June 25, 1968 W. M. EMERY 3,389,411

COVER FOR FOAM WEDGE

Filed April 7, 1967

FIG. 1

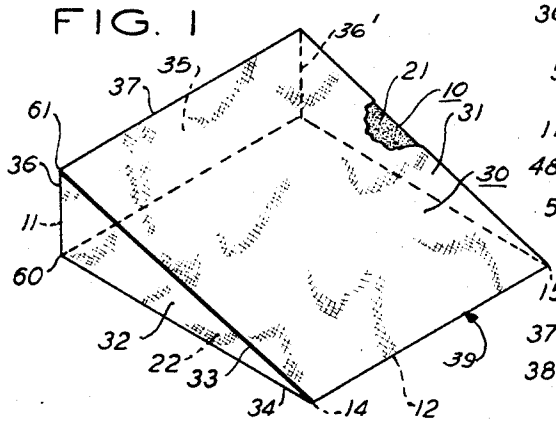


FIG. 2

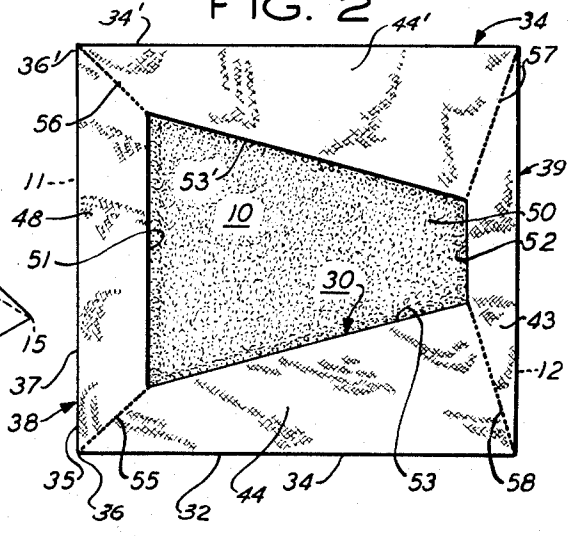


FIG. 3

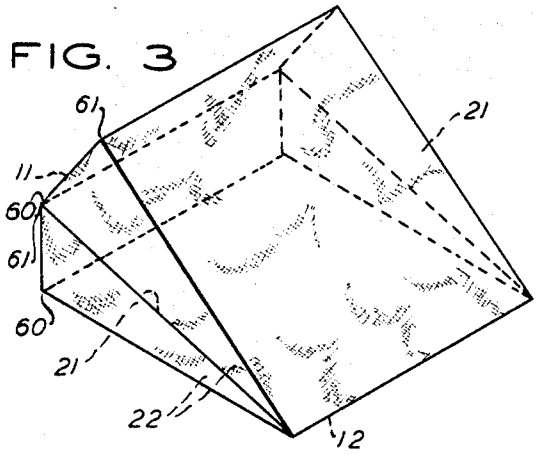


FIG. 4

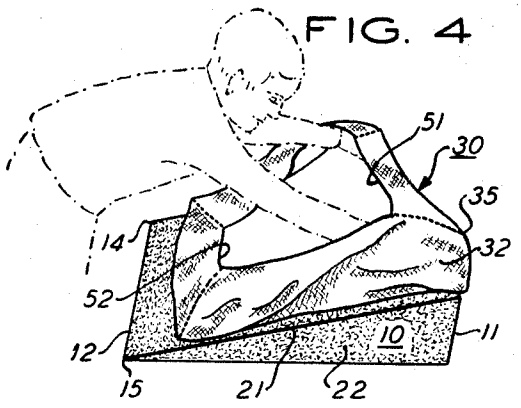


FIG. 5

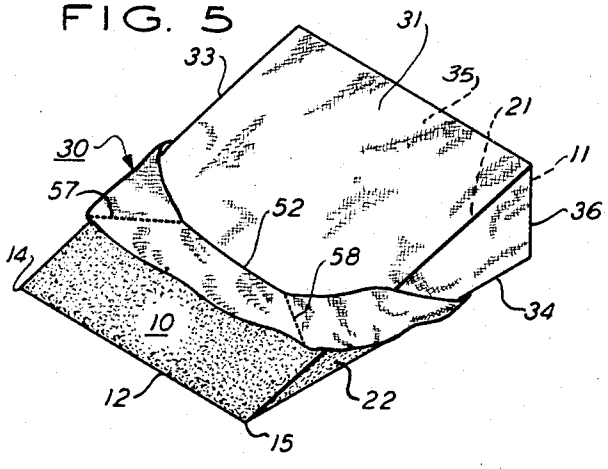
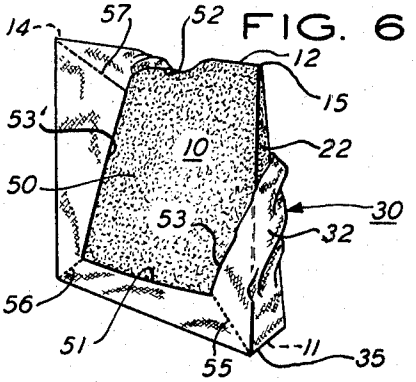


FIG. 6



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3,389,411

COVER FOR FOAM WEDGE

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7 Claims. (Cl. 5—339)

ABSTRACT OF THE DISCLOSURE

A slip-on cover for a wedge of plastic-like foam to utilize its high coefficient of friction to maintain its stability while sleeping, providing simplified design therefor utilizing the inflexibility and flexibility portions of said wedge and the selvage edges of the cover material and an undersize trapezoidal opening to both insert and expose said foam.

