Nov. 19, 1935. A. BORINO 2,021,713

LIFE PRESERVER MATTRESS

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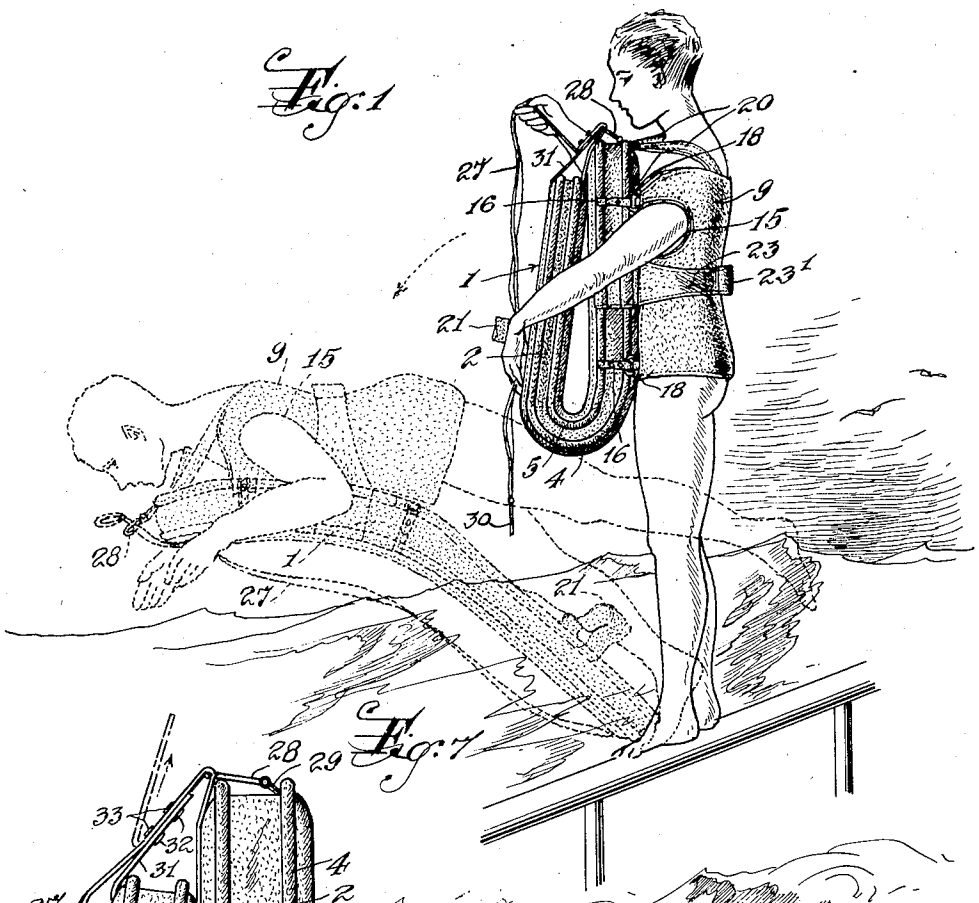


