Oct. 28, 1924. 1,513,591

W. E. DORR ET AL

FLOATING PLANT OR HARBOR FOR AIRSHIPS AND GIANT FLYING MACHINES

Filed Dec. 21, 1923

Fig. 3.

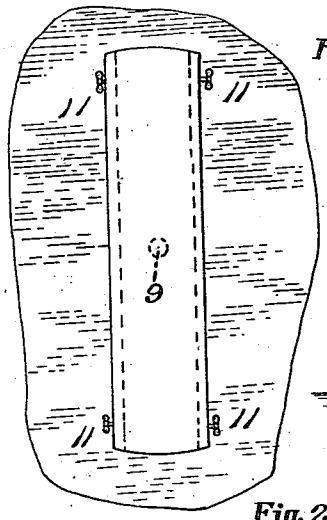


Fig. 1

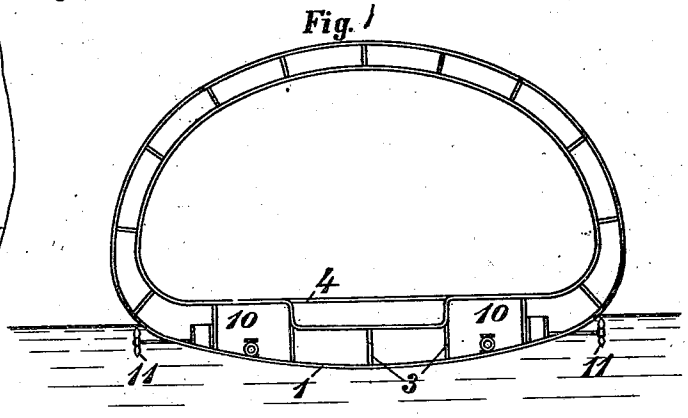


Fig. 2

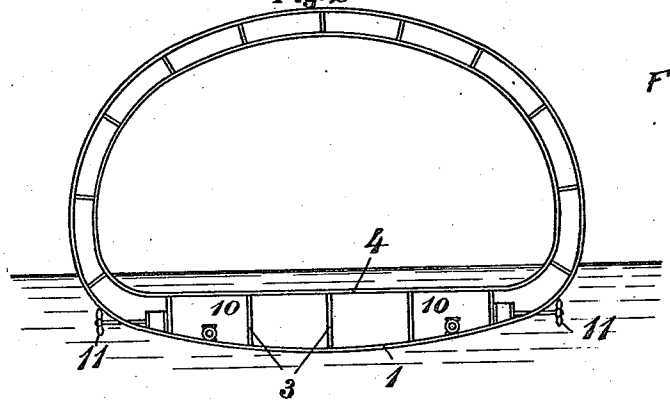
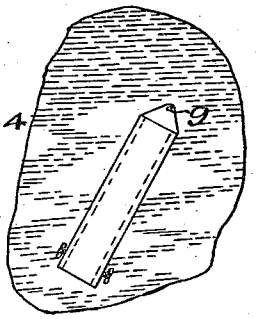


Fig. 4



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UNITED STATES PATENT OFFICE.

WILHELM ERNST DÖRR, OF UEBERLINGEN-ON-THE-BODENSEE, AND ERNST A. LEHMANN AND EBERHARD LEMPERTZ, OF FRIEDRICHSHAFEN-ON-THE-BODENSEE, GERMANY, ASSIGNORS TO LUFTSCHIFFBAU ZEPPELIN GESELLSCHAFT MIT BESCHRANKTER HAFTUNG, OF FRIEDRICHSHAFEN, BODENSEE, GERMANY, A FIRM.

FLOATING PLANT OR HARBOR FOR AIRSHIPS AND GIANT FLYING MACHINES.

Application filed December 21, 1923. Serial No. 682,130.

To all whom it may concern:

Be it known that we, WILHELM ERNST DÖRR, ERNST AUGUST LEHMANN, and EBERHARD LEMPERTZ, residing at Ueberlingen-on-the-Bodensee, and Friedrichshafen-on-the-Bodensee, Germany, respectively, have invented certain new and useful Improvements in a Floating Plant or Harbor for Airships and Giant Flying Machines, of which the following is a specification.

