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54 Easily transportable boat.

57 A boat (1,50) of rigid polyurethane foam construction comprises a hollow stem portion (2) and two side buoyancy members (3, 4) extending from the stem portion (2) to the stern (5) of the boat (1). A transverse portion (7) extending between the side members (3, 4) forms a seat (8). An opening (10) is provided through the boat (1) so that an operator may pass his feet through to engage the ground and carry the boat (1) from one location to another using hand grips (11) on opposed sides of the opening (10). Recesses (12) in the stem portion (2) form foot rests (13) so that an operator

sitting on the seat (8) spans the opening (10) with his legs. The underside of the transverse portion (7) forming the seat (8) is inclined downwardly towards the stern (5) of the boat (1) at 14 to prevent splashing of the operator. A transom member (15) is provided for receiving an outboard motor and a well (16) for a water-tight box is also provided in the stem portion (2). The boat (1) which can be used in shallow waters is versatile, stable, has maximum buoyancy with minimum draught and may be easily carried by an operator from one location to another.

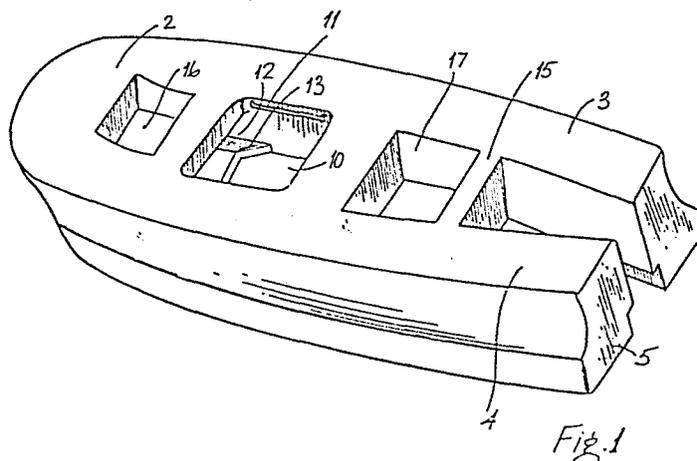


Fig. 1

TITLE MODIFIED₁ -
see front page "BOAT"

The invention relates to a boat and in particular to a row or paddle boat. The term "boat" as used in this specification however includes any vessel with or without a deck and which may be propelled by oars or paddles
5 or by sail or power as well as surfboards, sailboards or the like.

A problem frequently experienced with such boats is that they are unsuitable for use in shallow waters. In general, such boats have a draught of twelve inches or more. Accordingly,
10 where shallower waters are encountered, the boat has to be either abandoned or alternatively dragged over the shallow water until deeper water is again reached. This, it will be appreciated, is very unsatisfactory in that it leads to damage to the keel and bilges of the boat, or where the
15 boat has to be abandoned, it leads to considerable inconvenience.

One object of the invention is to provide a boat which may be used in shallow waters.

The invention is characterised in that the boat includes an
20 opening through which an operator passes his feet to engage the ground for transporting the boat from one location to another. The advantage of the invention is that it provides a boat which may be easily transported and is thus versatile enough to be used in a wide range of waterways including
25 very shallow waterways.

In one embodiment of the invention grip means are provided

for carrying the boat. The added advantage of this feature is that the boat can be readily transported by an operator from one location to another. Preferably the grip means are provided on opposed sides of the opening so that the operator can conveniently carry the boat once he passes his feet through the opening.

In a preferred embodiment of the invention the boat includes a stem portion and two side members extending rearwardly of the stem portion. The advantages of this construction of boat are stability and that the boat has particularly good buoyancy.

In a further embodiment of the invention a seat is provided aft of the opening. The seat allows the operator to be accommodated comfortably in the boat.

Preferably the seat extends between the side members and the opening is defined by the stem, the side members and the seat. Because the seat extends between the side members it adds to the structural strength and hence the stability of the boat.

Usually the underside of the seat is inclined downwardly towards the stern of the boat. The advantage of this feature is that it prevents splashing of the operator when the boat is moving.

In another embodiment of the invention foot rests are provided forward of the opening. The advantage of this feature is that the operator sitting on the seat spans the opening with his legs to distribute the weight evenly, assist the comfort of the operator and the degree of control including ease of steering.