Fig. 1

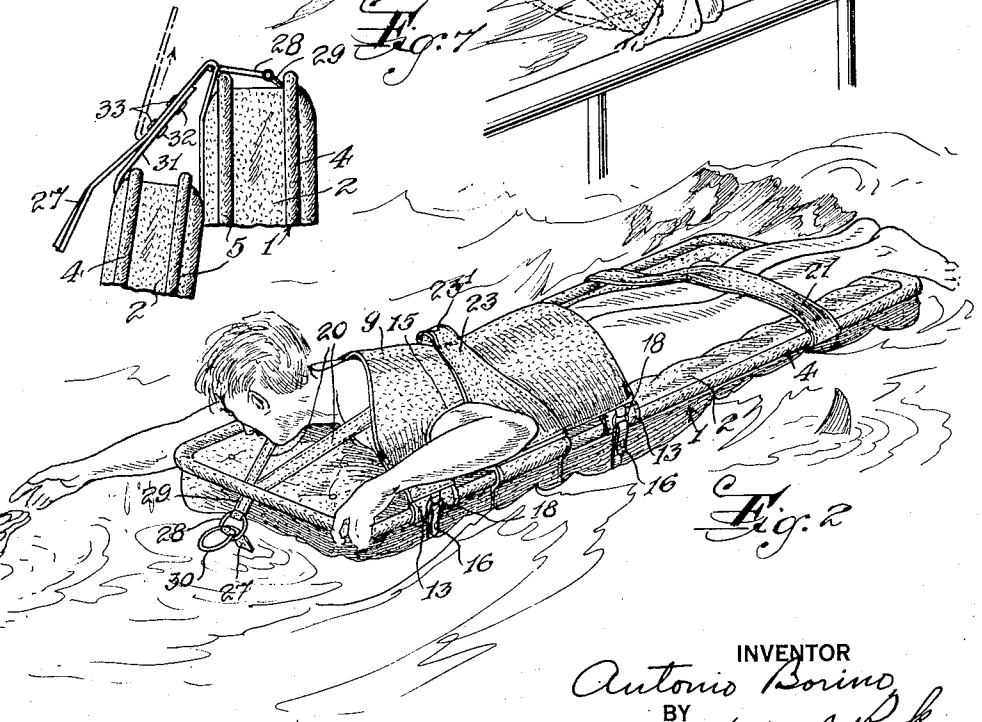


Fig. 2

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Fig. 3

