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[54] **STRAP SUPPORT MEANS**

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[52] **U.S. Cl.** ..... **224/5 P**

[51] **Int. Cl.** **A45c 13/00,** A45f 5/00

[58] **Field of Search** ..... 224/5 R, 5 P, 5 V, 5 H, 224/5 S, 5 Q, 26 G, 26 K, 5 M, 5 N, 5 A, 5 B, 5 BC, 5 G, 25 R, 25 A

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[57] **ABSTRACT**

A strap support means which distributes the weight of strap carried articles to inhibit slipping of the strap off of such as a person's shoulder when the strap is disposed over the shoulder and inhibits the strap from riding up and about the neck of a person when disposed about the base of the neck.

12 Claims, 8 Drawing Figures

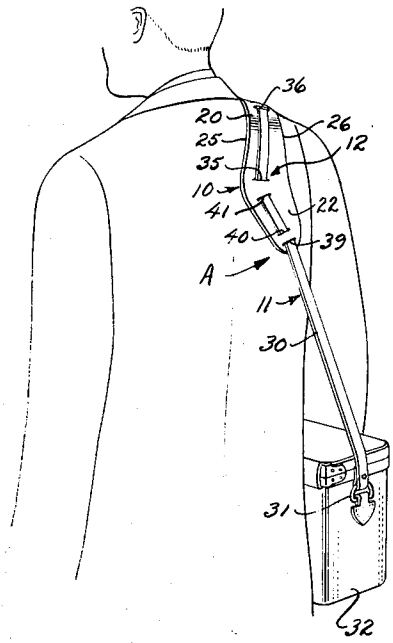

FIG. 1

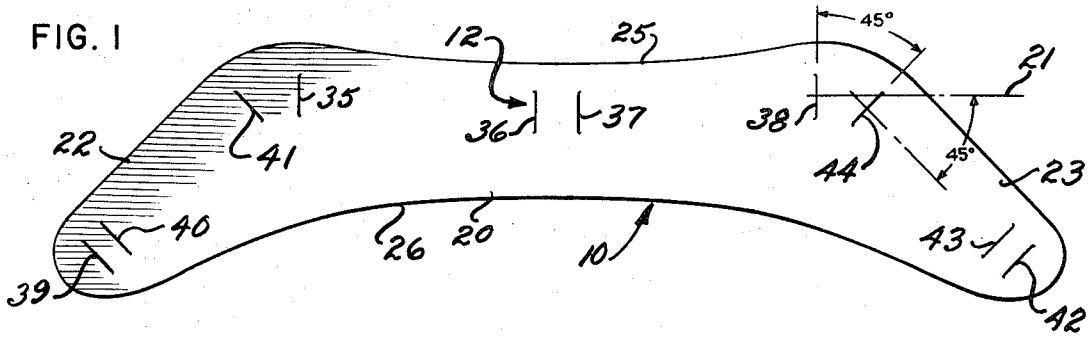

FIG. 2

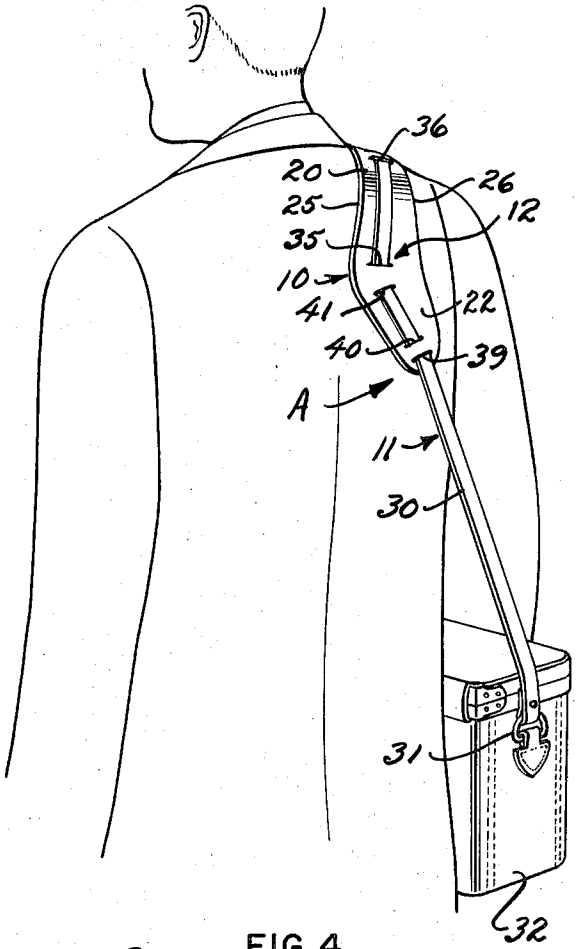

FIG. 3

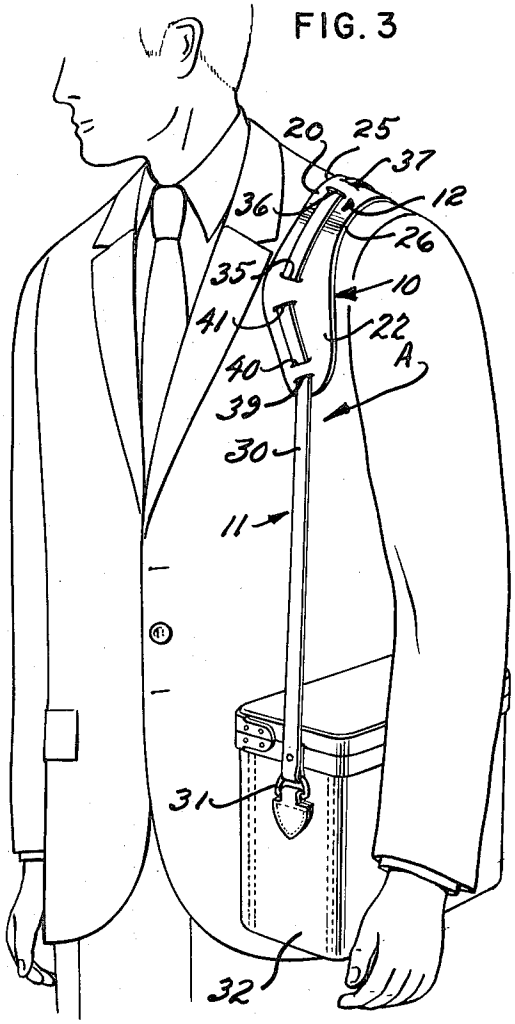

FIG. 4

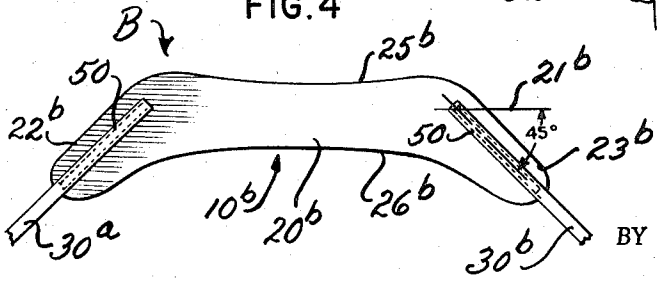

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FIG. 5

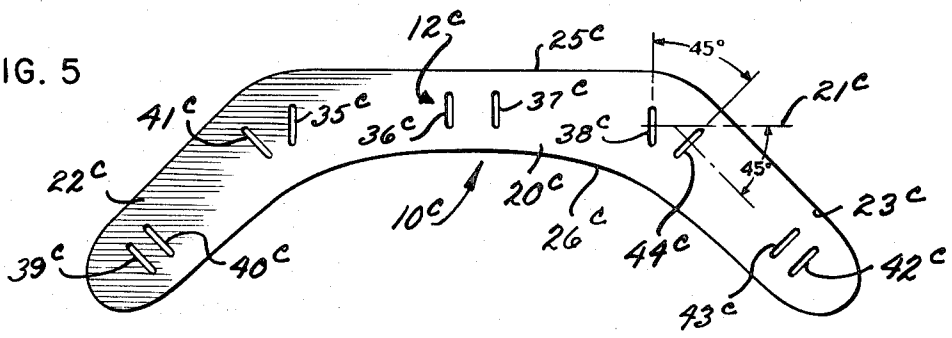


FIG. 6

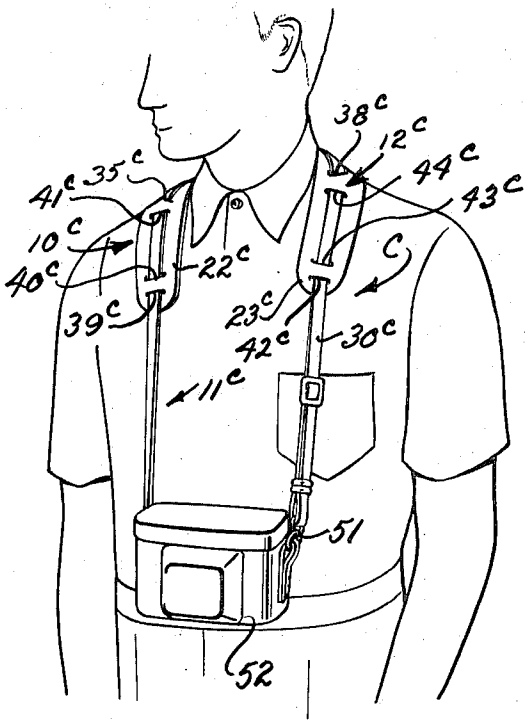
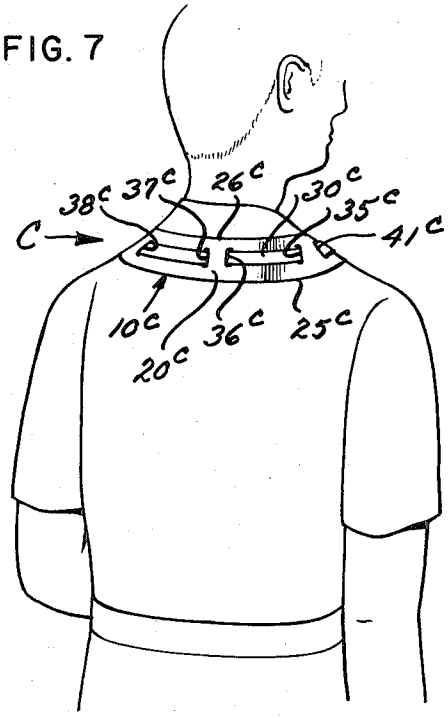


FIG. 7



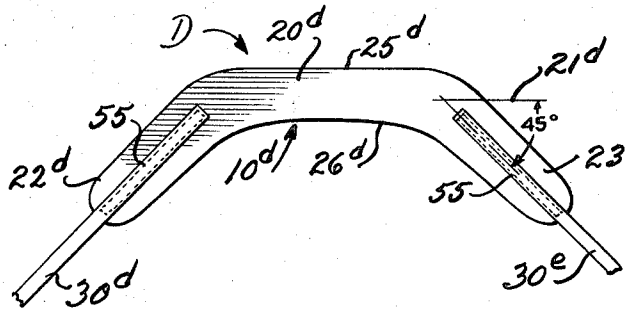


FIG. 8

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STRAP SUPPORT MEANS

