

[72] Inventor **William E. Forrest**
 2034 Franklin St., Denver, Colo. 80202
 [21] Appl. No. **746,339**
 [22] Filed **July 22, 1968**
 [45] Patented **Feb. 16, 1971**

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Primary Examiner—Gerald M. Forlenza
 Assistant Examiner—Robert J. Spar
 Attorney—John E. Reilly

[54] **CARRIER FOR ARTICLES SUCH AS PITONS**
10 Claims, 5 Drawing Figs.

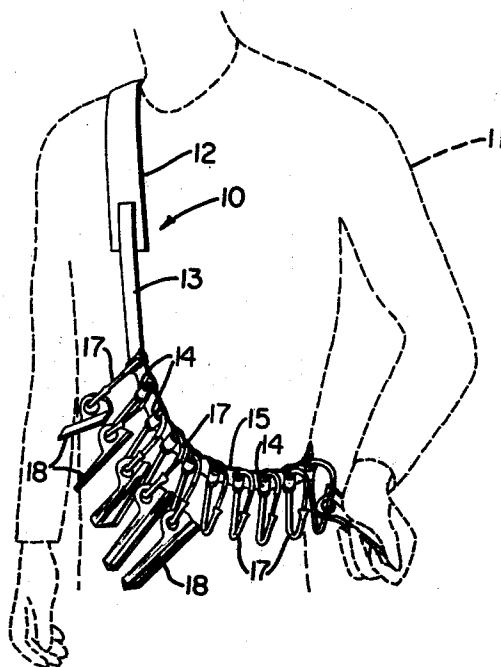
[52] U.S. Cl. 224/5,
 24/233, 24/237
 [51] Int. Cl. A45f 5/00
 [50] Field of Search..... 224/1.1, 5,
 5.2, 7 (B), 7 (A), 7 (C), 7.1, 7.11, 5.21, 5.22, 5.24,
 13, 21, 22, 23, 24; 24/3.1, 236, 237, 73.12, 73
 (CH), 232, 233, 238, 239