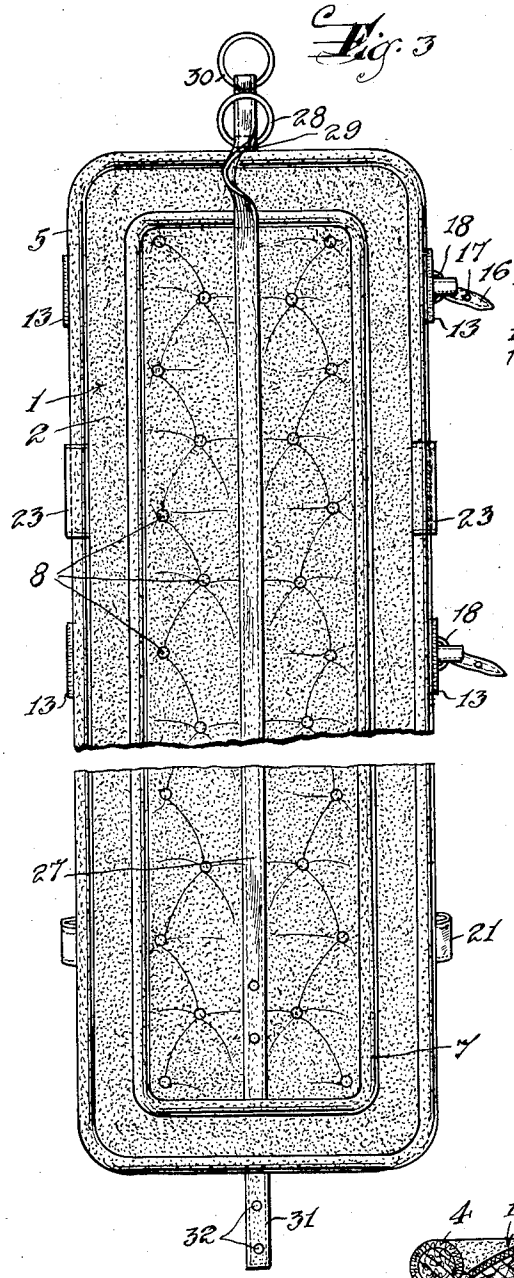


Fig. 4

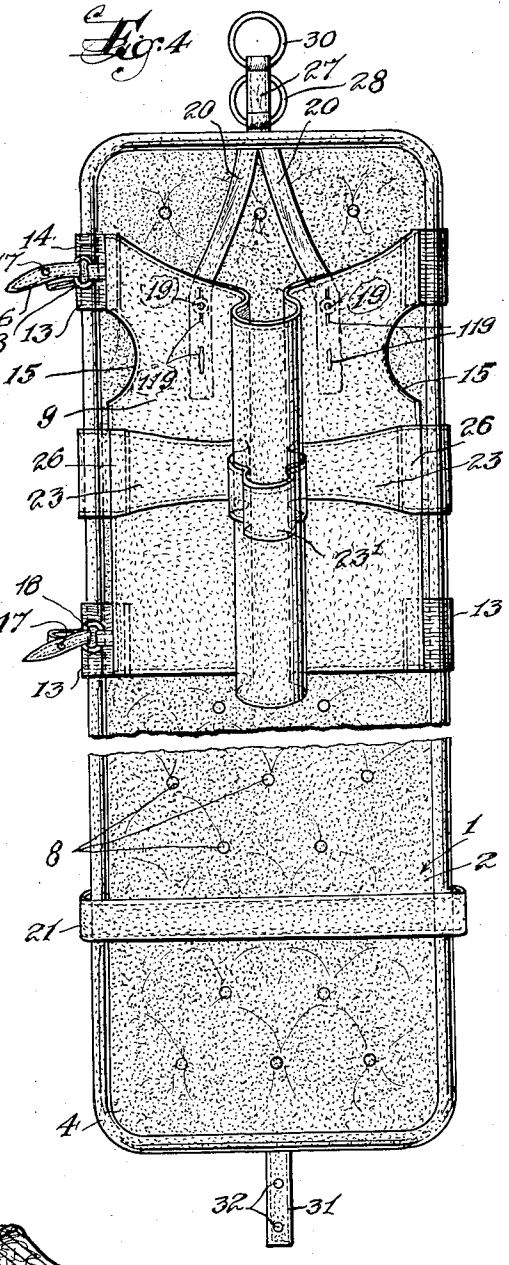
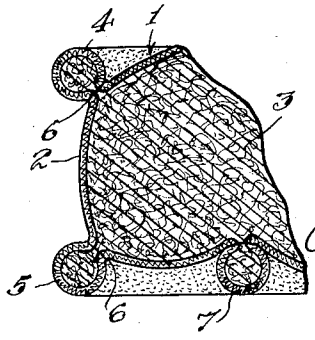


