Oct. 12, 1943. F. L. BROWN 2,331,302

LIFE PRESERVER

Filed Oct. 30, 1939

Fig. 1

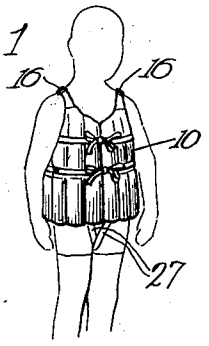


Fig. 2

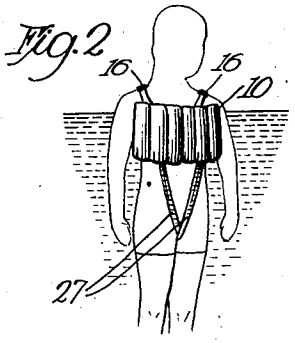


Fig. 6

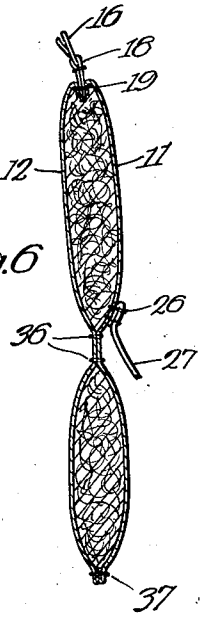


Fig. 3

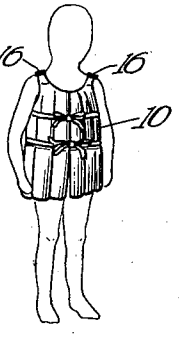


Fig. 4

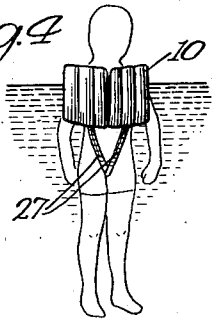
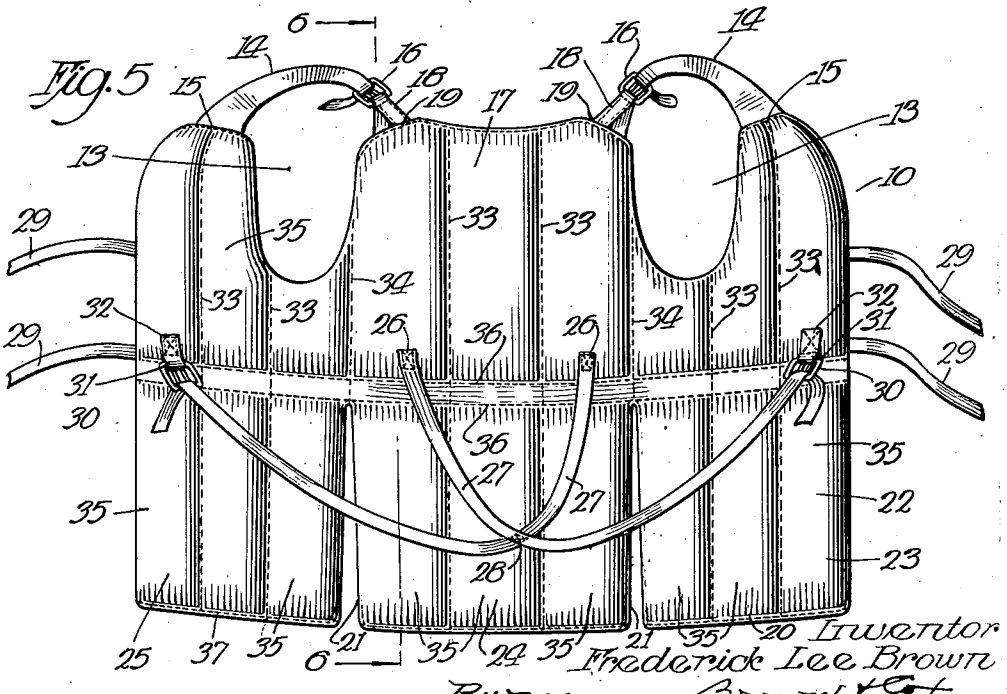


Fig. 5



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2,331,302

LIFE PRESERVER

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Application October 30, 1939, Serial No. 302,050

6 Claims. (Cl. 9—20)

The present invention relates to life preservers and more particularly to jacket-like preservers or play vests worn by children.