In the use of carrier straps for supporting various articles over a person's shoulder, it has heretofore been a problem to prevent the carrier strap from slipping off of the shoulder. When the carrier strap is disposed about the base of the neck, a problem has arisen in preventing the carrier strap from riding up onto the wearer's neck. I have discovered that if the strap is caused to depend over the shoulder or about the upper torso at an angle within a given range, that the weight force vector of the article supported is such as to inhibit the strap from slipping off of the person's shoulder when supported thereover and will likewise inhibit the strap from riding up and about the neck when disposed about the base of the neck.

My improved carrier strap was originally developed for use by photographers and I have therefore shown the same in the drawings for such as the shoulder support of a utility case and the support of a camera about the base of the neck. It will be readily appreciated that the invention is not specifically limited to support of any particular type of article and that it will find use in a variety of different fields.

Other objects and advantages of the invention will become apparent during the course of the following detailed description, taken in connection with the accompanying drawings, and in which drawings:

FIG. 1 is a plan view of one form of improved strap support means.

FIGS. 2 and 3 show a carrier strap including the improved strap support means of FIG. 1 as it may be worn over the shoulder.

FIG. 4 is a modified form of strap support means.

FIG. 5 is a plan view of a further modified form of strap support means.

FIGS. 6 and 7 show disposition of a carrier strap including the strap support means of FIG. 5 about the base of the neck.

FIG. 8 is a further modified form of my improved strap support means.

Articles which are supported over the shoulder usually have a greater weight than those which are likely to be supported about the base of the neck. Accordingly, the strap support means for such shoulder supported articles are likely to be slightly larger than those for supporting articles about the base of the neck, in order to provide more area through which the weight may be distributed. This is thus the general basic difference between the strap support means as shown in FIGS. 1–4 and the strap support means as shown in FIGS. 5–8. In other words, the strap support means of FIGS. 1–4 could just as well be used for wearing about the base of the neck as over the shoulder, and the strap support means of FIGS. 5–8 could likewise just as well be worn over the shoulder as about the base of the neck.

