

[54] **BINDER**
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3,490,449 1/1970 Ewerwahn 128/540 X
 3,570,480 3/1971 Stubbs 128/78

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 [51] Int. Cl. **A41c 1/00**
 [58] Field of Search..... 128/75, 78, 156,
 128/540, 541, 538, 578, 580, 549

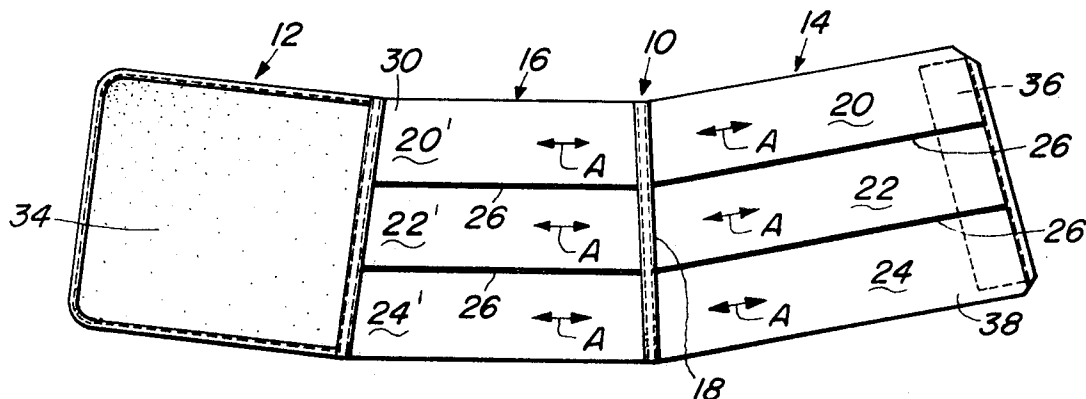
[56] **References Cited**
UNITED STATES PATENTS

3,115,879	12/1963	Kaplan.....	128/541
3,568,670	3/1971	Gaylord	128/78
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[57] **ABSTRACT**

A body support comprising a body encircling member having a first section made of elastic webbing stretchable in the body encircling direction and a second section formed of a looped fabric and forming an extension of the first section to complete encirclement of the body. A narrow strip of fastener material having hook-like members is secured to the free end of the first section, and the hooks releasably lock on the loops of the looped fabric to close the member about the body.