Fig. 8

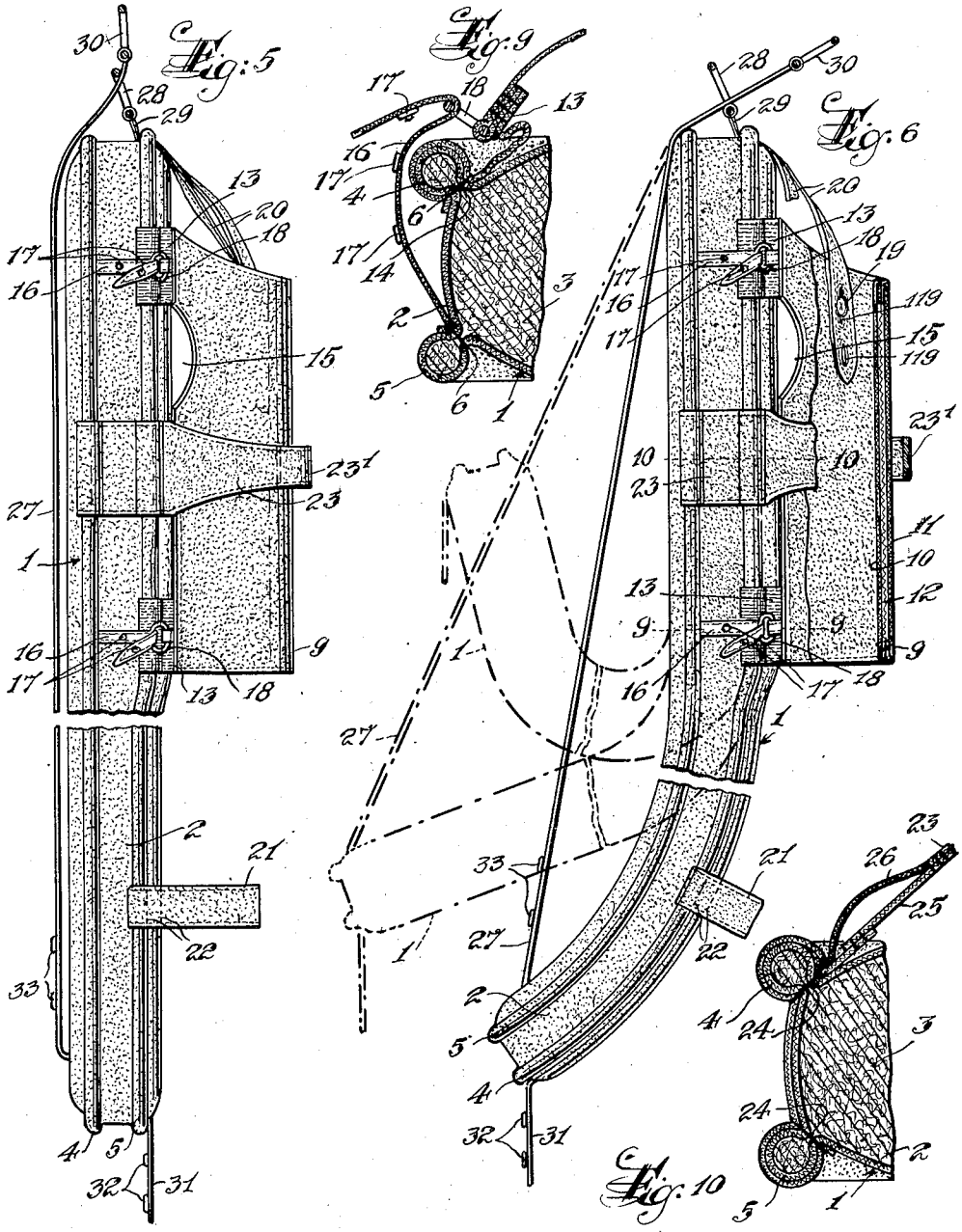


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Fig. 11

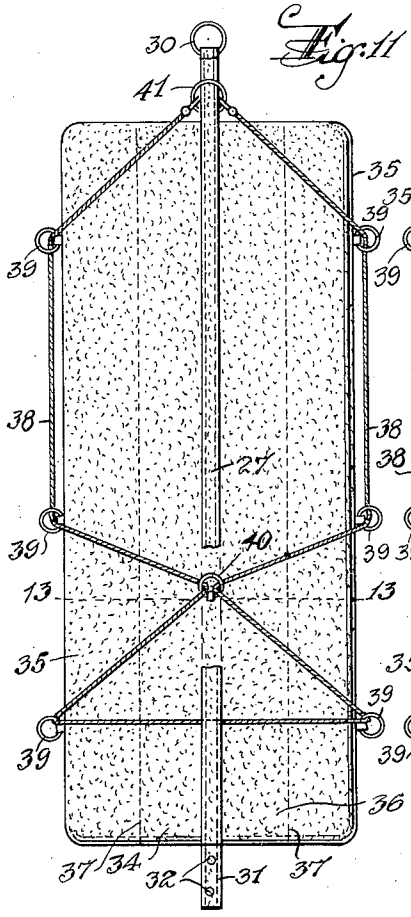


Fig. 12

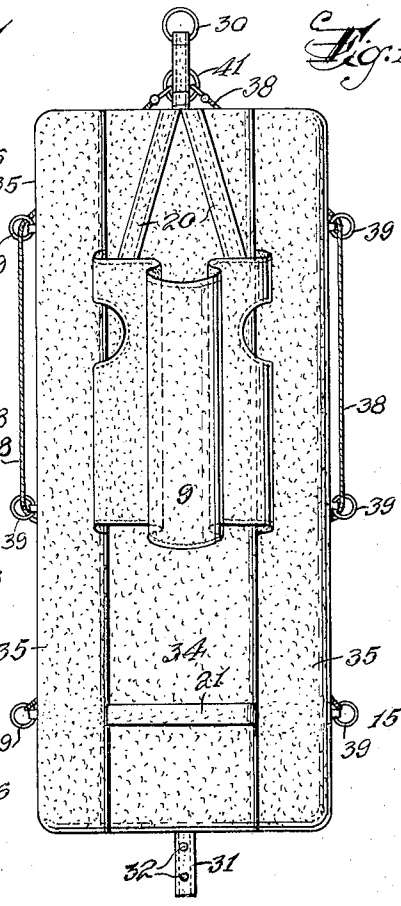


Fig. 14

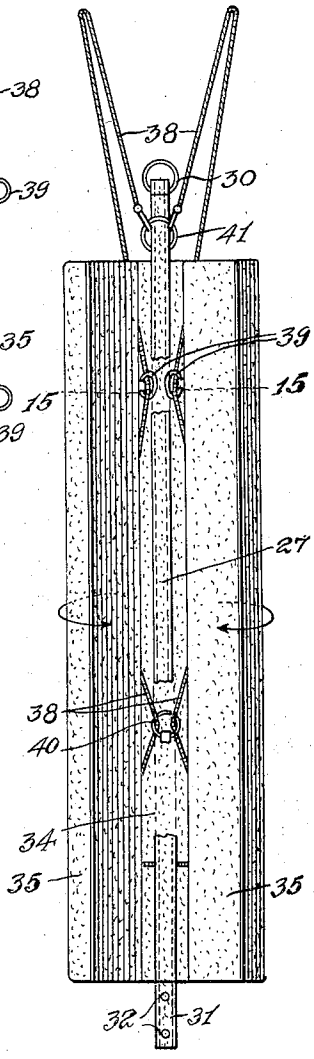


Fig. 13

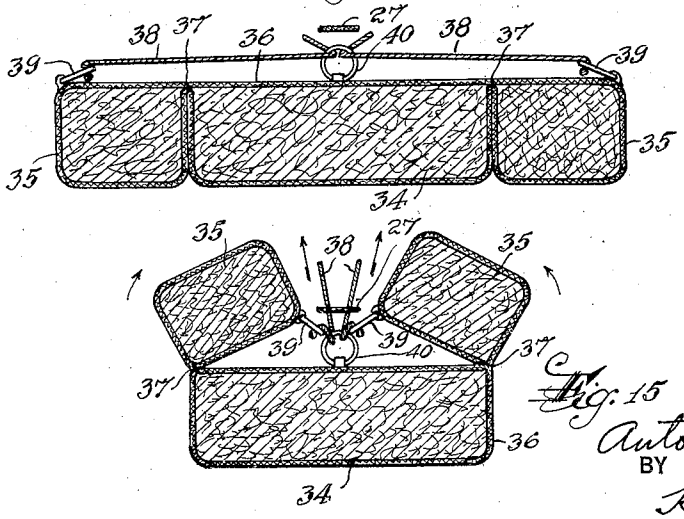


Fig. 15

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UNITED STATES PATENT OFFICE

2,021,713

LIFE PRESERVER MATTRESS

Antonio Borino, Nutley, N. J.

Application August 31, 1934, Serial No. 742,233

12 Claims. (Cl. 9—13)

My invention relates to improvements in combined mattresses and life rafts, for use particularly on board a ship, either as bedding or life saving equipment.

Mattresses of this character, now commercially available, are not equipped for attachment to the body of a person so that in an emergency he may dive overboard with the mattress beneath him, or her, as the case may be. Neither are they adapted to be folded so that they may be conveniently carried, while attached, to a place suitable for launching in the manner above indicated. Moreover, all such mattresses, of which I am cognizant, are unsuitable for bedding for the reason that some embody a rigid frame which impairs their resiliency particularly at their edges so that they are uncomfortable to sleep upon, while others are constructed in part of cork which is too hard and unyielding for use in bedding.

With the foregoing in mind, the principal object of my invention is to provide a buoyant mattress equipped with means for securing it to the body of a person in an anterior position so that it may be launched as a raft by the person diving in the usual manner and permit free use of the arms for swimming strokes, and which