United States Patent [19]

Thorpe

[11] **3,834,340**

[45]* **Sept. 10, 1974**

[54] **MARINE CRAFT**

[75] Inventor: **David C. Thorpe,** London, England

[73] Assignee: **Richmond Marine Limited,** London, England

[*] Notice: The portion of the term of this patent subsequent to July 4, 1989, has been disclaimed.

[22] Filed: **Apr. 20, 1972**

[21] Appl. No.: **245,896**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 887,295, Dec. 22, 1969, Pat. No. 3,674,170.

[30] **Foreign Application Priority Data**

Jan. 23, 1969 Great Britain 4029/69

[52] **U.S. Cl.** ..... **114/201 R,** 220/18

[51] **Int. Cl.** **B63b 19/14**

[58] **Field of Search** ..... 114/116, 56, 85, 201 R; 9/6, 1; 220/18, 63, 24.2, 24.3, 24, 41, 17

[56] **References Cited**

UNITED STATES PATENTS

2,539,326	1/1951	Quitter	220/17
3,158,882	7/1963	Kibby	9/1 R
3,634,897	1/1972	Cuccio	9/1 R
3,674,170	7/1972	Thorpe	9/1 R

Primary Examiner—Duane A. Reger
Assistant Examiner—D. C. Butler
Attorney, Agent, or Firm—Baldwin, Wight & Brown

[57] **ABSTRACT**

A marine craft hull having an opening in which a storage container can be located, said container comprising a bin the upper edge of which is provided with an outwardly projecting flange, a cover which extends over the bin and engages the flange and means for rigidly securing the cover in position on the boat hull.

23 Claims, 13 Drawing Figures

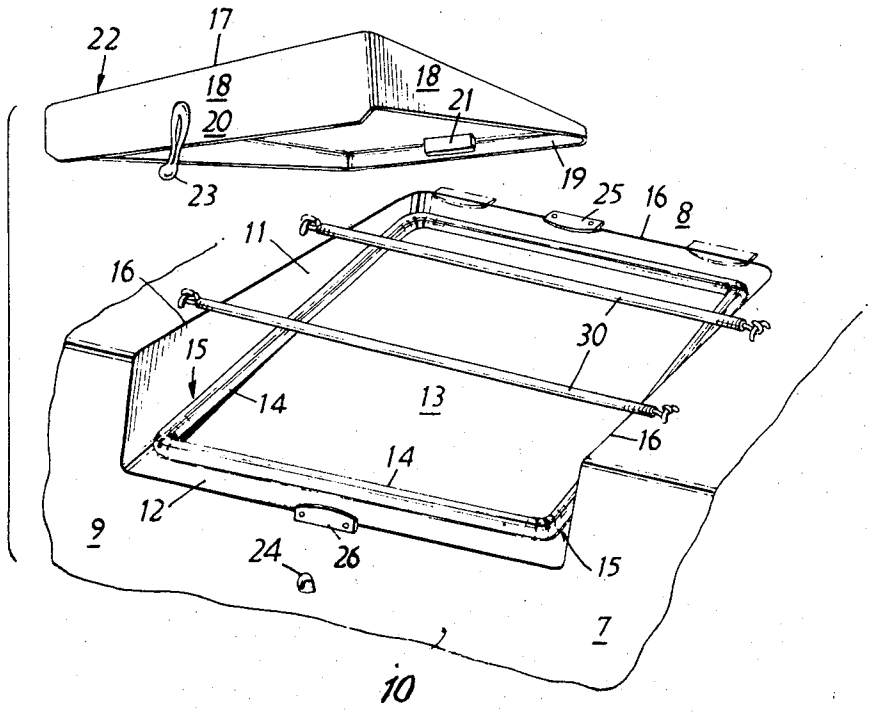
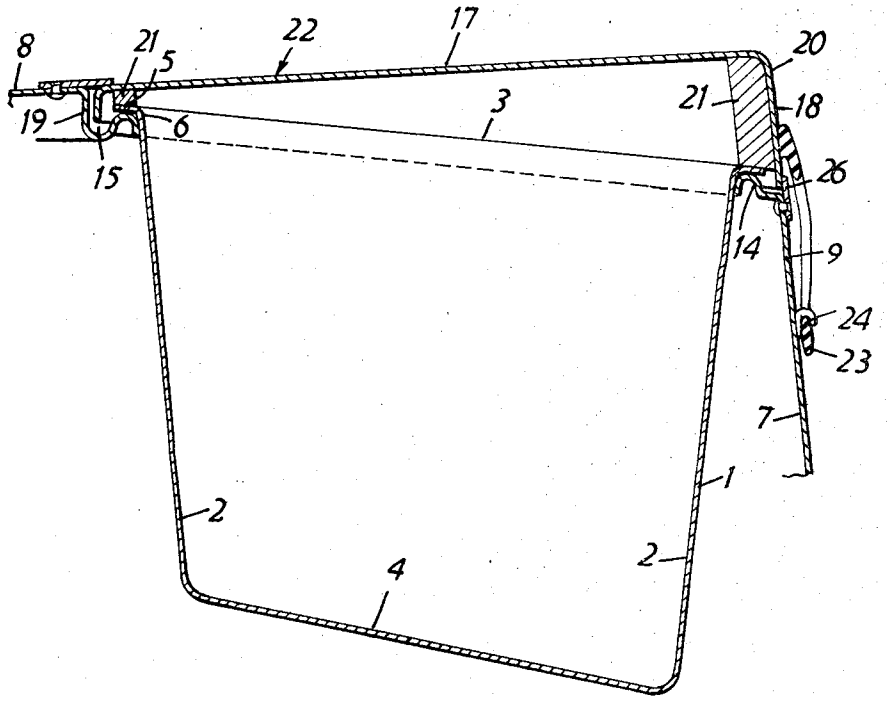


