Sept. 11, 1962 W. L. BENSON, JR 3,053,216

FLOATABLE HOUSING

Filed Feb. 2, 1959 4 Sheets-Sheet 1

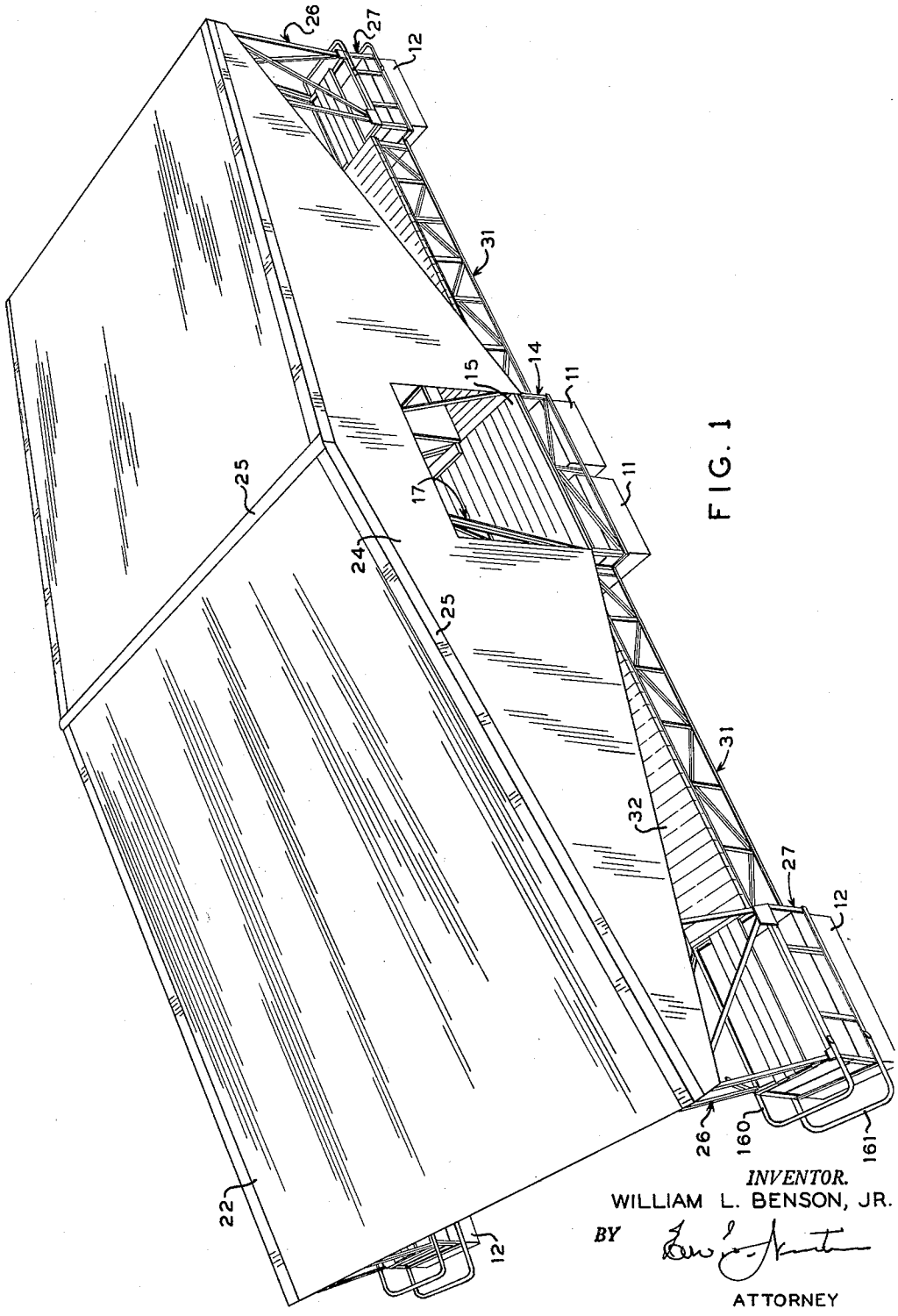


FIG. 1

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FLOATABLE HOUSING

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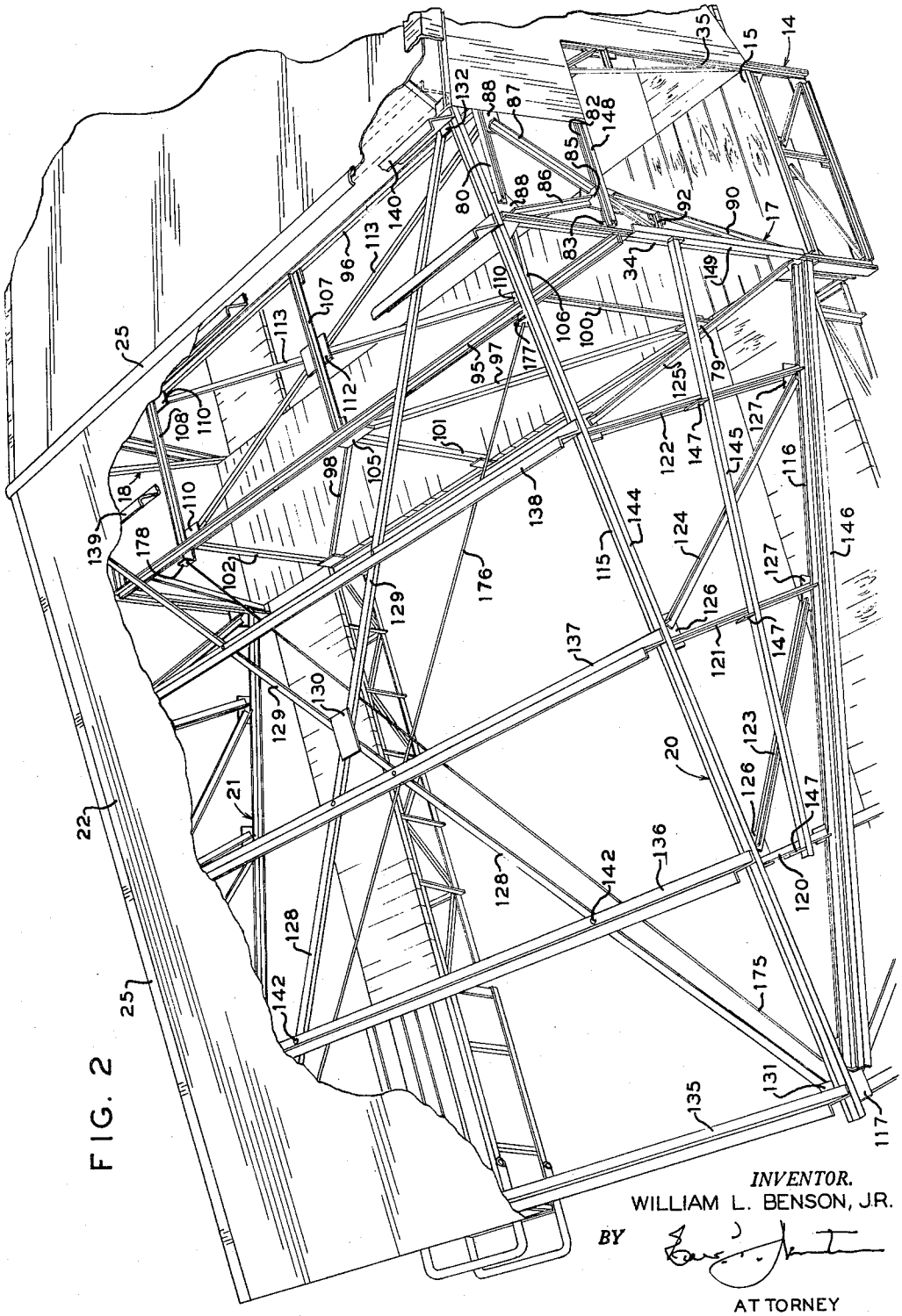


