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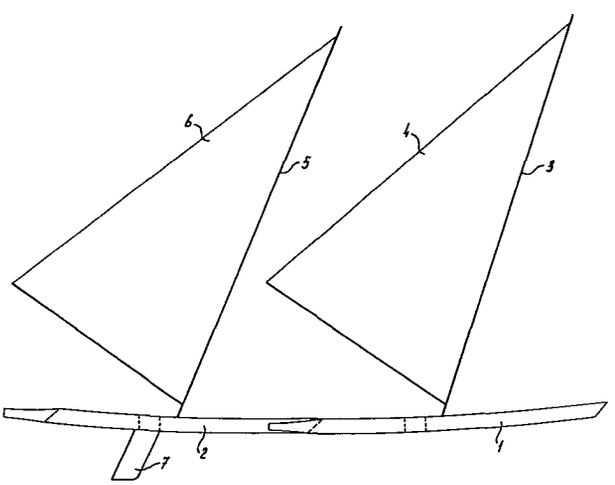
(54) Multi unit surf-board such as a tandem surf-board formed by at least two mono surf-boards.

(57) The invention relates to surf-board or the like gliding vessels which surf-boards are almost or entirely identical and are shaped in such a way that the stem portion (12, 52) of a surf-board (1, 50) fits into a recess (8, 51) of another surf-board which preferably is identical so that two or more surf-boards can be interconnected to a tandem or multiple surf-board, special locking means being provided to hold stem and stern of subsequent surf-boards strongly together such as cams (20, 21), bushing-pin connections (22, 23 or 36, 37, 40, 25) or tensioning belts (26, 28), or velcro fastener belts between mating surface alone or in combination, whilst in a preferred embodiment the interconnection is obtained by a centre board (53) extending through slots (54, 55, 56) of the mating stern and stem.



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Surf-board or the like gliding vessel.

The invention relates to a surf-board or other gliding vessel having more than one mast and sail such as a tandem surf-board, comprising interconnectable parts which can be disconnected. Surf-boards are generally known and their popularity is rapidly increasing because they open a new form of sailing sport to large groups of the population. The best known surf-boards are so-called mono-surf-boards, which means that they have only one mast and sail and only offer place to one person. Known as well are tandem surf-boards having a board out of one piece upon which two or more masts are placed and accordingly offering place to two or more persons. With such a tandem surf-board higher speeds are possible and for said reason they are very attractive. The disadvantages of said known surf-board are:

a transportation no longer can take place upon the roof of a motor vehicle

b the price is high and

c said surf-board only can be used if there are a sufficient number of participants,

d the users are dependent from each other which means that they should be available at the same time to start surfing.

Known as well is a surf-board comprising a stem, a stern and one or more central pieces, which pieces releasably can be interconnected. With said known surf-board a central piece can be applied suitable for two or more masts so that with maintenance of stem and stern a tandem surf-board can be composed offering place to two or more persons, but which during transportation in disassembled condition takes no more nor less place than a normal mono surf-board.

The disadvantages of said surf-board composed of parts are:

a that the price is high as well.

b that a sufficient number of participants have to be available so that the users depend from each other,

c out of the parts only one mono surf-board can be composed because the other parts then cannot be used.

Purpose of the invention is to provide a surf-board system offering the owners of mono surf-boards of the same type to combine them to tandem surf-boards or even multiple surf-boards.

According to the invention this purpose is achieved in that each one of said parts is formed by a complete mono surf-board or vessel each being formed at its stern and stem respectively such that the stem of a next surf-board or vessel by its form fits into the stern of a preceding surf-board or vessel and the reverse

Accordingly each part itself is a mono surf-board and said parts fit into each other like a male-female construction due to which they can be interconnected in any desirable number without disturbing the properties when used as mono surf-board. Preferably each surf-board has a stern of a form such that the stem of an identical surf-board can be enclosed and mounted into it. In this way two or more surf-boards in a simple way can be interconnected to a multiple surf-board. The sailing properties of the mono-no surf-board are not effected neither by the shape of stem and stern nor by the recess in the stern. If the surf-boards are combined to a multiple surf-board then in the same way as with known surf-boards a multiple sail surface is obtained without considerable increase of the resistance within the water. Due to this the possibility is obtained to form combined surf-boards by means of a surf-board which need not to cost more than a normal mono surf-board and due to this an additional dimension can be given to the surf sailing sport without increasing its costs.

The advantages accordingly are:

a with respect to the tandem surf-board made from one piece no longer transportion problems exist;

b each part can be used as mono surf-board;

c the interconnection is very simple; tools are not

necessary; can take place if so desiredwithin the water.

d Disconnection also can take place at any moment;

e If a surf-board according to the invention is bought the problem of the choice between mono surfing or tandem surfing disappears because with one type both possibilities can be achieved.

f The users are independent from each other;

g From a sporting point of view it is of great importance that the owner of a mono surf-board according to the invention for the price of one surf-board at any moment can change over to tandem surfing as soon as he finds someone else having the same surf board and the same desire. The reverse is true as well.

