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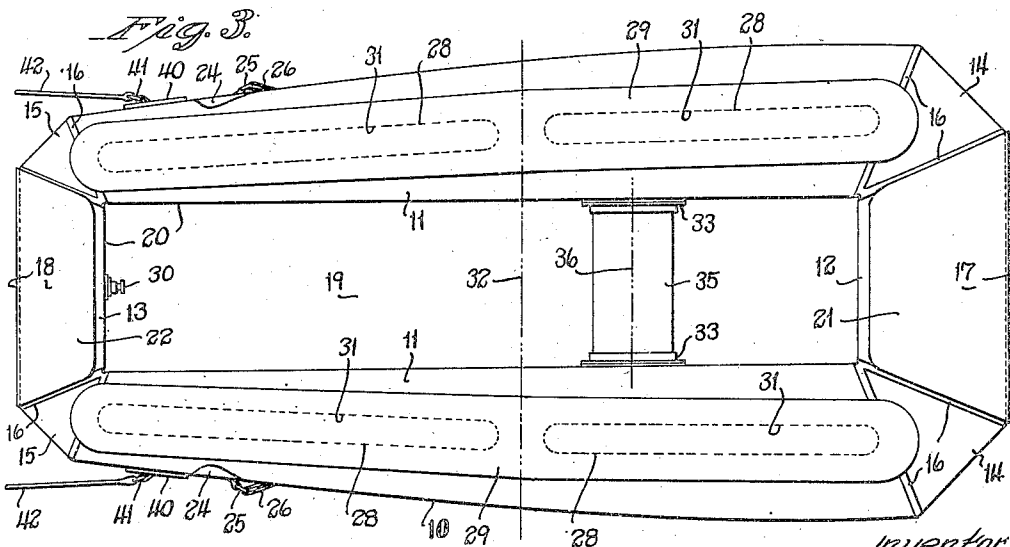
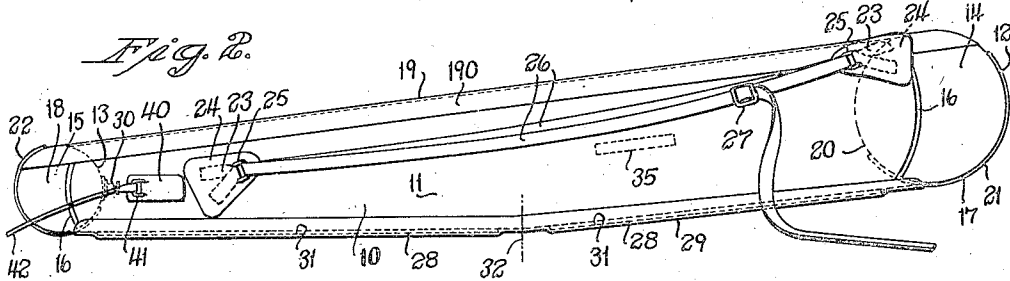
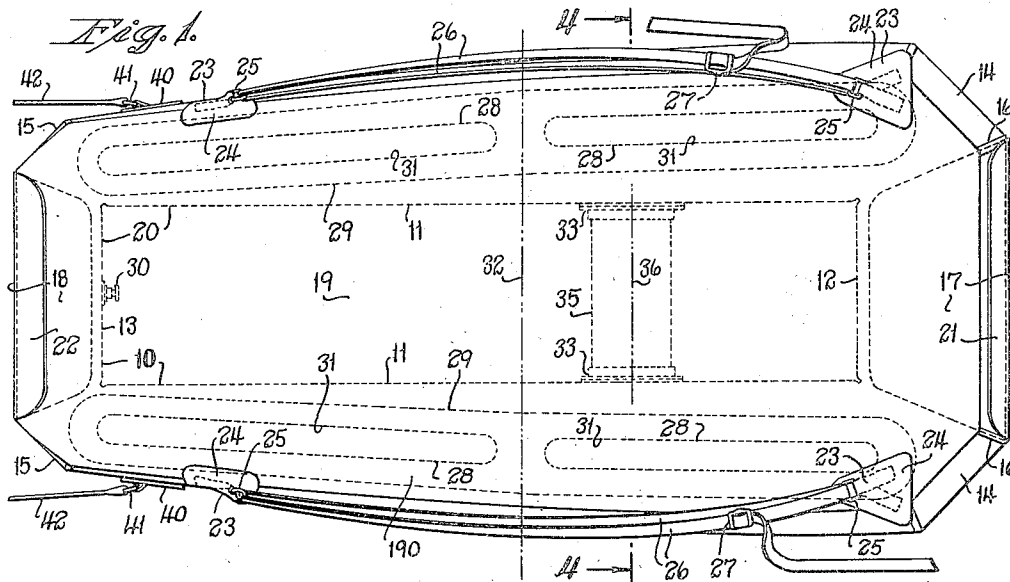
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2,496,460