FIG. 1.


8
21
5
22
17
20
19
6
3
21
18
15
26
14
9
24
23
7
1
2
2
4

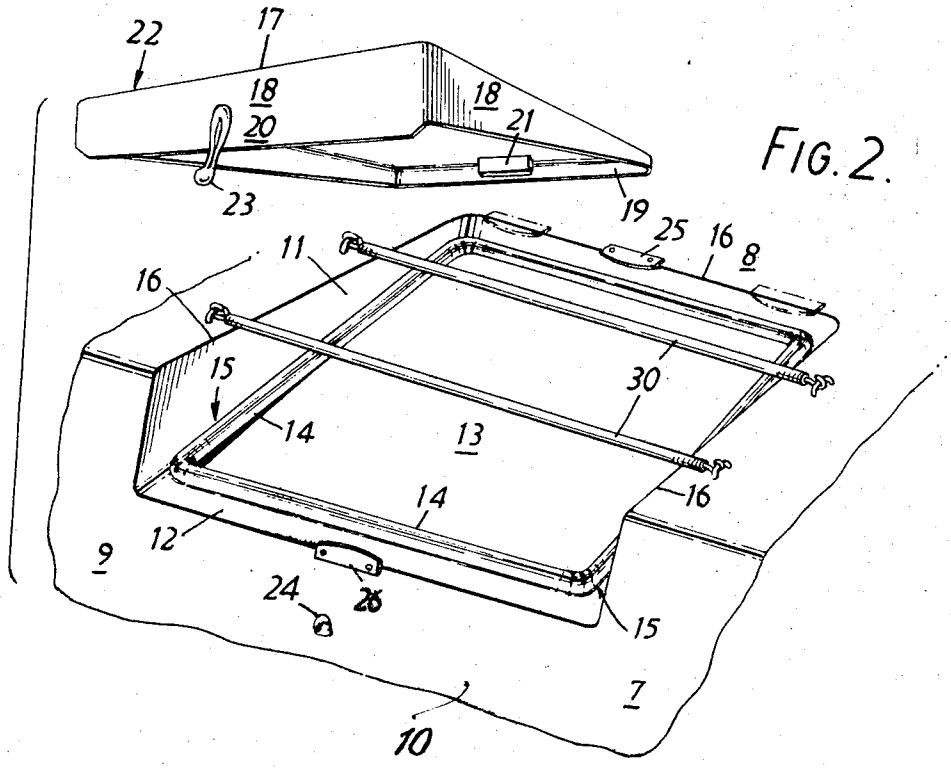

22
17
18
20
18
21
23
19
25
16
8
11
16
15
30
14
13
16
14
12
9
24
26
15
7
10

FIG. 2.

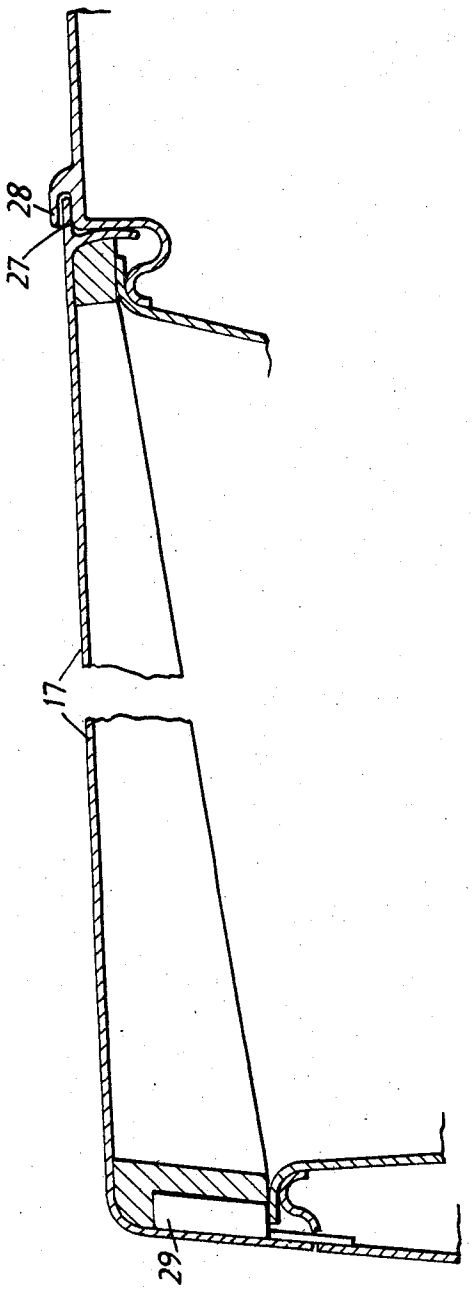


FIG. 3.