Although it is preferred that the surf-boards which according to the invention can be interconnected to a tandem surf-board or a multiple surf-board, are entirely identical, the invention also relates to those surf-boards which are identical at stern and stem but inbetween different to be able to combine junior surf-boards with surf-boards for grown-up people. It even is possible to combine surf-boards which are not identical at all but of which one has a stem which fits into the stern of another surf-board.

The mono surf-board suitable to be combined to a multiple surf-board at the location of the front end of the recess and at the Iocaton of the stem has been provided with connecting members which together form a connection. By the form fitting insertion of this stem in the recess of the stern relativeIy few and simple connecting means are sufficient. Often a connection of the stem in the front end of the recess will arready be sufficient. However, one also can provide members at the rear ends of the legs of the stern extending on both sides of the recess which lock against upward movement a stem placed

in said recess.

According to the invention the connection can be obtained by providing those parts of stem and stern which fit upon each other at least locally with the complimentary parts of a velcro fastener. Velcro fasteners have the advantage to enable a quick connection which gives way however upon overloading.

According to the invention the connection between the front end of the stem and the front end of the recess can be obtained in that the surf-board at the front end of the recess as well as at the stem has been provided with connecting members which together form a connection.

Instead of said connections or in addition thereto it is possible that the stern at the front end of the recess and/or at the rear ends of the legs of said stern has been provided with cams extending above the recess and adapted to engage the top surface of a stem placed within the recess. Due to this in combination with the upwardly inclined side faces of the legs of the recess which side faces deliver a locking downwardly a locing in all directions is obtained and provisions then still only are necessary to prevent disengagement in axial direction. This can be achieved by means of the above mentioned pin connection but also in that one or more of the cams has been provided with a vertical bushing for a pin and the stem at the locations which come to lie below the cams has been provided with a bushing, which bushings are in line if a stem is placed in the recess of a stern. Further the enclosure between the rear ends of the legs of the recess independent from the above-mentioned connecting means or in addition thereto so can be obtained by interconnecting said legs by means of a tension belt running over the top surface of a stem placed or to be placed in the recess and pressing this stem against the legs of the stern of the preceding surf-board

Surf-boards having centre boards are well known and it is also known that such a centre board bas been removably inserted within a longitudinal slot. The surf-board according to the invention can be provided as well with such a removable centre board. This is desirable not only for transportion purposes, as is well known, but to prevent that too many centre boards effect the steerability of a combination of two or more surf-boards according to the invention.

According to a preferred embodiment of the surf-board according to the invention the surf-board at its stern has been provided with a hollow space which, with the exception of the rearwardly open insert opening is closed in principle and has an inner shape which is equal to the outer form of the stem and that openings are provided in the stem and in top and bottom portion of the stern of a form and location such that in case a stem is placed into the stern opening both surf-boards are interconnectable by a connecting member which can be inserted through the in line lying openings. Such a connecting member can be a pin or a plurality of pins but preferably said openings are formed by longitudinal slots and the connecting member has the form of a centre board such as e.g. one of the centre boards of the two or more mono surf-boards which are to be interconnected. In this way without additional elements a tandem surf-board can be obtained having the same or almost the same steering qualities as a mono surf-board.

The invention now will be further elucidated with reference to the drawings.

Figure 1 shows two interconnected surf-boards according to the invention.

Figure 2 is a side view of a surf-board according to the invention.

Figure 3 is a top view of the surf-board of Figure 2.

Figure 4 show a sequence of cross sections or

the timber plan of the surf-board of Figure 2 or 3 respectively.

Figure 5 shows a side view of a interconnecting possibility between two surf-boards.

Figure 6 is a top view of Figure 5.

Figure 7 is a cross section according to the line VII-VII of Figure 6.

Figure 8 is a longitudinal cross section according to the lines VIII-VIII of Figure 6.

Figure 9 is a cross section according to the line IX-IX of Figure 8.

Figure 10 is a cross section according to the line X-X of Figure 8.

Figure 11 is a top view of another embodiment.

Figure 12 is a side view of the surf-board according to Figure 11.

Figure 1 shows a tandem surf-board comprising a front surf-board 1, a second surf-board 2. The surf-board 1 has been provided with a mast 3 with sail 4 and the surf-board 2 with a mast 5 with sail 6. At 7 an insertable centre board has been provided formed by a plate mounted within a slot provided for that purpose. This is well known. The surf-board 1 has a similar slot and if so desired a centre board can be inserted there as well.

The Figures 2 and 3 show one of the surf-boards of Figure 1 at larger scale. In said figures at the location of the letters a,b,c,d,e,f,g,h,i and k the cross sections are indicated which are found as well in the timber plan indicated in Figure 4.

