# United States Patent [19]

**Blair**

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[54] **FLOTATION LIFE JACKET**


[76] Inventor: **Ronald L. Blair,** 2650 W. Belden Ave., Chicago, Ill. 60647



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[52] **U.S. Cl.** ..... **9/341;** 9/342

[51] **Int. Cl.** ..... **B63c 9/10**

[58] **Field of Search** ..... 9/341, 342, 340, 336, 337, 9/338, 347



[56] **References Cited**

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*Primary Examiner*—Trygve M. Blix
*Assistant Examiner*—Charles E. Frankfort
*Attorney, Agent, or Firm*—Max R. Kraus



[57] **ABSTRACT**

A flotation life jacket formed to comprise a plurality of vertically extending pockets formed in the jacket with each of the pockets having a filler material, the filler material comprising cylindrical members formed of foam, the cylindrical outer surface of which is skin coated, the skin coating sealing the cylindrical surface and rendering it impervious to water and reducing the likelihood of the filler becoming waterlogged, thereby enhancing the flotation capabilities of the jacket. The shape of the filler material in the pockets also makes the jacket more readily conform to the shape of the wearer and eliminates any sharp corners and increases comfort and manouverability.


**6 Claims, 6 Drawing Figures**

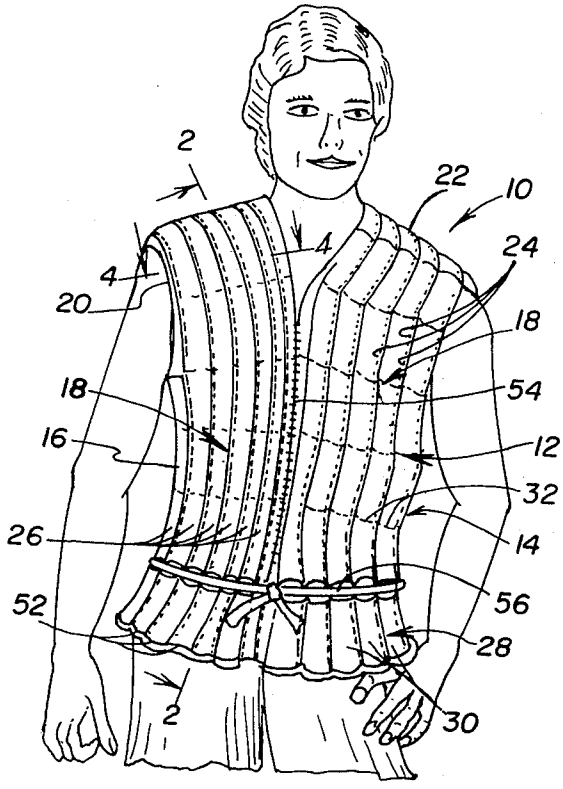


FIG. 1

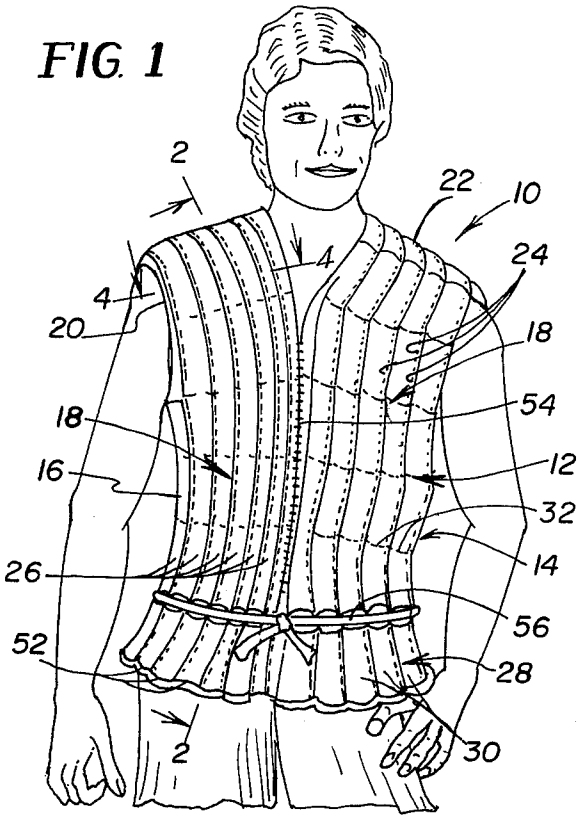



FIG. 2

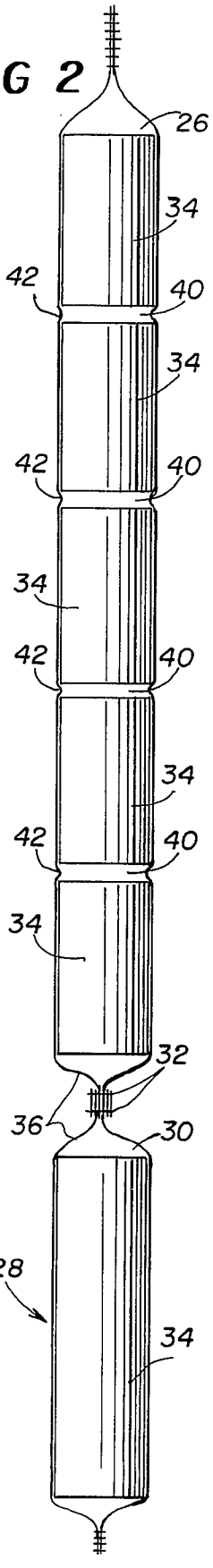