As a general rule, the usefulness of a preserver purchased for a child is not exhausted with one or more seasons' wear. In the meantime, the child grows, and, more often than not, outgrows the preserver long before its period of usefulness is over.

On the other hand, a life preserver purchased with a thought to the future size of a child is disliked by the child, and, in instances where stubbornness of a child is acceded to by indulgent parents, the child will be permitted to play in or around the water or have a ride on a boat without wearing a preserver. It is an increasingly important factor with the rearing of children to provide means whereby safe conditions are pleasantly accepted and even sought by the children themselves, and unsafe conditions are made less attractive.

A child's dislike for an oversized life preserver is not entirely unfounded. With reference to my copending application, filed of even date herewith, Ser. No. 302,049, it will be noted that the location of the center of buoyancy is a very important factor of safety. The center of buoyancy of a conventional preserver, particularly one that is oversize, is comparatively speaking, well down upon the child's body, often as low or, in oversized preservers, lower than the waist.

Knowing that children move and kick their feet in the water aimlessly a great deal, and, knowing that movement of legs and feet in water tends to bring them to the surface, the low center of buoyancy in the preserver and the foot movement causes the child to tip forwardly or rearwardly. This unsteadiness frightens the uninitiated and creates a dislike for that which should be relied upon to protect.

I mention that the uninitiated are frightened. One can teach a child how to handle a conventional life preserver without being frightened, but it is one of the intentions of the present invention to provide a preserver for children which they may use the first time without feeling a frightening tendency to tip and without any need for instruction.

A further object of the invention is to provide a life preserver or play vest which affords immediate and maximum protection for children thrown into or entering the water suddenly in event of emergency or accidents. Furthermore, I provide a life preserver which maintains the head and shoulders in a balanced upright position without danger of tipping or strangulation whether the child is calm, frightened or unconscious.

Another object of the invention is to provide a life preserver which is thoroughly adjustable to the requirements of each and every child of all expected sizes within any given age range even though a particular child in that range has grown larger than, or has to grow into the size of the preserver purchased for him.

Moreover, it is a further purpose of the present invention to provide a life preserver which may be worn from year to year by growing children with the same degree of safety and feeling of security.

A further object of the invention is to provide a life preserver which has a variable center of buoyancy in or out of the water which can be set or varied for each child wearing the preserver, or can be adjusted to provide a constant center of buoyancy in the water relative to a particular child during a period of his growth.

Another object of the invention is to provide a life preserver which, under all conditions, minimizes interference with movements of a child wearing it, yet provides the proper center of buoyancy in the water whether it is worn by a small child or a large child.

Another object of the invention is to provide an improved life saver jacket having increased safety and utility which is simple to manufacture, adjust and wear.

These being among the objects of the present invention, other and further objects will become apparent from the drawing herein, the description relating thereto, and the appended claims.

Referring now to the drawing:

Fig. 1 is a perspective view of a preferred form of the invention as it appears when worn by a child of a size for which the preserver is built;

Fig. 2 is a view similar to Fig. 1, illustrating the position assumed by the preserver of Fig. 1, when in the water;

Fig. 3 is a view similar to Fig. 1, illustrating how the preserver, shown in Fig. 1, may be worn with complete security by a child who has not yet reached the full size for which the preserver was built;

Fig. 4 is a perspective view, similar to Fig. 2, showing the position assumed by the preserver of Fig. 3 when placed in the water;

Fig. 5 is a view from the front of the preserver with the front fastenings undone and the preserver opened to reveal the construction and location of the means by which the preserver is

fastened to a child before any adjustment of the means is made for any particular child; and

Fig. 6 is a section taken upon the line 6—6 in Fig. 5.