PNEUMATIC FLOAT

Filed Aug. 10, 1946

2 Sheets-Sheet 1



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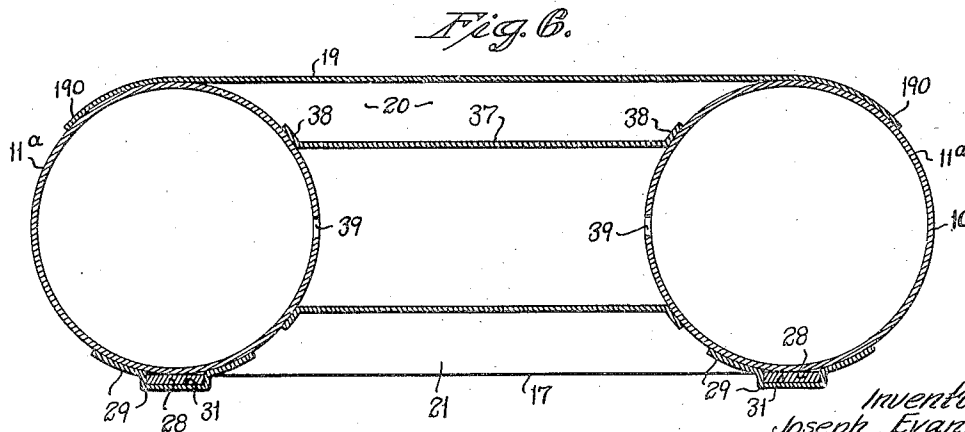
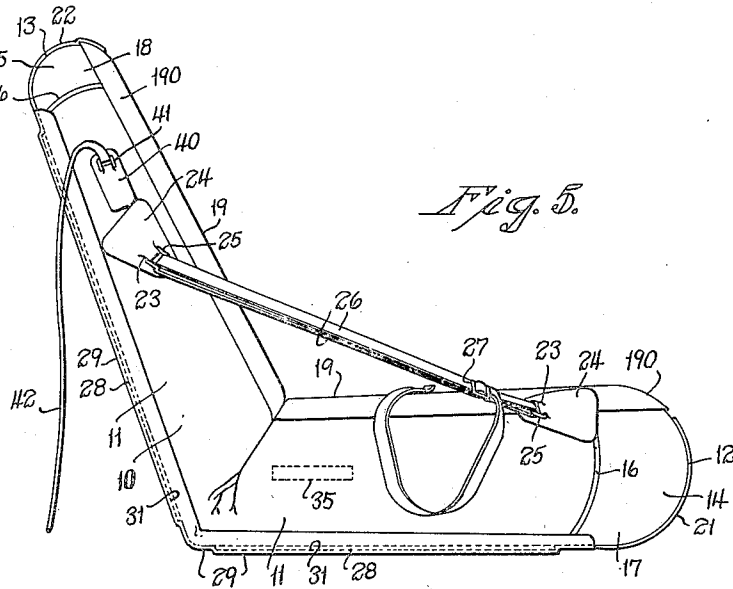
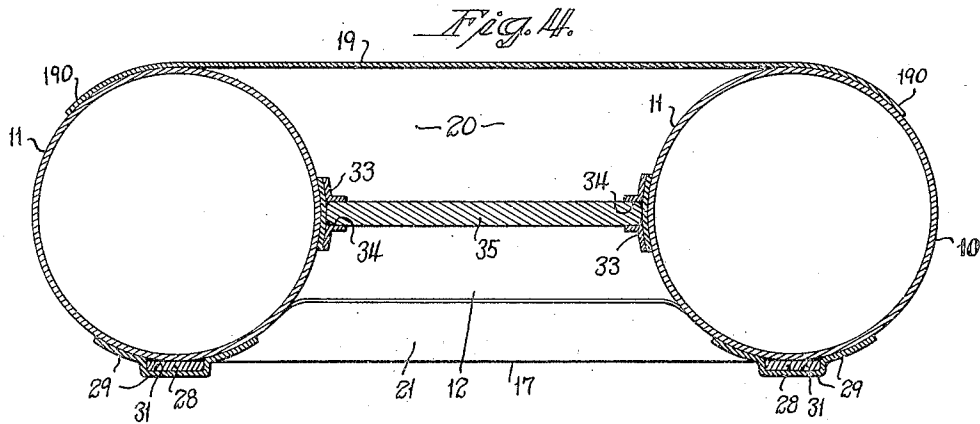
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PNEUMATIC FLOAT