furthermore is foldable into compact form in its attached position by the person to whom it is attached for quick and convenient carrying, will unfold in the proper position for launching in the manner described, and is sufficiently soft and pliant for use as bedding yet possessed of sufficient rigidity for use as a life raft.

In another and more specific aspect the object of my invention is to provide a buoyant mattress formed of flexible material so that it is foldable for carrying and suitable for bedding and including a novel harness for attaching it to the body of a person and permitting its folding while so attached, together with manually manipulated means for folding the same which can be manipulated by the person to whom the mattress is attached, and efficient releasable means for retaining the mattress in folded position.

Other objects, such as economy in manufacture, together with the nature of my improvements will be readily understood when the following description and claims are read in conjunction with the accompanying drawings.

In said drawings:

Figure 1 is a view in side elevation showing in full lines my combined mattress and raft folded and attached for use in its life saving capacity and illustrating in dotted lines the manner in which it is launched.

Figure 2 is a perspective view further illustrating its use as a raft.

Figure 3 is a bottom plan view of the combined mattress and raft unfolded.

Figure 4 is a top plan view thereof in the same condition.

Figure 5 is a view in side elevation looking at the left side of Figure 4.

Figure 6 is a similar view, partly broken away and partly in section, and illustrating in full and dotted lines how the combined mattress and raft is folded.