FIG. 2

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FLOATABLE HOUSING

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FIG. 3

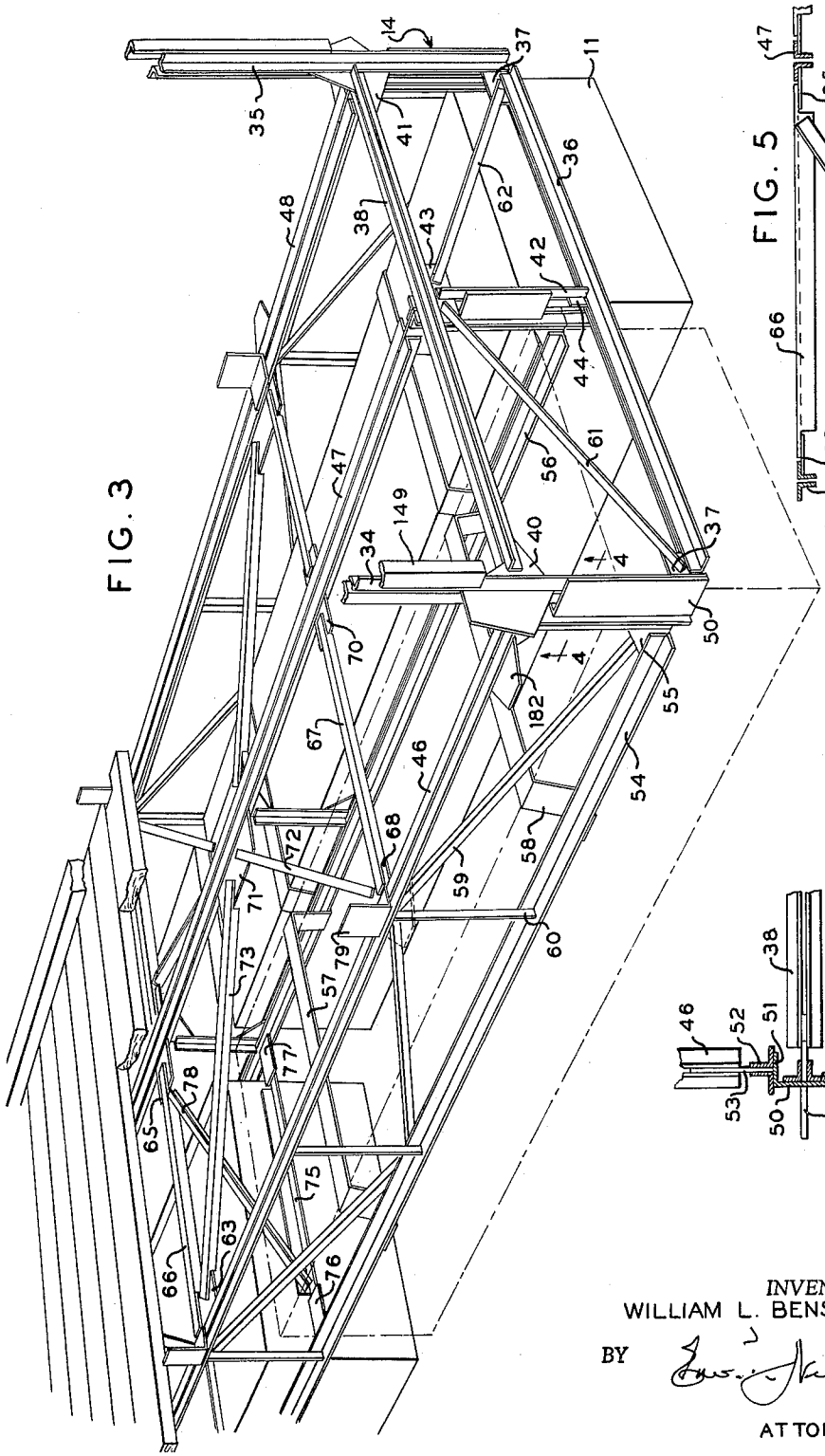


FIG. 5

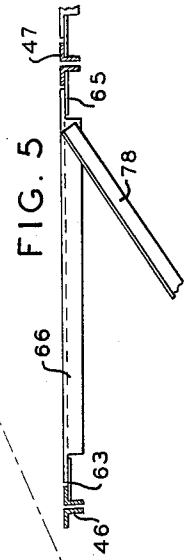


FIG. 4

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FLOATABLE HOUSING

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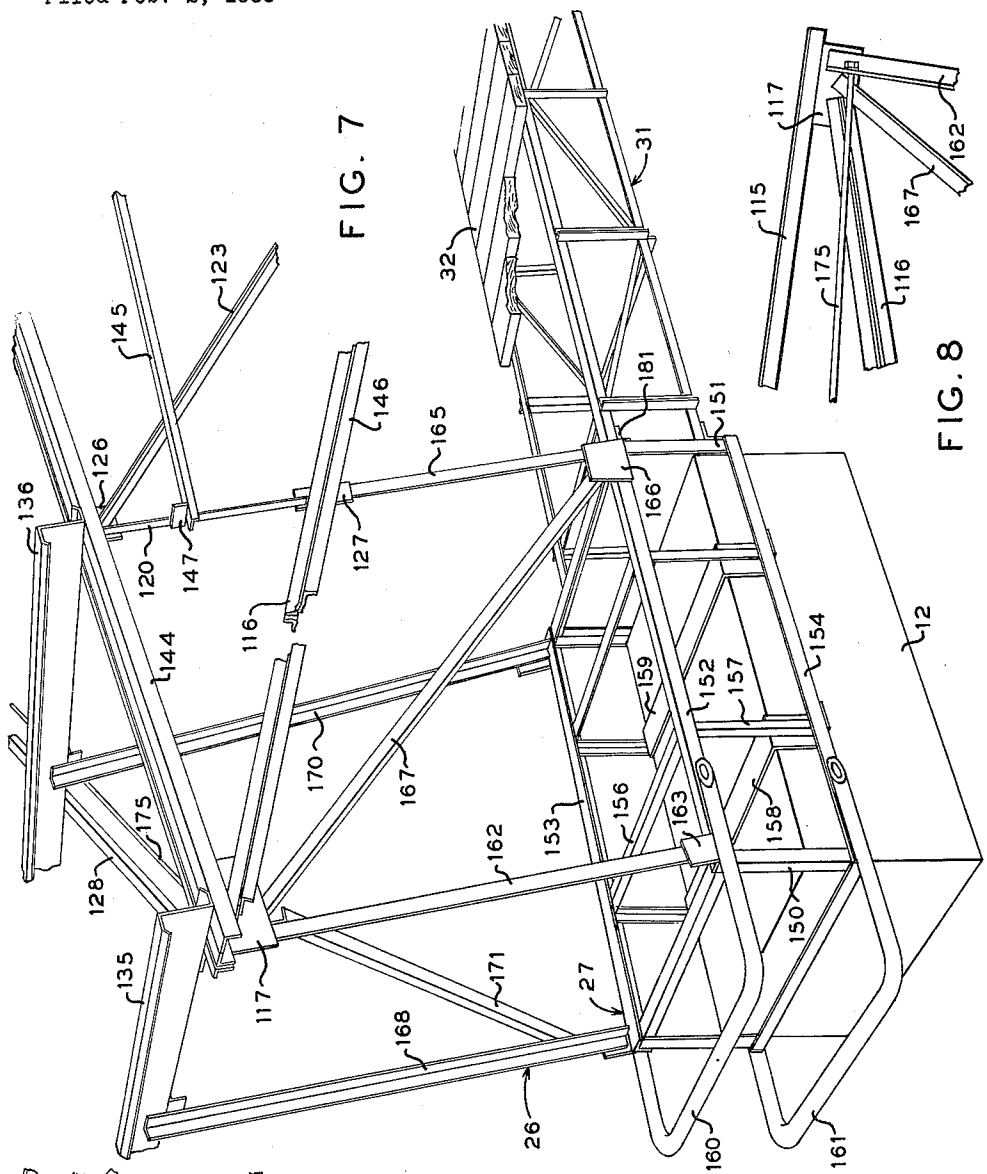


FIG. 7

FIG. 8

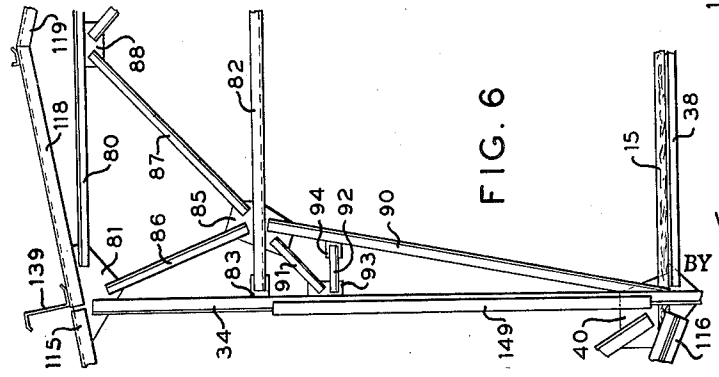


FIG. 6

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United States Patent Office 3,053,216 Patented Sept. 11, 1962

3,053,216
FLOATABLE HOUSING

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Filed Feb. 2, 1959, Ser. No. 790,720
12 Claims. (Cl. 114—.5)

This invention relates to a floatable housing, and more particularly concerns a float supported boathouse of unusually high stability under all conditions of wave action.