In another embodiment of the invention the boat is provided with means for receiving an engine. This feature allows the boat to be fitted with an outboard motor or any engine including a jet engine for increasing the speed of the boat as desired. Preferably the means for receiving the engine comprises a transom which also contributes to the structural strength and stability of the boat.

In a further embodiment of the invention the boat is formed at least partially from a closed cellular material such as a rigid polyurethane foam. The advantage of using a closed cellular material is that sufficient buoyancy and stability is obtained while still providing a boat that is sufficiently light weight to be carried by an operator. The material is also relatively cheap and is easily moulded into a desired shape thus keeping labour costs to a minimum. Further, even if the boat is broken up as a result of bad weather or an accident the various sections of the boat can still be used by the operator to keep afloat while awaiting rescue. Further, the material has particularly good heat insulation properties. Another

advantage of using such material is that the boat maintains its stability in any position even if the boat is ruptured or punctured.

In another embodiment of the invention at least portion of the hull of the boat is covered by an outer skin of water resistant material such as glass fibre. Again, this adds to the stability of the boat and will decrease the risk of damage to the boat in use.

The invention will be more clearly understood from the following description thereof given by way of example only with reference to the accompanying drawings in which:-

Fig. 1 is a perspective view from above of a boat according to the invention,

Fig. 2 is a perspective view from below of the boat of Fig. 1,

Fig. 3 is a plan view of the boat of Fig. 1,

Fig. 4 is a side elevational view of the boat of Fig. 1,

Fig. 5 is a sectional elevational view of the boat of Fig. 1, on the line V-V of Fig. 3,

Fig. 6 is a sectional end view of the boat of Fig. 1 on the line VI-VI of Fig. 4,

Fig. 7 is a sectional end view of the boat of Fig. 1 on the line VII-VII of Fig. 4,

5 Fig. 8 is a perspective view of another boat according to the invention,

Fig. 9 is a side elevational view of the boat of Fig. 8, and

Fig. 10 is a cross sectional view of the boat of Fig. 9 on the line X-X.

10 Referring to the drawings there is illustrated a boat according to the invention indicated generally by the reference numeral 1. The boat 1 is of rigid polyurethane foam construction and comprises a hollow stem portion 2 of inverted V shape. Two side buoyancy members 3 and 4 also of rigid polyurethane foam
15 construction extend from the stem portion 2 to the stern 5 of the boat 1. A transverse portion 7 extending between the side members 3 and 4, forms a seat 8.

An opening 10 through the boat is formed between the side buoyancy members 3 and 4, the seat 8 and the stem
20 portion 2 so that an operator may pass his feet through the boat to engage the ground and transport the boat from one location to another. Grip means, provided by hand grips 11 mounted on the side members 3 and 4 permit the boat to be held so that it may be carried for example over
25 extremely shallow water, or dry ground. Recesses 12 in the stem portion 2 form foot rests 13 so that an operator

sitting on the seat 8 spans the opening 10 with his legs. As will be apparent particularly from Figs. 2 and 3 the underside of the transverse portion 7 forming the seat 8 is inclined downwardly towards the stern 5 of the boat 1 at 14.

5 This prevents splashing of the operator when the boat is moving.

A transom member 15 also incorporated in the transverse portion 7 is provided for receiving an outboard motor, if desired. Conventional oar locks may also be provided if desired. A well 16 is provided in the stem portion 2
10 to take a water-tight box, for example, for carrying tools, food or the like. Another well 17 is provided between the transverse portion 7 and the transom member 15.

It will be apparent, particularly from Figs. 6 and 7 that
15 the side members 3 and 4 are shaped so that the maximum buoyancy is at the bottom on these members. This provides the boat with minimum draught. It has been found in the case of the boat according to the present invention that the draught is only three inches. It will therefore be
20 appreciated that the boat is particularly suitable for use in extremely shallow waters.

In use, when the boat is launched, the operator sits on the seat 8 pushes his legs forward to span the opening 10 and puts his feet on the foot rests 12. He then rows or paddles
25 the boat, or if desired, uses an outboard motor mounted on the transom 15. When water less than three inches in depth is encountered the operator puts his feet through

the opening 10, stands up, catches the hand grips 11 and walks while carrying the boat at the same time until more suitable waters are reached.