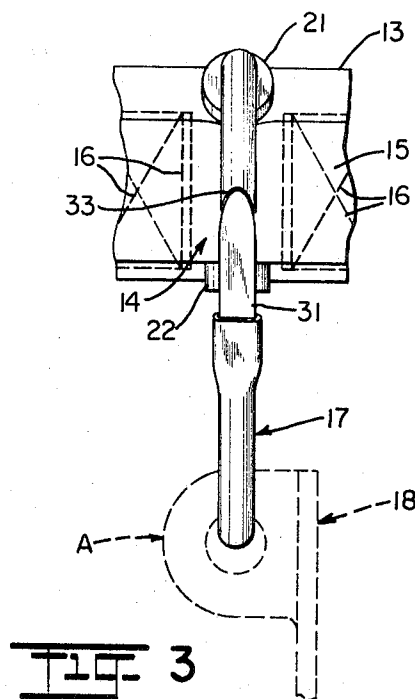
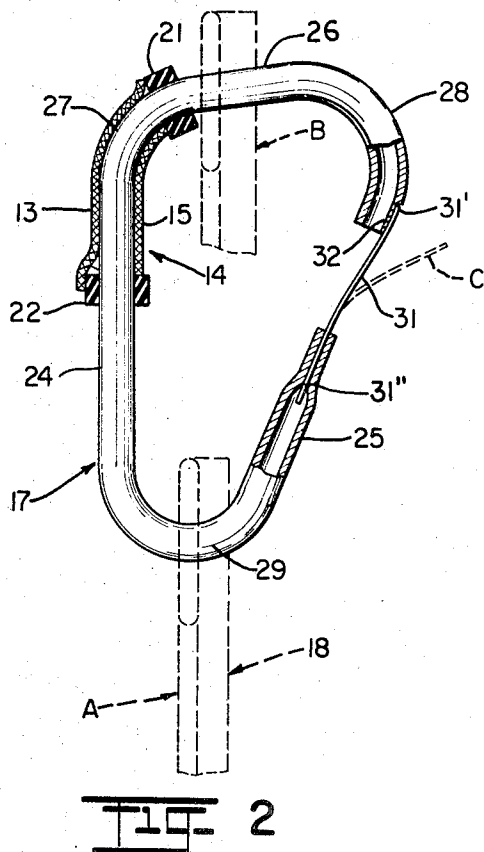
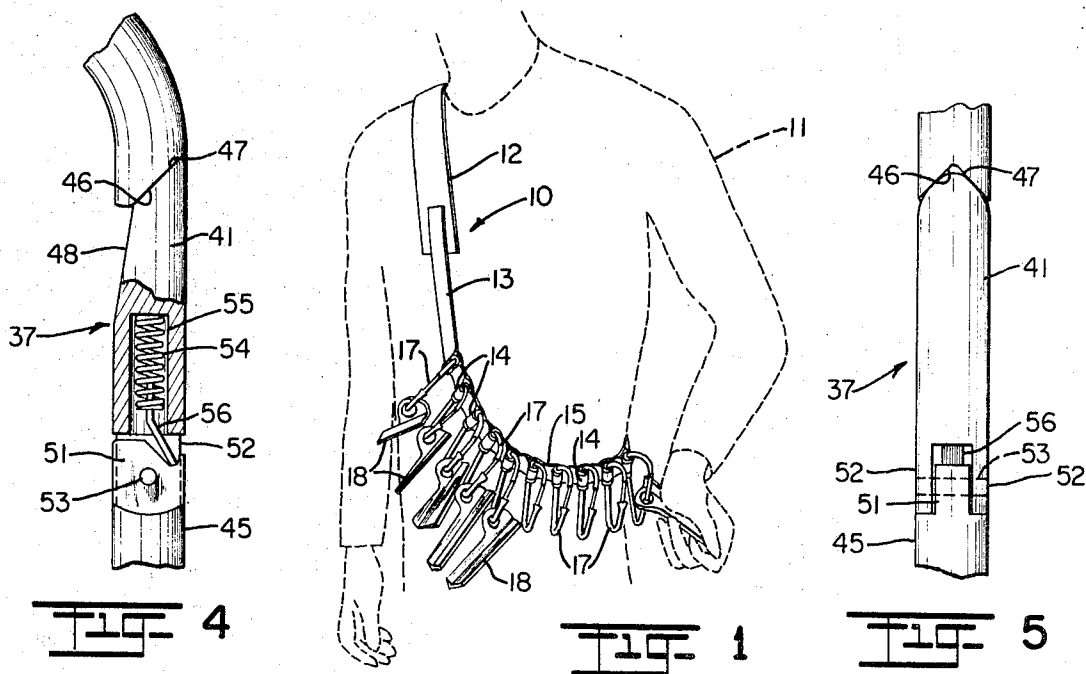
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ABSTRACT: A carrier for removably supporting a plurality of articles in a sorted arrangement and particularly pitons used for mountain climbing includes a body mount preferably of a bandolier type having spaced support stations, and a piton retainer member is removably attached at selected of the bandoleer support stations and firmly held thereto in a fixed, upright, ready to use position. Each retainer member is comprised of an elongated piece shaped in a closed loop of a particular configuration including a lower hook portion on which the pitons are carried in a depending manner, an upper inclined portion on which the pitons may be temporarily supported for selective piton removal from the lower hook portion and a pressure responsive gate portion formed in an outer side having an upper free end arranged to move outwardly to open the closed loop for selective piton removal and replacement and arranged to automatically return to the closed position.





INVENTOR.
WILLIAM E. FORREST
BY
John E. Reilly
ATTORNEY

CARRIER FOR ARTICLES SUCH AS PITONS

This invention relates generally to novel and improved article carriers, and more particularly relates to carrying for a plurality of pitons customarily employed in mountain climbing.

It is often desirable to carry on the body articles of different sizes and shapes which may be easily removed and replaced as required. One such example is the carriage of pitons which are used in mountain climbing. Essentially, pitons comprise a metal spike with an eye to which the climbing rope is attached by means of a carabiner. These pitons vary in size, and in use the climber must select a particular size for a particular crack or crevice in the rock. It is, therefore, important that the pitons be classified according to size and be carried in such a way as to permit the climber to remove and replace them with a minimum of effort and preferably with one hand. It is apparent that the right piton at the right time can be critical in mountain climbing.