As most clearly follows from Figure 3 the surf-board at the stern has been provided with a recess 8 open rearwardly and having side flanks 9 and 10 respectively diverging upwardly and joined at the location of a flat strip 11. This recess can be made as well with a bottom as indicated with the line 8'. The stem generally indicated at 12 has side flanks 13 and 14 as well as a flat front piece 15 which surfaces 13, 14 and 15 in shape fit upon

the surfaces 9, 10 and 11. AT the location of the surface 11 and the stem 12 velcro fastener belt can be provided.

At 16 a slot has been indicated for the mounting of a centre board.

Accordingly if two or more of the surf-boards shown in Figures 2 and 3 are placed behind each other with the stem 12 in the recess 8 then they closely fit upon each other. This clearly follows from the timber plan of Figure 4 which in the left hand part at the lines 17 and 18 shows how the timber lines a of the stern and g of the stem follow each other whilst this again is shown at the line 18 for the timber lines b of the stern and k respectively of the stem.

The interlocking of the stem 12 in the recess 8 of a stern can be obtained in a simple way by providing the recess upwardly of abutting members e.g. in the form of cams 19, 20 and 21. The interlocking in axial direction then in a simple way can be obtained by means of the pin 22 which can be inserted through an eye 23 of the cam 19 and into the bushing 24 of the stem. Instead of the pin 22 velcro fastener belt can be applied upon the surface 11 or over the seam of the joined stem and stern.

figures 5, 6 and 7 show a different form of interconnecting at a location of the rear ends of the legs which on both sides of the recess 8 form the stern.

At the front end of the recess stem and stern are interconnected by a pin 25 which will be described further.

At the rear ends the connection is obtained by means of a tension belt 26 most clearly shown in Figure 7.

As Figure 7 shows the belt 26 comprises a left hand part secured to one leg of this stern by means of the connecting strip 27 and a right hand part 28 connected to the right hand portion by means of a connecting strip 29. Both ends are interconnected by means of a tension

member 30 of known construction.

The connection by means of the pin 25 is shown more in detail in figures 8 to 10 inclusive.

In figure 8, 31 is a stern and 32 a stem.

Upon the surface indicated with 11 in figure 3 plate 33 has been mounted shown in figure 9 which with bent ends 34, 35 lies in one plane with top surface and bottom surface respectively of the stern. Said plate 33 has two bushings or sleeves 36, 37 spaced apart and at the inner side, which means between the outwardly turned surface of the plate 33 and the stern, which stern to this end has been provided with a recess 38 which as shown in Figure 9 and 10 is a little bit larger than the bushings 36, 37.

The stem 32 in the same way has been provided with a plate 39 with bushing 40. Said bushing 40 has a length such that it fits inbetween the bushings 36 and 37.

In Figure 10 the plates 33 and 39 are shown at a distance from each other and on the right hand side of Figure 10 one can see that the plate 33 has a recess or opening 41 through which bushing 40 can penetrate.

If stem and stern are placed against each other as shown in Figure 8 then the bushings 36, 37, and 40 are in line with each other and the pin 25 can be inserted through them.

The connection atthe outer ends of the stern, as far as necessary, then can be performed as shown in Figures 5 and 7 inclusive, which means with a tension belt, or in the manner as shown in Figures 2 and 3 by means of the cams 20 and 21. Other combinations of connecting means and other embodiments of connecting means of course are possible.

Figures 11 and 12 show a preferred embodiment according to which the surf-boards 50 at the stern have a recess 51 which is only open at the rear end and the inner form of said recess 51 is such that the stern 52

fits exactly into the recess 51.

The two surf-boards 50 are interconnected by means of a centre board 53 whcih extends through slots 54 and 55 of top wall and bottom wall respectively of the recess 51 and through the slot 56 of the stern. This centre board 53 can be a centre board which also can be used in the slot 57 of a surf-board 50 when used as mono surf-board.

The invention has been described in its application upon surf-boards. If a body such as a surf-board, the underside of which as the property that with sufficient speed it starts to glide upon the water, is provided with side boards than a vessel shape derived from the surf-board can be formed or a surf-board form derived from a vessel form can be formed, offering more comfort e.g. in that the possibility of a seat is created. Also then the principle upon which the invention is based can be applied.

The Velcro fastener mentioned above is a fastener well known in textile between two faces one having a plurality of loops the other a plurality of elastic hooks.

C L A I M S

1. Surf-board or other gliding vessel having more than one mast and sail such as a tandem surf-board, comprising interconnectable parts which can be disconnected, characterized in that each one of said parts is formed by a complete mono surf-board or vessel each being formed at its stern and stem respectively such that the stem of a next surf-board or vessel by its form fits into the stern of a preceding surf-board or vessel and the reverse.