In recent years there has been increased public boating use of a large number of lakes created primarily for irrigation, power generation and flood control. Since such artificial lakes are subject to considerable "draw-down" to permit effecting their primary purpose, the shore lines thereof are extensively variable, thereby precluding the use of ground supported boathouses which are now in general use with relatively fixed-level bodies of water. Conventional floating boathouses known to the prior art are suitable for only limited application on such artificial lakes because of their failure to provide satisfactorily for torsional distortion due to the magnitude, angle of attack, and frequency of wave action. As a result, in larger lakes which often develop substantial wave action, such conventional floating arrangements have been found unstable and often unsafe due to structural fatigue.

It is one of the objects of the present invention, therefore, to overcome these and many other problems known to the prior art by the provision of a new and improved floatable housing in which a cantilever superstructure serves the two-fold furpose of supporting the skin or covering of the housing and establishing unit stability.

An additional object of this invention is to provide a new ind improved floatable housing which is structurally rigid throughout, having no moving parts subject to wear or adjustment, and in which no structural material is located below the water line, so that all load bearing members are subject to inspection and maintenance with a minimum of effort.

A further object of this invention is to provide a new and improved floatable housing in which the buoyant flotation bodies thereof are so positioned and arranged as to permit utilization of walkways for ingress and egress by foot or land-vehicular traffic so as to allow convenient access to boats and equipment located within the slipways of the structure.

Still another object of this invention is to provide a new and improved floatable housing in which the structural members thereof are so arranged as to reduce the internal stresses in the vertical plane of the structural complexes to near zero, so that there is no theoretical limit on the capacity of the structure to evade torsional stress with respect to the magnitude, angle of attack, or frequency of wave action.

It is also among the objects of this invention to provide a new and improved floatable housing which is a self-contained structural unit so that groups of such units in virtually any desired pattern may be clamped together without violating the inherent ability of any one unit to maintain its position relative to the mean water surface at its location.

An additional object of this invention is to provide a new and improved floatable housing having buoyant flotation bodies therein which provide maximum water displacement for the weight of the displacing media used and which are relatively inert to corrosive agents normally encountered as well as being immune to accidental puncture.

It is to be included among the objects of this invention to provide a new and improved floatable housing which supplies an immediate and effective answer to the docking and protection of boats and which may be adapted to many other uses where a protected water area is required.

Many other features, advantages and objects of the invention will become apparent from further consideration of the following specification taken in conjunction with the accompanying drawings in which like designators indicate the same or similar parts throughout, and in which:

FIG. 1 is a perspective view showing one type of floatable housing according to the present invention.

FIG. 2 is a fragmentary perspective view, partly broken away, showing the superstructure of the floatable housing of FIG. 1.

FIG. 3 is a perspective detail, partly broken away, showing the construction of the central base frame.

FIG. 4 is a horizontal cross section, taken along the line 4—4 of FIG. 3, showing the girder to corner column securing arrangement in the central base section.

FIG. 5 is a vertical cross section showing the manner of securement of an L-beam halfway along the top side of the central base frame.

FIG. 6 is an enlarged perspective view, partly broken away, showing the walkway bridging and cantilever securing arrangement.

FIG. 7 is a perspective view, partly broken away, showing the cantilever support arrangement for a remote base frame.

FIG. 8 is a fragmentary detail showing the manner of securement of a wind rod to the free end of a cantilever truss.

In considering first the principle upon which the present invention is based, a rigid center section is provided having flotation equal to the total weight of the structure so that the whole structure is free to rotate in any direction about its center line and consequently to accept outside applied force without distortion. This center section is stabilized by flotation bodies symmetrically arranged at a relative large distance from the center lines and so proportioned as to tend to maintain the center section parallel with the plane of the mean water surface. The net result of the arrangement renders the height of the center of gravity above water line small as compared to the gross horizontal projected area of the structure.

The remote flotation stabilizing bodies are arranged in opposed pairs when related to the center lines of the structure. Consequently, this requires that any force tending to create torsion within the structure be opposed by at least two stabilizing forces and uses the weight of the structure itself to transfer applied forces to the main supporting section which acts as a geometrical line axis. This, of course, leaves the horizontal plane of the structure approximately parallel to the mean water surface at all times and under all conditions of wave magnitude, frequency or angle of attack.

Referring now particularly to the drawings, FIGS. 1 and 2 show the floatable housing of my invention as being characterized by a covered superstructure of generally rectangular outline having main flotation units 11 extending transversely under the center section of the superstructure, and remote stabilizing pontoons 12 at each corner thereof. Main flotation units 11, which are of such combined buoyancy as to floatably sustain the entire superstructure above water, are retained in position under the center section by a central base frame 14 forming a central support which supports the walkway planking 15.