Figure 7 is a fragmentary view in side elevation illustrating manually manipulative means for folding said mattress and life raft and retaining it in folded position.

Figure 8 is a fragmentary view in transverse section, taken on the line 8—8 of Figure 4 and drawn to an enlarged scale.

Figure 9 is a similar view taken on the line 9—9 of Figure 6.

Figure 10 is another similar view taken on the line 10—10 of Figure 6.

Figure 11 is a view in bottom plan of a modified form of the invention.

Figure 12 is a view in top plan of said modified form.

Figure 13 is a view in transverse section taken on the line 13—13 of Figure 11, and drawn to an enlarged scale.

Figure 14 is a view in top plan showing said modified form partially folded, and

Figure 15 is a view in transverse section taken on the line 15—15 and drawn to an enlarged scale.

Describing my invention in detail, and first with reference to the preferred embodiment thereof shown in Figures 1 to 10 inclusive, the numeral 1 designates the mattress proper which comprises a rectangular envelope casing 2 of canvas, or heavy duck or the like, and a filler 3 of kapok, or similar material, which is soft and pliant so that the mattress may be folded and which at the same time is buoyant and light in weight. As shown in Figure 2 the mattress 1 is of a width such that an average size person lying thereon face downward may project their arms over the sides thereof to propel the mattress in the water as by the usual breast stroke used in swimming. The length of the mattress is preferably slightly less than that of the usual bed mattress. To impart sufficient rigidity to said mattress so that it will not unduly undulate in the water it is provided with heavy rolls 4 and 5 extending around its upper and lower edges, respectively, and

formed by stitching said edges, as at 6 around the kapok filler. On its lower face the mattress 1 is provided with a similarly formed rectangular roll 7 which is spaced from the lower edge roll 5 equidistantly at its sides and ends and which functions both as a reenforcing rib and as a keel. To secure the casing 1 and filler 2 together the mattress may be tufted in the usual manner as shown at 8.

For securing the mattress to the body of a person a harness is provided on one side, comprising a vest 9 adjacent the front or upper end of the mattress to provide for free movement of the head on said mattress. The vest member 9, as shown in Figure 6, is formed of inner and outer plies 10 and 11, respectively, of fabric, preferably canvas with an intermediate ply 12 of a suitable strengthening fabric. Suitably located elastic bands 13 stitched to the top edge roll 5 as at 14 connect the side edges of the vest 9 to the mattress so that said vest will give to facilitate attachment of the mattress to the body and snugly fit the same. At appropriate points the side edges of the vest 9 are cut away to provide arm holes 15. Adjusting straps 16 provided with snap fasteners 17 are stitched to one side of the mattress and pass through rings 18 secured to one side edge of the vest 9 as shown in Figure 9, the arrangement being such that the vest may be taken in to tighten the same as desired.

Secured in any suitable manner to the front, or top, end of the said mattress 1 and buttoning to the vest 9 as at 19 is a pair of straps 20 forming a V-shaped neck yoke designed to take over the shoulders of the person so that the weight of the mattress, when being carried is sustained on the shoulders of the person and to prevent said person from being thrown forwardly off the mattress by the action of the water when the mattress is afloat. The straps 20 are provided with a plurality of button holes 19 for adjusting them as desired. Intermediate the vest 9 and the rear, or lower, end of the mattress is a leg strap or band 21 the ends of which are stitched, as at 22, to the sides of the mattress.

For hoisting the mattress 1 from the water, or carrying it by hand, a transversely extending canvas band 23 is secured thereto forwardly of the transverse median line of said mattress so that the latter will be hoisted front end foremost and a person thereon lifted from the water in a substantially upright position. In this position said band spans the vest member 9. Preferably said band 23 is stitched to said vest member 23 to provide a loop 23' for the hand or for a hoisting hook or rope. To securely attach the band 23 to the mattress 1 its ends are stitched around the upper and lower edge rolls 4 and 5 as shown at 24 in Figure 10. The band 23 is connected to the side edges of the mattress by strong elastic straps 25 one of which is shown in Figure 10. The straps 25 are suitably connected to the band 23 and to the upper edge rolls 4 to form slack loops in said band, as at 26 in Figure 10, so that said band will yield to accommodate outward yielding of the vest on the body.