Typical dimensions for a single seater boat would be the length of between 2½ to 3 meters and width of one meter. The length of the boat would be increased as the number of seats is increased. In the case of a boat with two or more seats it will be appreciated that one or any number of openings may be required depending on the weight of the boat.

Using rigid polyurethane foam material with a skin of fibre glass it is estimated that the weight of a single seater boat would be in the region of 15 to 20 kilograms which should be sufficiently light to be carried by an adult over relatively long distances.

Referring to Figs. 8 to 10 there is illustrated another boat according to the invention indicated generally by the reference numeral 50. The boat 50 is similar to that described with reference to Figs. 1 to 7 and like parts are assigned the same reference numerals. In this case hand grips 51 are moulded into the side members 3,4 on either side of the opening 10 to allow the boat to be carried by an operator from one location to another. An additional small sized seat 52 is provided forward of the opening 10. The front of the seat 52 is inclined downwardly

rearwardly to provide a foot rest 53 for the operator.

It will be apparent, particularly from Fig. 10 that the side buoyancy members 3,4 are partially parabolical in transverse cross section to give the maximum buoyancy at the bottom of these members. In addition, this shape is particularly
5 useful for deflecting waves.

It will be appreciated that in some cases the boat will be fitted with an engine other than an outboard engine which may require a relatively large draught. For example
10 the boat may be fitted with a jet or any other suitable type of engine.

It will be appreciated that the opening in a boat may be of any suitable size or shape to accommodate an operators legs.

15 It will also be appreciated that grip means may not be essential to the boat as the boat could be shaped in such a way as to allow the operator to pass his arms under the side portions of the boat to grip it when standing in the opening.

20 This is particularly the case with sailboards, surfboards or the like which may be easily transported from one location to another by providing an opening for the operators feet in the board.

It will be appreciated that in the case where the boat incorporates a seat the seat may be of any suitable shape and construction and may be positioned at any convenient location in the boat.

5 While the underside of the seat has been described as being inclined downwardly towards the stern of the boat this may not be an essential feature. Indeed, in some cases a separate deflector may be employed to direct any water coming up through the opening away from the operator. Such
10 a deflector may be removable as desired and may for example be provided by a closure member for the opening.

Additionally, it will be appreciated that while a boat of a particular shape has been described any other suitable shape could be used. Indeed, if desired, a more conventional,
15 clinker built or carvel construction could be used, in which case, the opening 10 may be surrounded by a water-tight bulk head to prevent water from leaking into the boat.

It will also be appreciated that while the boat has been
20 described as being manufactured from rigid polyurethane foam it may also be manufactured from any other suitable material, for example, other plastics material, fibre glass, fibre cement, timber, moulded timber skin and in particular any closed cellular material or indeed any suitable material.
25 At least portion of the hull of the boat may be coated

with an outer skin of water resistant material such as a glass fibre reinforced skin.

It will further be appreciated that the stern and side members of the boat could, if desired, be of hollow construction. In some cases it is envisaged that they
5 may be of a solid expanded polystyrene material coated with a thin layer of fibre glass material.

It will also be appreciated that if desired the transom could be provided aft of the side members. Furthermore,
10 it will be appreciated that if desired, the boat could be adapted to receive a mast and sail, and in certain cases, a centre plate or other suitable retractable keels.

CLAIMS

1. A boat (1) characterised in that the boat(1) includes an opening(10) through which an operator passes his feet to engage the ground for transporting the boat
5 (1) from one location to another.

2. A boat (1) as claimed in claim 1 characterised in that grip means (11) are provided, preferably on opposed sides of the opening (10), for carrying the boat (1).

- 10 3. A boat (1) as claimed in claim 1 or 2 characterised in that the boat includes a stem portion (2) and two side members (3,4) extending rearwardly of the stem portion(2).

4. A boat (1) as claimed in any preceding claim characterised in that a seat (8) is provided aft of the
15 opening (10).

5. A boat (1) as claimed in claim 4 characterised in that the seat (8) extends between the side members (3,4) and the opening (10) is defined by the stem (2), the side members (3,4) and the seat (8).

