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Pritchard et al.

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[45] **May 13, 1975**

[54] **INFLATABLE PAD**

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[21] Appl. No.: **333,990**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 206,623, Dec. 10, 1971, abandoned.

[52] **U.S. Cl.** ..... **224/5 P;** 2/2; 206/DIG. 30; 297/389

[51] **Int. Cl.** **A45f 3/02**

[58] **Field of Search**..... 224/5 P, 26 R; 280/150 SB, 280/150 AB; 206/DIG. 30; 5/349; 297/389; 2/2

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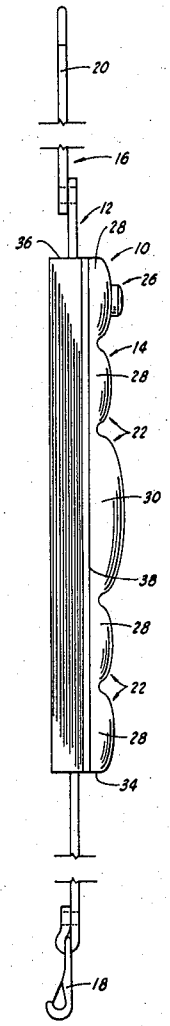
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Assistant Examiner—Jerold M. Forsberg
Attorney, Agent, or Firm—John H. Widdowson

[57] **ABSTRACT**

An inflatable pad has a pocket portion and an inflatable air chamber portion in juxtaposition. The pad receives a strap through the pocket portion, and in use has the air chamber portion positioned between the strap and a person or article. The inflatable pad is a cushion for the strap.