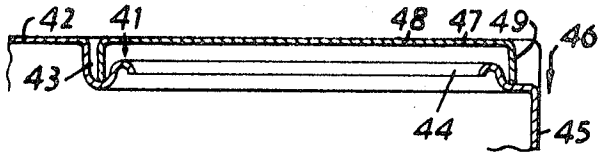


FIG. 4.

FIG. 5.

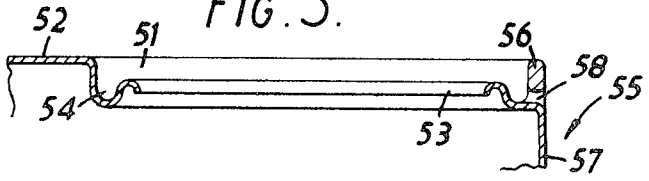


FIG. 6.

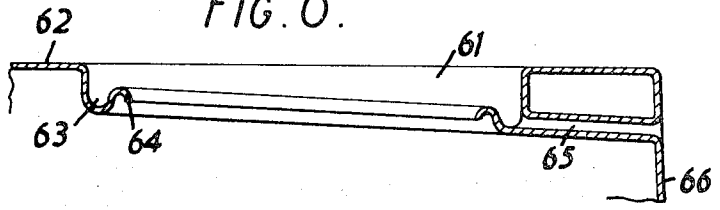


FIG. 7.

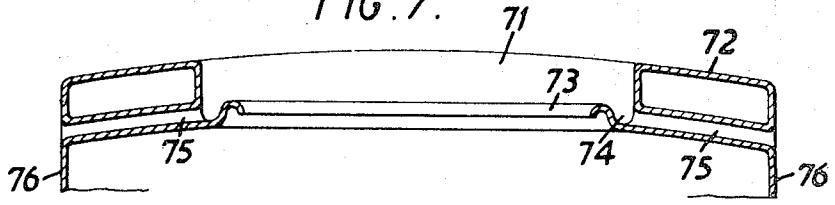
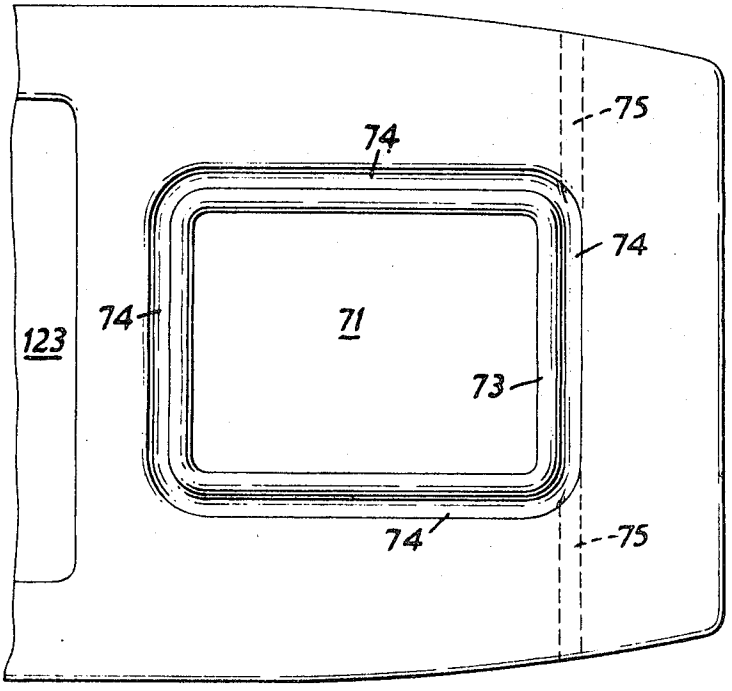


FIG. 8.



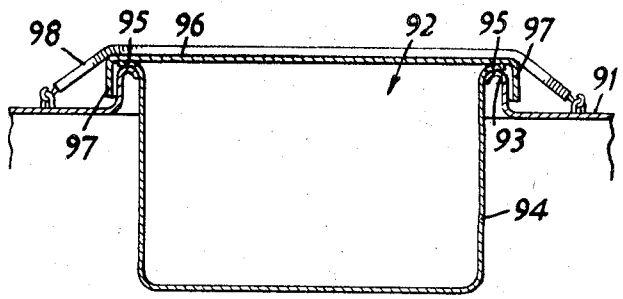


FIG. 9.