2. Surf-board or vessel according to claim 1, characterized in that said parts are identical at stern and stem.

3. Surf-board according to claim 2, characterized in that saidparts are entirely identical.

4. Surf-board or vessel according to claim 1, 2 or 3, characterized in that the stern of each board or vessel respectively has been provided with a rearwardly open and upwardly widening V-shaped or U-shaped recess into which the stem of the next surf-board or vessel fits.

5. Mono surf-board suitable to be combined to a multiple surf-board according to one or more of the preceding claims, characterized in that said surf-board at the front end of the recess as well as at the stem has been provided with connecting members which together form a connection.

6. Mono surf-board according to claim 5, characterized in that said surf-board at the rear ends of the legs of the stern present on both sides of the recess has been provided with members to lock against upward movement a stem placed in said recess.

7. Mono surf-board according to claim 5 or 6, characterized in that the surf-board in its central plane of division at the front side of the recess has been provided with a bushing or a plurality of spaced apart bushings in line lving within said plane and parallel to the front part of the recess and that the stem in the same central plane of division and parallel to the line of the stem has been provided with a plurality of spaced apart bushings or one bushing respectively, which bushings of stem and stern are adapted with respect to each other such that upon placing a stem in the recess of a stern a pin can be inserted through said bushings.

8. Mono surf-board according to one or more of the preceding claims 3 to 7 inclusive, characterized in that the stern at the front end of the recess and or at the rear ends of the legs of said stern has been provided with cams extending above the recess and adapted to engage the top surface of a stem placed within the recess.

9. Mono surf-board according to one or more of the claims 5 to 8 inclusive, characterized in that those parts of stem and stern which fit upon each other at least locally have been provided with the complimentary parts of a velcro fastener.

10. Mono surf-board according to claim 8, characterized in that one or more of the cams has been provided with a vertical bushing for a pin and the stem at the locations which come to lie below the cams has been provided with a bushing, which bushings are in line if a stem is placed in the recess of a stern.

11. Mono surf-board according to one or more of the preceding claims, characterized in that the legs of the stern can be interconnected by means of a tension belt

running over the top surface of a stem placed or to be placed in the recess.

12. Mono surf-board suitable for combination to a multiple surf-board as claimed in claim 1, 2 or 3, having a removable centre board, characterized in that the surf-board at the stern has been provided with a hollow space which, with the exception of the rearwardly open insert opening, is substantially closed and which has an inner form which is equal to the outer form of the stem and that openings are provided in the stem and in top and bottom portion of the stern of a form and location such that in case a stem is placed into the stern opening both surf-boards are interconnectable by a connecting member which can be inserted through the in line lying openings.

13. Surf-board according to claim 12, characterized in that the openings are formed by longitudinal slots and the connecting member has the form of a centre board.