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The present invention relates in general to floats and, more especially, to an improved pneumatic float which is particularly useful as a device both for participation in water sports and for relaxation.

An object of the invention is to provide an improved pneumatic float having a multiplicity of uses.

A further object is to provide an improved pneumatic float which combines the functions of a mattress, aqua-sled, boat and chair.

A still further object is to provide in combination with a pneumatic float, improved means for converting the float into a substantially self-supporting chair.

With the above and other objects in view, as will appear to those skilled in the art from the present disclosure, this invention includes all features in the said disclosure which are novel over the prior art.

In the accompanying drawings, in which certain modes of carrying out the present invention are shown for illustrative purposes:

Fig. 1 is a plan view of the improved pneumatic float of this invention;

Fig. 2 is a side elevation of the float shown in Fig. 1;

Fig. 3 is a bottom plan view of the float;

Fig. 4 is an enlarged section on line 4-4 of Fig. 1;

Fig. 5 shows the float altered in shape so as to simulate a chair; and

Fig. 6 is a section similar to Fig. 4 but showing a modification of the transverse stiffening-means for holding the sides of the float in spaced parallel relationship.

Referring to the drawings which show an exemplary embodiment of the invention, the improved float comprises a substantially-elongated quadrilateral-member indicated generally at 10, having spaced slightly-forwardly-converging sides 11 and spaced parallel end-sections 12 and 13, the latter being joined to the corresponding ends of the side-pieces 11 by suitable corner-sections 14 and 15 respectively, each of which is substantially keystone in shape, as seen in Figs. 1 and 3. The material from which the sides, end-sections and corner-sections are formed comprises a water-impermeable material capable of being inflated and is preferably a tubular rubberized-fabric stock, although any other equivalent material may be used. All joints between the sides 11, end-sections 12 and 13 and corner-sections 14 and 15 are held together by rubber binding tape 16 or equivalent fastening-means, 55

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secured by a rubber cement or equivalent sealing-means over the adjoining edges of the joints, so as to form a continuous air-inflated tube. At a convenient place in the wall of the float, preferably on the inner wall of the end-section 13, is an air-valve 30 for inflating the float, either by mouth or other means. The particular float shown by way of illustration is characterized by a bow-portion 18 which in normal use of the float projects upwardly relative to the low stern-portion 17 (see Fig. 2). To effect this preferred shape, the end-section 12 and its corner-sections 14, constituting the stern 17 of the float, are larger in diameter than the end-section 13 and its corner-sections 15, which constitute the bow 18 of the float. Consequently, the sides 11 are not cylinders of uniform diameter but each is tapered longitudinally from its forward end, which is of relatively-small diameter, to its rear end, which is of relatively-large diameter, in order that the respective ends of each side 11 will correspond in diameter substantially to the diameters of the respective corner-sections and end-sections with which they are joined. Secured to the sides and end-sections of the float is a cover or deck 19 comprising a substantially-rectangular sheet of flexible material, preferably a woven rubberized fabric, a relatively-wide continuous marginal-portion 190 of which is cemented or otherwise secured over the upper peripheral surfaces of the sides 11 and the bow- and stern-portions 17 and 18 respectively of the float, the deck 19 being so arranged that when the float is inflated, the deck will be stretched substantially tautly over the substantially-rectangular central aperture 20 prescribed by the spaced sides 11 and end-sections 12 and 13 of the float. When the float is used as a mattress, raft or seat, the deck 19 is adapted to support a person reclining or sitting thereon. As shown in Fig. 2, suitable scuff-resisting pads 21 and 22 of a relatively-tough water-resistant rubberized fabric may be cemented around the stern- and bow-portions respectively of the float to protect the rubberized fabric of the float when the latter is pulled up onto the beach or subjected to similar scuffing or scraping action.