In addition to the above my novel mattress is equipped with manually manipulative means for folding the same comprising a pull strap 27 on its under, or rear, side having one end suitably attached to said mattress adjacent the lower end of the latter and a free end passing through a keeper ring 28 secured to the upper end of said mattress by a short strap 29. By pulling on the free end of the pull strap 27 the mattress 1 may be folded transversely upon itself, below the vest 9, to position substantially its lower half opposite its upper half with its ends juxtaposed, as shown in Figures 1 and 7 in which position it forms a compact bundle which may be quickly and conveniently carried by the person to whom it is attached through door ways of state rooms and down companion ways of a ship, and will not drag on the deck. To provide a hand grip on the pull strap 27 and to prevent it from slipping out of the keeper ring 28 a ring 30 is secured to the free extremity or end of said strap 27. Means are provided for securing the ends of the mattress together when the latter is folded as follows. A short strap 31 having snap fastener members 32 thereon is secured to the lower, or rear end, of said mattress. The pull strap 27 is provided with snap fastener members 33 complemental to the members 32 and located adjacent the attached end of said pull strap so that they will be pulled through the keeper ring 28 when the mattress has been fully folded, and may be connected with the members 32 on the strap 31 as shown in Figures 1 and 7.

Referring briefly to the use of the embodiment of my invention described in the foregoing, before attaching the mattress to the body the adjusting straps 16 are loosened so that the vest 9 may give freely against the tension of the elastic bands 13. The vest is then positioned on the body, the head of the person being inserted through the neck yoke straps 20. The straps 16 may then be used to tightly fit the vest 9 about the body in a manner which will be manifest. The mattress may be folded prior to or after it is attached to the person by manual manipulation of the pull strap 27 as previously described. When the mattress has been carried to a favorable position for launching, the strap 27 is pulled rearwardly to disconnect the snap fasteners 32 and 33, and said strap is then released thereby permitting said mattress to unfold by gravity. After the mattress is launched the person thereon may insert his legs beneath the leg strap 21 for greater security if desired.

In the modified form of my invention shown in Figures 11 to 15 the mattress proper comprises an intermediate section 34 and narrower side sections 35 and a casing 36 forming hinge connections 37 between the intermediate section and each side section extending longitudinally of the mattress so that the latter may be folded back over the lower or rear face of said intermediate section, as shown in Figures 14 and 15. In this position of the sections 34 and 35 the mattress is folded and its ends secured together in the same manner and by the same means described with reference to the preferred embodiment of the invention. The vest 9, however, is connected at its side edges to the sides of the intermediate section 34 as indicated in Figure 12. A pull cord or cable 38 is trained through rings 39, suitably secured to outer edges of the side sections 35 and also through a ring 40 secured to the intermediate section 34 with its ends terminating at the upper or front end of the mattress and so that by pulling on said ends the side sections 35 will be folded back over the intermediate section. The ends of said cord 38 are secured to a ring 41 sliding on the pull strap 27 so that said ends cannot be inadvertently pulled out of the rings 39 and 40. The manner in which this form of the invention is used is substantially the same as previously described with the exception that the sections 35 must be folded back prior to folding

the mattress and unfolded prior to launching. The manner in which these operations are accomplished will, it is believed, be manifest. It may be stated, however, that by virtue of the folding sections the mattress is reduced in width when folded so that it may be carried with ease through unusually narrow places such as hallways and very narrow state room doors.

A combined mattress and life raft constructed as described in the foregoing is light and durable, readily and securely attached to the body and can be folded by the person to whom it is attached with slight effort on the part of said person. By flattening out the vest 9, band 23, and leg strap 21 and unbuttoning the neck yoke straps 20 the mattress may be used as bedding equipment.

Although I have described a preferred form of my invention and one modification thereof as embodying certain specific features of construction, it is to be understood that right is herein reserved to modification of such features and other changes falling within the scope of the claims appended hereto.

Having thus described my invention, what I claim is:

1. A life raft comprising a buoyant rectangularly shaped mattress for supporting the body of a person, said mattress being foldable transversely to facilitate its being carried by said person and including a harness for attaching the mattress to the body of the person, manually manipulative means for folding said mattress and including, a pull strap secured to said mattress adjacent one end thereof, a keeper ring secured to the other end of said mattress and through which said strap passes, and means for retaining the mattress in folded position and including a strap secured to the first-mentioned end and having snap fastener members thereon, and snap fastener members on said pull strap complemental to the first-mentioned members and engageable with the latter in the folded position of said mattress by looping said pull strap around said ring.