Extending upwardly above the central base frame 14 is walkway bridging that is supported across the central base frame 14 by the center section or by portal frames 17 and 18, the arrangement being such as to define a

transverse passageway through the housing for people and vehicles. Extending oppositely from portal frame 17 normal to base frame 14 of the center section is a pair of outwardly tapering cantilever trusses 20 which form a balanced cantilever superstructure arrangement pivotable about a center line through the center section. In like manner, extending oppositely in a balanced arrangement from a portal frame 18 is a second pair of outwardly tapering cantilever trusses 21. The covering includes slipway roofing 22, preferably of corrugated aluminum, which is supported from the cantilever trusses 21 and the siding or side wall facing sheets 24 also being secured thereto. Suitable flashing 25 is provided at the hip of the structure and along the roof and side wall junctions.

Depending from the free end of each cantilever truss remote from the center section are strut assemblies 26 which support the remote base frames 27 that retain stabilizing pontoons 12 at each corner of the boat house. Between each remote base frame 27 and central base frame 14 is provided a horizontal truss 31 which carries planking 32 so as to form a quay, the arrangement being such that the layout of the central walkway and quays would appear in a top plan view in the form of an H. It will be readily apparent that the quay arrangement is such as to define a pair of slipways, one on either side of the main walkway, for the mooring of boats.

Considering now one side of the structure in greater detail, it being understood that the other side is identical, corner columns 34 and 35, each being built up from a pair of L-shaped angle irons, are the main structural members of the center section, forming the corner members for the base frame and the walkway bridging thereabove. As shown most clearly in FIGS. 3, 4 and 5, the central base frame has a lower built-up beam 36 horizontally secured to the lower ends of corner columns 34 and 35, respectively, by fillet plates 37 which are welded between the adjacent sections of each member. In like manner, the upper or portal threshold beam 38 is horizontally secured between columns 34 and 35 by gusset plates 40 and 41, respectively, which are welded between adjacent sections of each member. It will be noted that each of gusset plates 40 and 41 extends outwardly from the base frame for the securement thereto of the lower chord of one of the cantilever trusses 20, as will hereinafter be seen. Centrally between corner columns 34 and 35 is the build-up stub column 42 secured to the upper and lower beams 38 and 36 by gusset plates 43 and 44, respectively.

Extending transversely across the top side in the central base frame section are spaced girders 46, 47 and 48, secured, respectively, to corner column 34, stub column 42 and corner column 35. The manner of securement of each of these girders is best depicted in FIG. 4, where it can be seen that built-up corner column 34 has welded to its flat base portion the right angle adapter 50 so as to present the flange 51 thereof confronting the end of girder 46. Built-up stub coupler 52 has its flat base portion welded along flange 51 of adapter 50, the arrangement being such that girder 46 is secured to the upper end of stub coupler 52 by way of fillet plate 53 which is welded between the adjacent sections of each member. In like manner, girder 47 is secured to upstanding central stub column 42, and girder 48 is secured to corner column 35.

Extending transversely across the bottom of the central base frame section spaced downwardly from girders 46 and 48 are outer L-beams, as at 54, each being secured to the lower end of its respective stub coupler 52 by being welded to a fillet plate 55 which, in turn, is welded between the adjacent sections of the coupler. Extending across the central base frame section spaced downwardly of central girder 47 is a built-up girder 56, being secured to the bottom of stub coupler 42 in a manner similar to that shown in FIG. 4. In that embodiment of the invention shown by way of example, four central flotation units are employed under the central base frame section to support the centilever superstructure, each being retained between an outer L-beam 54 and the center girder 56 by straps, as at 57 and 58, secured therebetween. This arrangement is such that the straps merely pass over the flotation units being flexed upwardly by the buoyant force of the latter so as to provide for retention of the units within the base frame.

Bracing is provided along each side of the base frame by truss framing, including counters 59 and columns 60, which may, for example, be secured between girder 46 and L-beam 54 as by welding. Additional bracing at each end of the central base frame is provided for by diagonals 61 and 62, each being secured at its lower end to a corner fillet plate 37 and at its upper end to central gusset plate 43, which also secures the central stub column 42 to upper beam 38.

Providing strength to the top portion of the central base frame section and additional support for walkway planking 15 is the truss framing between the girders 46, 47 and 48. Considering the truss framing between girders 46 and 47, it being understood that the truss framing between girders 47 and 48 is symmetrical, girder 46 is provided halfway along its length with an inwardly extending gusset plate 63 welded to the underside of the horizontal flange of the inner section of the girder. In like manner, gusset plate 65 is welded under the horizontal flange of the confronting section of the central girder 47 halfway along its length. As shown most clearly in FIG. 5, L-beam 66 is secured between gusset plates 63 and 65, the arrangement being such that the downwardly disposed or vertical flange at each end of the L-beam is cut away so as to permit the horizontal flanges thereof to be welded to the top side of each gusset plate, thereby providing a substantially even surface for the support of the walkway planking. Parallel with but spaced outwardly from L-beam 66 is a second L-beam 67, secured in a like manner between girder 46 and center girder 47 by gusset plates 68 and 70, respectively. Halfway between gusset plates 70 and 65 on center girder 47 is welded gusset plate 71. Secured between gusset plate 71 and gusset plate 68 is the diagonal 72; likewise, secured between gusset plate 71 and gusset plate 63 is the diagonal 73, the securing of both diagonals being similar to the manner of L-beam securement depicted in FIG. 5. Between lower girders 54 and 56 below L-beam 66 is secured lower L-beam 75 by means of outer gusset plates 76 and 77, similar to the securement of upper L-beam 66. A diagonal 78 is welded between the inner end of upper L-beam 66 and the outer end of lower L-beam 75 to provide additional bracing for the center section. L-shaped anchor brackets, at 79, each having a lower horizontal flange welded to a girder 46, extend upwardly for securing the walkway bridging members, as will hereinafter be seen.