- 20 6. A boat (1) as claimed in claim 4 or 5 characterised in that the underside (14) of the seat (8) is inclined

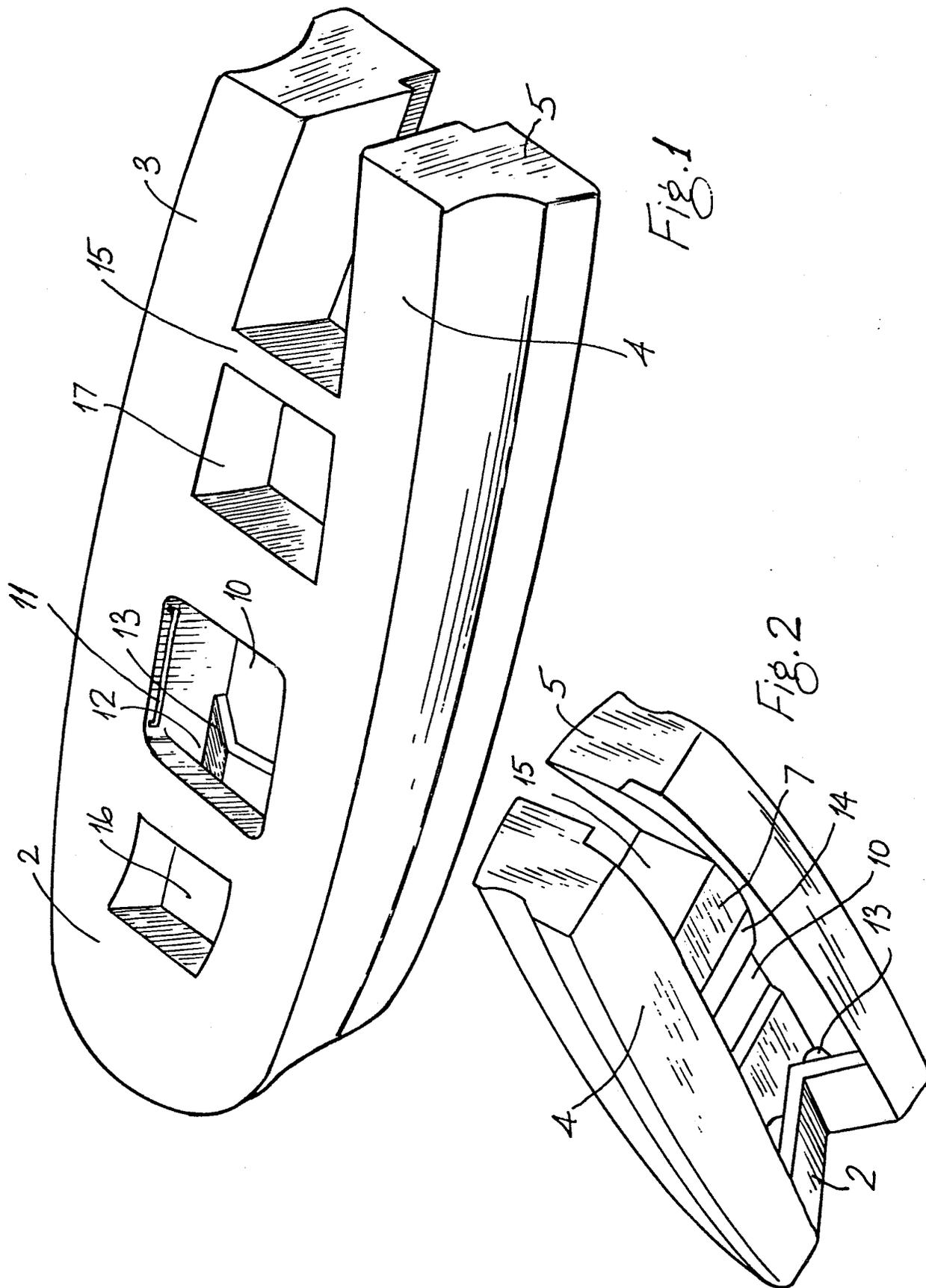
downwardly towards the stern (5) of the boat (1).