FIG. 10.

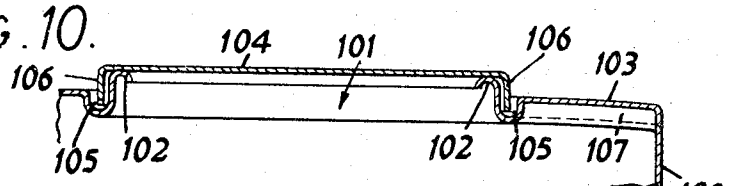


FIG. 11.

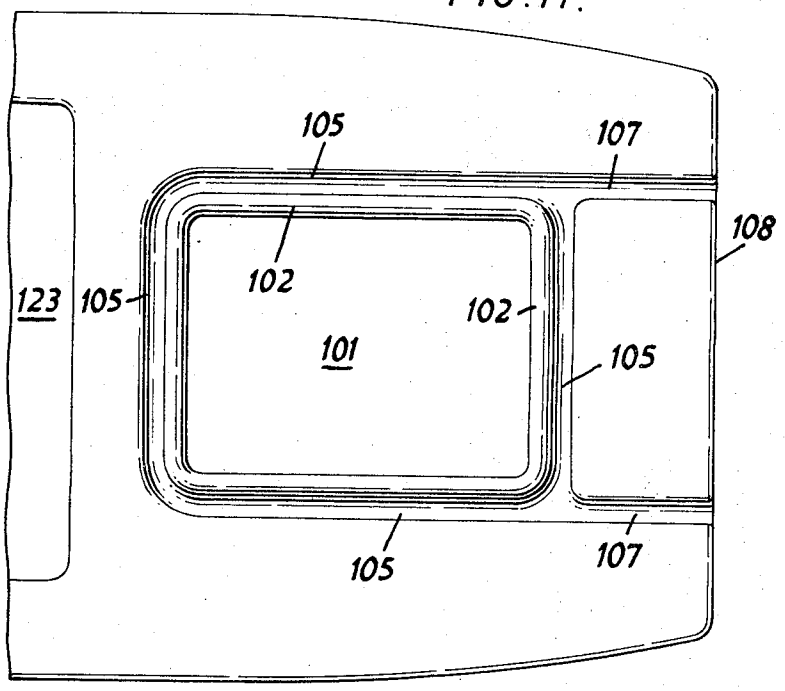


FIG. 12.

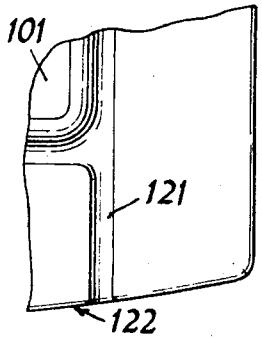
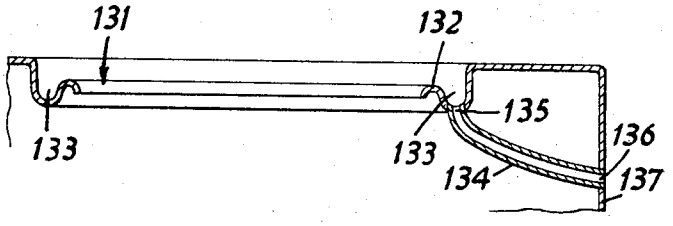


FIG. 13.



MARINE CRAFT

This invention relates to boat hulls and to means for closing an opening therein and is a Continuation-In-Part of my co-pending Patent Application Ser. No. 887,295 filed Dec. 22, 1969 now U.S. Pat. No. 3,674,170.

According to the present invention in a horizontally extending part of the deck of a boat hull an opening for the insertion of a bin, a bevelled perimetrical flange surrounding said opening having an upper surface which is above said deck, a cover for said opening, said cover having a top wall with downwardly depending flange walls which surround said perimetrical flange and extend downwardly below said upper surface in closed position of said cover whereby water and the like will flow downwardly from said cover outside said perimetrical flange onto said horizontally extending part of said deck, and means for retaining said cover in said closed position.

Preferably said horizontally extending part of said deck surrounding said perimetrical deck is formed as drainage channels into which water and the like will flow from said cover and said drainage channels maybe arranged to extend to a bulkhead in said boat hull or to an outer wall of said boat hull.

The bin may be provided with an upper outwardly directed end flange spaced from said channel and resting on said perimetrical flange. Thus, the cover not only provides protection for articles carried in the bin but also can be arranged to act to hold it in position when said cover is arranged over said bin.

In one convenient arrangement at least one elastic shock cord is positioned to overlie said opening and serving to retain said cover in closed condition.