In the past, pitons have usually been carried on carabiners attached to a nylon sling which is placed over the shoulder of a climber. These carabiners are generally of a closed loop or endless construction with a gate portion along one side which pivots inwardly of the loop to permit the removal and replacement of pitons. One disadvantage of the previous arrangement was that the carabiners were not held firmly on the sling and would change position as the position of the climber changed so that the climber would frequently have to hold or reposition the carabiner prior to removing a piton. Further there was no convenient arrangement to remove the piton furthest from the gate portion.

Accordingly, it is an object of this invention to provide a new and improved means for supporting or carrying pitons on the body of a climber in which they may be easily and readily removed and replaced with a minimum of effort and frustration.

Another object of this invention is to provide a carrier for pitons of different sizes and shapes wherein the pitons may be carried in a sorted or classified manner having an improved gate structure which is held firmly in the same upright position during climbing for ease of removal and replacement of pitons using only one hand.

Yet another object of this invention is to provide a piton carrier having a greater piton capacity and of lighter weight construction than previous piton carriers.

It is still another object of the invention to provide a piton carrier which enables the climber to more efficiently and quickly select a desired piton from a plurality of pitons mounted on a single retainer member of a generally endless or closed looped configuration.

In accordance with the present invention in a preferred embodiment one of the significant features is that the essentially endless retainer member is positively held on a bandolier so that its gate portion is always in the same upright position for piton removal. Another feature is the provision of a second or upper support surface, above downwardly converging sides and a lower hook portion, upon which the pitons may be temporarily positioned to allow removal of a selected piton from the lower hook portion and especially those located furthest from the gate opening. Yet a further feature is the use of a gate arrangement formed in an outer side which moves outwardly from a lower point of support when a force is applied outwardly and is biased to return to close the loop when the force is removed.

Other objects, advantages and capabilities of the present invention will be more apparent as the description proceeds taken in conjunction with the accompanying drawings, in which:

FIG. 1 is a front elevation view showing the bandolier mounted over the shoulder portion of the body of a person depicted in dash lines with a plurality of pitons of various sizes shown being supported from a plurality of retainer members carried by the bandolier at spaced stations along the bandolier;

FIG. 2 is a side elevation view of one retainer member shown in FIG. 1 drawn approximately to scale and partially in

section with the lower normal support and upper temporary support positions of a piton indicated in dash lines and the open position of the gate portion indicated in dashed lines along with an upper fragment of the bandolier and its associated support loop indicated in operative association therewith;

FIG. 3 is a front end elevation view of the retainer member shown in FIG. 2 with an eye portion of the piton shown as being located on the lower normal support portion;

FIG. 4 is a fragmentary side elevation view of another embodiment of retainer or carrier member employing a spring biased gate construction; and

FIG. 5 is a fragmentary front elevation view of the embodiment shown in FIG. 4.

Referring now to the drawings there is shown a typical bandolier type of body mounted carrier. The bandolier 10 is normally placed over the shoulder of the body of a climber designated 11 and comprises an endless loop or strap arranged to be placed over one shoulder and extend across the central portion of the body and above the belt on the opposite side and includes an upper shoulder engaging strip of material 12 and a lower depending narrower strip of material 13. These strips of material 12 and 13 are preferably arranged in an overlapping relation at their ends and are secured together as by stitching or the like. A plurality of support stations in the form of loops 14 are formed along the lower strip 13 by means of an outer strip of material 15 of essentially the same length as the lower strip 13 and of slightly narrower width and is positioned thereon and secured to the outer surface thereof leaving consecutive spaces between a plurality of stitches 16. Typical materials and dimensions included by way of example for the bandolier are to make the upper strip 12 of a cotton webbing 2 inches wide; the lower strip 13 of a nylon-cotton webbing 1 inch wide; and the strip 15 of closely woven 1,000-pound test nylon webbing one-half inch wide.

A piton retainer member generally designated by numeral 17 is shown as fitting into and extending through each of the loops 14. These piton retainer or carrier members 17 are constructed and arranged in a manner as hereinafter described to receive and support a plurality of pitons 18 of different shapes and sizes. For purpose of clarity in FIG. 1 only one piton is shown on each retainer member but it is understood that the usual practice is to have several different pitons arranged in a particular order in relation to the gate so that the climber may know where a particular piton is located. Each piton retainer member 17 is held in an upright generally fixed position on the bandolier 10 by spaced upper and lower tubular or washer members 21 and 22 which slide over and frictionally engage the retainer members and are spaced to tightly engage the edges of the outer strip of material 15 which forms the loop 14 and thereby prevents it from twisting and sliding up and down thereon. Members 21 and 22 are preferably formed of a resilient material such as rubber. While particular reference is made herein to the support of a piton it is understood that the features of a carrier of the present invention are equally applicable to other articles which are to be carried on a person and quickly and selectively removed for use.

