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[33] **Germany**

[31] **P 15 56 456.4**

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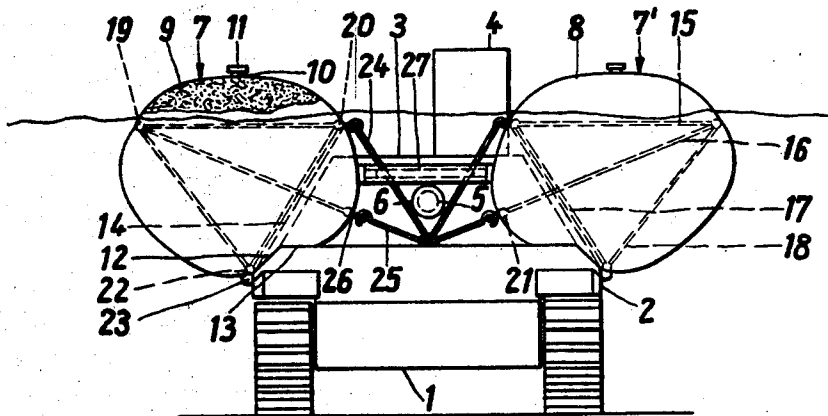
[54] **ARMORED VEHICLE FLOAT STRUCTURE**
 9 Claims, 2 Drawing Figs.

[52] **U.S. Cl.**..... 115/1

[51] **Int. Cl.**..... B63f 3/00

[50] **Field of Search**..... 115/1;
 114/68, 69

ABSTRACT: An armored vehicle is provided with a plurality of porous baglike shells and foam material to be introduced into the shells to produce floats oppositely positioned on the vehicle by means of spacing braces and tension struts, with rigid members secured to the floats to provide the floats with a shape complementary to the vehicle external shape.