The invention also includes a construction in which in a deck of a boat hull; a recess having vertically extending recess walls which define all the sides of said recess said recess being provided with an opening for the insertion of a bin, a bevelled perimetrical flange surrounding said opening from said recess walls, drainage channels formed between said perimetrical flange and said recess walls, and a cover for said opening, said cover having a top wall with respective downwardly depending flange walls, the heights of said flange walls conforming to those of said recess walls in closed position of said cover, a drainage channel extension extending through an opening in said recess walls to a vertically extending wall of said hull, whereby water and the like will flow from said cover outside said perimetrical flange into said drainage channels and said drainage channel extension; and retainer means for retaining said cover in said closed position.

If desired said drainage channels can be inclined to the horizontal.

Any suitable material can be used for making the container but it is particularly adapted for manufacture in a plastics material and if the hull of the craft is also made from a plastics material a good seal can be obtained between the perimetrical flange and the flange on the container.

The invention may be performed in many ways and a number of embodiments will now be described by way of example and with reference to the accompanying drawings in which:

FIG. 1 is a cross-sectional side elevation of a storage container according to the present invention in position in a boat hull,

FIG. 2 is an isometric view of part of a boat hull adapted to receive the container and the container lid,

FIG. 3 is a cross-sectional side elevation of an alternative construction,

FIG. 4 is a cross-sectional side elevation of part of a boat hull of an alternative construction,

FIG. 5 is a cross-sectional side elevation of another alternative construction,

FIG. 6 is a corss-sectional side elevation of yet another construction according to the invention,

FIG. 7 is a cross-sectional end elevation of another construction in which drain channel extenstions extend to the side walls of the hull,

FIG. 8 is a part plan view of the construction shown in FIG. 7,

FIG. 9 is a cross-sectional side elevation of another construction in which no drainage channels are provided,

FIG. 10 is a cross-sectional side elevation of a similar construction to FIG. 9 but provided with drainage channels,

FIG. 11 is a plan view of the construction shown in FIG. 10, and

FIG. 12 is a part plan view of a construction similar to that shown in FIGS. 10 and 11 but with drainage channel extensions extending to the side walls of the hull.

FIG. 13 is a cross-sectional side elevation view of an alternate construction in which drainage channels are connected to a vertically extending wall.

In the first arrangement to be described and as shown in the FIGS. 1 and 2 of the drawings the container for use in an opening in the boat hull comprises a bin 1 made from a plastic material or plastics composition which has tapering side walls 2 and the upper edge 3 of which extends in a plane which is inclined to the horizontal. Similarly the base 4 is also inclined to the horizontal at the same angle which is approximately 9°. The upper edge 3 of the bin is provided with an outwardly projecting flange 5 which is bevelled at 6 where it joins the side walls 2 of the bin. The overall dimensions of the bin are arranged so that it can carry an outboard motor of the folding type and other articles if required such as clothes.

The boat hull 7 which is to receive the bin is provided with an after-deck 8 which extends forwardly from the stern of the craft to a substantially vertically extending bulkhead 9 which forms the rear of the cockpit 10. Arranged in this after-deck 8 is a recess 11 the surface 12 of which is sunk below the level of the after-deck 8 and which is inclined to the deck and the horizontal so that where the recess emerges through the bulkhead 9 it is deeper than at the point where it is adjacent the stern. Provided in this recess 11 is an opening 13 the dimensions of which are closely related to the dimensions of the upper flange 3 of the bin 1. The edges 14 of the recess 11 immediately adjacent the opening 13 are raised and bevelled to conform with the outer surface of the upper end of the bin so that when it is pushed into the opening 13 it closely engages these surfaces. The marginal edges 14 are raised in relation to their immediately surrounding surfaces so that a channel 15 is produced between the raised seating and three of the outer

edges **16** of the recess **11**, the other edge of the recess opening through the bulkhead **9** into the cockpit.

In order to close the bin a hatch cover **17** is provided which has downwardly extending flange walls **18** which vary in depth commensurate with the recess side walls, the flange **19** adjacent the stern being of less depth than the flange **20** adjacent the cockpit and blocks **21** are provided beneath the cover **17** so that when it is placed in position on the bin **1** as shown in FIG. **1** its upper surface **22** is in line with the after-deck **8** but the blocks **21** engage the flange of the bin. The dimensions of the cover are such that its downwardly extending flange walls **18** extend outside the flange **14** on the bin **1** when the cover **17** is in position and the cover is connected to the hull by means of a moulded rubber retaining strop **23** at the front which hooks onto a suitable catch **24** on the hull and a retaining clip **25** near the stern beneath whcih it is located, and a location clip **26** on the bulkhead.

With this arrangement therefore the hatch cover **17** not only closes the bin **1** but holds it in position in the hull and the downwardly extending flanges **18** cause any water on the after-deck to flow downwardly into the channel **15** surrounding the seating mounting. As the channels are inclined the water will run down them and into the cockpit **10** from which it can easily be removed.