2. A combined sleeping mattress and life raft comprising a non-inflatable buoyant flexible mattress for supporting a person in recumbent position and including a harness for attaching the mattress to the body of the person in an anterior position, said harness including a non-inflatable and foldable flat vest member yieldingly connected to said mattress, manually manipulative means operable from the head end only for tightening said vest member against the body of said person, and neck yoke straps permanently connected to said mattress and detachably connected to said vest.

3. A life raft comprising a flexible mattress having rolled upper and lower edges, respectively, and provided on its lower face with a continuous roll spaced from the lower edge roll to re-inforce the intermediate under portion of said mattress and to act as a keel therefor.

4. A combined sleeping mattress and life raft comprising a non-inflatable self buoyant mattress for supporting the body of a person in recumbent position and including a harness at one side adjacent one end thereof for securing the mattress to the body of the person in an anterior position, said mattress being foldable transversely intermediate its ends while attached to facilitate carrying the same, and having connected to its opposite ends means manually manipulative at the head end only by the person to whom said mattress is attached for folding the same, and releasable means for retaining the mattress in folded position.

5. A combined sleeping mattress and life raft comprising a non-inflatable self buoyant mattress for supporting the body of a person in recumbent position and including a harness at one side adjacent one end thereof for securing the mattress to the body of the person in an anterior position, manually manipulated means at the head end only for folding said mattress anteriorly of the body of said person, and releasable means for retaining the mattress in a folded position until launched by the wearer.

6. A combined self buoyant sleeping mattress and life raft for supporting the body of a person in recumbent position in a bed as well as in water, said mattress being non-inflatable and including a foldable flat harness at one side adjacent one end thereof for securing the mattress to the body of the person, said mattress being foldable transversely to facilitate carrying the same and having secured thereto at the foot end manually manipulative folding means extending to and positively positioned at the head end of the mattress.

7. A combined sleeping mattress and life raft set forth in claim 6 wherein said mattress comprises main section and side sections which are foldable upon said main section longitudinally of the mattress, and manually manipulative means for folding said sections.

8. A combined sleeping mattress and life raft set forth in claim 6 wherein said mattress comprises main section and side sections which are foldable upon said main section longitudinally of the mattress, rings certain of which are secured to the side edges of said side sections while others are attached to said main section, and a draw cord threaded through said rings and operable from one end of the mattress for folding said side sections on the main section.

9. A combined self buoyant non-inflatable sleeping mattress and life raft for supporting the body of a person in recumbent position in a bed as well as in water, said mattress including a foldable flat harness at one side adjacent one end thereof for securing the mattress to the body of the person in an anterior position, said mattress being foldable transversely intermediate its ends while attached to facilitate carrying the same, and having connected to its opposite ends means manually manipulative at the head end only by the person to whom said mattress is attached, for folding the same.

10. A combined self buoyant non-inflatable sleeping mattress and life raft for supporting the body of a person in recumbent position in a bed as well as in water, said mattress including a foldable flat harness for attaching said mattress to the body of the person, said harness embodying a non-inflatable vest member yieldingly secured to said mattress, at one side adjacent one end thereof and manually manipulative means for tightening the vest member about the body of said person.

11. A combined self buoyant non-inflatable sleeping mattress and life raft for supporting the body of a person in recumbent position in a bed as well as in water, said mattress including a foldable flat harness for attaching the mattress to the body of a person and embodying a non-inflatable vest member at one side adjacent one end of the mattress, resilient bands yieldingly connecting said vest member to said mattress, and manually manipulative means for connecting the

vest member against the body of said person, the rings secured to said vest and through which said straps are looped, and strap fasteners on said strap.

12. A combined sleeping mattress and life raft comprising a self buoyant rectangular non-inflatable mattress for supporting the body of a person and foldable transversely to facilitate its being carried by said person, and including at one side adjacent one end a non-inflatable foldable flat harness for attaching a front of the mattress to the body of the person, and manually manipulative means for folding said mattress and including a strap secured to the mattress adjacent the foot thereof, and a keeper ring for said strap secured to the head end of the mattress, said strap extending through said ring.

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