Referring now to the drawing in further detail, I provide a vest-like life preserver 10 for children, preferably made of two layers of soft, closely woven fabric comprising an inner layer 11 and an outer layer 12 (see Fig. 6). The two layers of fabric are pattern cut to open either in the back or in the front and to be closed with either tie straps or elastic bands. The pattern provides armholes, as at 13, to receive the arms of a child, the upper ends of which are connected by shoulder straps 14 fastened to the front edge 15 of the armholes 13 and adjustably secured to buckles 16 which are secured to the back 17 of the preserver by tapes 18 stitched thereto, as at 19. The lower portions of the vest and the two layers of fabric are severed, as at 21, to divide the bottom portions 22 of the vest into flaps, two or more in number, although, in the particular embodiment illustrated, namely, one opening in front, I provide three flaps 23, 24 and 25 comprising the right front flap 23, the rear flaps 24 and the left flap 25. In instances where the vest is constructed to open in the rear, the fastenings are preferably located there also, in which case an added advantage arises in that a child cannot reach them, without difficulty, to release the fastenings and remove the vest.

A better understanding of the invention will be had from a description of the manner in which the vest is manufactured.

Although the inner layer of fabric 11 may have stitched thereto upon its outer face, as at 26, the top of an adjustable seat pantalet, or the like, preferably having elastic webs for automatic adjustment for size, I have shown tapes 27 which cross each other at a point 28 where they are stitched together. The tapes are arranged to cross where they are expected to engage at the crotch of the wearer. In this way the straps run from their securement down over the hips of the wearer, through the crotch and from there the free ends of the straps are carried forwardly to buckles 30 disposed on opposite sides of the jacket near the front edge where they are also secured to the inner fabric 11 by tapes 31 stitched to the fabric, as at 32. These tapes, when adjusted, limit the upward movement of the jacket upon a wearer in the water.

The two layers of fabric are superimposed upon each other with their outer faces towards each other. All the edges except the lower edge 20 are stitched together preferably by one continuous line of stitching across the top, around the armholes and down the sides. The fabrics are then stitched together along the edges created by the lines of severance 21.

At the time the two pieces of fabric are stitched along the upper edge and around the armholes, the tapes 14 and 18 are placed between the layers of fabric in their proper places where the lines of stitching will catch and anchor them in place, and in event the fastenings comprise tie tapes 29 these are secured at this time in like manner along the edges where the vest opens.

Thereafter, the envelope thus formed is turned inside out through one of the lower portions 23, 24 or 25, and again laid out flat with the outside faces of the layers of fabric now disposed upon the outside of the envelope. Vertical lines of stitches 33 are then made in the fabric from top to bottom at spaced points, with like lines of stitching 34 running from the top of the lines of severance 21 to the armholes 13. These vertical lines of stitching provide vertical tubes 35 opening along the bottom edge 20. The envelope is then ready to receive the buoyant material.

Any approved buoyant material such as cork blocks, balsa wood blocks, rubber composition or other buoyant materials may be used, although I prefer to use kapok.

The amount of kapok employed in any particular preserver for a child will depend somewhat upon the size of the life preserver. I prefer to use the maximum of kapok bulk needed to support properly a child of the largest expected size in any particular age range.

The kapok is stuffed into the tubes from the bottom openings in predetermined quantities for each tube. Although all the kapok may be stuffed in at one time in each tube and the life preserver then quilted, I prefer to insert only a portion of the kapok in each tube and force it well to the top thereof and then run two horizontal lines of stitches 36 spaced from each other approximately an inch and running from one end of the preserver to the other, transversely to the vertical lines of stitches 33 immediately below the points 26 and 32 where the crotch straps and buckles are fastened to the inner layer of fabric.

After the stitched lines 36 have been made the remaining kapok is inserted for each tube, the lower cut edges of the fabric layers are then turned in and the lower ends of the tubes are sealed by a line of stitching 37 along the lower edge 20 thereof.

Having thus described the construction and method of manufacture of the preferred embodiment of the invention, it will be appreciated that a preserver is provided which is simple in construction, easy and inexpensive to manufacture, and that the article provided is very durable and neat.

Referring now to Figs. 2 and 4, it will be noted that the only alterations that need be made to adapt the life preserver described to children of different sizes within a particular size range are adjustments at the buckles. With small children, the shoulder straps are preferably shortened and the crotch straps adjusted to locate the center of buoyancy of the upper portion as high upon the child as comfort and expediency permits. The crotch straps are then adjusted to limit upward movement of the upper portion of the vest under the influence of buoyancy when the child enters the water.