Considering now more particularly the walkway bridging and cantilever securing arrangement of the center base frame section, built-up corner columns 34 and 35 are joined at the upper extremity of each by the crossbeam 80. Referring to one half of end frame 17, it being understood that the other half is symmetrical, this securement is accomplished by welding corner gusset plate 81 between the adjacent sections of corner column 34 at the upper end thereof, and welding the crossbeam thereto. Gusset plate 81, in addition to securing crossbeam 80, passes through corner column 34 to secure on the other side thereof the upper chord of cantilever truss 20, as will be hereinafter seen.

Downwardly of crossbeam 80, built-up headbeam 82 of the portal entrance is secured between corner columns 34 and 35 by means of gusset plates, as at 83, being welded between the section of each member. To provide additional bracing for each end frame, a gusset plate 85 is secured in headbeam 82 inwardly the end thereof, extending above and below for the securement thereto of a plurality of bracing members. This arrangement includes a first L-brace 86 between corner gusset plate 81 and the

upper portion of gusset plate 85, with a second L-brace 87 extending between the upper portion of gusset plate 85 and a center gusset plate 88 secured halfway along the crossbeam 80. Welded to the gusset plate 40 at the juncture of portal threshold beam 38, and the lower portion of gusset plate 85 is an L-strut 90, which is also secured to column 34 by intermediate L-braces 91 and 92. For this purpose, corner column 34 is provided between the portal threshold beam and headbeam with an inwardly extending gusset plate 93. L-brace 91 is secured between column gusset plate 93 and the lower portion of headbeam gusset plate 85, and stub-like L-brace 92 is secured horizontally between column gusset plate 93 and a gusset plate 94 on L-strut 90.

Extending parallel with the outer base frame girders 46 and 48, respectively, are built-up overhead girders 95 and 96, each being secured by its base flange to the base flanges of corner columns 34 and 35, respectively. Each side wall of the walkway passage is provided with truss framing, including L-counters 97 and 98 and L-columns 100, 101 and 102. Considering one side wall, it being understood that the other side wall is identical, each framing member is welded at its lower end to one of the spaced anchor brackets 79 which are welded to outer base frame girders 46 and 48. Halfway along overhead girder 95 is secured a depending gusset plate 105 to which the upper ends of center column 101 and counters 97 and 98 are welded. Outer L-columns 100 and 102 of the side wall framing are secured at their lower ends, respectively, to the same anchor bracket 79 to which the lower ends of L-counters 97 and 98 are secured. The upper ends of L-columns 100 and 102 are directly welded to the outer upright flange of the overhead girder 95. It will be noted that outer L-columns 100 and 102 of the sidewall framing are spaced inwardly along the central base frames 17 and 18, respectively, with no counter or brace therebetween, so as to provide an unobstructed passage from the walkway to the quays.

In the overhead arrangement of the walkway bridging, L-beams 106, 107 and 108 are secured between overhead girders 95 and 96 in parallel with end frame or portal headbeam 82. Outer L-beams 106 and 108 are spaced inwardly from the end frames, being secured to overhead girders 95 and 96 by gusset plates 110 at approximately the position of the side wall L-columns 100 and 102, with center L-beam 107 being secured halfway therebetween to the girders 95 and 96 in like manner. Welded to the underside of center L-beam 107 intermediate the ends thereof is a gusset plate 112 from which extend four diagonals 113, each to one of the gusset plates 110 that secure the respective ends of outer L-beams 106 and 108 to overhead girders 95 and 96.

Considering next one of the cantilever arrangements of my invention, it being understood that each of the others is either identical or symmetrical, cantilever 20 is in the form of an outwardly tapering truss having upper and lower built-up chords 115 and 116, respectively, secured at their innermost ends to the center section and secured together at their outer ends by gusset plate 117 which is welded between the adjacent sections of each chord member. The innermost end of lower chord 116 is welded to base frame gusset plate 40, and upper chord 115 is welded to gusset plate 81 at the upper end of corner column 34. As an extension of upper chord 115, beam 118 is welded to gusset plate 81 for confronting end-to-end securement at the hip of the structure with the innermost end of beam 119 which is an extension of the upper chord of the oppositely projecting cantilever.

Providing structural strength to the cantilever is the truss framing between the upper and lower chords, including spaced L-struts 120, 121 and 122 and counters 123, 124 and 125. The L-struts are secured normal to upper cantilever chord 115, each being welded to a gusset plate, as at 126, which is also secured between adjacent sections of the upper chord. In like manner, the lower end of each of these L-struts is secured to lower cantilever chord 116 by a gusset plate, as at 127. Extending between the upper end of L-strut 120 and the lower end of adjacent L-strut 121 is the counter 123, being secured between gusset plates 126 and 127. In like manner, counter 124 is secured between the upper end of L-strut 121 and the lower end of L-strut 122. Counter 125 is similarly secured at its upper end to the upper end of L-strut 122, but secured at its lower end to the base frame gusset plate 40 to which is welded corner column 34 of the center base frame section along with the innermost end of lower chord 116 of the cantilever.

Secured between the free end of each cantilever and the innermost end of extension beam 118 of the upper chord of its companion cantilever is a diagonal including colinear members 128 and 129 joined by a central gusset plate 130, the arrangement being such that the outer end of each diagonal member 128 is welded to a gusset plate 131 on upper crod 115, and the inner end of each diagonal member 129 is welded to a gusset plate 132 on the inner end of each extension member 118. Mounted between the upper chords 115 of companion cantilevers 20 and 21 are Z-shaped purlins 135, 136, 137, 138, 139 and 140. Outermost purlin 135 is secured across the free ends of the cantilevers, and innermost purlin 140 is secured across the inner ends of extension beams 118, while purlins 136, 137, 138 and 139 are secured at spaced intermediate positions therebetween. Each purlin is further secured, as by bolts 142, to the diagonal members 128 and 129 which pass thereunder.