2 Claims, 10 Drawing Figures



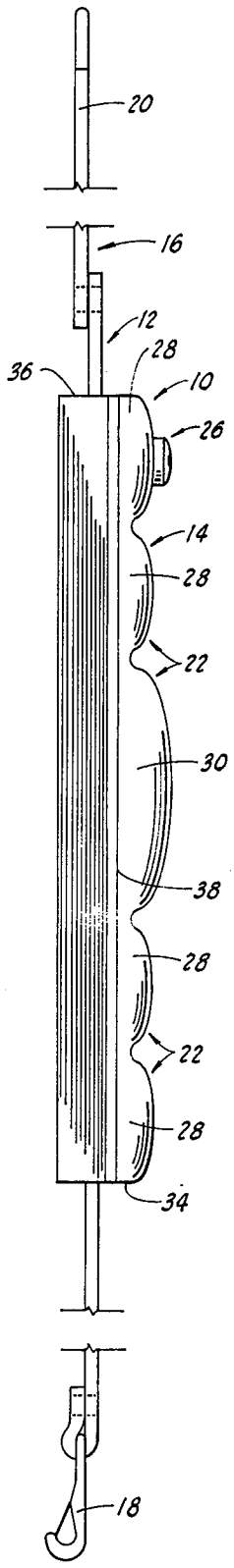


FIG - 3

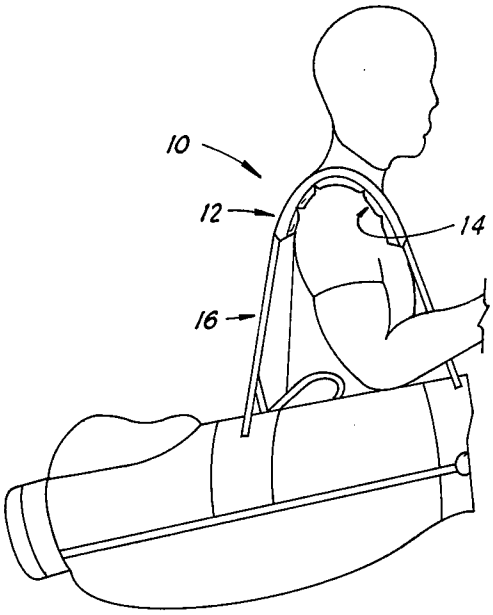


FIG - 1

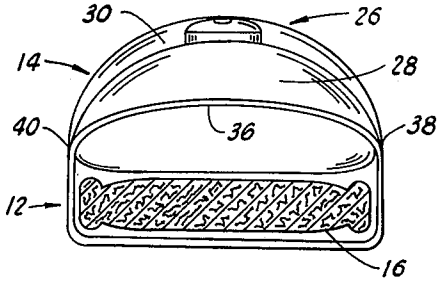


FIG - 4

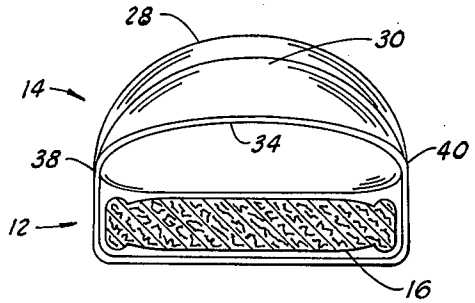


FIG - 5

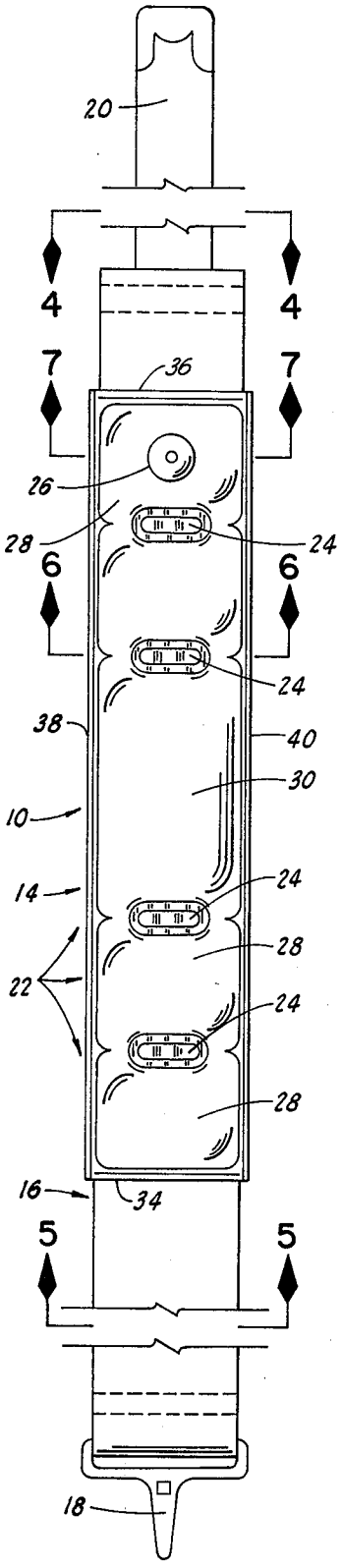


FIG - 2

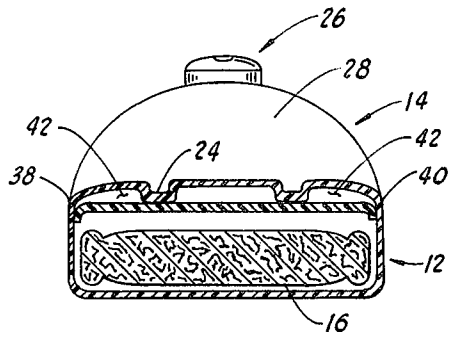


FIG - 6

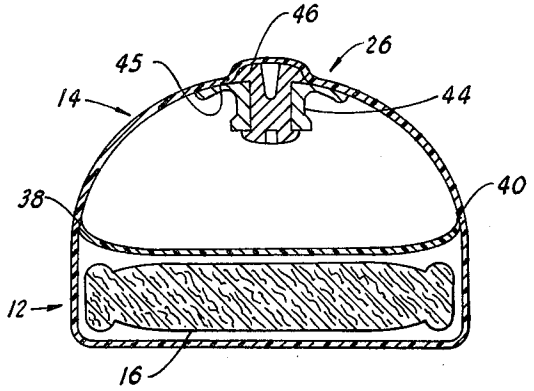


FIG - 7

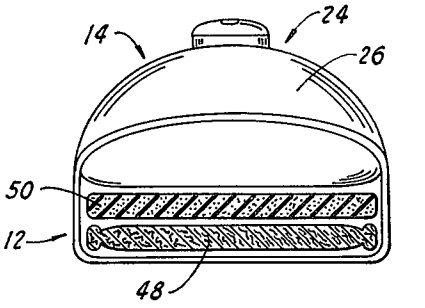


FIG - 8

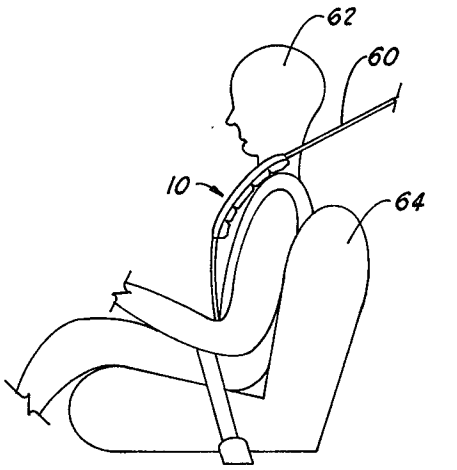


FIG - 10

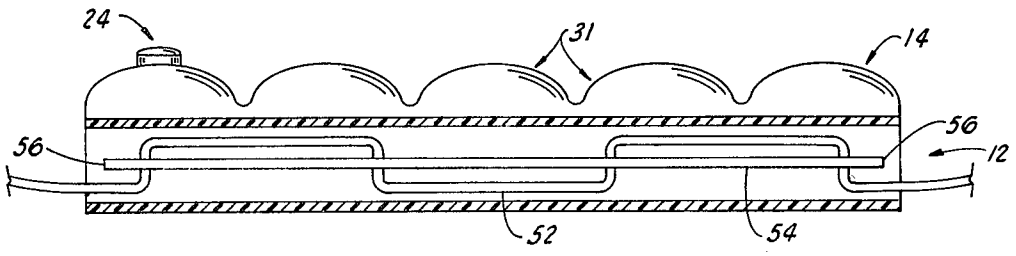


FIG - 9

INFLATABLE PAD

This application for patent is a continuation-in-part application based on our application entitled INFLATABLE CUSHION PAD FOR GOLF BAG SHOULDER STRAPS having Ser. No. 206,623, filed Dec. 10, 1971 now abandoned.

Numerous types of padded shoulder straps and inflatable pad structures are known in the prior art; however, these padded devices and pads for straps are quite limited in their usage and are not particularly well adapted for use on a great many straps. The padded shoulder straps such as golf bag straps and padded carrying case straps which are known in the prior art are padded by means of attaching a resilient material such as sponge rubber to a portion of the strap which is to be in contact with a person's body or other article. These padded golf bag straps in particular consist of a single layer of foam material attachable to the body contact side of the strap or a cylindrical tube of material slipped over the strap and in either case they are not satisfactory as the sponge rubber deteriorates quickly with usage and they tend to turn or roll on a person's shoulder when in place. The sponge rubber or resilient material pads used for carrying things such as cameras or rifle cases or the like are constructed similar to the golf bag shoulder strap pads. Inflatable pads which are known as the prior art are generally flat pads attached to garments to absorb shock forces such as the recoil from a rifle. Other inflatable pads are attached to the shoulders of an athlete for protecting him during football practice. No inflatable pad is known in the prior art which is adapted to be mounted with a strap by a pocket along the inflatable portion thereof.

In one preferred specific embodiment, an inflatable pad is provided which has a pocket portion and an air chamber portion with the pocket portion being adapted to receive a strap or the like to position the air chamber portion on a face of the strap. The inflatable pad is adapted to have the air chamber portion positioned between the strap and an article for cushioning of forces of the strap contacting the article. In particular the inflatable pad is adapted for use with a strap such as would come into contact with with a s body with the air chamber portion being between the strap and the person's body. The inflatable pad is provided with a valve for inflation thereof and it has a plurality of compartments in the air chamber portion thereof to enable the pad to conform with the shape and contour of a person's body and the strap or the like.