The storage container provided by the invention can thus be used to carry any required articles, such as an outboard motor or it can be used as a wet-blocker for fish. The water-tight hatch cover **17** ensures that the container will remain reasonably dry due to the water running away down the water way channels. Moreover, the container can be removed from the boat and taken away for filling or emptying. With the container removed the hatch cover **17** can be replaced in position to seal the opening **13.**

In another construction as shown in FIG. **3** the hatch cover **17** can be provided with a latching lug or lugs **27** on its stern end which engage beneath a projecting rim **28** at the rear end of the recess **11.** The forward end of the cover is provided with a lock indicated at **29** so that when the cover is locked in place it cannot be removed and there are no screws or fittings on its upper surface which can be broken or removed to allow it to be lifted.

Again, the cover could be held in place merely by elastic shock cord **30** extending transversely over it and the clip **25,** catch **24** and strop **23** dispensed with. Thus, with this arrangement the rear of the cover can be lifted over the edge **14** and then slid forward without removing the shock cord **30** or disturbing the steering tiller (not shown) for the craft if it extends above the cover. The cover can therefore be opened to provide access whilst the craft is in motion. Alternatively the elastic shock cord can be arranged to extend fore and aft rather than transversely. In this case a single strand is sufficient and is stretched as the cover is moved forward to provide sufficient room to allow the user's hand to be insrted into the container. For complete removal the cover is raised and moved transversely.

In this arrangement described above the boat hull is made from glass fibre so that the seating for the container can be easily moulded to provide a good fit. If required the invention could of course be made from any other material as described.

It can thus be seen that according to this embodiment there has been provided in a deck for a boat's hull an inclined recess which emerges through a bulkhead, said recess having opposite upwardly tapering side walls terminating in upper and lower ends, an upper end wall extending across the upper ends of said side walls, a lower end wall forming a surface interconnecting the lower ends of said side walls, so that surface emerging at said bulkhead is located deeper than the level of said upper end wall, said recess being provided with an opening for the insertion of a bin, a bevelled perimetrical flange surrounding said opening and spaced from said side walls and said upper end wall, a channel formed between said perimetrical flange and said side and upper end walls, and a cover for said opening, said cover having a top wall with respective depending flange walls, the heights of said flange walls conforming to those of said tapering side walls and of said upper end wall, respectively, the front flange wall of said cover reaching said surface beyond said bevelled flange in closed condition of said cover, so that any liquid, water and the like will flow downwardly from said upper end wall in said channel and outside said perimetrical flange, while said cover flange walls clear said channel in said closed cover condition.

FIG. **4** shows another embodiment which is similar to that shown in FIGS. **1** and **2** but in this construction the recess **41** in the after-deck **42** of the boat's hull is not inclined to the horizontal. Thus, the drainage channels **43** extend horizontally around the bevelled perimetrical flange **44** and emerge through a bulkhead **45** into the cock-pit **46** of the craft. In order to make the construction more clear in the drawing the bin has been omitted. In this construction a cover **47** has a top wall **48** and downwardly depending flange walls **49** which are of equal depth all around the cover and the lower ends of said side walls resting in said channels **43** when the cover is in position. Again, the means for holding the cover in position are not shown but can consist of shock cords as shown in FIG. **2** or a strop as shown in FIG. **1**

With this construction the top wall of the cover **47** is substantially level with the deck **42** and when the cover is in the closed condition any water will flow downwardly from the upper end wall outside the side walls **49** into the channel **43** from which it will emerge into the cock-pit **46.** As the side walls **49** of the cover extend to positions below the top surface of the flange **44** water will be prevented from entering the opening in the hull and will be led away down the channels.

FIG. **5** shows a construction somewhat similar to FIG. **4** and in this Figure the cover and the bin have both been omitted for clarity. A recess **51** is again provided in an after-deck **52** and a bevelled perimetrical flange **53** surrounds an opening and provides drainage channels **54.** In this construction the recess **51** does not open into the cock-pit **55,** this side of the recess being closed by a wall **56** which is an extension of a bulkhead **57** which defines one of the cock-pit walls. Drainage channel extensions **58** extend through the wall **56** so that water entering the channels **54** is again drained into the cock-pit **55.** It is sometimes convenient to be able to use such a construction in order to stiffen the hull where the recess **51** is provided. Although, in FIG. **5** the drainage channels **54** are shown to extend horizontally they could be inclined in a similar manner to that shown in FIGS. **1** and **2** of the drawings. Again, it

will be appreciated that if the recess **51** was arranged close to an exterior wall of the hull, such as the transom of one of the sides of the hull then the drainage channels **58** could lead to this vertically extending wall and not to the cock-pit **55.**

FIG. **6** shows another construction which is similar to **55** and has a recess **51** in the deck **62** of a boat's hull. In this figure the bevelled perimetrical flange is shown by reference numeral **63** and the drainage channels by reference numeral **64.** The drainage channels **63** have extensions **65** which pass to a vertical extending wall of the hull **66.** In this construction it will be seen that the drainage channels **63** and extensions **65** are inclined to the horizontal and that the distance from the vertically extending walls **66,** which may be the bulkhead, transom, or side walls of the hull is somewhat greater than that shown in FIG. **5.**

With the arrangement shown in FIGS. **5** and **6** the cover (not shown) can be as shown in FIG. **4,** that is resting in the drainage channels or blocks could be provided, as shown in FIG. **1** and **2** which rest on the upper surface of the bevelled perimetrical flange. Again, the construction is such that a container can be located in position in the opening which is surrounded by the bevelled flange.