The structural features of the float described above constitute a preferred construction and one which is particularly adapted to the purposes of this invention. It will be understood, however, that the preferred construction serves only to illustrate the salient features of the invention, and is not a limitation thereto, the invention

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being applicable to other equivalent types of floats.

As shown in Figs. 1 and 2, both sides 11 of the float are provided with suitable harness-means indicated generally at 23 and comprising patches 24 secured to the bow- and stern-portions of the float preferably relatively high up on the outer walls of the sides, each patch embodying fastening-means such as D-rings 25 for receiving a strap 26. Each strap 26 is provided with a cinch-buckle 27, so that the effective length of the straps may be increased or decreased, as desired. By shortening the length of both the straps 26 substantially equally, the opposite ends 17 and 18 of the float will be drawn up into angular relationship to each other, as shown in Fig. 5, in which position the bow-portion 18 of the float is adapted to form the back of a chair-like structure, the stern-portion 17 of the float being the seat.

In order to provide a satisfactory chair-like structure, suitable stiffening-means are provided to prevent the float from buckling at undesired locations when bent in the form of a chair. To this end, the bottom of the float (Fig. 3) is provided with a plurality of stiffening-elements or stays indicated at 28, comprising relatively-thin-but-stiff slabs of wood or equivalent material attached to the bottom of each side 11, adjacent the forward and rearward ends thereof, the longitudinal axis of each stay being parallel to the longitudinal axis of its respective side 11. A pair of such stiffening-elements 28 is shown arranged in axial alignment under each side 11 of the float for providing the desired rigidity at opposite ends thereof. It will be appreciated, however, that the stiffening of a limited area at the opposite ends of each side may be accomplished by one large stay, as shown, or by a plurality of relatively-small stays. Each stay or slab of wood 28 is adapted to be attached to its respective area of the float by means of a reinforcement 29 which is an elongated substantially-rectangular sheet of tough water-resistant rubberized fabric of a length comparable to the length of each side 11 and substantially thrice the width of the wooden stays 28. Each rubberized-fabric reinforcement is secured to the underside of one of the sides 11 of the float by rubber cement or equivalent fastening-means, and is adapted to provide a pair of longitudinally-aligned pockets 31 to accommodate the stays 28, each of the latter being wholly enclosed within its respective pocket 31. As shown in Fig. 3, each stay 28 is preferably of a length such as to extend from one end of its respective side 11 to a point just short of the middle thereof.

In accordance with this construction, the forward half or bow-portion of the float and the rearward half or stern-portion thereof are made relatively rigid or non-flexible, whereas, the mid-portion of the float, along a transverse axis 32 intermediate the inner ends of the respective stays 28 and including the deck 19, is readily flexible, which permits the float to be bent along its transverse axis, as indicated in Fig. 5, whereupon the deck-covered stern-portion 17 of the float constitutes a relatively-stiff self-supporting seat, while the deck-covered bow-portion 18 constitutes a relatively-stiff back-rest, the latter being held rigidly in angular relation to the seat by the shortened straps 26.

An additional feature of the invention is the use of transverse stiffening-means for holding the sides 11 of the float in normal spaced rela-

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tionship even when supporting the weight of a person, so as to preclude any tendency for the sides to draw together and reduce the tautness of the deck 19. To this end, the oppositely-disposed inner walls of the sides 11 may be provided with suitable recessed-means 33 comprising a rubberized fabric or equivalent material, built up or otherwise constructed to provide sockets 34 which are suitably shaped to receive the opposite ends respectively of a stiffening-element or stay such, for example, as a relatively-wide wooden board 35, the recessed-means being cemented or otherwise secured to the walls of the sides 11 on a transverse line 36 rearwardly of the transverse axis 32 of the float, so that the latter may be bent in the manner hereinabove described, and to provide a transverse stiffened area at the stern-portion of the float. The opposite ends of the stay 35 are arranged to make a relatively-tight fit in the respective sockets 34 of the recessed-means 33, so as to be held securely therein during normal use of the float. However, when the float is to be deflated and folded, the ends of the stay 35 are adapted to be readily withdrawn from the sockets 34.