One object of this invention is to provide an inflatable pad structure overcoming the aforementioned disadvantages of the prior art devices.

Still, one other object of this invention is to provide an inflatable pad structure having a pocket portion with a juxtapositional air chamber portion with the pocket portion being adapted to receive and hold a strap or the like.

Still, another object of this invention is to provide an inflatable pad structure which is adapted to be used with a strap which is brought into contact with a person's body for the protection of the person's body with the inflatable pad having a pocket to receive the strap and having an air chamber portion to be in contact with the person's body.

Yet, another object of this invention is to provide an inflatable pad structure with an elongated hollow pocket portion to receive a strap or the like therethrough with an air chamber portion in juxtaposition to the pocket and extending the length of the pocket portion to substantially cover one face of the strap or the like.

Yet, an additional object of this invention is to provide an inflatable pad structure having an air chamber portion which has a plurality of connected compartments and having a valve for inflating the air chamber to a desired pressure.

Various other objects, advantages, and features of the invention will become apparent to those skilled in the art from the following discussion, taken in conjunction with the accompanying drawings in which:

FIG. **1** is a side elevation view of a person carrying a golf bag in an over-the-shoulder relation with the inflatable pad mounted with the golf bag strap and being on top of the person's shoulder;

FIG. **2** is a plan view of the inflatable pad mounted on a strap taken from the face thereof having the air chamber portion and adapted to be in contact with a person's body;

FIG. **3** is a side elevation view of the strap and inflatable pad shown in FIG. **2**;

FIG. **4** is an enlarged end elevation view taken on line **4—4** of FIG. **2**;

FIG. **5** is an enlarged end elevation view taken on line **5—5** of FIG. **2**;

FIG. **6** is a cross-sectional view taken on line **6—6** of FIG. **2** showing a seam between compartments of the air chamber.

FIG. **7** is a cross-sectional view taken on line **7—7** of FIG. **2** showing the valve;

FIG. **8** is an enlarged end elevation view of the inflatable pad having a strap and a filler pad therein the pocket portion thereof;

FIG. **9** is a side elevation view of the inflatable pad structure having equally spaced compartments in the air chamber portion, with a portion of the pads side cut away for clarity exposing a strap laced through a spacer member in the pocket portion; and

FIG. **10** is a side elevation view of a person, shown in outline form, sitting in a vehicle seat having the inflatable pad of this invention mounted on the shoulder strap of the seat safety harness.

The following is a discussion and a description of preferred specific embodiments of the inflatable pad structure of this invention such being made with reference to the drawings, whereupon the same reference numerals are used to indicate the same or similar parts and/or structure. It is to be understood that such discussion and description is not to unduly limit the scope of the invention.

Referring to the drawings in detail and in particular to FIG. **1**, an inflatable pad structure of this invention, indicated at **10**, is shown with the carrying strap of a golf bag which is supported by a person in an over-the-shoulder relation. The inflatable pad structure **10** is adapted to be mounted with a strap to serve as a cushion therefor. The inflatable pad structure **10** includes a pocket portion **12** to receive a strap or the like and an air chamber portion **14** to receive and hold a quantity of air. The air chamber portion is positioned on one face of the strap or the like for cushioning that side of the strap as shown.

