myriad and depend to a large extent on the ingenuity of the user. Many adaptions can be utilized as the needs dictate, such as using telescopic legs as seen in FIG. **4**.

The foregoing description is by way of elaboration of a preferred embodiment and is not to be construed as a limitation thereof on the claims that follow.

What is claimed is:

1. A portable knapsack frame supporting interchangeably various carriers comprising:

a. a pair of J-shaped bar members disposed in mutually parallel fashion, a collapsible and hinged bar member having sleeves at the ends thereof, each of said J-shaped bar members being received in a corresponding sleeve, means for attaching said J-shaped bar members in said sleeves, said hinged bar member joining said J-shaped bars so that the J-shaped bar members can be moved towards one another by folding of the hinged bar members, said J-shaped bar members having therein a plurality of apertures for receiving bolt members;

b. a carrier having projecting sleeve members for attachment to the J-shaped members;

c. said sleeve members being slidably received on said J-shaped bars and adapted to be fixed relative to said carrier by a bolt being locked through each sleeve member and a corresponding aligned aperture in said J-shaped bar members.

2. A portable knapsack frame as described in claim **1** in which carrier including a depending pouch having leg apertures for carrying children.

3. A portable knapsack frame as described in claim **1** in which the carrier includes a semi-circular shaped tray.

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