Although a wooden stay, such as illustrated at 35 in Fig. 4, provides a highly satisfactory form of transverse stiffening-means, other equivalent means may be used such as, for example, the pneumatic stiffening-element indicated generally at 37 in Fig. 6. The latter is preferably a tube of a rubberized fabric arranged to extend between the oppositely-disposed inside walls of the sides 11a, the opposite open ends of the tubular stay being cemented or otherwise secured thereto, by rubber binding tapes 38. Suitable apertures 39 are provided in the opposite walls of the sides 11a within the confines of the tubular stay 37 to provide a continuous air-passage between each side 11a and the tubular stay. It will be clear that when the float is inflated, the tubular stay forms a relatively-rigid transverse stiffening-means for effectively preventing the sides 11a of the float from collapsing inwardly.

The float is also adapted to have other uses in addition to those of a mattress, raft and chair. Thus, by inverting the float so that its deck 19 is on the bottom, the float constitutes a boat, in which case the transverse stiffening-element, and in particular the wooden stay 34, will serve as a seat. It is also within the purview of the invention to utilize the float as an aquasled, and to this end it may be provided with a second set of patches 40 at its forward end, the patches 40 having fastening-means such as D-rings 41 for attachment of a towline 42 to the float for use in towing the latter. When so used, the straps 26 provide holding-means or reins for a person using the float as an aquasled.

It will be clear from the foregoing description that when the tubular member is inflated to its elongated or outstretched form, it constitutes a mattress adapted to support a person on the ground, or a float upon which a person may be supported on the deck 19 above the surface of the water. When the float is to be used as a chair, the bow- and stern-portions may be readily drawn up in angular relation to each other by means of the shortened straps 26 which function to hold the weight of a person seated upon the deck-covered stern-portion 17 of the float and resting against the deck-covered relatively-rigid bow-portion 18 which constitutes, in effect, a back-rest, the longitudinal and transverse stiffening-elements providing adequate rigidity over

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limited areas of the float to prevent undesirable buckling.

The invention may be carried out in other specific ways than those herein set forth without departing from the spirit and essential characteristics of the invention, and the present embodiments are, therefore, to be considered in all respects as illustrative and not restrictive, and all changes coming within the meaning and equivalency range of the appended claims are intended to be embraced therein.

I claim:

1. A flexible pneumatic float comprising an inflated quadrilateral tubular member of water-impermeable material; and longitudinally-discontinuous stiffening-means secured to said tubular member longitudinally thereof and adjacent its opposite ends respectively to give rigidity thereto and to permit said float to be bent transversely intermediate the discontinuous stiffening-means.

2. A flexible pneumatic float comprising an inflated substantially-rectangular tubular member of water-impermeable material, said tubular member being constructed and arranged to have a relatively-high bow-portion and a relatively-low stern-portion; and longitudinally-discontinuous stiffening-means attached to said tubular member longitudinally thereof and adjacent said bow-portion and stern-portion respectively, to give rigidity to said bow and stern portions and to permit said float to be bent transversely intermediate the discontinuous stiffening-means.

3. A flexible pneumatic float comprising a substantially-rectangular inflated tubular member of water-impermeable material, said tubular member having a relatively-high bow-portion and a relatively-low stern-portion; longitudinally-discontinuous stiffening-means; and means on said tubular member adjacent said bow-portion and stern-portion respectively, to secure said discontinuous stiffening-means thereto longitudinally thereof so as to give rigidity to said bow and stern portions and to permit said float to be bent transversely intermediate the discontinuous stiffening-means.

4. A flexible pneumatic float comprising a substantially-rectangular inflated tubular member of water-impermeable material, said tubular member having a relatively-high bow-portion and a relatively-low stern-portion; longitudinally-discontinuous stiffening-means; and fabric reinforcements on the underside of said tubular member constructed and arranged to secure said discontinuous stiffening-means thereto longitudinally thereof so as to give rigidity to said bow and stern portions and to permit said float to be bent transversely intermediate the discontinuous stiffening-means.

5. A flexible pneumatic float comprising a substantially-rectangular inflated tubular member of water-impermeable material, said tubular member having a relatively-high bow-portion and a relatively-low stern-portion; stiffening-means secured to the underside of said tubular member adjacent said bow-portion and stern-portion respectively to give rigidity to said bow and stern portions; and harness-means secured at opposite ends of said tubular member, said harness-means including a strap arranged to hold the bow and stern portions of said tubular member in angular relationship to each other whereby the respective ends of said tubular member constitute a substantially-rigid seat and back-rest.