In addition to providing rigidity to companion cantilevers, the purlins also support the slipway roofing 22, which may be of corrugated aluminum or other lightweight sheet material suitably secured to the purlins. Siding 24 of the same or similar material is supported by L-shaped girts 144, 145 and 146 which are secured adjacent each cantilever truss in such manner as to present one flange of each vertically disposed girt to facilitate securement of the siding 24. Upper girt 144 is bolted to the lowermost flange of each of purlins 135 to 140 where the purlins extend over the upper chord 115. The lower girt 146 is welded to the outer flange of lower cantilever chord 116, while intermediate girt 145 is secured to the cantilever L-struts 120, 121 and 122 by support plates 147, each of which is joined to an L-strut intermediate the ends thereof. For this same purpose, L-shaped girt 148 is welded to the headbeam of the portal entrance in the center section and girt 149 is welded to corner column 34, the arrangement being such that the outermost flange of each is vertically disposed for the securement of siding thereto.

As shown most clearly in FIG. 7, remote base frame 27, depending by strut assembly 26 from the free end of cantilever 20, may be generally characterized as a box-like framework having rectangular end frames 150 and 151 secured together at the top by upper corner girders 142 and 153, and at the bottom by lower corner girders 154. Intermediate the end frames 150 and 151, crossbeams 156 are secured between the upper girders, and crossbeams 157 are secured between the upper and lower corner girders on each side, the arrangement being such that the bottom of the remote base frame is open so as to permit retention therein of the pontoon 12 by the straps 158 and 159 which pass over the pontoon for securement between the lower corner girders 154. Remote pontoon 12 is preferably made of expanded or foamed polystyrene so as to provide maximum flotation, with the result that the upward buoyant force thereof flexes straps 158 and 159 upwardly so as to satisfactorily provide for retention of the pontoon. Coextensive, U-shaped fenders 160 and 161 encompass the extreme outer end of each remote base frame 27 so as to protect boats passing into the slipway. Upper fender 160 has its ends secured, as by welding, to the upper frame base girders 152 and 153, re-

spectively; and, in like manner, lower fender 161 has its ends secured to the lower frame base giders 154.

To support remote frame base 27 from cantilever 20, an outer strut 162 is secured to the end frame 150 of the remote frame base by gusset plate 163, and extends upwardly for welding to gusset plate 117 which secures the upper and lower chords of cantilever 20. Inwardly of strut 162, a second strut 165 is secured to end frame 151 of the remote frame base by gusset plate 166, and extends upwardly for securement to the lower chord 116, by means of gusset plate 127 to which the lower end of L-strut 120 of the cantilever truss framing is secured. Diagonal 167 is secured between gusset plate 117 at the upper end of strut 162 and gusset plate 166 at the lower end of strut 165.

The slipway side of the remote base frame is additionally supported by L-struts 168 and 170 being secured, respectively, between the end frames 150 and 151 and purlins 135 and 136 thereabove. To complete the support of remote base frame 27 from cantilever 20, a diagonal 171 extends above end frame 150 between the lower end of L-strut 168 on the slipway side, and the upper end L-strut 162, being welded directly to coplanar flanges on each strut. Diagonally secured between the center section and the outer ends of the cantilevers 20 and 21 are a pair of wind bracing rods 175 and 176. For this purpose, offset brackets 177 and 178 are welded to center section overhead girder 95, directly above the positions where the sidewall L-columns 100 and 102, respectively, are secured. Considering one of the wind rod bracing arrangements, it being understood that the others are identical, it can be seen that wind rod 175 extends from bracket 178 to the upper end of outer strut 162, being bolted or otherwise suitably secured therebetween. As shown most clearly in FIG. 8, this bracing arrangement is such that the upper and lower cantilever chords join at substatnially the same point as the diagonal wind rod so as to provide maximum lateral stability.

Extending between each remote base frame 27 and central base frame 14 is the elongate truss framework 31 of generally rectangular outline. The outer end of truss framework 31 is secured to the end frame 151 of remote base frame 27 by right angle brackets 181, and the inner end is secured to the upper girder 46 of the central base frame 14 by anchor plates 182 extending outwardly therefrom. The framework between each remote base frame 27 and center base frame 14 functions principally to provide support for the planking 32 so as to provide a quay along each side of the boathouse to permit easy access to boats moored within the slipway.

From the foregoing construction it can be seen that the float support arrangement of my invention is such as to maintain the walkway in the center section substantially parallel to the plane of the water surface, because the height of the center of gravity of the structure is small as compared to its gross horizontal area, thereby providing maximum stability. The balanced cantilever superstructure, then, not only provides support for the roofing and siding, but is such that any wave action tending to create torsion within the structure, as by upward pressure on one of remote pontoons, is opposed by two stabilizing forces and uses the cantilever superstructure of the boat house itself to transfer the applied forces to the center section and onto the opposed remote pontoons. As a result, the internal stresses in the vertical plane of the structural complexes is reduced to near zero, so that there is no theoretical limit on the capacity of the structure to evade torsional stress with respect to the magnitude, angle of attack, or frequency of wave action.

While the structure was designed as an immediate answer for docking and protection of boats, it may be adapted to other uses where a protected water area is required, such as for use as a movable swimming or fishing area, or for use as a floating base for underwater exploration survey or salvage, or for use as a houseboat by installation of appropriate living quarters and the addition of power for propelling, or for use as a floating and movable station for servicing other units with gasoline, fuel, food or other necessities.