7. A boat (1) as claimed in any preceding claim characterised in that foot rests (13) are provided forward of the opening (10).

5 8. A boat (1) as claimed in any preceding claim characterised in that the boat is provided with means (15) for receiving an engine.

9. A boat (1) as claimed in any preceding claim characterised in that the boat (1) is formed at least
10 partially from a closed cellular material such as a rigid polyurethane foam.

10. A boat (1) as claimed in any preceding claim characterised in that at least portion of the hull of the boat (1) is covered by an outer skin of water resistant material
15 such as glass fibre.



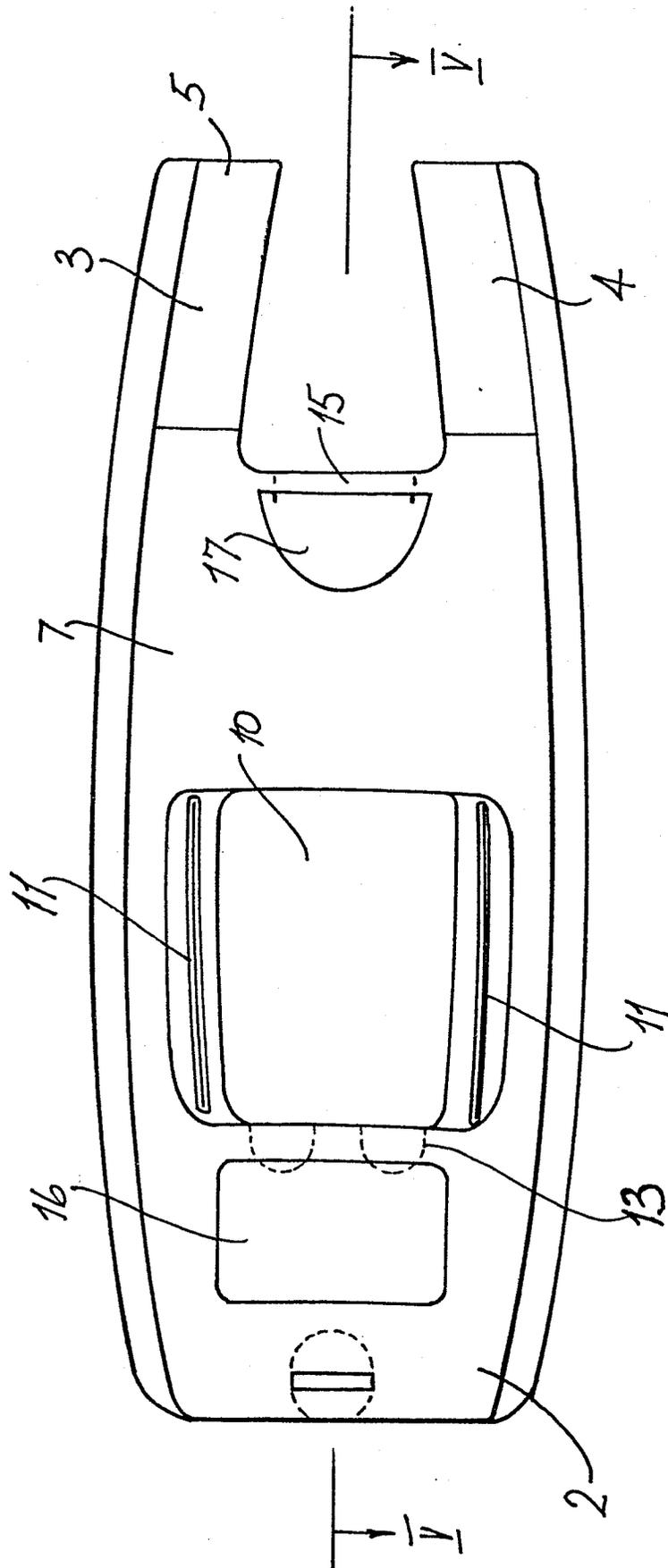


Fig. 3

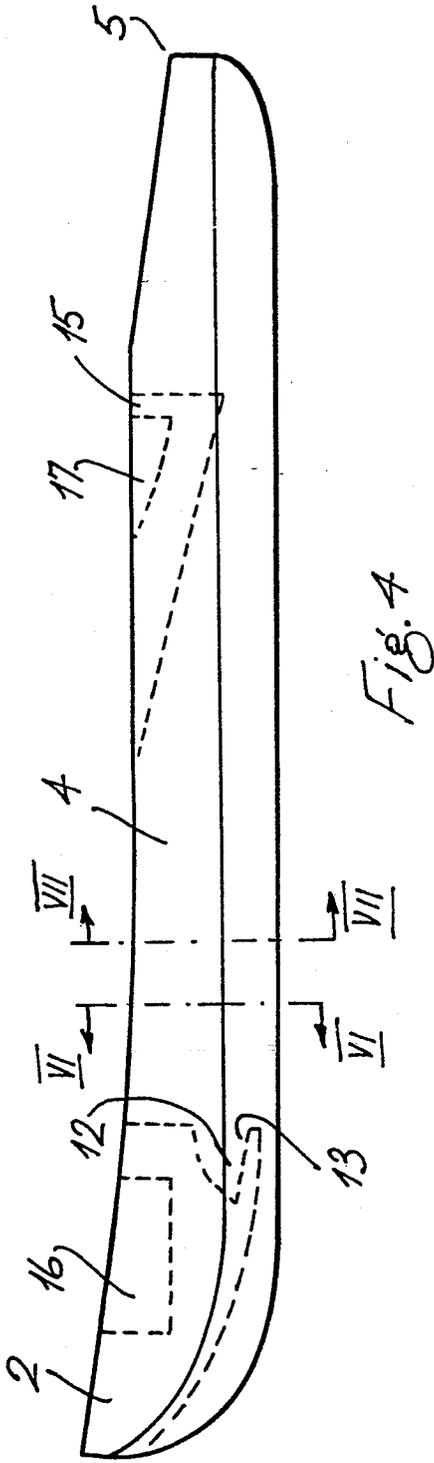


Fig. 4

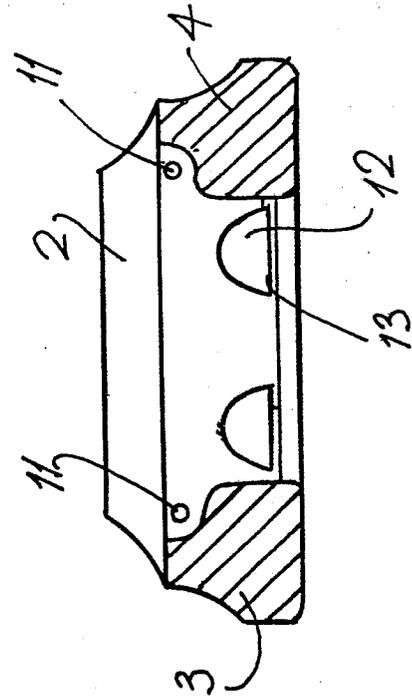