FIG. 3

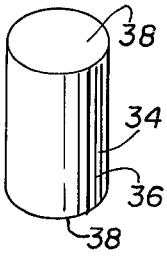



FIG. 5

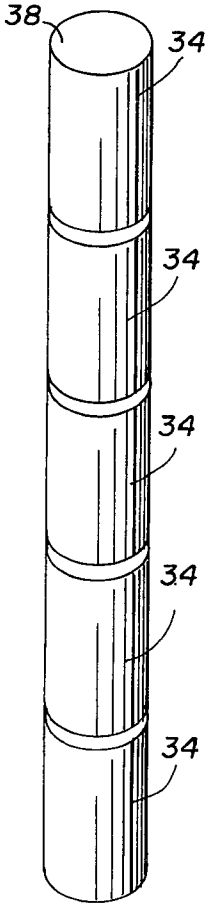



FIG. 4

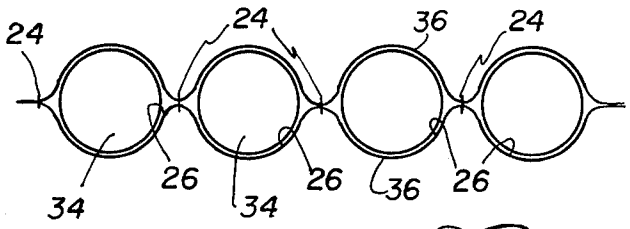
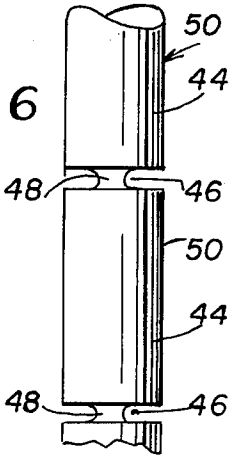



FIG. 6



# FLOTATION LIFE JACKET

## BRIEF SUMMARY OF THE INVENTION

One of the objects of this invention is to provide a flotation jacket, known as a life jacket, in which the jacket is formed with vertically extending pockets, which pockets are filled with fillers formed of solid cylindrical-shaped members formed of a foam material, the cylindrical surface of same being skin coated to prevent penetration of water through said skin coated surface and to reduce the possibility of waterlogging of said cylindrical members so as to provide greater flotation characteristic and greater safety factor.

Another object of this invention is to provide a filler formed of a cylindrical surface which is sealed and impervious to water so that water cannot penetrate through said cylindrical surface thereby presenting a substantial surface area which is impenetrable by water and thereby increasing the flotability of said jacket.

Another object of this invention is to provide a flotation jacket in which the filler material is formed in a cylindrical shape so that when the jacket is worn it more readily conforms to the shape of the body of the wearer and eliminates corners or sharp edges of the filler material from bearing against the body of the wearer.