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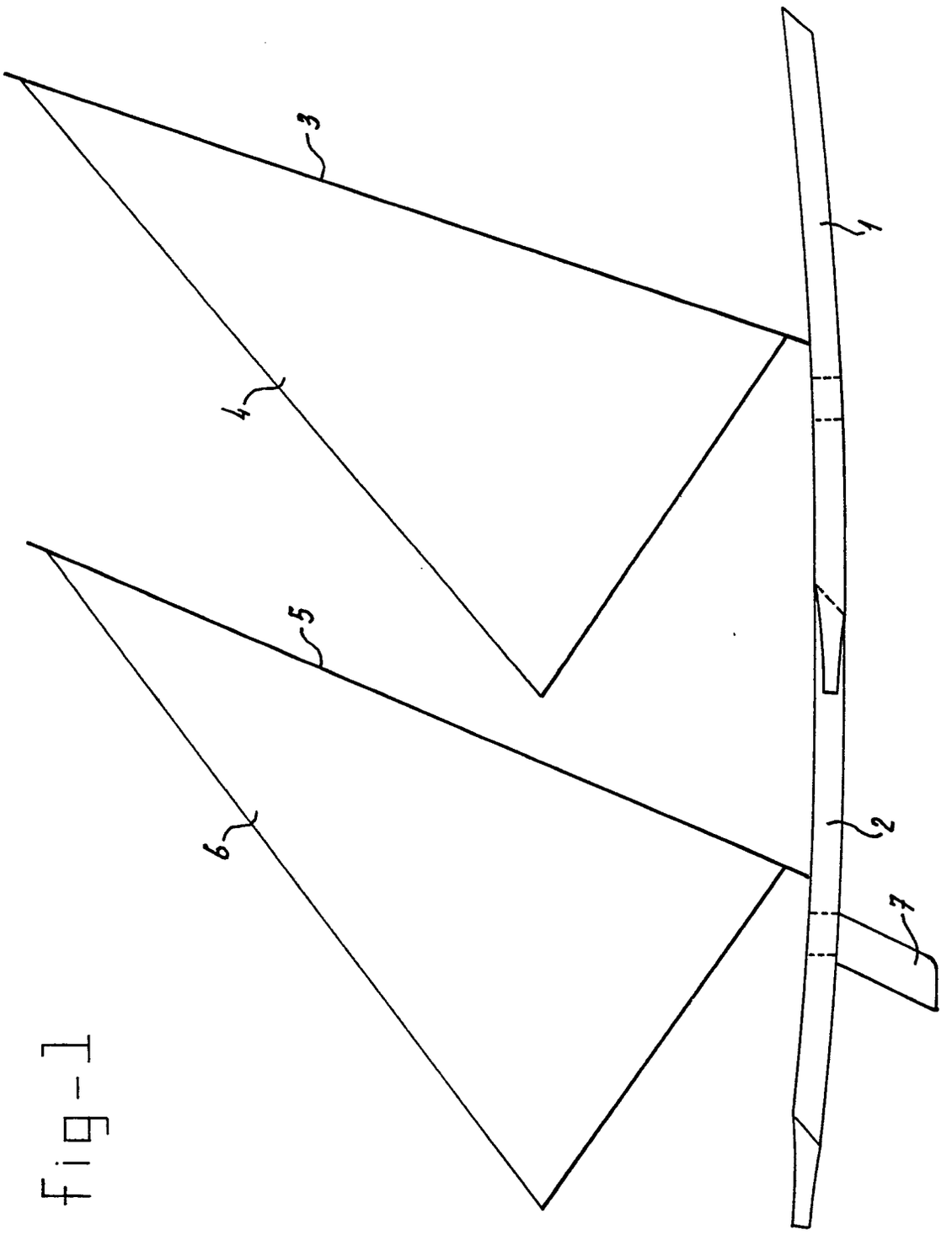
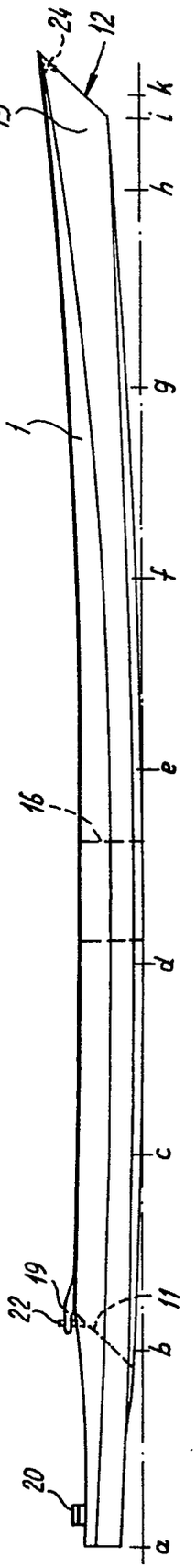


fig-1

Fig-2


24
12
13
i
k
h
g
1
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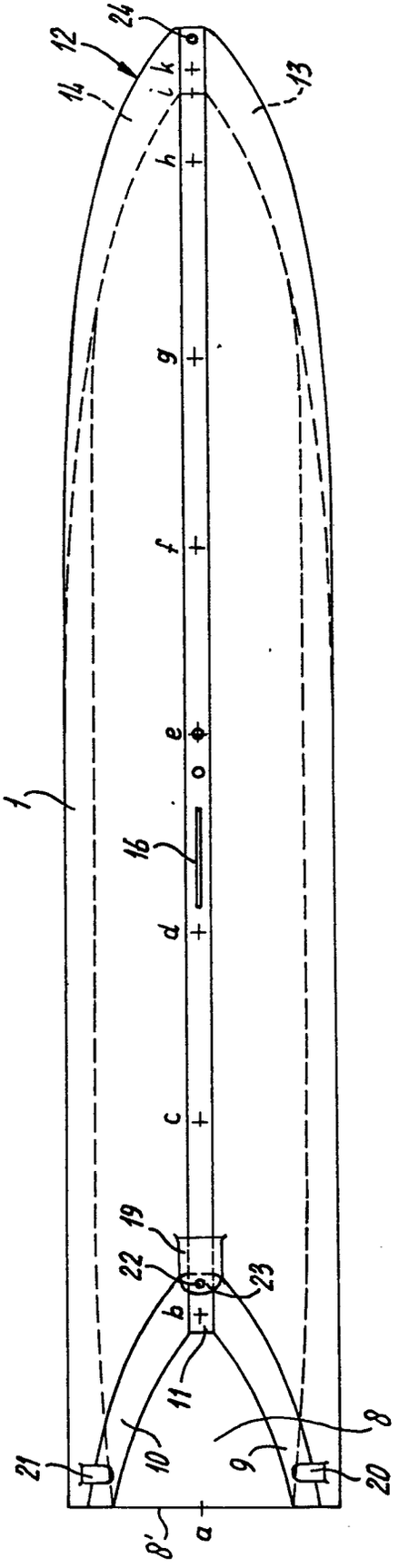
e
16
d
c
19
22
11
b
20
a