Fig. 6

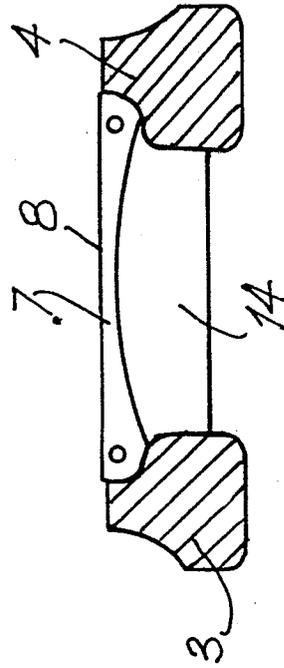


Fig. 7

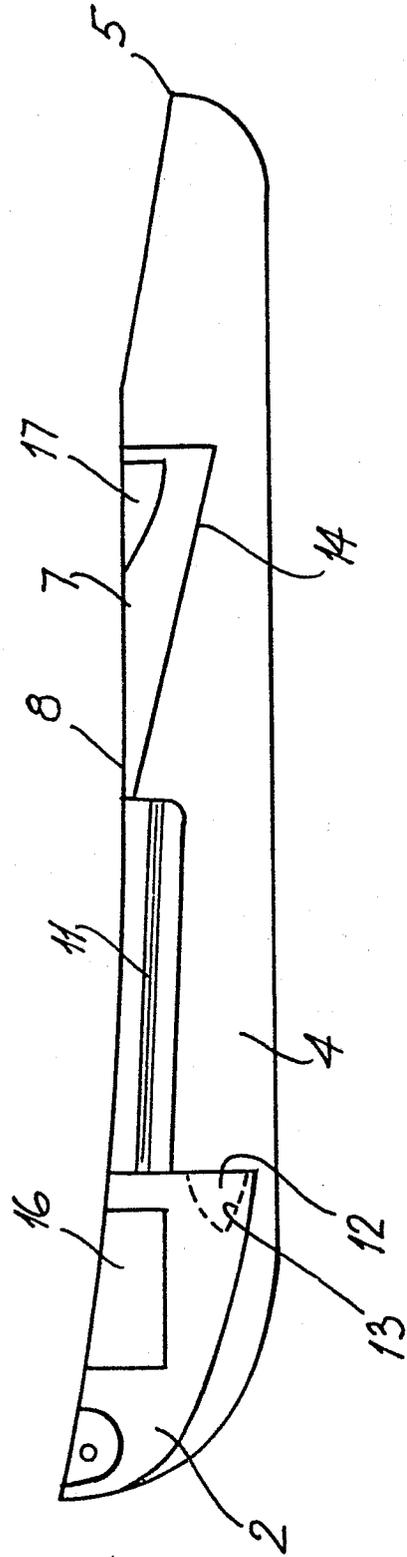


Fig. 5

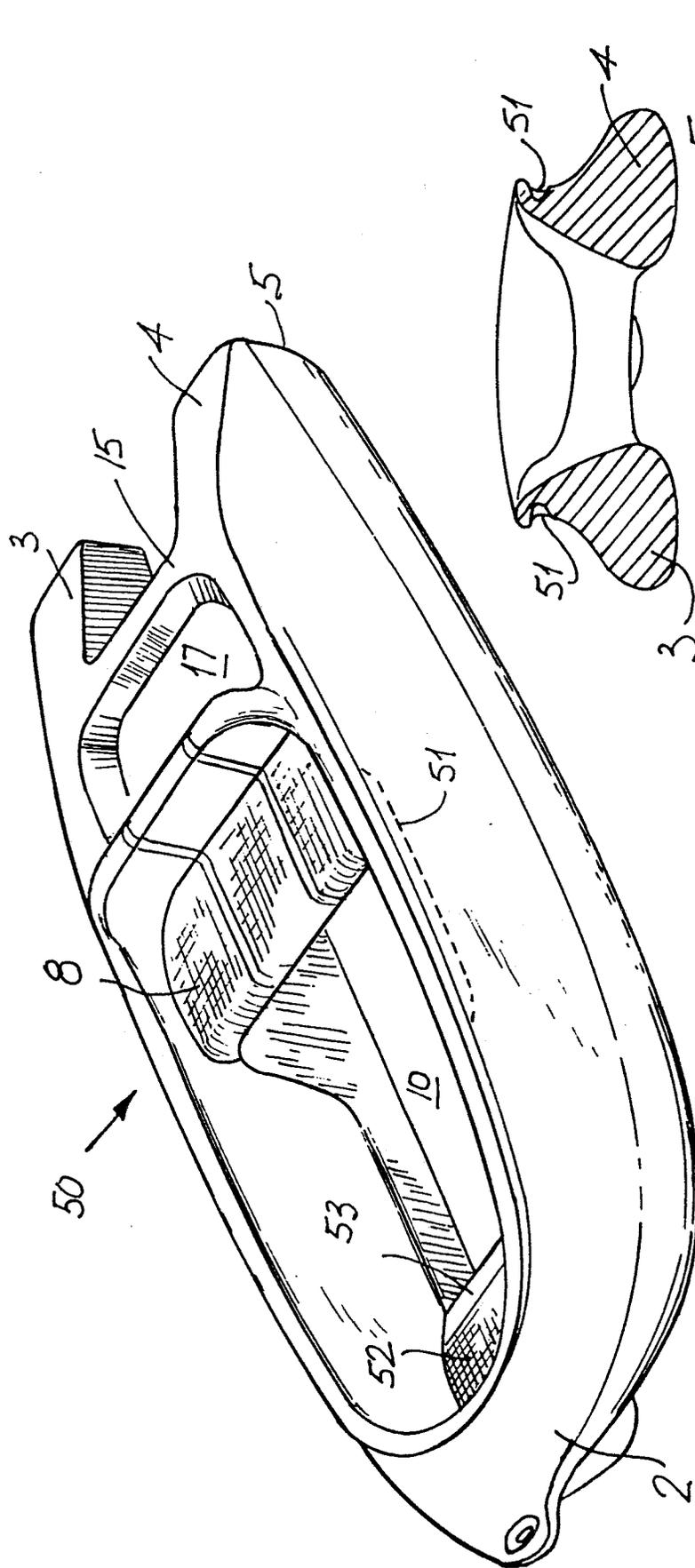


Fig. 8

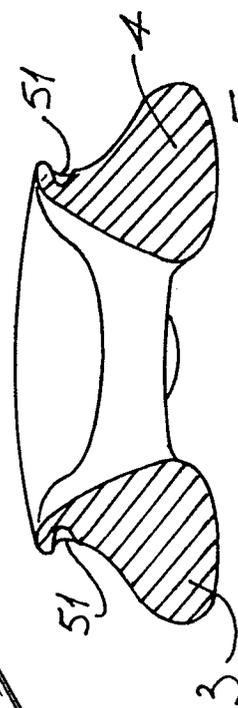


Fig. 10

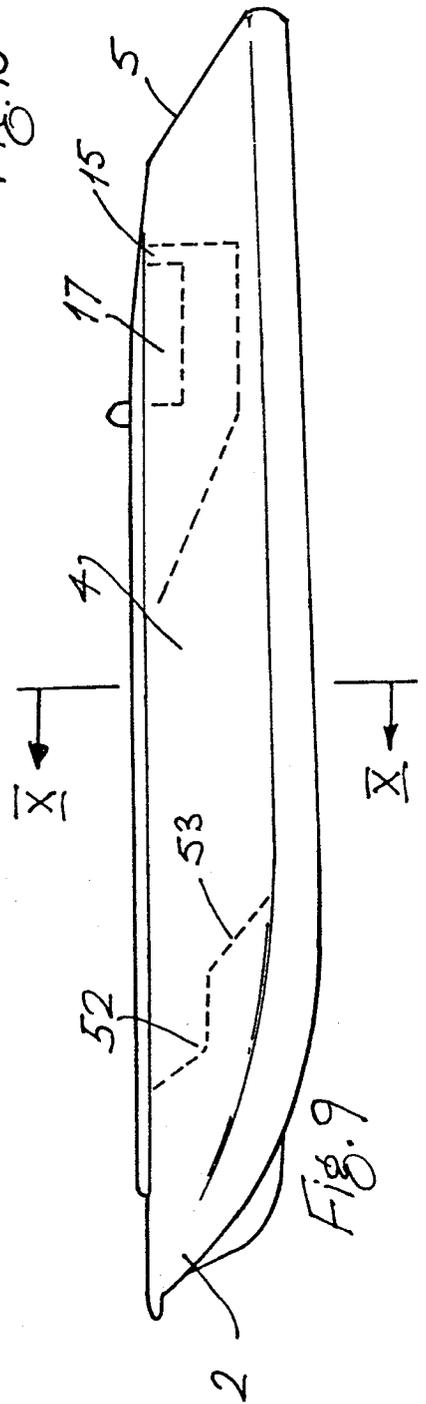


Fig. 9



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 3)
X	US-A-3 638 256 (McINTYRE) * Whole document *	1,3-6, 8-10,7	B 63 B 35/72
A	US-A-3 324 488 (SCHULTZ) * Whole document *	1,4,6, 8-10	
A	US-A-2 747 204 (ERICKSON) * Column 2, lines 32-48; figure 1 *	1,4,7	
A	US-A-4 315 475 (ECHOLS)		
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int. Cl. 3)
			B 63 B
Place of search THE HAGUE		Date of completion of the search 14-06-1984	Examiner BRUMER A.M.
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			