The invention relates to a floating plant or harbor for airships, which differs from the known floating sheds, carried by a multiple of separate pontoons, by the feature that instead of these only one single ship's hull is employed, forming a unitary supporting construction, which extends essentially over the total length of the base of the shed, and that the deck of the ship's hull forms simultaneously the floor of the shed, designed to resist the forces acting in the horizontal direction. By such an arrangement the advantage of diminishing the dead weight is obtained, because the ship's hull carrying the shed is engaged everywhere in a nearly equal degree and furthermore all structures of the construction are compelled alternately to absorb all the arts of loads occurring here. Therefore closed circuits in the distribution of forces within the structures and an extremely great stiffness of the construction is obtained.

According to our invention the structure in its cross section is not to have any flexible joint, so that it resembles a tube with hollow walls making it float, the upper inner shell of the walls being taken away because of the outer shell being sufficient to serve for a roof. The lower inner shell may at the same time serve for a floor. Such a structure will work up in itself all the stresses that may result from loads, changes of buoyancy in its different parts, changes of temperature and so on. The feature that it has no flexible joints causes a distribution of all possible stresses over all members of the structure, all of them contributing to its strength, and thereby allowing a very low weight of construction.

In the further pursuance of the idea of our invention it is made possible, to dip and lift the ship's hull by the arrangement of flood chambers combined with pumps, for the purpose of placing the floor of the shed according to requirement above or below the water-level. Furthermore propellers may be provided for assisting or substituting for the action of the wind and for shifting the shed around the anchoring point into the direction of the wind. The axles of these propellers are therefore arranged transversely to the longitudinal axis of the ship's hull so that the propellers when being driven effect a rotary movement of the shed around its anchoring point.

In order that the invention may be readily understood, in the following specification a floating harbor-plant will be described with reference to the annexed drawings, in which—

Figs. 1 and 2 show cross sections of an airship shed embodying our invention; Figs. 3 and 4 give a plan view of the arrangement of such sheds on the water.

The girders of the shed shown in Figs. 1 and 2 comprise two ringlike beams 1 and 4 distanced apart. They may be connected by plates, thus forming cross bulkheads, or by suitable stays 3. These stays 3 in the longitudinal direction of the structure form parts of longitudinal trusses, which in the lower part of the structure may be developed into longitudinal bulkheads. The lower parts of the outer rings 1 bear a water tight shell, their upper parts are adapted to bear a roof sheeting. The lower parts of the inner rings 4 also have a water-tight cover, serving to make water-tight compartments 10 and at the same time serving for a floor.

Propellers 11, driven by motors of any kind, in any suitable manner are provided, for assisting the wind to turn the shed around its anchoring point 9 into the direction of the air-current.

The constructions of Fig. 1 and of Fig. 2 are alike in their essential parts, they differ only in the arrangement of the longitudinal bulkheads; furthermore in Fig. 2 the floor of the shed is shown below the water-level, so that the airship may be drawn into the shed while resting at water level.

The shed may be arranged on a pond, especially made for this purpose, in such a manner that it is capable of being turned

around one of its ends or around a central point, as shown in Figs. 3 and 4, or the shed may be located on a greater expanse of water, for instance in a sea basin, and rotatory around an anchoring-point 9. The lateral movements of the shed are effected by means of the propellers 10, the axles of which are arranged transversely to the longitudinal direction of the shed.

What we claim as our invention and desire to secure by Letters Patent is:

A floating shed for airships comprising a tubular structure including a series of inner and outer cross members of ring-like shape, disposed in spaced-apart relation, one within the other; longitudinally-extending members connected with the cross-members and constituting therewith a framework; a covering disposed upon the framework constituting a roof; a shell disposed upon the framework and constituting a hull; a covering disposed upon the interior of the framework to constitute a floor, the space between the inner and outer cross members being enlarged at this portion of the shed; and an instrumentality connected with the framework and shell in proximity to this enlarged space to constitute bulkheads and form, with certain other portions of the shed, a water-tight compartment.

In testimony whereof we affix our signatures in presence of two witnesses.

WILHELM ERNST DÖRR.
ERNST A. LEHMANN.
EBERHARD LEMPERTZ.

Witnesses:
HANS BURMEISTER,
E. WILHELM BERG.