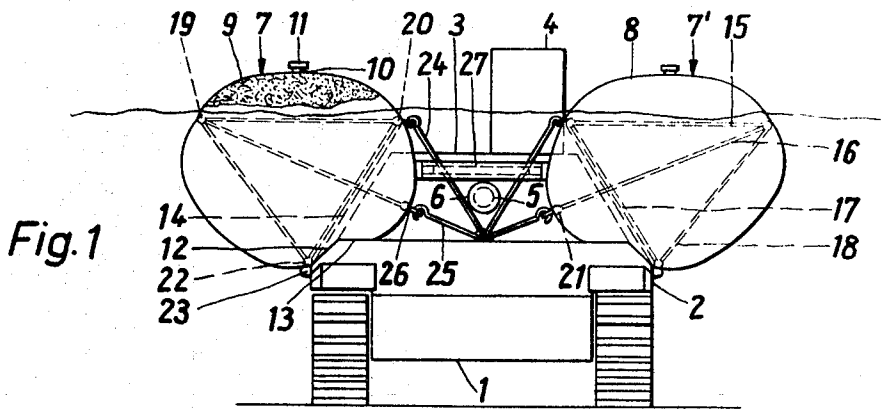


Fig. 1

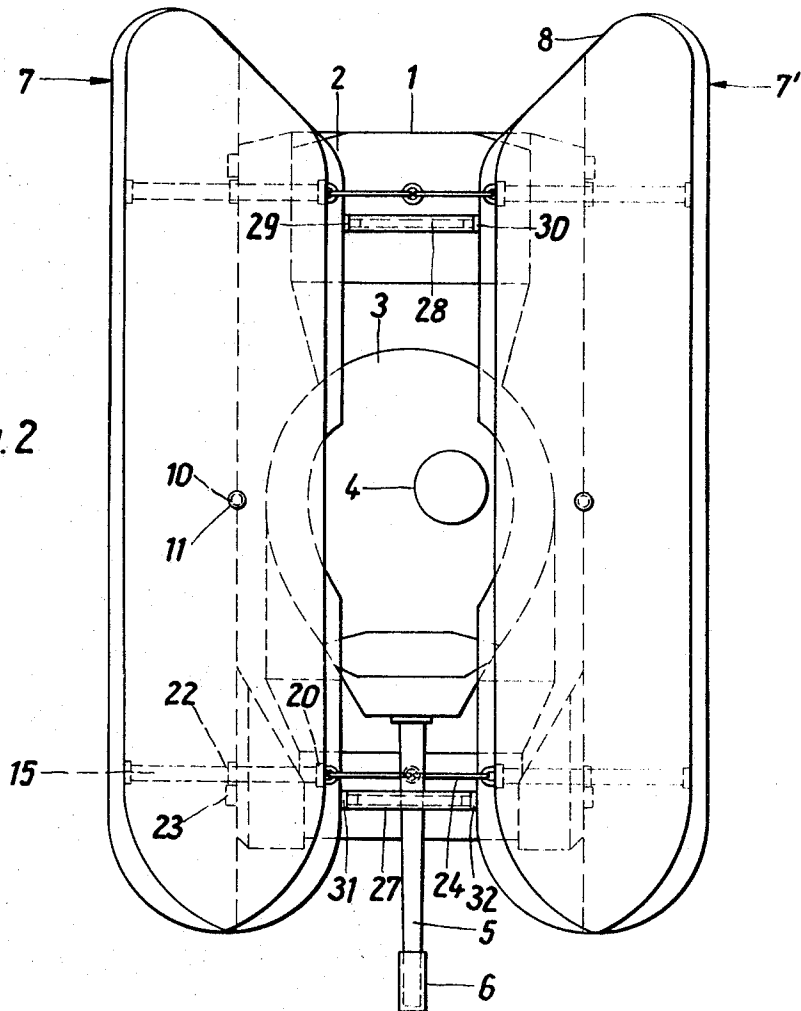


Fig. 2

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ARMORED VEHICLE FLOAT STRUCTURE

BACKGROUND OF THE INVENTION

It is known to provide air-filled hoses as buoyant bodies to float vehicles. However, such hoses are usually constructed of close-textured fabrics, the manufacture of which is expensive, and the hoses thus constructed may be easily damaged by pointed objects or the like so that they will become unusable. Also, atmospheric influences have decided disadvantageous effects on the tightness of such hoses.

SUMMARY OF THE INVENTION

It is an object of the present invention to float vehicles by means of floats that are insensitive to minor damage and also that may be constructed of loose-textured casings, shells or the like so that they are cheaper to manufacture and more lightweight to store and transport. The advantages inherent in an air-filled float, which may be rapidly readied for action, are retained with the present invention, without the disadvantages of the known constructions.

The above objects are accomplished in accordance with the present invention by providing at least one float comprising a flexible shell that is filled with a synthetic foam before use. Floats of this type will remain buoyant even after incurring minor damage and punctures. Besides, the shell encompassing the space of the float can be made of air or water permeable materials, the manufacture of which is inexpensive and does not entail a great weight. Stored foam producing materials may be provided in the vehicle to take up little room with small weight, which may be rapidly put into action for expanding and readying the floats for use. The foam filling of the float shells has a large pore or bubble material structure, so that the inherent weight of the buoyant bodies is kept as small as possible. Also, the shell of the float is provided with means so that it will conform and be complementary to the shape of the vehicle, which makes it easily attachable to the vehicle. The shell of the float is furthermore provided with shape imparting rigid components, which will form the exterior shape of the float complementary with the exterior shape of the vehicle, after the filling process has been completed.

The filled floats are mounted on the vehicle by means of tension members having quick-acting locks or closures and secured between the floats and vehicle. Thus, the floats may be easily attached to the vehicle and readily detached from the vehicle. When a plurality of floats are mounted on the vehicle, particularly on opposite sides of the vehicle, rigid spacers or brace members are provided to retain the spacings between the floats and provide a generally rigid structure. This type of construction prevents a major change in the position of the floats with respect to the vehicle due to the forces imparted by the buoyancy thereof.

BRIEF DESCRIPTION OF THE DRAWING

Further objects, features and advantages of the present invention will become more clear from the following detailed description of the drawing, wherein:

FIG. 1 is a front elevation view of an armored vehicle provided with the floats of the present invention, partially in section, with the vehicle riding in water; and

FIG. 2 is a top view of the vehicle provided with the floats according to the present invention.