In the drawings, wherein are shown preferred and modified embodiments of the invention, and wherein similar reference characters designate corresponding parts throughout the several views, the letter A may generally designate the carrier strap as shown in FIGS. 1–3; B the carrier strap as shown in FIG. 4; C the carrier strap as shown in FIGS. 5–7; and D the carrier strap as shown in FIG. 8.

Carrier strap A preferably includes strap support means **10**, strap means **11**, and attaching means **12** for

attachment of strap means **11** to strap support means **10**.

Strap support means **10** may be of any appropriate material. Since the same usually serves as a form of pad to distribute the weight of the strap supported article over a large area, it is preferably of some relatively soft and pliable material such as leather.

Strap support means **10** preferably includes an elongated central body portion **20** which may have a longitudinal axis **21**, and a pair of end portions **22** and **23** at spaced apart opposed ends of central portion **20**, preferably extending at an angle to the same side of central portion **20**.

Support means **10** is preferably worn as shown in FIGS. **2** and **3**, with edge **25** thereof disposed toward the wearer's neck and edge **26** thereof disposed toward the wearer's arm.

Strap means **11** may comprise an elongated strap **30**, each end of which may be provided with an article support **31** to which may be attached such a utility case **32**.

In the form of invention as shown in FIGS. **1–3**, attaching means **12** may comprise a plurality of slots through which strap **30** may be threaded in support of opposite ends thereof depending to the front and back of the wearer's body.

As shown, slots **35, 36, 37,** and **38** enable attachment of strap **30** to strap support means **10** with the main portion thereof which extends over the wearer's shoulder being positioned generally along axis **21** of elongated central portion **20**. Slots **39, 40,** and **41**; and slots **42, 43,** and **44** are respectively provided on end portions **22** and **23** so that the strap ends extending therethrough are angularly positioned with respect to that portion of strap **30** which is received by slots **35, 36, 37,** and **38**. As shown in the drawings, the optimum angular relationship is 45 degrees. However, it is obvious that the invention is not limited to merely a 45° angular relationship. An angular relationship of from 30° to 50° is practical and an angle of from 20° to 70° will be effective.

When a carrier strap A is worn over the shoulder, as shown in FIGS. **2** and **3**, the angular relationship of the strap ends **30** as they extend from end portions **22** and **23** of strap support means **10** are such that the weight of the article supported thereby will be substantially equally distributed through strap support means **10**, but with an angular weight force vector such that as the weight supported is increased, strap **30** will exert a force through strap support means **10** to draw edge **26** more closely and firmly toward the shoulder, bringing a larger area of strap support means **10** into ever firmer and securer engagement with the wearer's shoulder.

Carrier strap A is thus extremely effective for shoulder strap support of heavy loads that would otherwise have an ever increasing tendency to pull the strap off of the shoulder. In addition, the distribution of the load over a large area prevents the strap from digging into the wearer's shoulder.

Carrier strap A is equally effective for use over either the left or right shoulder, FIG. **2** being a rear view showing use on the right shoulder and FIG. **3** being a front view showing use on the left shoulder.

Carrier strap B is substantially similar to carrier strap A, including a strap support means 10^b having an elongated central body portion 20^b which may have a longitudinal axis 21^b and a pair of end portions 22^b and 23^b

at spaced apart opposed ends of central portion 20^b, preferably extending at an angle to the same side of central portion 20^b. Support means 10^b is similarly worn as shown in FIGS. 2 and 3, with edge 25^b thereof disposed toward the wearer's neck and edge 26^b thereof disposed toward the wearer's arm.

The strap means of carrier strap B may comprise a pair of elongated straps 30^a and 30^b which may be provided with suitable article supports (not shown).

The attaching means for attachment of straps 30^a and 30^b to strap support means 10^b may comprise stitches 50 by which the upper ends of straps 30^a and 30^b are sewn to strap support means 10^b.

As shown, the ends of straps 30^a and 30^b are respectively attached to end portions 22^b and 23^b at an angular relationship with respect to axis 21^b of elongated central portion 20^b. As shown in the drawings, the optimum angular relationship is 45 degrees. As previously described in connection with carrier strap A, the invention is not limited to merely a 45° angular relationship, an angular relationship of from 30° to 50° being practical and an angle of from 20° to 70° being effective.

The weight distribution in use of carrier strap B is the same as that previously described in connection with carrier strap A.