3 Claims, 4 Drawing Figures



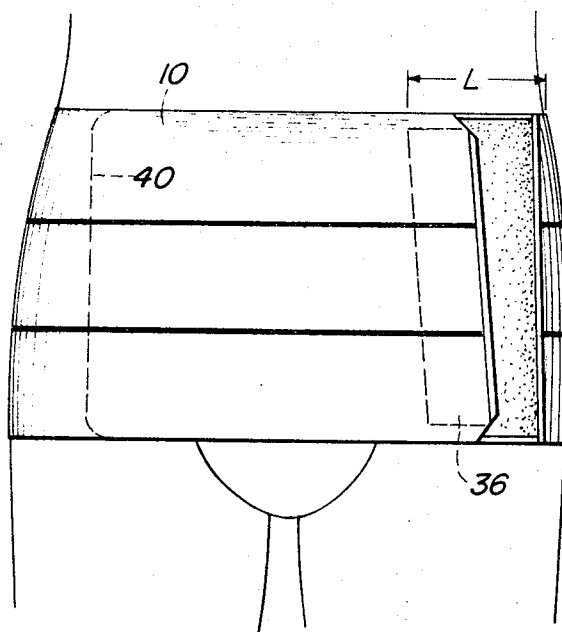


FIG. 1

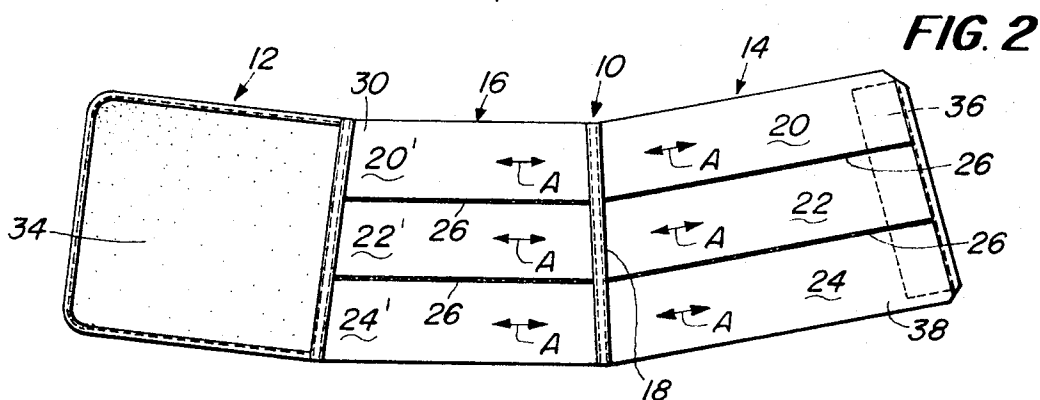


FIG. 2

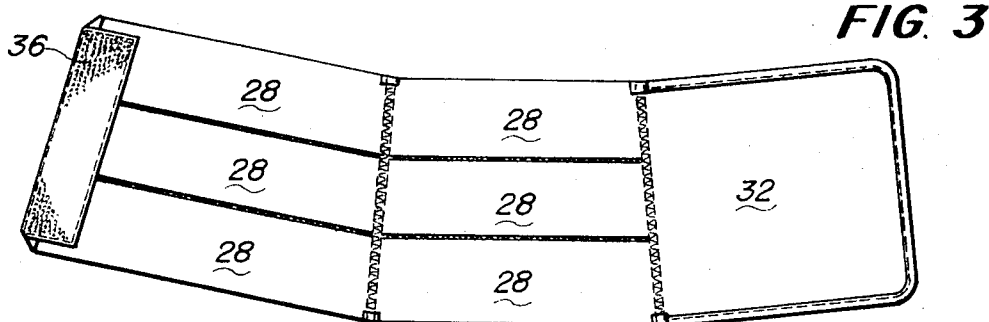


FIG. 3

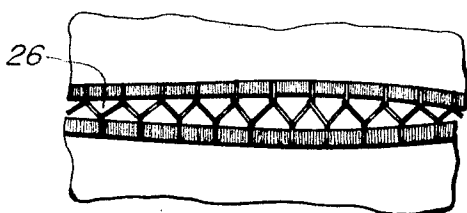


FIG. 4

BINDER

BACKGROUND OF THE INVENTION

This invention relates to body supports and binders and more particularly comprises an improvement over the garment shown in my earlier U.S. Pat. No. 3,115,879 dated Dec. 31, 1963.

Body supports and binders of the class shown in my earlier patent have enjoyed very substantial commercial success since their introduction into the market. Particularly, they have made very significant inroads into the use of such prior art devices as Scultetus binders, cotton cloth binders, ace bandages, and adhesive elastic bandages. The binders and supports have been commercially successful because they remain in place on the body even when the wearer is very active physically, they permit ready inspection of the portion of the body covered, and because they are more comfortable than the other types of supports and binders available. The binders and supports are used as post-partum and post-surgical binders, as well as for general bracing and support of various parts of the body.

The present invention comprises an improvement over the body support garment shown in my prior patent in that it enables a binder to be used over a wide range of sizes, thus substantially reducing inventory requirements of manufacturers and retailers. Moreover, the cost of manufacture of the improved binder shown in this application is significantly less than the cost of manufacture of the prior art binders.

The binder of this invention (the word "binder" is hereafter used generically for supports and binders) like the binder in my prior patent comprises a body encircling member which is stretchable in a body encircling direction but is generally non-stretchable across its width, i.e., in a direction parallel to the axis of the encircling garment. Peculiar to this invention, however, is the fact that the body encircling member is composed of at least two sections, one of which is stretchable in the body encircling direction while the other section which forms an extension of the first is made of a less expensive non-stretchable looped fabric. A very narrow fastener material bearing hook members is secured to the free edge of the first section, and its hooks are designed to cooperate with the looped fabric so as to releasably close the garment about the body. In its preferred form, the first section made of a stretchable fabric is composed of a plurality of parallel panels secured in side by side relationship with the junction between the panels forming a hinge-like connection which enables the panels to bend readily into different planes with respect to one another.