Reference is made to my Patent 3,021,533 of June 22, 1960 and my co-pending application 632,881.

Description of prior art

Foam wedges upholstered or otherwise all-over covered are old in the art and no claim is made for the wedge per se. Claims are directed to a combination of certain unique characteristics of the foam wedge and a distinctive slip-on cover especially adapted to take advantage of them.

Foam wedges are used primarily to elevate the head, knees or feet of a sleeper for comfort or because medically required. Foam wedges are not adjustable in height and for this reason one may be placed on top of another for added height and should frictionally adhere one to the other.

Conventionally such a foam wedge, if it has a washable easily removable cover, is completely fabric covered with a long zipper extending longitudinally across the thick end. Such covers are unnecessarily expensive because of the amount of material, their plurality of pieces and sewing them together plus the long zipper. The cost of conventional covers are often more than the wedge itself, which is particularly unfortunate since extra covers may be required for laundering. But the greatest disadvantage of the conventional covering is increasingly noticeable as the thick end and angle increases in height, because the covering fabric does not have the high frictional characteristics of the foam and so the wedge may gradually slide out of position as the user restlessly moves during the night, allowing the user to assume positions that defeat the medical purpose of the device. This problem is, of course, increased when as shown in FIGURE 3 one wedge is used on top of another for greater elevation.

Another characteristic of a foam wedge is that the thick portion while somewhat compressible is relatively firm and inflexible, especially in the thicker sizes. The ratio of thickness vs. flexibility or firmness appears to be geometric rather than a straight line relationship. The result is that while the thick portion **11** is relatively inflexible, the thin end **12** is quite flexible, usually tapering down to ¼ to ½ inch at **12**.

Summary

My invention provides ingenious utilization of the above stated characteristics and solution of the problems mentioned and to do so constitutes objects of my invention. Also included as objects, but not limited thereto, is a trapezoidal opening in the under side of the cover exposing the highly frictionally resistant foam for contact with its support, the placing of a short parallel side of the trapezoid adjacent to the more flexible portion of the wedge and the longer parallel side adjacent

to the more inflexible portion. The bottom opening being materially and sufficiently smaller than the wedge to provide for its retention yet large enough for its insertion and for the extensive utilization of the selvage edges of the cover material while providing for a one piece slip-on cover closely fitting the wedge and covering it completely except for said bottom opening. The completeness and means of accomplishment of these and other objects and distinctive features will be obvious from the specification, claims and drawings which follow in which:

FIGURE 1 is an orthographic view of a covered wedge of foam,

FIG. 2 is a bottom view of FIG. 1,

FIG. 3 is an orthographic view of one wedge on top of another,

FIG. 4 shows how the thick end of a wedge is first inserted in a cover, and

FIG. 5 shows how the cover is drawn over the wedge preliminary to FIG. 6, and

FIG. 6 shows how the thin flexible edge is thereafter inserted in the cover.

FIG. 1 shows a wedge of foam, polyurethane or the like **10**. Without limiting my invention and for illustration only, the hypotenuse may be 27 inches, the vertical height of the thick end **11** may vary from 4 to 13 inches and the width 24 inches.

Top section **31** of cover **30** fully covers the hypotenuse top **21** of wedge **10**. Edges **33** and **34** are folds in the cover, and are not sewed. Section **35** fully covers the thick end surface **11** of the wedge and **35** and **32** are joined by sewing corner **36**. Edges **37**, **38** and **39** are folds in cover **30** and are not sewed.

FIG. 2 shows corner sections **44**, **44'**, **48** and **43** which are folded and turned in from **34**, **34'**, **38** and **39** respectively. This leaves an open area **50** through which the foam wedge **10** is exposed and can contact its fabric support such as a bed sheet and through which it can be inserted although the actual dimensions of the opening may be less than the dimensions of the top or bottom of wedge **10** so that the wedge cannot escape from said slip-on cover **30** while in use.

The opening may be a trapezoid with two sides **51** and **52** parallel and two symmetrically converging sides **53** and **53'**. Two of these sides are selvage and require no sewing or hemming when 45 inch material is used when the wedge height is 7½" to 12½" and likewise a cover made from 39" material for a 4" wedge will provide two selvage edges. This is considerable saving in sewing, because corner diagonals **55**, **56**, **57** and **58** are formed by sewing the adjoining sections together such as **44** and **48** to form **55**; **48** and **44'** to form **56**, **44'** and **43** to form **57** and likewise **43** and **44** to form **58**.