It is obvious that various other attaching means may be used for attachment of either a continuous strap or strap ends to a strap support means in order to provide the angular relationship of the depending ends of the strap with respect to the longitudinal axis of the strap support means as previously described.

Carrier strap C preferably includes strap support means 10^c, strap means 11^c, and attaching means 12^c for attachment of strap means 11^c to strap support means 10^c.

Strap support means 10^c preferably includes an elongated central body portion 20^c which may have a longitudinal axis 21^c and a pair of end portions 22^c and 23^c at spaced apart opposed ends of central portion 20^c, preferably extending at an angle to the same side of central portion 20^c.

Support means 10^c is preferably worn as shown in FIGS. 6 and 7, with edge 26^c thereof disposed toward the wearer's neck and edge 25^c thereof disposed toward the wearer's back.

Strap means 11^c may comprise an elongated strap 30^c, each end of which may be provided with an article support 51 to which may be attached such as a camera 52.

In the form of invention as shown in FIGS. 5–6, attaching means 12^c may comprise a plurality of slots through which strap 30^c may be threaded in support of opposite ends thereof depending to opposite sides of the wearer's neck.

As shown, slots 35^c, 36^c, 37^c, and 38^c enable attachment of strap 30^c to strap support means 10^c with the main portion thereof which extends about the base of the wearer's neck being positioned generally along axis 21^c of elongated central portion 20^c. Slots 39^c, 40^c, 41^c; and slots 42^c, 43^c, and 44^c are respectively provided on end portions 22^c and 23^c so that the strap ends extending therethrough are angularly positioned with respect to that portion of strap 30^c which is received by slots 35^c, 36^c, 37^c, and 38^c.

As shown in the drawings, the optimum angular relationship is 45°. As previously described, it is obvious that the invention is not limited to merely a 45° angular relationship, an angular relationship of from 30° to 50° being practical and an angle of from 20° to 70° being effective.

When carrier strap C is worn about the base of the neck, as shown in FIGS. 6 and 7, the angular relationship of the strap ends 30^c as they extend from end portions 22^c and 23^c of strap support means 10^c are such that the weight of the article supported thereby will be substantially equally distributed through strap support means 10^c with an angular weight force vector urging strap support means 10^c to firmly seat about the base of the neck and inhibiting the same from riding up about the neck of the wearer.

Carrier strap D is substantially similar to carrier strap C, including a strap support means 10^d having an elongated central body portion 20^d which may have a longitudinal axis 21^d and a pair of end portions 22^d and 23^d at spaced apart opposed ends of central portion 20^d, preferably extending at an angle to the same side of central portion 20^d.

Support means 10^d is similarly worn as shown in FIGS. 6 and 7, with edge 26^d thereof disposed toward the wearer's neck and edge 25^d thereof disposed toward the wearer's back.

The strap means of carrier strap D may comprise a pair of elongated straps 30^d and 30^e, each end of which may be provided with an article support (not shown).

In the form of invention as shown in FIG. 8, the attaching means for attachment of straps 30^d and 30^e to strap support means 10^d may comprise stitches 55 by which the upper ends of the straps are sewn to strap support means 10^d.

As shown in the drawings, the uppermost ends of straps 30^d and 30^e are respectively attached to end portions 22^d and 23^d so that they extend therefrom at an angular relationship with respect to the longitudinal axis 21^d of elongated central portion 20^d. The optimum angular relationship is 45°. Here again it is obvious that the invention is not limited to merely a 45° angular relationship, an angular relationship of from 30° to 50° being practical and an angle of from 20° to 70° being effective.

Carrier strap D is worn in a manner as previously specified in connection with carrier strap C and the weight distribution therethrough is the same as previously described in connection with carrier strap C.

It is obvious that I have shown only a few of the possible variations by which a carrier strap may be provided in which the strap ends depending from the wearer's body have a specified angular relationship with respect to the primary portion of the strap which engages the wearer's body.

Various changes may be made to the forms of the invention herein shown and described without departing from the spirit of the invention or the scope of the following claims.