There are prior flotation jackets formed with pockets in which the filler in said pockets is of a foam material generally similar to what is disclosed herein, however, said former fillers were made in the shape of ingots and/or rectangular shape in cross-section and to produce said ingot or rectangular-shaped fillers they were cut from a board or slab and as a result of said cutting a substantial portion of the ingot or rectangular-shaped filler lost its skin coating and by virtue thereof the surface of the filler was penetrable by water which reduced the flotation quality of said filler material and of the jacket. Further, the ingot or rectangular-shaped fillers had edges or sharp corners and when the jacket was worn the corner edges would interfere with the comfort and wear-ability of the jacket as it did not readily conform to the shape of the body of the wearer and it also increased the possibility of the filler material jabbing against the body of the wearer as a result of such corner edges. The foregoing objections are eliminated by the present invention in that the filler material is of cylindrical shape with the cylindrical surface being skin coated along its entire surface which improves the life and serviceability of the jacket and also said cylindrical fillers more readily conform to the body of the wearer since there are no sharp corner edges in said filler to bear against the body of the wearer.

## BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings:

FIG. **1** is a view of the flotation life jacket as worn.

FIG. **2** is an enlarged view taken on line 2—2 of FIG. **1.**

FIG. **3** is a perspective view of one of the cylindrical fillers.

FIG. **4** is a view taken on line **4—4** of FIG. **1.**

FIG. **5** is an exploded view of a plurality of the cylindrical fillers; and

FIG. **6** is a view of a modified cylindrical filler.

The flotation jacket is of conventional shape and is generally designated at **10.** The body **12** of the jacket is formed of a nylon material and is shaped to provide



a back portion **14** with continuing side portions **16** and front portions **18** and is provided with a pair of spaced side openings **20** through which the arms of the wearer are inserted. The body has shoulder portions **22** connecting the back portion with the front portion, all of which is conventional and well-known. The body is provided with spaced vertical lines of stitching as at **24** which form spaced vertically extending extending pockets **26** around said body and each of said pockets is adapted to receive a filler, to be hereinafter described.

It will be noted that the lower or skirt portion **28** of the jacket body is also provided with vertical lines of stitching which are continuations of the vertical stitchings **24** and likewise provide spaced pockets **30** in the skirt portion of the jacket, similar to the pockets **26.** The pockets **30** in the skirt portion **28** are vertically alined with the pockets **26** and said pockets, except for those at the back of the skirt portion are also to be filled with the filler to be described. Spaced transverse or horizontal lines of stitching **32** extend around said body to separate the body pockets **26** from the skirt pockets **30.** By leaving the back portion of the skirt without fillers, the skirt portion of the jacket which would normally lie adjacent the hips of the wearer would be completely flexible.

The filler material, which is the most important factor of this invention, is a solid cylinder, indicated at **34,** formed of a foam material which is skin coated along its outer cylindrical surface. The material which is best adapted for this jacket is a product produced by Dow Chemical Company under the trademark "Ethafoam No. 220", and under Dow owned U.S. Pat. No. 3,067,147 issued on Dec. 4, 1962. This material is produced by Dow Chemical Company in the form of a solid cylindrical extrusion and when manufactured is extruded through heated tubes which seals the outer circumference of the solid cylinder to provide the skin coating **36.** This product in said shape, insofar as is known to applicant, has not been used by either Dow Chemical Company or anyone else for a flotation jacket. To applicant's knowledge said product has been used in connection with the manufacture of concrete or a similar product totally unrelated to the present invention. The cylindrical fillers are produced by Dow in nine feet lengths.

The present invention utilizes said cylindrical foam members in either of two forms. The filler shown in FIGS. **2, 3, 4** and **5** may be cut from such nine feet lengths to the desired length, preferably each of a length of between 2½ to 3 inches, and a plurality of such cut fillers are used to occupy the spaces in the pockets **26** and **30.** The only portion of the filler where the skin coating is broken would be at the opposite ends **38** of each cut length, thus, only a small surface area of the cylindrical member has a broken skin coating leaving the major area or surface of said cylinder skin coated. Depending upon the length of the pocket, each pocket is intended to accommodate one or more lengths of filler material. For example, the pockets **26** in the front and back portions of the jacket body would each be filled with a plurality of separate and disconnected cylindrical members **34,** whereas the side pockets **26** and the skirt pockets **30** would each be filled with one of said fillers. The skin coated surface of the cylindrical member also makes it easy to insert the cy-

lindrical members into the pockets in the manufacturing process.