This is pointed out at this time to illustrate that, overlooking the presence of the lower portions for the moment, the upper portion of the life preserver comprises a short jacket which can be worn by children over a range of ages. The center of buoyancy thereof is adjustable to accommodate a large or a small child. The crotch straps are long enough to accommodate a large child and can be shortened to accommodate a small child.

Once the center of buoyancy of the upper portion is set for a given child, that center of buoyancy is maintained at or between predetermined limits in or out of the water, high upon the child's chest. This level is much higher than the fixed center of buoyancy provided by conventional life preservers which is quite low upon the child.

It is not necessary that the upper portion upon

the child be provided with any or as much buoyancy as the conventional preserver. The amount of any buoyancy provided is gauged by the child's comfort. Then, once the amount of buoyancy is determined for the upper portion of the vest, the remaining amount of buoyancy needed to assure the safety of the child is placed in the severed lower free moving portions of the preserver which occupy a hanging position under the influence of gravity when the child is not in the water and which shift upwardly when the child is in the water.

This arrangement provides a maximum amount of comfort for the child while playing around or wading in the water. The fuller freedom of movement afforded the child at play on dry land by the improved arrangement of buoyant material afforded by the present invention minimizes one of the obstacles to inducing a child to wear a life preserver in and around the water.

From a required stock inventory viewpoint this shiftable factor of the center of buoyancy makes it possible, in combination with the smaller upper portion and the harness, to have each vest manufactured to take care of a much wider range of sizes than it was possible to do safely with conventional life preservers. Regardless of whether a small child or a large child wears the preserver the center of buoyancy assumed by the preserver in water is always around the shoulders of the child. Once the center of buoyancy is established for the upper portion of the life preserver, the center of buoyancy of the lower portions proximate the upper center when they move upwardly.

The inconvenience of encumbering a small child at play on dry land with a bulk of buoyant material around his shoulders as in a conventional life preserver is removed and thereby is removed the child's inherent dislike to wear such a preserver while at play in or near the water.

On the other hand, any danger entailed by further lowering the center of buoyancy arising from a further spreading of the buoyant material downwardly for the child's comfort in the present invention is eliminated.

Moreover, a further safety factor is afforded by the present invention over conventional life preservers, in that the center of buoyancy is effective over a wider area in form of a horizontally spread ring around the child which is greater in diameter than is possible with conventional constructions. The folding up of the lower portions carries the normal center of buoyancy of the preserver in the water upwardly and radially outwardly when it folds over the upper portion under the effect of buoyancy in the water. Thus, the preserver, as a buoyant unit, has its effective buoyancy spread over a larger area of the water than possible with conventional preserver much in the nature of a lily pad.

This added spread of buoyancy increases the safety of the preserver by correspondingly decreasing any danger of the child tipping while in the water, whether the child remains quiet or violently kicks his feet as he might when frightened. Once the child discovers that the life preserver provided by the present invention cannot be tipped and rides the waves and other water movement with his head and shoulders maintained well above the surface, the child is no longer frightened. Thereafter, the fun coming with the freedom to move all parts of the body in a liquid medium without any solid resistance such as that offered by land, leads the child in natural playfulness to a carefree happiness in the water which up until the time he learns to swim will cause him to want and ask for his life preserver whenever he knows he is going to be near the water.

A child, of course, being used to land and the feeling of support that it gives him, feels frightened the first time he finds he is in the water and finds that he cannot touch anything solid if he happens to have entered the water quickly where it is deep. On the other hand, when he feels the untiltable support and security of the present invention this fear will pass and the life preserver will take on a new role without any need for instruction.

Not only this, but when the child is beginning to learn to swim, a low center of buoyancy may be desired. When a child wants to assume the horizontal swiming position, he soon learns to push the front flaps down to provide a low center of buoyancy. He then kicks his feet to bring them to the surface and thereupon proceeds to learn how to make arm strokes. The low center of buoyancy which is then imposed upon the preserver assists the child to maintain his horizontal position.