6. A flexible pneumatic float comprising an in-

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flated elongated tubular member of water-impermeable material; a flexible deck secured to said tubular member and arranged to be stretched substantially taut when said tubular member is inflated; and longitudinally-discontinuous stiffening-means attached to said tubular member longitudinally thereof to give rigidity to corresponding sections of said deck and to permit said deck to be bent transversely intermediate said discontinuous stiffening-means to form a seat and back-rest.

7. A flexible pneumatic float comprising an inflated elongated tubular member of water-impermeable material; a flexible deck secured to said tubular member and arranged to be stretched substantially taut when said tubular member is inflated; longitudinally-discontinuous stiffening-means attached to said tubular member longitudinally thereof to give rigidity to corresponding sections of said deck and to permit said deck to be bent transversely intermediate said discontinuous stiffening-means to form a seat and back-rest; and transverse stiffening-means to provide additional rigidity to one section of said deck.

8. A flexible pneumatic float comprising a substantially-rectangular inflated tubular member of water-impermeable material, said tubular member having a relatively-high bow-portion, a relatively-low stern-portion and a central aperture; a flexible deck secured to said tubular member and arranged to be stretched substantially taut over said central aperture when said member is inflated; stiffening-means secured to the underside of said tubular member adjacent said bow-portion and stern-portion respectively, to give rigidity to said bow and stern portions; and harness-means secured at opposite ends of said tubular member, said harness-means including a strap arranged to hold the bow and stern portions of said tubular member in angular relationship to each other and to bend the flexible deck substantially intermediate said bow and stern portions whereby the portions of said deck covering the rigidified ends of said tubular member constitute a seat and a back-rest respectively.

9. A flexible pneumatic float comprising a substantially-rectangular inflated tubular member of water-impermeable material; said tubular member having a relatively-high bow-portion, a relatively-low stern-portion and a central aperture; a flexible deck secured to said tubular member and arranged to be stretched substantially taut over said central aperture when said tubular member is inflated; longitudinal stiffening-means; pockets on the underside of said tubular member adjacent the bow and stern portions thereof to secure said stiffening-means thereto so as to give rigidity to said bow and stern portions, the portion of said tubular member intermediate the rigidified bow and stern portions thereof being substantially flexible; and harness-means secured at the bow and stern portions of said tubular member, said harness-means including a strap arranged to be shortened to bend said deck and said tubular member at said intermediate flexible portion and to hold the rigidified bow and stern portions of said tubular member in angular relationship with respect to each other whereby the portions of said deck covering the rigidified stern-portion and bow-portion of said tubular member constitute a seat and back-rest respectively.

10. In combination: a flexible pneumatic float; stiffening-elements secured to said float longitudinally and transversely thereof to give rigid-

ity to limited areas of said float and to permit flexing of the non-rigidified areas of said float; and harness-means secured to said float to flex the non-rigidified areas thereof.

11. In combination: a flexible pneumatic float; stiffening-elements secured to said float at spaced points thereof to give rigidity thereto and to provide a relatively-flexible portion intermediate the rigidified spaced points of said float, said float being adapted to be bent at said intermediate flexible portion; and harness-means secured at the opposite ends of said float arranged to hold the float in a bent position.

12. In combination: a flexible pneumatic float; longitudinal stiffening-elements secured to said float at opposite ends thereof to give rigidity thereto and to provide a relatively-flexible portion intermediate the rigidified opposite ends of said float, said float being adapted to be bent at said intermediate flexible portion; and harness-means secured at the opposite ends of said float, said harness-means including a strap arranged to hold one end of the float in angular relationship with respect to the opposite end thereof, whereby the respective ends of said float constitute a substantially-rigid seat and substantially-rigid back-rest.

13. In combination: a flexible pneumatic float having a central aperture, a deck-portion covering said central aperture and bow and stern portions; pockets on the underside of said float adjacent the bow and stern portions thereof; stiffening-elements in said pockets; and means secured at the bow and stern portions of said float to hold said bow and stern portions in angular relationship, whereby the deck-covering of the rigidified bow-portion of said float constitutes a back-rest, and the deck-covering of the rigidified stern-portion of said float constitutes a seat.

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