My invention will be better understood and appreciated from the following detailed description of one embodiment thereof, selected for purposes of illustration and shown in the accompanying drawing, in which:

BRIEF DESCRIPTION OF DRAWINGS

FIG. 1 is an elevation view suggesting the manner in which the body binder of this invention may be secured about the torso;

FIG. 2 is a plan view of the binder shown in FIG. 1 looking at the outer surface;

FIG. 3 is a plan view of the binder shown in FIGS. 1 and 2 looking at the inner surface; and

FIG. 4 is an enlarged fragmentary view showing the preferred manner of securing two panels of the binder together.

The embodiment of my invention shown in the drawing is designed to be worn about the abdomen and hips and is composed basically of two sections, namely, a stretchable section 10 and a non-stretchable section 12. Because the body support shown is particularly intended for use by females, the stretchable section 10 is itself composed of two subsections 14 and 16, but as is explained in greater detail following, the garment when designed particularly for use by males need not include the two subsections 14 and 16, but rather the section 10 may be of unitary design.

In the embodiment shown, sections 14 and 16 are stitched together as suggested at 18 to form generally rectangular stretchable section 10. Each subsection 14 and 16 is made up of three panels 20, 22 and 24 (the panels of subsection 16 are primed), each stretchable in their lengthwise direction, that is, in the encircling direction when the support is on the body. This stretchable character is suggested by the arrows A. Panels 20, 22 and 24 are not stretchable across their width.

Panels 20 and 22 as well as panels 22 and 24 have their adjacent edges secured together by fagoting stitching 26 which does not impair the elasticity of the panels. The fagoting stitching made of a cotton yarn or some similar material is not stretchable in itself and therefore the panels may not be separated transversely from one another more than that which is permitted by the length of the individual stitches which make up the fagoting. The stitching does, however, allow some limited relative movement of the adjacent panels and does permit complete stretching of the individual panels in their lengthwise direction and also permits some stretching of the individual panels with respect to the adjacent panels. The stitching 26 furthermore acts as a hinge to allow one panel to pivot along the stitching with respect to the next panel. This hinge-like action assists in retaining the garment in place on the body when it is worn, because movement of one panel is not necessarily transferred to movement of the other panels and therefore some play is afforded the garment when worn. As explained in my earlier patent, the fagoting stitching, which is the preferred manner of connecting the panels together also permits some overlapping relationship between the panels without causing the edges of the panels to curl. While fagoting is the preferred manner of securing the panels together, it will be understood that the several panels may be woven as a single piece with Leno weave defining the junction of the panels, rather than fagoting 26.

As stated above, for the female garment, the two subsections 14 and 16 are stitched together so as to form effectively three parallel panels each composed of two sections, namely 20 and 20', 22 and 22', and 24 and 24'. The two subsections are slightly tilted with respect to one another, and the panels are progressively longer in the downward direction. Thus, the lower edge of section 10 is somewhat greater than the upper edge of the section so as to accommodate the more rounded female torso. The garment when made for a man need not include the two subsections 14 and 16, but rather panels 20 and 20', 22 and 22', and 24 and 24' may each be made as a continuously woven piece. By making the panels successively longer from top to bottom, the non-

mal taper of the male form may be readily accommodated.

For maximum comfort, the elastic webbing which makes up section 10 is provided with a backing or lining 28 which does not in any way impede the stretch of the section but which is more comfortable against the skin. The lining in addition may help to retain the garment in place; that is, the lining along with the hinge connections between the panels which permits movement between the panels causes the garment to remain in place when worn.

In accordance with the present invention, the end 30 of the section 10 is stitched to the second section 12. Unlike section 10 section 12 is made of a looped fabric that preferably is approximately 6 inches or more in length. The looped fabric typically may be woven cotton of the velvet type, and the loops extend outwardly from the outer face of the fabric shown in FIG. 2. The fabric of section 12 is inexpensive, and non-stretchable, and like the stretchable section is readily washable. Preferably, it too has a soft liner 32 which lies against the skin when the garment is applied to the body. Face 34 shown in FIG. 2 carries the loops which are designed to cooperate with the fastener material 36 stitched to the rear surface of section 10 along its edge 38 as suggested in FIGS. 1-3.