From the foregoing it will be apparent that I have provided a new and improved floatable housing which is well adapted to fulfill the aforestated objects of the invention. Moreover, whereas the invention has been particularly described with reference to one embodiment thereof which gives satisfactory results, it will be understood by those skilled in the art to which the invention most nearly appertains that other embodiments or variations thereof may be resorted to without departing from the spirit or scope of the invention as defined by the appended claims.

I claim:

1. In a floatable housing, a center section, a first pair of spaced cantilevers supported from one side of said center section, a second pair of spaced cantilevers supported oppositely from said section, remote flotation means individual to and secured under the free end of each of said cantilevers to define between each pair of cantilevers a boat receiving slipway, central flotation means secured under said center section, means secured between each of said first pair of spaced cantilever sections for covering the spans therebetween, and means secured between each of said second pair of spaced cantilevers for covering the span therebetween.

2. A floatable housing comprising, a center section, a first pair of spaced cantilevers supported from one side of said center section, a second pair of spaced cantilevers supported oppositely from said center section, remote flotation means individual to and secured under the free end of each of said cantilevers to define between each pair of cantilevers a boat receiving slipway, central flotation means secured under said center section, said central flotation means being of such buoyancy as to floatably support said housing on water, means secured between each of said first pair of spaced cantilever sections for covering the span therebetween, and means secured between each of said second pair of spaced cantilevers for covering the span therebetween.

3. In a floatable housing, a center section, first and second cantilevers, each supported oppositely from said center section, remote stabilizing flotation means secured to the free end of each of said cantilevers, and central flotation means secured under said center section, said central flotation means being of such buoyancy as to floatably support said housing on water, and a plurality of quays each supported between said center section and one of said remote flotation means.

4. In a floatable housing, a center frame section, a first pair of spaced cantilevers supported from one side of said center frame section, a second pair of spaced cantilevers supported oppositely from said center frame section, remote flotation means secured to the free end of each of said cantilevers, central flotation means secured under said center frame section, and a plurality of quays each supported between said center frame section and one of said remote flotation means.

5. In a floatable housing, a center frame section, a first pair of spaced cantilevers supported from one side of said center frame section, a second pair of spaced cantilevers supported oppositely from said center frame section, remote flotation means secured to the free end of each of said cantilevers, central flotation means secured under said center frame section, said central flotation means being of such buoyancy as to floatably support said housing on water, and a plurality of quays each supported between said center frame section and one of said remote flotation means.

6. In a floatable housing, a center frame section, a first pair of spaced cantilevers supported from one side of said center frame section, a second pair of spaced cantilevers supported oppositely from said center frame section, remote flotation means secured to the free end of

each of said cantilevers, central flotation means secured under said center frame section, and a plurality of quays each supported between said center frame section and one of said remote flotation means, said center frame section being of such construction as to define a passageway therethrough normal to said cantilevers.

7. In a floatable housing, a center frame section, a first pair of spaced cantilevers supported from one side of said center frame section, a second pair of spaced cantilevers supported oppositely from said center frame section, remote flotation means secured to the free end of each of said cantilevers, central flotation means secured under said center frame section, said central flotation means being of such buoyancy as to floatably support said housing on water, and a plurality of quays each supported between said center frame section and one of said remote flotation means, said center frame section being of such construction as to define a passageway therethrough normal to said cantilevers.

8. A floatable housing comprising, a center frame section, a first pair of spaced cantilevers supported from one side of said center frame section, a second pair of spaced cantilevers supported oppositely from said center frame section, a remote flotation means secured to the free end of each of said cantilevers, central flotation means secured under said center frame section, said central flotation means being of such buoyancy as to flotably support said housing on water, and a plurality of quays each supported between said center frame section and one of said remote flotation means, means secured between each of said first pair of spaced cantilevers for covering the span therebetween, and means secured between each of said second pair of spaced cantilevers for covering the span therebetween.

9. A floatable housing comprising, a center frame section, a first pair of spaced cantilevers supported from one side of said center frame section, a second pair of spaced cantilevers supported oppositely from said center frame section, a remote flotation means secured to the free end of each of said cantilevers, central flotation means secured under said center frame section, said central flotation means being of such buoyancy as to floatably support said housing on water, and a plurality of quays each supported between said center frame section and one of said remote flotation means, means secured between each of said first pair of spaced cantilevers for covering the span therebetween, and means secured between each of said second pair of spaced cantilevers for covering the span therebetween, said center frame section being of such construction as to define a passageway therethrough normal to said cantilevers.

10. In a floatable housing, a rigid superstructure frame, means for buoyantly supporting said superstructure frame on water, a covering supported by said superstructure frame, said superstructure frame being so arranged as to define confronting oppositely opening slipways at opposite ends thereof, a central walkway below said covering and between said slipways, and a plurality of quays supported by said superstructure normal to said walkway and below said covering, with companion pairs of said quays joined to and extending from opposite sides of said walkway defining said slipways.

11. In a floatable housing, a central support, a plurality of cantilever frames extending oppositely from said central support, a cover extending over said cantilever frames and said central support, means for buoyantly supporting said cantilever frames and said central support on water, said cantilever frames defining oppositely opening slipways below said cover and a central walkway below said cover and between said slipways.

12. In a floatable housing, a central support, a plurality of cantilever frames extending oppositely from said central support, a cover extending over said cantilever frames and said central support, means secured to said central support below the same for buoyantly supporting said housing on water, said cantilever frames defining oppositely opening slipways below said cover, and a central walkway over said means and below said cover and between said slipways.

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