FIG. **2** and FIG. **3** show in elevation views the inflatable pad **10** mounted with a strap that is generally indicated at **16**. The strap **16** is shown for illustration pur-

poses only and is a strap similar to that used with a golf bag. Preferably the inflatable pad **10** is mounted with a strap such as that shown which is a relatively thin and flat strap structure. The strap **16** passes through the pocket portion **12** and extends from both ends of the inflatable pad **10.** The strap **16** is shown with a snap type clasp **18** on one end thereof and a narrow strap portion **20** on the opposite end thereof which is typical for golf bag straps. The pocket portion **12** is an elongated pocket open on the ends thereof as is shown in the end views of the inflatable pad **10,** FIG. **4** and FIG. **5.** The elongated pocket of the pocket portion **12** forms a sheath or tubular receptacle for the strap **16.** The air chamber portion **14** is preferably constructed with a plurality of connected compartments in a juxtapositional relation to the pocket portion **12** and are generally indicated at **22.** The compartments **22** are separated by seam segments **24** at several points along the inflatable pad **10.** The air chamber is esentially a compressible cushion or pillow held in place on the strap by its pressure on the strap in the pocket portion which functions to distribute the load of the article carried with the strap.

An inflator valve, generally indicated at **26,** is provided at one end of the air chamber portion **14** for inflation of the air chamber. The inflator valve **24** is preferably constructed generally as shown in FIG. **7** for the receipt of a needle type inflation tool of the conventional type which is commonly used with basketballs, footballs, etc. The inflatable pad structure **10** is constructed in an embodiment as shown in FIG. **2** and FIG. **3** of the drawings with five compartments generally indicated at **22** having a pair of equally sized compartments **28** on the opposite ends thereof and a larger compartment **30** in the center portion thereof. The seam segments **24** separate the several compartments and determine the size of the compartments. Preferably the inflator valve **26** is placed in the end compartment as shown. In practice with the inflatable pad **10** used with a golf bag carrying strap in the carrying of golf bags, it has been found desirable to make the center pocket **30** larger to cushion the majority of the load which is carried directly on top of the shoulder. FIG. **1** shows the large compartment **30** in a shoulder top position. In using the inflatable pad **10** for carrying heavy loads in an over-the-shoulder relation it is obviously an advantage to have a larger compartment in the center portion of the pad. It is to be understood that the inflatable pad structure **10** of this invention can be constructed with the air chamber portion thereof having multiple pockets or having single pockets. FIG. **9** illustrates the inflatable pad having five equally spaced compartments generally indicated at **31,** in the air chamber portion thereof.

The inflatable pad structure **10** is preferably constructed of a plastic-like material for simplicity in construction and durability in the finished product. In practice the inflatable pad structure **10** has been constructed of a flexible vinyl material because such has been found preferable due to the flexible and durable nature of the material. The inflatable pad structure **10** as shown in the drawings can be constructed from two rectangularly shaped pieces of flexible plastic material with one piece being larger and forming the exterior of the pocket portion **12** and the air chamber portion and the smaller piece forming the interior of the air chamber portion **14.** In construction of the inflatable pad **10** the smaller sheet is joined with the larger sheet after the inflator valve **26** has been attached to the larger piece. In practice with the vinyl material it has been found an advantage to use heat to seal the pieces together. In one operation the smaller sheet can be attached to the larger sheet with seams **34** and **36** formed on the ends of the inflatable pad and other seams **38** and **40** formed on the pocket portion interior and the plurality of compartment separating seams **24** formed in the center portion thereof. The compartment separating seams **24** form the divisions of the compartments **22** and are oriented transverse to the elongated axis of the inflatable pad structure. It is to be noted that at the option of the user the spacing and quantity of the compartments **22** can be modifying or changing the compartment separating seams **24.** Once the two sheets of material have been joined together the outer edge portions of the larger piece thereof can be joined by a similar heating process to form the looped or tubular structure of the pocket portion **12.** FIGS. **4** and **5** are opposite end views of the cushion pad **10** illustrating the relative positions of the seams of the pad structure, and the shapes of the portions thereof when inflated. FIG. **6** shows in detail the structure of the inflatable pad **10** at a compartment separating seam **24** showing the juncture of the two separate pieces of plastic material. The space indicating at **42** is a portion of the air chamber connecting the compartments at the separating seam **24.** FIG. **7** shows in detail the structure of the inflator valve **26.** The inflator valve **26** shown has a support portion **44** therearound a perforatable seal portion **46** in the center thereof. The perforatable portion **46** is adapted to removably receive and pass a needle valve tool for inflation and deflation of the air chamber.