DETAILED DESCRIPTION OF THE DRAWING

As shown in the Figures, an armored motor vehicle 1 has a chassis structure 2 and a turret 3 mounted for rotation on the chassis 2. The turret 3 has a hatch 4 and a pivotally mounted gun barrel 5, which gun barrel may be sealed against the entrance of water or the like, by a protective hood 6.

Two floats 7, 7' are positioned on opposite sides of the vehicle 1, respectively. Each of the floats consists of a loose fabric, preferably lightweight porous material, shell 8 filled with a

foamed material 9, preferably synthetic material; this foam material is produced shortly before use by introducing the components generating the foam into the shell 8, which components have previously been stored in the motor vehicle in pressurized containers along with the folded and collapsed shells. The shell 8 may be manufactured of a material which to a limited extent is air and water permeable, to reduce the cost of its manufacture and its weight; the shell is provided with a feeding opening 10 or coupling, which is closed off by means of a tight-sealing lid, which will allow introduction of the foam components.

The shell 8 is provided with a plurality of sections 12, 13, 14 that are complementary to the external shape of the adjacent portions of the chassis 2 of the vehicle 1. This complementary shape is particularly obtained by means of shape-imparting rigid components 15, 16, 17, 18 that are secured to the interior of the shell 8, which components are disposed at the appropriate spacings with respect to each other. The shape imparting components are attached by mounting members 19, 20, 21, 22 of the shell 8.

Each of the floats is securely fastened to the chassis 2 of the vehicle 1 by means of mounting elements 23 secured to the chassis 2, which elements can be easily closed or opened and are not illustrated in detail in the drawing. A plurality of tension members or struts 24, 25 cooperate between the chassis 2 of the vehicle 1 and the floats 7, 7' for example, the tension member 25 is constructed as a strap with a turn buckle 26 fixedly connected therewith. However, locks, latches or other quick-acting type couplings different from the above-mentioned couplings may be employed to secure the tension members 24, 25 between the chassis 2 and the respective floats 7, 7'.

In order to avoid an undesirable shifting of the position of the floats relative to the vehicle and each other when the vehicle enters the water and forces are imparted to the floats by means of their buoyancy and the weight of the vehicle, structurally rigid spacer members or braces 27, 28 are mounted at appropriate spaces from each other, preferably between the floats 7, 7'. These spacer members 27, 28 are formed by tubular bodies, or the like. In order to affix the latter to the shells of the floats and the chassis 2, the shells of the floats are provided with tangs 29, which are engaged by the spacer members 27, 28.

While a specific embodiment of the present invention has been described in detail with respect to the detailed drawings, this has been done for the purpose of illustration only and further modifications, variations and embodiments are contemplated.

I claim:

1. A float of foamed material for supporting loads, preferably vehicles in water, comprising: a flexible closed shell and foam material filling the interior of said shell before use, wherein said foam has a large bubble structure, said shell filled with foam having an exterior contour complementary to the shape of the vehicle, and said shell having a plurality of stiffening members forming the complementary contours when said shell is filled with foam.

2. The float according to claim 1, in combination with a vehicle and including a plurality of tension members provided with quick-acting closures secured between the float and the vehicle.

3. The float according to claim 1, in combination with a vehicle and another identical float, including rigid braces spacing said floats and holding said floats on opposite sides of the vehicle, respectively.

4. A float of foamed material for supporting loads, preferably vehicles in water, comprising: a flexible closed shell and foam material filling the interior of said shell before use, wherein said shell filled with foam has an exterior contour complementary to the shape of the vehicle, and said shell has a plurality of stiffening members forming the complementary contours when said shell is filled with form.

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5. The float according to claim 4, in combination with a vehicle and including a plurality of tension members provided with quick-acting closures secured between the float and the vehicle.

6. The float according to claim 4, in combination with a vehicle and another identical float, including rigid braces spacing said floats and holding said floats on opposite sides of the vehicle, respectively.

7. The float according to claim 6, in combination with a vehicle and including a plurality of tension members provided

with quick-acting closures secured between the float and the vehicle.

8. The float according to claim 5, in combination with a vehicle and another identical float, including rigid braces spacing said floats and holding said floats on opposite sides of the vehicle, respectively.

9. The float according to claim 4, wherein said closed shell is constructed of lightweight air and water permeable material, and said foam material is a foamed synthetic plastic.

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