Each retainer or carrier member 17 is formed in a closed loop or endless configuration of a special shape. A hollow piece of elongated lightweight metal tubing is shown in one arrangement for reduced weight. Referring to FIG. 2, this piece is shaped to include lengths of essentially straight inner and outer downwardly convergent side portions 24 and 25 and an upper relatively broad portion 26. The upper portion 26 is joined to the inner and outer side portions by inner and outer gradual bends 27 and 28, respectively, and the inner portion 24 is joined to the outer portion by a lower sharp or restricted bend 29. The lower bend 29 and the inner side 24 form a hook on which the pitons are normally supported in a depending manner during carriage as is designated in dash lines A. The inner side portion 24 may also be considered the shank of the hook portion which depends from the strap with the lower portion 29 projecting forwardly and upwardly away from the shank to provide the principal support for the pitons.

The attachment members 21 and 22 are located at the upper end of the inner side 24, or stated another way, at the upper end of the shank of the hook so that the weight of the piton being carried pulls the retainer member downwardly and toward the body of the climber. The upper portion 26 inclines downwardly toward the inner bend 27 and thereby provides an elevated support surface for pitons which may be temporarily placed in an upper position as is designated in dash lines B to permit selective removal of the pitons 18 from the retainer member 17.

A gate portion 31 is formed in the outer side 25 for removal and replacement of pitons on the retainer member. Gate portion 31 is supported at its lower end 31' and has a free upper end 31' which moves outwardly from end 31' to open the closed loop when an outwardly directed force is applied thereto and will automatically return to the closed position when this force is removed. In the form shown the member is constructed so it has a space or opening in the outer side 25 and the gate portion 31 normally closes this opening. The gate portion 31 shown is made of a length of resilient spring steel held and fitted into a narrowed lower end of the member 17 and may be secured thereto preferably by a suitable adhesive. The upper end 31' of the gate abuts the upper end of the member and a recess 32 is formed in the member so that the gate is flush with the outer surface of the member 17. The free end 31' will then move outwardly to a selective position designated C to open the loop.

In order to install a retainer member 17 on the bandolier, the gate portion 31 is opened, the washer 22 is placed in the position shown and the member 17 is slid into the loop 14 to the position shown by a sliding action over the upper end of member 17. Washer 21 is then slid over the upper end of member 17 and forced against the side of the loop 14. In this manner, the retainer member 17 is always held firmly in an upright position so that the gate portion 31 may be easily moved outwardly by pressing the piton thereagainst. If the climber wants to use the piton that is furthest from the gate portion 31 the other pitons are moved above to position B and the selected piton may be moved through the opening in the retainer member and out the gate portion. He can then push the other pitons to the lower normal support position A where they will remain because of gravity.

It is understood that a variety of gate constructions could be used that will move outwardly when forces are applied thereto and return to a closed position when the outwardly directed force is removed within the spirit and scope of the present invention. The other embodiment illustrated in FIGS. 4 and 5 comprises a retainer member 37 constructed of an elongated solid piece or rod of a lightweight material such as aluminum. Member 37 is of the same general closed loop shape as member 17 above described and mounts on the bandolier and operates generally in the same manner. Retainer member 37 has a space or opening in an outer side 45 defined by spaced upper and lower ends and is provided with a gate or gate portion 41 which normally closes this opening.

Gate portion 41 is constructed of the same material as the other piece forming member 37 so that the entire assembly is essentially of uniform cross section throughout its lengthwise extent. The upper end of member 37 has an outwardly inclined V-shaped surface 46 arranged to receive and abut against an outwardly inclined rounded surface 47 at the upper end of the gate. Gate 41 also has a slightly tapered inner surface portion 48 so that a piton when slid upwardly along the inner surface of the gate will abut the upper end of the member to facilitate easy removal of the pitons.