Fig-3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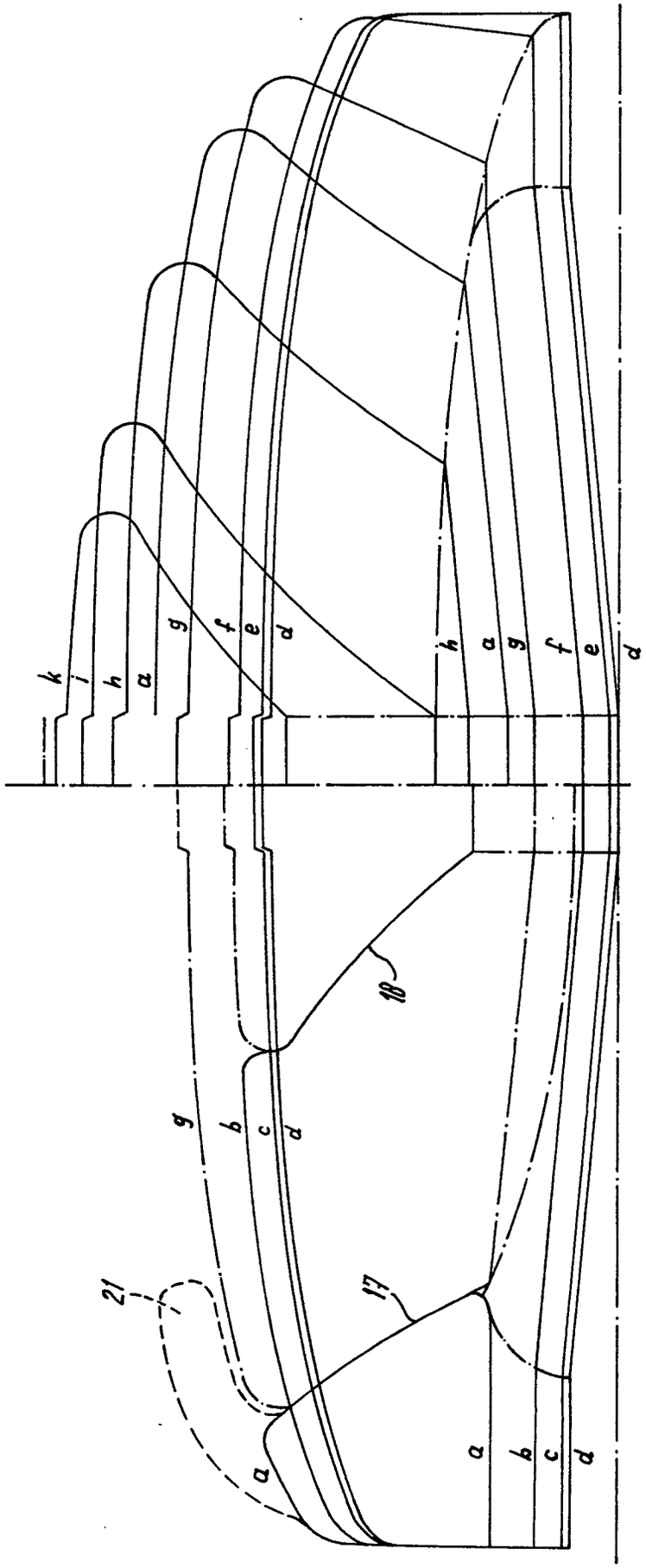