In some applications of the inflatable pad **10** the strap placed in the pocket portion **12** will be held in place by the force of the interior side of the pocket portion adjacent to the air chamber pressing against the strap and holding it in position in the pocket portion **12.** In some other applications of the inflatable pad where it must be used on a relatively thin strap, it may be necessary to insert a filler pad in the pocket portion **12** along with the strap for the purpose of filling the cavity thereof so the strap will be retained in the desired position and so the inflatable pad structure **10** can be inflated to the desired pressure. In practice in using the inflatable pad **10** for carrying golf bags, where the weight carried ranges about 25 pounds, a pressure of approximately 1½ to 2 pounds per square inch pressure in the air chamber has been found desirable. In applications of the inflatable pad **10** with the relatively thin strap and a filler pad the filler pad is necessary to develop the desirable pressure within the air chamber and at the same time retain a desirable shape in the pad structure. Without the filler pad the inflatable pad structure will tend to balloon and deform as well as allowing the relatively thin strap to slide within the pocket portion **12.** FIG. **8** shows an end elevation view of the inflatable pad **10** having a relatively thin strap indicated at **48** and a filler pad indicated at **50.** The particular filler pad **50** to be used will of course depend upon the material of the strap **48** and the thickness thereof. In practice in using the inflatable pad structure **10** with web belts, such as automotive seat belts and the like, it has been found advantageous to use a filler pad of a resilient plastic-like material as it is flexible, durable and clings to both the belt and the inflatable pad.

FIG. 9 illustrates yet another application of the inflatable pad structure **10** for use with a strap which is substantially narrower and thinner than the pocket portion **12.** As shown, the thin and narrow strap **52** is laced through a filler or spacer member **54.** The filler or spacer member **54** is preferably a flexible elongated planar member having a plurality of slots therein to receive the thin narrow strap **52** such that it can be laced therethrough to support the strap in a transversely fixed position within the pocket portion **12.** In lacing the thin narrow strap **52** through the spacer member **54** it is to be noted that such must be done with the ends **56** of the spacer member **54** having the strap **52** passing therethrough in a direction opposite to the air chamber portion **14** so pulling the strap **52** in the direction of the air chamber will bring the filler or spacer member **54** into contact with the air chamber portion of the pad structure at the ends. In practice it has been found that the filler or spacer member **54** can be constructed of a lightweight flexible and strong material, such as polyethylene plastic material; however, other material can be used. A specific use of the inflatable pad structure **10** with the spacer member **54** for thin narrow straps is with a mail carrier's pouch shoulder strap since these straps are quite narrow. The spacer member **54** supports the pad **10** on the thin narrow strap and distributes the load over the shoulder. At this point it is to be noted that for applications of the inflatable pad **10** of this invention for uses such as with mail carrier's pouches where the load changes considerably over a short period of time it is advantageous to have the inflatable pad structure constructed with equally sized compartments in the air chamber as shown in FIG. **9.** The use of equal sized compartments prevents turning or rolling of the pad in a low load condition which will occur if the pad has an enlarged center compartment.

The inflatable pad structure **10** of this invention is an inflatable cushion pad that can be used on virtually any structure with a strap or the like that is to be brought in contact with a person's body or an animal's body. FIG. **1** shows the inflatable pad structure **10** used with the carrying strap of a golf bag. FIG. **10** shows the inflatable pad **10** used with a shoulder harness belt **60** of an automobile safety belt system. In this application the driver **62** sitting in the vehicle seat **64** positions the inflatable pad structure **10** on the shoulder belt **60** in a position generally as shown extending over his shoulder and onto his chest. In this application, the inflatable pad structure **10** provides comfort for the driver **62** by isolating the often irritating strap from his body and clothing; and in the case of an accident or sudden stop wherein the person's body would be brought into firm contact with the shoulder strap **60,** the inflatable pad **10** will in that case cushion the blow. Other applications for the inflatable pad structure of this invention are numerous and obvious, for example, back pack shoulder and back straps, parachute harnesses, duffle bag straps, rifle or automatic weapons straps, infant carrier harnesses, and as described mail carrier pouch shoulder straps. In use of the inflatable pad structure **10** for animal harnesses such can be used for breast collar straps and girth straps on horses and the like. Other further uses of the inflatable pad of this invention can be made by attaching the pad to a structure or article that a person may come in contact therewith, such as a football blocking dummy, or attaching it to an article for packing or storage purposes as a shock or vibration insulator.