Consequently, although a preferred embodiment and several modifications of the invention have been suggested and described herein it will be apparent to those skilled in the art that various and further uses, modifications and changes may be made without departing from the spirit and substance of the invention, the scope of which is commensurate with the appended claims.

What I claim is:

1. A life preserver jacket comprising a buoyant body portion split vertically at the front, shoulder straps on said body portion adjustable to vary the height of the center of buoyancy of said body portion, strap means secured to one end of and adjacent the lower edge of said body portion, adjustable means for supporting the other end of said strap means, said strap means forming a crotch engaging means to anchor said body portion against movement upwardly upon a user in the water, and independently integral acting buoyant means including separate sections secured to said body portion along the lower edge thereof having approximately the same buoyancy as the body portion and movable from a depending position under the influence of gravity to an elevated position under the influence of buoyancy in water.

2. A life preserver jacket having a buoyant body portion split substantially vertically at the front wherein the body portion comprises an envelope composed of an inner and an outer layer of fabric stitched marginally together, intermediate lines of spaced vertical stitching providing tubular constructions in said envelope, a buoyant material inserted in the upper portions and the lower portions of said tubular constructions, and means integrally securing said buoyant material in place and providing a flexing portion in the fabric for rendering the lower tubular portions movable into overlapping position with respect to the upper tubular portions, and means for securing the upper tubular portions to a wearer in relation to the size of the wearer including a crotch engaging element.

3. A life preserver jacket for children comprising an envelope split vertically at the front, a kapok filling for the envelope, shoulder straps adjustable for controlling the height of the envelope upon the wearer, means holding the front

parts together at the split, strap means secured at one end to the envelope approximately at the vertical mid-point of the envelope, adjusting means secured to the envelope in a like place for engaging the other end of said strap means to control the upward movement of the envelope, horizontally disposed lines of stitching in the envelope spaced vertically from each other below said mid-points to provide a plurality of fold lines permitting the lower part of the envelope to fold back upon the upper portion, said lower portion being vertically split at horizontally spaced points for independent movement of the severed portions and to permit ready access to said adjusting means.

4. A life preserver jacket comprising a buoyant body portion, adjustable means for securing the body portion to a wearer in position corresponding to his height below the shoulder of the wearer, buoyant means including separate sections, means securing the separate sections to the body portion, said securing means being of such a nature that said separate sections may be carried into positions where they are superposed upon the buoyant body portion under the influence of water whereby a lateral shift takes place in the resulting buoyancy afforded by the body portion and the buoyant means when the jacket is placed in the water.

5. A life preserver jacket comprising a buoyant body portion having a factor of buoyancy disposed around the wearer, the vertical projection of the relative buoyant centers of which is disposed comparatively close to the wearer's body for comfort and freedom of movement, means for securing said body portion to the wearer in a position locating the buoyant body portion below the shoulders of the wearer, and buoyant means including separate elements, means securing the separate elements to the buoyant body portion, said securing means being of such a nature that said separate elements are movable into positions superposed upon the body portion under the influence of water whereby the vertical projection of the composite resulting factor of buoyancy of the superposed portion and elements is widened horizontally with respect to the wearer's body when the jacket is placed in water as compared with the location of the first mentioned projection.

6. A life preserver jacket comprising a buoyant body portion having a factor of buoyancy disposed around the wearer, the vertical projection of the relative buoyant centers of which is disposed comparatively close to the wearer's body for comfort and freedom of movement, adjustable means for securing said body portion to the wearer in a position corresponding to his height to locate said centers of buoyancy at a selected level upon the wearer below the shoulders of the wearer, and buoyant means including separate depending elements, means securing said separate elements to the body portion, said securing means being of such a nature that said separate elements are movable outwardly and upwardly into positions superposed upon the body portion under the influence of water whereby the vertical projection of the composite resulting factor of buoyancy of the superposed portion and elements is widened horizontally with respect to the wearer's body when the jacket is placed in water as compared with the location of the first mentioned projection and the level of the composite buoyancy of the portion and elements is shifted upwardly from that existing when the jacket is worn out of water.

FREDERICK LEE BROWN.