Fig-4

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Fig-5

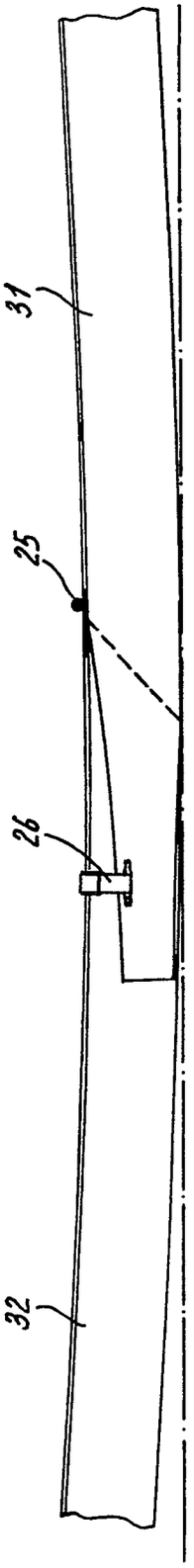
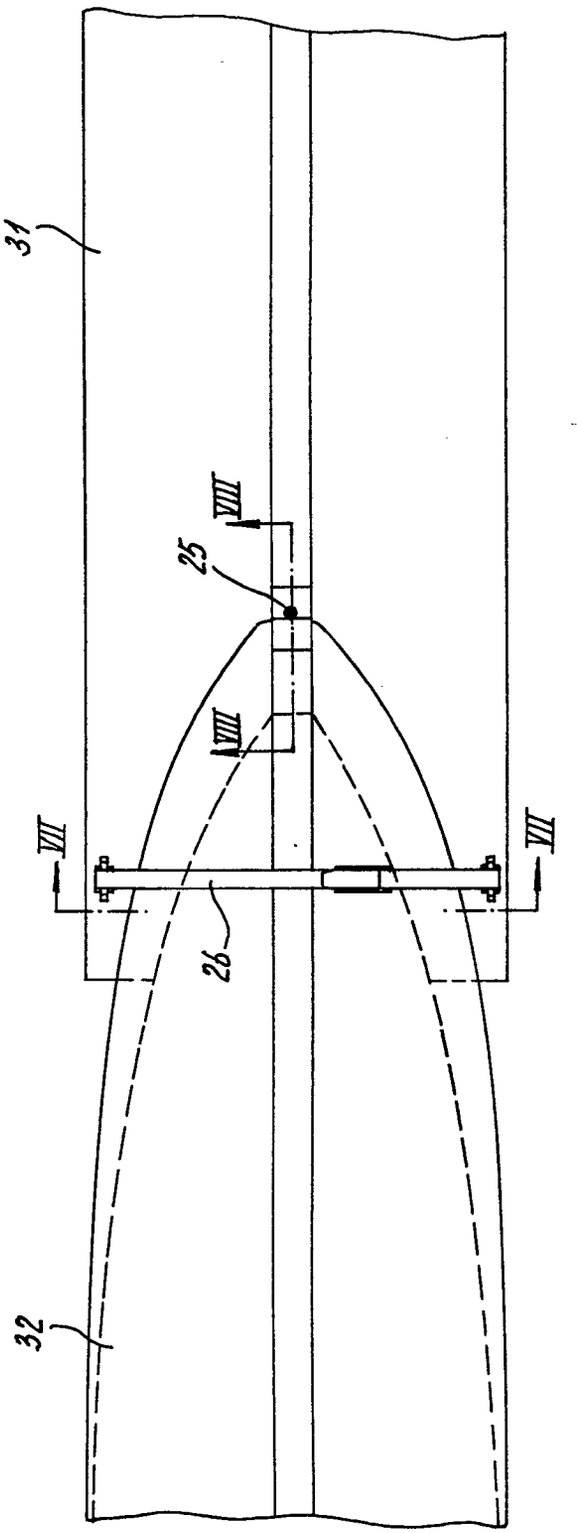


Fig-6



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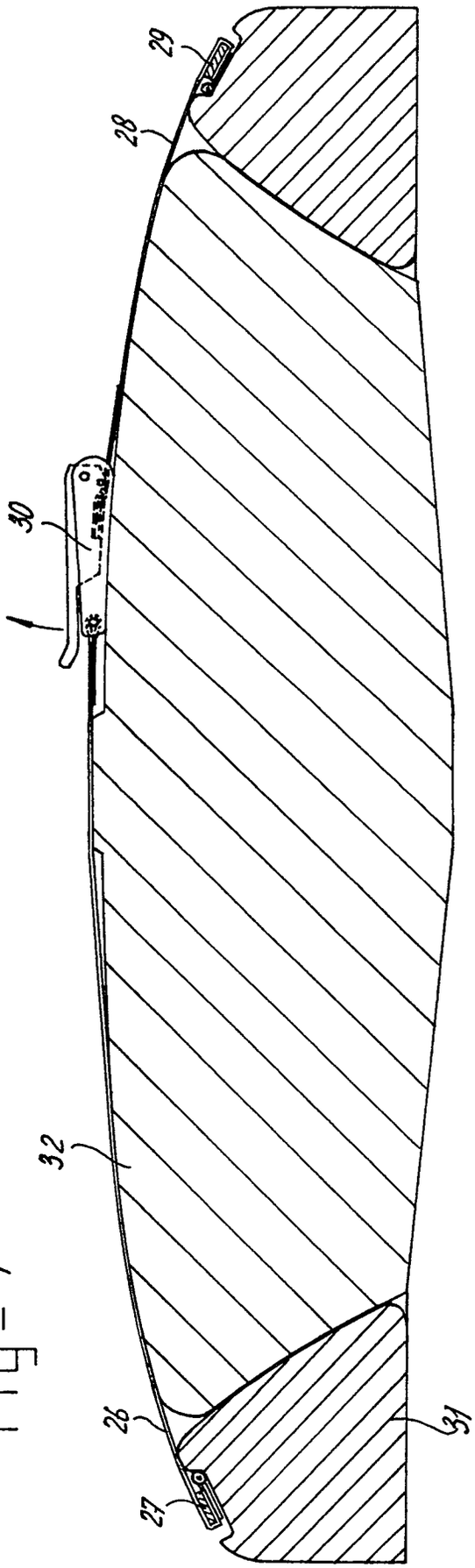