FIGS. **7** and **8** show another construction according to the invention in which a recess **71** is provided in a deck **72.** The recess **71** being surrounded by the deck and having the usual opening surrounded by a bevelled perimetrical flange **73.** Drainage channels **74** surround all four sides of the bevelled flange **73** so that water can drain from the channels **74** through channel extension **75** which extend outwardly to the side walls **76** of the hull.

Once again the cover and container are omitted from FIG. **7** for the sake of clarity but the top wall of the cover would be substantially level with the after-deck **72** and the side walls will extend down so that they enter the channels **74.** If desired the recess **71** could be inclined to the horizontal so that liquid in the channels **74** drained more easily into the extensions **75** in a somewhat similar manner to the liquid flow in the arrangement shown in FIGS. **1** and **2.**

In FIG. **9** a construction is shown in which no recess is provided in the after-deck **91,** the opening **92** being at deck-level and surrounded by a perimetrical flange **93.** In FIG. **9** a container **94** is shown in position in the opening, the flanges **95** of the container resting on the upper surface of the perimetrical flange **93** and the top wall **96** of a cover resting on the flanges **95.** The side walls **97** of the cover extend downwardly below the level of the upper surface of the perimetrical flange **93** and the cover being held in position by means of shock cord **98.** As the opening **92** is not provided in a recess in the deck the perimetrical flanges **93** stand proud of the deck and there are no drainage channels as such. Water splashing over the cover will however run down the side walls **97** and onto the deck **91** and away, the top wall **96** of the cover bearing on the flange **95** of the container **94** holding it in position and as the side walls extend downwardly below the level of the flange **95** water will not enter the container. When the container is removed the lower edges of the side walls **97** of the cover will rest on the deck **91** and again water will not enter the opening **92** because of the cover side walls. If desired the dimensions of the side walls and the perimetrical flange **95** could be such that the top wall of the cover rested on the upper surface of the flange **95** without the bottom of the side walls touching the deck **91.**

As shown in FIG. **9** the top wall of the cover **96** is not in line with the deck **91** and FIGS. **10, 11** and **12** show further constructions in which the top wall of the cover is raised in a similar manner. In FIG. **10** the opening **101** is arranged in a shallow recess but the perimetrical flanges **102** are raised higher than the surface of the deck **103** so that when the cover **104** is in position it is raised in a similar manner to that shown in FIG. **9.** In this construction shown in FIG. **10** the slight depression provides drainage channels **105** into which the side walls **106** of the cover extend when it is in the closed position. As is clearly shown in FIG. **11** the opening **101** is arranged in the middle of the deck and drainage channel extensions **107** extend rearwardly to the transom **108** of the boat so that water running from the side walls **106** passes into the channels **105** and away down the extensions **107.** In the arrangement shown the drainage channels **105** and the extensions **107** are substantially horizontal but they could be inclined to provide better drainage if desired.

In this figure the container is not shown but could of course be positioned in the manner described in relation to the other emobdiments in which case it will be held in position by the cover **104.**

FIG. **12** shows one corner of the opening **101** but in this case the drainage channel and extensions **121** extend transversely to the hull and emerge in one of the hull side walls **122.** If desired the extensions could be inclined to provide better water flow.

In FIGS. **8** and **11** the cockpit area of the boat hull is indicated by reference numeral **123.**

If desired the extensions **107** in FIG. **11** could lead from the other opposite side of the opening so that the drainage channels **103** and extensions **107** drained into the cockpit **123.**

FIG. **13** demonstrates a construction which can be employed in any of the above constructions in which it is required to drain the water from the drainage channels into a vertically extending wall of the hull such as a bulkhead, the transom or a side wall. In this construction the opening is idndicated by reference numeral **131** the bevelled perimetrical flange by reference numeral **132** and the drainage channels by reference numeral **133.** A drainage channel extension in the form of a curved tube **134** is provided which enters the drainage channel **133** through an opening **135** and extends to an opening **136** in the selected vertically extending wall **137.** This construction is particularly advantageous where it is difficult to mould or otherwise form the drainage channel extension this being supplied by the separate tube **134.**

As mentioned above the covers on all the above constructions can be held on by shock cord or any other suitable means and the boat can be safely left or sailed with the container in position or with it removed the downwardly extending side walls and raised perimetrical flange ensuring that water does not enter the opening or container if it is in position.

It is to be understood that various structural changes and modifications can be had within the scope of the attached claims without departing from the spirit and range of the invention.