The strip of fastener material 36 which may typically be that sold under the trademark Velcro is covered with a closely spaced layer of hook-like fasteners which typically are like those shown in DeMestral U.S. Pat. No. 2,933,797. The hooks may be made of nylon or some other material which causes them to hold their shape, that is, remain in an upstanding position on the fabric which comprises the strip 36 and facing away from the plane of the fabric. Thus, the hooks extend inwardly from the inner surface of section 10 so that when the garment is applied to the body as shown in FIG. 1, the hooks extend toward and are positioned to engage the loops carried by the front face of the fabric of section 12. When the hooks are pressed in face to face relationship to the surface of loops, the hooks and loops interengage one another, and subsequent separation requires a force of considerable magnitude. Typically, strip 36 may be approximately 2 inches wide, and its length substantially coincides with the width of section 10.

As is evident in FIG. 1, when the garment is applied to the body, elasticized section 10 encircles a substantial portion of the entire body, and that portion which is not encircled by elasticized section 10 is encompassed by section 12. When the support fits as shown in FIG. 1, only that portion of the encircling garment represented by length L in FIG. 1 is not stretchable in a body encircling direction. Strip 36 is secured by its hooks to section 12, and that part of section 12 to the left of strip 36 as viewed in FIG. 1 lying beneath section 10 does not interfere with the stretchability of section 10, for end 40 is not secured to section 10 but rather is merely overlapped by it. It will be appreciated that when the garment is applied to a substantially larger person, the length of section L may be increased, ultimately substantially to the length of section 12. Nevertheless, the substantial length of section 10 will provide enough body encircling stretchability so as to perform the binding and/or support functions and derive the advantages attributed to applicant's earlier form of binder.

It will be appreciated that just a very few garments of different size will cover the entire range of sizes normally fitted to such binders. If the strip 34 is approximately 13 inches in length, and the garment is designed for use as an abdominal binder as shown, a range of approximately 15 inches in waist size may be accommodated, because of course added to the length of panel 34 is the stretchability of section 10 itself. The stretchability of section 10 also provides some flexibility for fitting the torso, and because any part of section 12 may engage the fastening strip 36, a very large range of sizes may be accommodated by a single garment. Thus, the manufacturing and retailing costs are reduced by requiring a lesser inventory than would otherwise be required, as a large inventory of each size need not be stocked. Further, because of the nature of the fabric 34, it is inherently less expensive than the elasticized webbing which makes up the panels that comprise section 10. Accordingly, because part of the length of the body encircling garment is made up of the less expensive fabric, the total cost of the garment is reduced.

Having described this invention in detail, those skilled in the art will appreciate that numerous modifications may be made of this invention without departing from its spirit. For example, while in the foregoing description an abdominal binder is shown, it will be appreciated that a binder made in accordance with this invention may be designed for use on other parts of the body. The particular binder as illustrated is merely exemplary of the binders which may be made in accordance with the invention. Therefore I do not intend to limit the breadth of this invention to the single embodiment illustrated and described. Rather, it is intended that the scope of this invention may be determined by the appended claims and their equivalents.

What is claimed is:

1. A body support comprising
 - a body encircling member having a first section which extends part way around the body, made of elastic webbing and stretchable in the body encircling direction,
 - said first section comprising a plurality of parallel strips extending in the body encircling direction with the junction of the strips forming hinge-like connections between the strips,
 - a second section forming part of the member for extending around the rest of the body and attached to one end of the first section, said second section made of a non-stretchable, looped fabric and extending at least six inches beyond said end of the first section,
 - said first and second sections being of substantially the said width,
 - means on the inner surface of the first and second sections providing a soft lining for the support,
 - and a narrow strip of fastener material secured to the first section of the member at the other end thereof and extending along substantially the full width of that end, said strip carrying a plurality of closely spaced hook members to releasably lock with the looped fabric to close the member about the body.
2. A body support as described in claim 1 further characterized by
 - said member having an outer and inner surface,
 - and said narrow strip being secured to the inner surface of said first section so that the first section of elastic webbing overlies the second section of loop fabric and the hooks engage the looped fabric when the support is applied to the body.
3. A body support as described in claim 2 further characterized by
 - said first section comprising two substantially identical subsections.

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