Fig-7

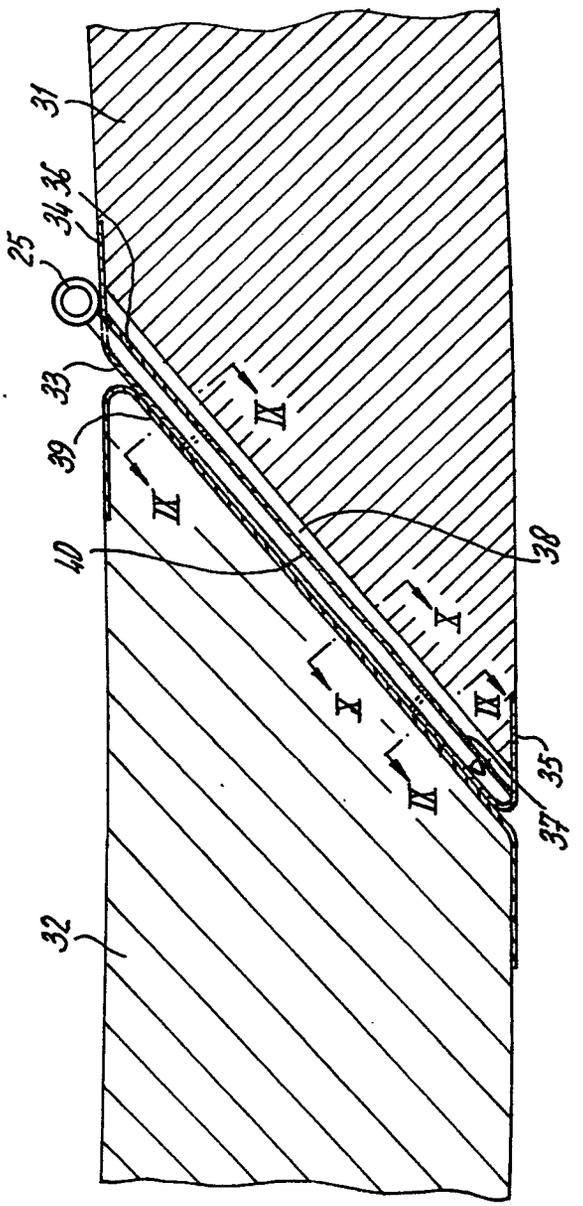

Fig-8

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Fig-9

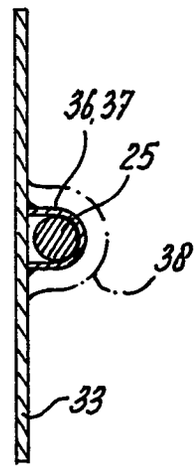

Fig-10

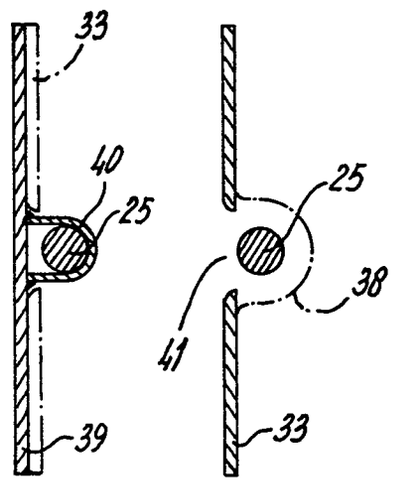

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fig-11

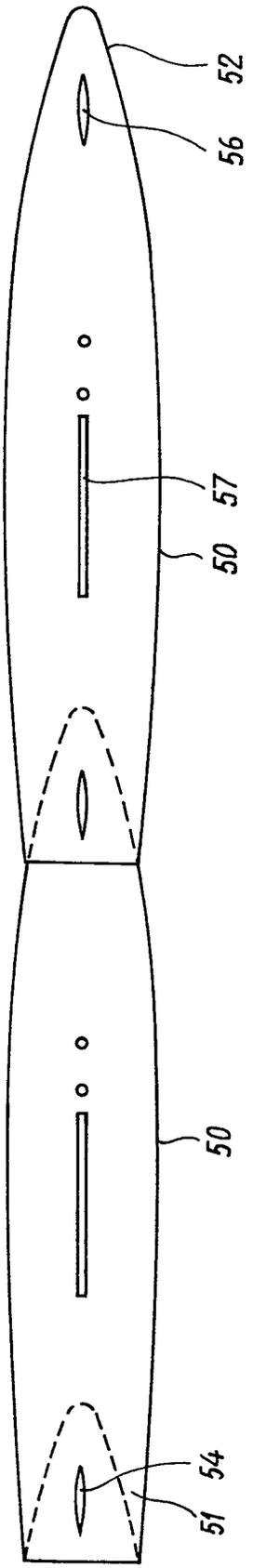

fig-12