In the manufacture of the inflatable pad structure of this invention, it is obvious that the structure can be easily manufactured from a flexible plastic material to achieve the end product. In practice, the inflatable pad structure has been constructed from a flexible vinyl sheet material and such has proven to be a desirable material for the construction of the pad structure due to its flexibility, its not being affected by moisture and its being easy to clean. The inflatable cushion pad can be constructed from the named material by forming the seams thereof by heating as described so there are no exposed seams on the sides of the pad to rub and cause irritation. It is to be noted that the number of compartments and the spacing thereof can be changed at the option of the user depending upon the specific desired use of the inflatable pad. Also, it is to be noted that the size of the air chamber portion and the pocket portion can be modified from that shown in the drawings for a specific use or to accommodate a special strap or the like.

In the use and operation of the inflatable pad structure of this invention, it is seen that same provides a cushion structure for attachment to and use with a strap or the like which is to be brought into contact with a body. The inflatable pad structure provides an air compartment cushion which is attachable to a strap or the like and which has numerous uses as described. The inflatable pad structure by virtue of its inflatable nature provides adjustment of the cushioning effect thereof by simply and easily changing the pressure within the air chamber as is necessary depending upon the load carried. The inflatable pad distributes the load carried over the area of the pad thus eliminating pressure points. Another feature of the inflatable pad is that once inflated the pad is tightened on the strap or the like and will retain its position without slipping until deflated.

As will become apparent from the foregoing description of the applicant's inflatable pad structure, relatively inexpensive and simple means have been provided to effectively cushion straps which are to be brought in contact with a body. The inflatable pad structure is simple to attach or mount with a strap, attractive in appearance, usable in many applications, and it is structurally simple. The inflatable pad structure due to its simple structure is economical to manufacture.

While the invention has been described in conjunction with preferred specific embodiments thereof, it will be understood that this description is intended to illustrate and not limit the scope of the invention, which is defined by the following claims.

We claim:

1. An inflatable cushion pad for golf bag shoulder straps, or the like, comprising a flexible pocket portion, a flexible air chamber portion integrally attached along said pocket portion in juxtaposition, said air chamber portion having a plurality of end to end compartments in fluid communication with each other and bendable between said compartments, means mounted in the wall of said air chamber portion to inflate same, said pocket portion is an elongated hollow pocket open on the ends thereof, said air chamber portion extends along said pocket portion substantially covering a face of said inflatable pad, said air chamber portion is sub-

stantially the same length as said pocket portion, said means to inflate is a valve means through a wall of said air chamber portion, said valve means being openable for inflation or deflation of said air chamber portion, said air chamber portion being adapted to be positioned on one face of a strap when same is placed in said pocket portion, said pocket portion being adapted to fit around said strap in a close fitting relation when said air chamber portion is in an inflated condition, said plurality of compartments being separated by a plurality of seams transverse to said elongated pocket portion forming said compartments of substantially equal size, said inflatable pad being constructed and adapted to in use receive said strap in said pocket portion to have said plurality of compartments of said air chamber portion inflated and to be used having said air chamber portion positioned between said strap and a person and shaped to the contour of same to cushion the force of said strap when moved in contact with said person, said pad is inhibited from moving along the length of said strap by frictional engagement with said pocket and by inflation of said air chamber.

2. The inflatable pad of claim **1** wherein said plurality of compartments additionally includes a compartment in the center portion of said air chamber that is larger than the other compartments on the end portion of said air chamber portion.

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