I claim:

1. In a recessed generally horizontally extending part of a deck of a boat's hull an opening of a predetermined outline, a bevelled perimetrical flange surrounding said opening having an upper surface which is above said deck generally horizontal extending part, a bin extending down through said opening and having a peripheral supporting flange releaseably seated on said perimetrical flange, a cover for said opening, said cover having a top wall with downwardly depending flange walls which surround both said perimetrical flange and said supporting flange and extend downwardly below said upper surface in closed position of said cover whereby water and the like will flow downwardly from said cover outside said perimetrical flange onto said generally horizontally extending part of said deck, and retainer means for retaining said cover in said closed position.

2. In a deck of a boat's hull according to claim 1 in which said generally horizontally extending part of said deck surrounding said perimetrical flange is at least in part formed as drainage channels into which water and the like will flow from said cover, said drainage channels having an extension extending across said deck to a vertically extending wall of said hull.

3. In a deck of a boat's hull according to claim 2 in which said drainage channel extension extends to a bulkhead in said boat hull.

4. In a deck of a boat's hull according to claim 2 in which said extension of said drainage channels extends to an outer wall of said boat hull.

5. In a deck of a boat's hull according to claim 1 in which said retaining means includes at least one elastic shock cord positioned to overlie said opening and serving to retain said cover in closed condition.

6. In a deck of a boat's hull a recess which opens through a vertically extending wall of the boat's hull and having vertically extending opposite side walls and an end wall of equal height, a lower end wall forming a surface interconnecting said side walls at the open side of said recess where it opens through said vertically extending wall, said recess being provided with an opening for the insertion of a bin, a bevelled perimetrical flange surrounding said opening and spaced from said side walls and said end wall, drainage channels formed between said perimetrical flange and said side and end walls and a cover for said opening, said cover having a top wall with respective depending flange walls, the heights of said flange walls conforming to those of said side and end walls of said recess in closed condition of cover whereby any liquid, water and the like will flow from said cover outside said perimetrical flange into said drainage channels, and retainer means for retaining said cover in said closed position.

7. In a boat's deck according to claim 6, said perimetrical flange defining said opening, and a bin provided with an upper outwardly directed end flange vertically spaced from said drainage channels and resting on said perimetrical flange.

8. In a boat's hull according to claim 6 in which said recess opens through a bulkhead in said boat's hull.

9. In a boat's hull according to claim 6 said cover being provided with a top wall substantially level with the upper surface of said boat's deck.

10. In a boat's hull according to claim 6 including at least on elastic shock cord positioned to overlie said recess and serving to retain said cover in closed position.

11. In a deck of a boat, a recess defined by a plurality of upstanding walls and including a generally horizontal wall, a bevelled perimetrical flange extending up from said horizontal wall and defining an opening through said horizontal wall, a removable bin passing through said horizontal wall and having an outwardly directed peripheral support flange seated on said perimetrical flange, a cover overlying said opening and having depending sides extending below said support flange and an upper portion of said perimetrical flange, said perimetrical flange and adjacent ones of said upstanding walls together with portions of said generally horizontal wall defining drainage channels, and drain means connected to said drainage channels.

12. The boat deck of claim 11 wherein said cover sides are seated on said generally horizontal wall.

13. The boat deck of claim 11 wherein said drain means are defined by said recess opening through a wall area of said boat.

14. The boat deck of claim 11 wherein said cover has an upper surface disposed generally flush with said deck.

15. The boat deck of claim 11 wherein said cover is seated on said bin support flange.

16. In a deck of a boat's hull a recess having vertically extending recess walls which define said recess, said recess being provided with an opening for the insertion of a bin, a bevelled perimetrical flange surrounding said opening and spaced from said recess walls, drainage channels formed between said perimetrical flange and said recess walls, and a cover for said opening, said cover having a top wall with respective downwardly depending flange walls, said drainage channels extending to a vertically extending wall of said hull for delivering drainage water therebeyond, whereby water and the like will flow from said cover outside said perimetrical flange into said drainage channels and beyond said hull wall, and retainer means for retaining said cover in said closed position.

17. In a deck of a boat's hull according to claim 16 in which said drainage channels connect to a drainage channel extension which extends to an outer wall of said boat hull.

18. In a deck of a boat's hull according to claim 16 in which said vertically extending hull wall is a bulkhead in said boat hull.

19. In a deck of a boat's hull according to claim 16 wherein said recess walls define all sides of said recess, and there is a drainage channel extension connected to said drainage channels, said drainage channel extension extending through one of said recess walls to a vertically extending wall of said hull.

20. In a deck of a boat's hull according to claim 19 wherein said hull vertically extending wall is an outer wall of said hull.

21. In a deck of a boat's hull according to claim 19 wherein said hull vertically extending wall is a bulkhead.

22. In a deck of a boat's hull according to claim 16, said perimetrical flange defining said opening, and a bin provided with an upper outwardly directed end flange spaced from said drainage channels and resting on said perimetrical flange.

23. In a deck of a boat's hull according to claim 16 wherein said cover flanges are seated in said drainage channels and support and generally position said cover.

* * * * *