Since the sewing of **55** and **56** are a continuation of corner sewing **36** and **36'** respectively and if edge **51** requires hemming, then **36**, **55**, **51**, **56** and **36'** can be sewed continuously. If, on the other hand, for other sizes edges **53** and **53'** require hemming, and **51** and **52** are selvage then the continuous sewing operation is merely shifted to **36**, **55**, **53** and **58** or **36'**, **56**, **53'** and **57**.

Also noteworthy of the ingenuity of the cover design is the fact that side **51** of opening **50** is adjacent to the thick and relatively inflexible end **11** of the foam wedge is longer than the parallel edge **52** at the opposite end of the trapezoidal opening **50** which is adjacent to the thin flexible end **12** of the wedge. This provides a greater wrap around of the cover where the flexibility of the foam might otherwise allow the cover to come off of itself and at the same time also provides a maximum opening for frictional resistance for stability. Now, if these conditions were reversed it would be difficult, if not im-

possible, to insert the thick end **11** into the cover adjacent to an edge no longer than **52** and if the thin exible end **12** of the foam wedge were inserted into an end with a relatively long side like **51**, the extreme flexibility of end **12** would probably not hold itself in place.

It should also be noted that the cover must be shaped to provide for a 90° angle at corner **60**, less than 90° at corner **61** and that no provision is made in sewing or cutting of the corner for any vertical height or thickness at the end **12** or **39**. The simplicity of the cover is emphasized by the fact that it is one piece and utilizes two selvage edges.

In slipping the cover onto the wedge as shown in FIG. 4, the foam wedge is placed with top **21** up, the cover **30** is positioned on top of **21** with end of cover **35** turned wrong side out. Then with a slight compression of the foam end **11**, the end **35** can be flipped around end **11**. Then, after turning the wedge to rest vertically on **11** and **35**, the flexible corners **14** and **15** of the wedge are fully flexed back onto themselves and inserted into the corresponding corners of the cover.

In summary, my unique cover design retains and makes use of the high frictional non-skid properties of the foam. A wider span is provided for the insertion of the inflexible thick end of the foam. A shorter span and wider over lap of the cover is provided to retain the thin flexible end. An attractive trapezoidal opening is provided for the dual purpose of easy insertion of the wedge and through which the high frictional characteristic of the foam can function to provide stability, all in one piece, all with a minimum amount of sewing, much of which is continuous, utilizing the selvage edges for a wide range of sizes and making the cover washable and relatively inexpensive in relation to the cost of the foam.

While only one embodiment is shown the interpretation of the specification and claims should be broad enough not to preclude the inclusion of similar forms such as one having more than one flexible edge, a thick portion and slopes there between or one having a flat top over the thick portion, both such forms being shown in my copending application of even date #632,881 in FIG. 7.

Accordingly, I claim:

1. A sleeping device subject to forces inherent to its functional use tending to slide it laterally, comprising foam material possessing a high co-efficient of friction effective against woven fabric such as a bed sheet, a thinner and more flexible edge portion, a thicker and less flexible portion, a sloping portion there between, a single block of said foam material including said portions, a top surface and a bottom surface, and a slip-on cover covering said top surface to avoid user contact therewith and covering only a part of said bottom surface thereby exposing an area of said bottom surface sufficient to provide said effective frictional resistance to said forces inherent in its use and tending to slide it laterally.

2. A sleeping device as set forth in claim **1**, wherein said partial covering of the bottom surface is sufficient to retain said foam material within said covering, after said thinner and more flexible edge of said block is straightened within said cover and its bottom surface substantially flat.

3. A sleeping device as set forth in claim **1** wherein the partial covering of said bottom surface provides an opening so restricted that to insert said single block of foam therein, said thicker and less flexible portion must be inserted before inserting said more flexible edge portion utilizing flexibility of said edge portion for final insertion.

4. A sleeping device as set forth in claim **1** wherein the partial covering of said bottom surface provides an opening so restricted that to remove said single block of foam therefrom, said more flexible edge portion must be flexed and removed before said less flexible portion, utilizing the flexibility of said edge portion to do so.

5. A sleeping device as set forth in claim **1** wherein said partial covering of the bottom surface provides a lesser covering adjacent to said less flexible portion than adjacent to said more flexible edge portion to assure the retention of said edge portion, thereby providing a maximum area of exposure of said bottom surface for frictional resistance.

6. A sleeping device as set forth in claim **1** wherein said bottom surface is normally horizontal and said sloping portion is at an angle thereto and in normal use the user applies unbalanced forces against said sloping surface thereby producing a resultant lateral to said bottom surface requiring restraint by said frictional resistance for stability.

7. A sleeping device as set forth in claim **1**, wherein said covering is a woven fabric and said foam material is a wedge shaped block with sufficient exposure and co-efficient of friction against the fabric covering of an adjacent wedge shaped block to provide stability at an increased angle incident to the placement of a plurality of said blocks one on top of the other with their thin edge portions adjacent.

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