Where the pocket is filled with a plurality of separate and disconnected cylindrical filler members **34**, as best seen in FIG. **2**, each 2½ to 3 inches in length, free areas or spaces **40** would be provided between the ends of adjacent filler members so that the fillers **34** would be free to move vertically in their respective pockets, to the extent of the free areas or spaces, and the nylon material at said spaces indicated at **42** would remain extremely flexible at said junctures along the length or height of the pockets. The cylindrical shape of the fillers **34** eliminates all sharp edges or corners against the body of the wearer and permits the fillers to rotate or turn within their pockets with the body movement of the wearer thus increasing the comfort and permitting the wearer to have greater manouverability while wearing the jacket. The unbroken skin coat **36** increases the serviceability and life of the jacket as it increases the area of the filler which is impenetrable by water and is therefore less likely to become waterlogged.

In lieu of the individual disconnected cylindrical filler members **34** just described, the cylindrical filler member **44** can be of a continuous length sufficient to accommodate the length of each pocket in which it is to be inserted. Said cylindrical member **44** may be formed with one or more annular grooved portions **46** cut therein, as indicated in the modification in FIG. **6**, in which two or more of such elongated cylindrical members **44** are connected together as an integral unit, but by virtue of the annular grooves **46** presents a flexible connection **48** between the cylindrical members **44**. In this connection the major portion of the cylindrical surface **50** remains skin coated and only that small portion of the ends encompassed by the grooved portion **46** which is cut to form the groove has the broken skin coated portion. In whatever form the cylindrical members are used, whether in individual members as shown in FIG. **2** or in the modification shown in FIG. **6**, the major portion of the circumference of the cylindrical member is skin coated which means that the cells of the foam material are closed and only in that portion of the cylindrical member where the skin is broken by the cutting are the cells open.

In forming the jacket, the vertical lines of stitching **24** are first made to form the vertical pockets in the body and in the skirt portion. The fillers are then inserted through the open bottom ends of the bottom pockets of the jacket to first fill the pockets **26** in the jacket body, after which the transverse stitching **32** is applied to close the bottom of said pockets **26**. The pockets **30** in the skirt portion are then filled with the filler and the bottom of the skirt pockets **30** are closed by transverse stitching lines **52**. Thus the pockets in the jacket body are separated from the pockets in the skirt portion of the jacket with each of said pockets being filled with cylindrical filler members, except certain of the pockets in the back portion of the skirt. The front portion of the jacket is provided with the conventional zipper fastener members **54** and with the usual cords **56**.

By virtue of the cylindrical-shaped fillers and the exterior surface of the fillers having continuous smooth edges, the jacket when worn more readily conforms to the shape of the body of the wearer and provides a smooth surface throughout without sharp edges, and the cylindrical members can if necessary move or roll within their respective pockets in relation to the body movement of the wearer, in contrast to fillers which are other than cylindrical and which have sharp edges. The cylindrical fillers present large surface skin coated areas which increases the flotation of the jacket and only small portions at the ends of said fillers have the skin coating broken, thus, the jacket formed by this invention has the advantage of being more wearable and comfortable by conforming to the curvatures of the body of the wearer and in addition provides a jacket which will have greater flotation capabilities and longer periods of use than jackets heretofore produced.

What is claimed is:

**1.** A flotation jacket to be worn by a person around the upper part of the body and having spaced side openings through which the arms of the person extend, said jacket having a plurality of vertically extending cylindrical-shaped pockets formed in said jacket and extending around the front, back and sides of said jacket, a filler material vertically retained in said pockets, said filler material being of a cylindrical shape and of a foam material with the cylindrical outer surface skin coated, said skin coated outer cylindrical surface rendering the filler material impervious to water and reducing the likelihood of said filler becoming waterlogged, thereby increasing the flotation capabilities of the jacket, said cylindrical filler being free to rotate or turn within each of said pockets to conform to the body of the person and his movements.

**2.** A flotation jacket as set forth in claim **1** in which the cylindrical filler is approximately between two and one-half to three inches in length and in which certain of said pockets have a plurality of such fillers.

**3.** A flotation jacket as set forth in claim **1** in which a plurality of said cylindrical fillers are confined in a single pocket and each such filler is separate from the other.

**4.** A flotation jacket as set forth in claim **3** in which spaces are provided between adjacent cylindrical fillers in a single pocket.

**5.** A flotation jacket as set forth in claim **1** in which the foam material is a product produced by Dow Chemical Company and identified under the trademark "Ethafoam No. 220."

**6.** A flotation jacket as set forth in claim **1** in which the cylindrical filler comprises an integrally formed member having an annular groove to provide for a flexible connection at said annular groove.

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