The gate 41 is pivotally supported at its lower end on the lower end on the lower end of member 37 with an arrangement including a narrowed portion 51 at the upper end of the member adapted to receive a clevis portion 52 on the lower end of the gate and a pin 53 extends through portions 51 and 52 to hold them for pivotal movement about the pin. A spring 54 is mounted in a bore 55 in the lower end of the gate. A plunger 56 is located at the lower end of the bore and arranged on an incline so that when a force is applied to pivot

the gate outwardly the plunger compresses the spring and the spring will expand when the outward force is removed to return to the closed position with the inclined upper surface of gate 47 engaging surface 46 as shown.

From the foregoing it is apparent that the climber will be able to easily select with one hand the desired piton to accommodate the particular need while climbing a mountain and that a wider range of pitons may be carried on a single retainer member, than with the prior practice using carabiners.

Although the present invention has been described with a certain degree of particularity, it is understood that the present disclosure has been made only by way of example and that changes in details of structure and system components may be made without departing from the spirit and scope thereof.

I claim:

1. A carrier for articles such as pitons comprising a body-supported strap having a plurality of spaced-support stations along its length, a retainer member constructed and arranged to be removably attached to said stations and formed of an elongated piece shaped in a closed loop configuration, said retainer member including a lower hook portion for supporting pitons in a depending manner, an upper portion inclined inwardly toward an inner side for supporting pitons moved to a temporary position above said hook portion and a gate portion in an outer side arranged to move outwardly when an outwardly directed force is applied thereto from a lower point of support for removal and replacement of a piton onto said retainer member and return to said closed position when the force is removed, said retainer member including a pair of resilient tubular members disposed in spaced relation along the inner side and arranged to slide against a looplike member forming a station of a strap to hold the retainer member firmly on the strap.

2. A carrier for supporting articles comprising:
a body-supported strap,

a support member firmly mounted to the strap to stand substantially erect and project forwardly from the strap to facilitate removal and replacement of the articles thereon, said support member including a hook portion having a shank depending from the strap and a lower end section projecting forwardly and upwardly away from the shank to provide a support surface for articles,

an upper end portion extending forwardly and upwardly from the top of the shank then downwardly toward the lower end section, and

a movable gate between the lower end section and said upper end portion to form a closed endless article-retaining configuration, said gate being arranged for movement forwardly away from the strap when a forwardly directed force is applied thereto to permit removal and replacement of articles depending from the hook portion.

3. A carrier as set forth in claim 2, wherein said upper end portion extends forwardly and upwardly along a gradual incline to from a secondary support surface for the articles.

4. A carrier as set forth in claim 2, wherein the upwardly extending portion of said lower end section and said gate extend forwardly and upwardly along a relatively sharp incline.

5. A carrier as set forth in claim 2, wherein a terminal end of the downwardly turned upper end portion is inset from an upper terminal end of said gate to form a stop for an article being moved forwardly and upwardly against said gate.

6. A carrier as set forth in claim 2, including means for pivotally supporting said gate from an upwardly extending portion of said lower end section and spring-biasing means operatively associated with said gate and lower end section for returning said gate to a closed position after it has been moved forwardly to release an article.

7. A carrier as set forth in claim 2, wherein said gate is formed of a resilient material and is an extension of said lower end section.

8. A carrier as set forth in claim 2, wherein said upper end portion is of a substantially greater length than said lower end section.

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9. A carrier as set forth in claim 2, wherein said strap is firmly mounted to an upper end portion of said shank.

10. A carrier for articles such as pitons comprising a bandolier having a plurality of spaced loops arranged along its length, a retainer member arranged to be supported in selected of said loops and means for firmly holding said retainer member in an associated of said loops to stand substantially erect and project forwardly from the bandolier to facilitate removal and replacement of pitons thereon, said retainer member including a hook portion having a shank secured to and depending from its associated loop and a curved lower end section projecting forwardly and away from the shank to provide a support surface for the pitons, an upper

end portion extending forwardly and upwardly from the top of the shank along a gradual incline and then downwardly toward the lower end section for supporting pitons moved to a temporary position above said lower end section, and a movable gate between the lower end section and the downturned end of said upper end portion along a sharp incline to form a closed endless piton-retaining configuration, said gate being supported from said lower end section for movement forwardly away from the bandolier when a forwardly directed force is applied thereto to permit removal and replacement of articles depending from the hook portion.

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