I claim:

1. A carrier strap for disposition about a portion of a person's body such as the neck, shoulder and the like for carrying various strap supported articles, said strap support means comprising a substantially flexible material which will substantially conform to the contour of that part of a person's body with respect to which the same may be disposed on dependency of an object from said strap means, said strap support means including an elongated central portion and a pair of end por-

tions, one end portion extending outwardly from each end of said central portion, one end of each said end portion being integral with an end of said central portion and, in a planar orientation of said strap support means, said end portions extend outwardly from said central portion to the same side of said central portion and at a divergent angle with respect to each other, the longitudinal axis of both end portions being at substantially the same angle of divergency outwardly from the longitudinal axis of said central portion, the longitudinal axis of each said end portion being disposed at a fixed angle of from 20° to 70° with respect to the longitudinal axis of said central portion, said strap means extending from the outermost end of each portion of said strap support means in a depending relation with respect thereto and with the outermost depending ends thereof in a spaced apart relationship with respect to each other for attachment to spaced portions of an article to be supported thereby at a spaced location from said strap support means and being disposed with respect to said strap support means to conduct the load of objects dependent from said strap means through said end portions of said strap support means and thence through said central portion of said strap support means, whereby to inhibit movement of said strap support means in the direction of divergency of said end portions thereof along that portion of the person's body about which the same is disposed, said central sportion being disposed for engagement with a wearer's body and said pair of end portions being disposed with respect thereto to depend to opposite sides of the portion of a wearer's body engaged by said central portion and extending from said central portion in a direction away from the wearer's body.

2. Strap support means as specified in claim 1 wherein said longitudinal axis of each said end portion is disposed at a fixed angle of from 30° to 50° with respect to the longitudinal axis of said central portion.

3. Strap support means as specified in claim 1 wherein said longitudinal axis of each said end portion is disposed at a fixed angle of substantially 45° with respect to the longitudinal axis of said central portion.

4. Strap support means as specified in claim 1 wherein said strap means is integral with said strap support means.

5. Strap support means for disposition in relation to a person's body such as the neck, shoulder and the like in support of a carrying strap, said strap support means comprising a substantially flexible material which will substantially conform to the contour of that part of a person's body with respect to which the same may be disposed, said strap support means including an elongated central portion and a pair of end portions, one end portion extending outwardly from each end of said central portion, one end of each said end portion being integral with an end of said central portion and, in a planar orientation of said strap means, said end portions extend outwardly from said central portion to the same side of said central portion at a divergent angle with respect to each other, the longitudinal axis of both end portions being at substantially the same angle of divergency outwardly from the longitudinal axis of said central portion, the longitudinal axis of each said end portion being disposed at a fixed angle of from 20° to 70° with respect to the longitudinal axis of said central portion, said central portion being disposed for engagement with a person's body whereby to inhibit movement of said strap support means in the direction of divergency of said end portions thereof along that portion of the person's body about which the same is disposed, and said pair of end portions being disposed with respect thereto to depend to opposite sides of the portion of the person's body engaged by said central portion and extending from said central portion in a direction away from such person's body, and attaching means for attachment of a carrying strap to said strap support means whereby opposite ends of said strap may be attached to an object at spaced apart positions for support of an object in a spaced apart position from said strap support means, said attaching means comprising means to conduct the load of objects dependent from the attached strap through said end portions of said strap support means.

6. Strap support means as specified in claim 5 wherein said attaching means comprises means for fixedly attaching the carrying strap to said strap support means.

7. Strap support means as specified in claim 5 wherein the carrying strap is continuous from one depending end and across said support means to another depending end, said attaching means comprising means for attaching and entraining the carrying strap across said end portions and said central portion of said strap support means.

8. A carrier strap as specified in claim 5 wherein the same is provided for disposition over a person's shoulder and wherein the strap is attached to said strap support means so that the strap depends from said strap support means in a relation thereto with the weight of the article supported thereby substantially equally distributed through said strap support means with an angular weight force vector such that as the weight supported is increased the edge of said strap support means disposed toward the person's arm is drawn more closely into engagement with the person's shoulder.

9. A carrier strap as specified in claim 4 wherein the same is provided for disposition about the base of a person's neck and wherein the strap is attached to said strap support means so that the strap depends from said strap support means in relation thereto with the weight of the article extending substantially equally through said strap support means with an angular weight force vector urging the pad in a direction to inhibit the same from riding up about the neck of the wearer.

10. Strap support means as specified in claim 5 wherein the longitudinal axis of each said end portion is disposed at a fixed angle of from 30° to 50° with respect to the longitudinal axis of said central portion.

11. Strap support means as specified in claim 5 wherein said longitudinal axis of each said end portion is disposed at a fixed angle of substantially 45° with respect to the longitudinal axis of said central portion.

12. Strap support means as specified in claim 7 wherein said attaching means comprises a plurality of slots provided in said strap support means and the strap is threaded therethrough in attachment of the same to said strap support means.

* * * * *