

H. E. GRIESHABER.  
 SPRAY SHIELD FOR SUBMARINE BOATS.  
 APPLICATION FILED OCT. 8, 1917.

1,314,059.

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Fig. 1.

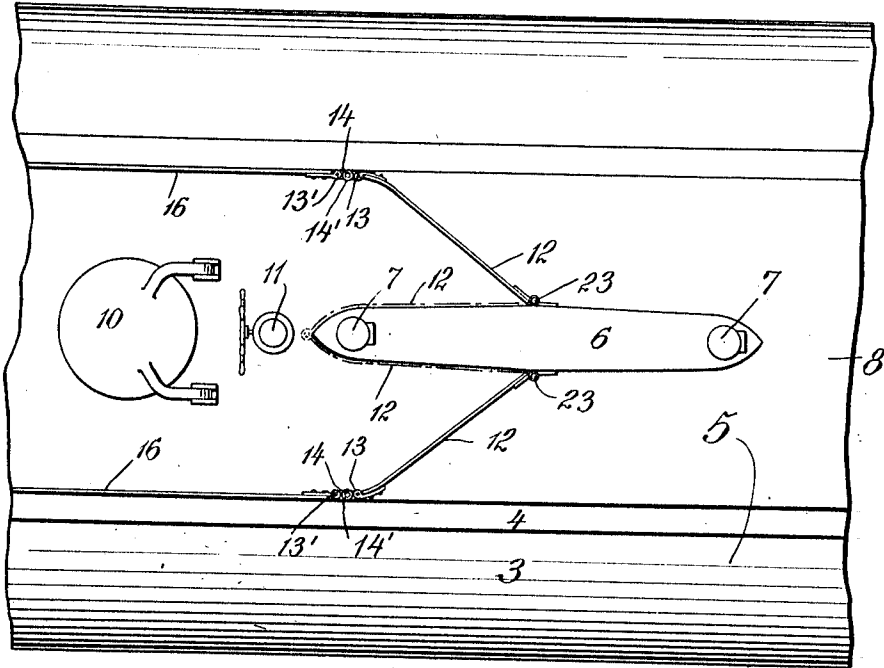
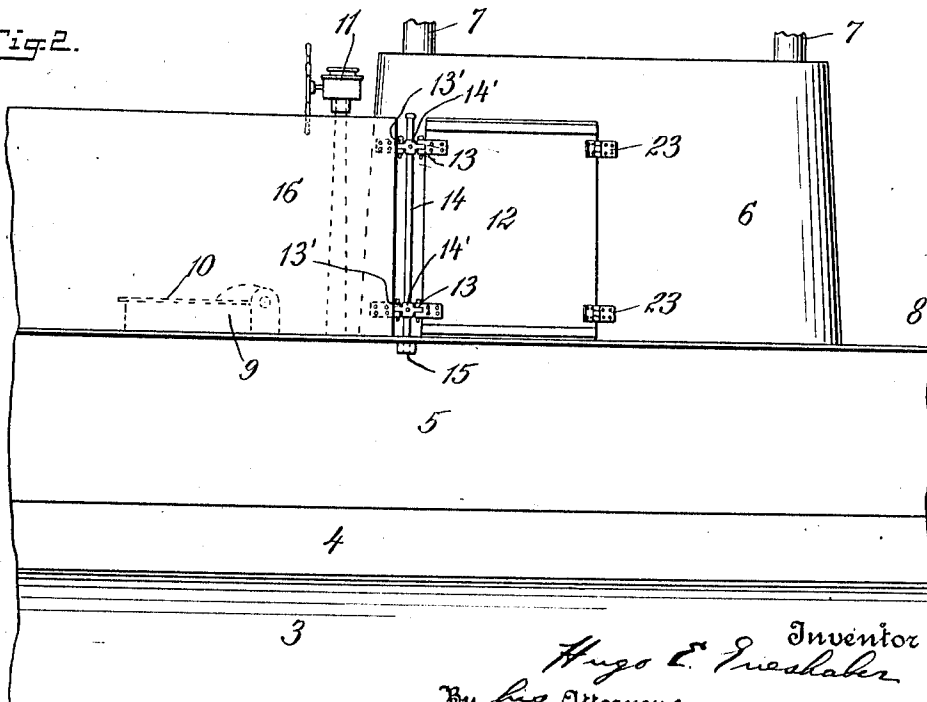


Fig. 2.



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# UNITED STATES PATENT OFFICE.

HUGO E. GRIESHABER, OF GROTON, CONNECTICUT, ASSIGNOR TO ELECTRIC BOAT COMPANY, A CORPORATION OF NEW JERSEY.

## SPRAY-SHIELD FOR SUBMARINE BOATS.

1,314,059.

Specification of Letters Patent. Patented Aug. 26, 1919.

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*To all whom it may concern:*

Be it known that I, HUGO E. GRIESHABER, a citizen of the United States, residing at Groton, in the county of New London, State of Connecticut, have invented certain new and useful Improvements in Spray-Shields for Submarine Boats; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to submarine boats and aims to provide a novel fairwater structure to act as a spray and weather shield for protecting members of the crew on an exterior navigating deck, usually an elevated deck or bridge above the coning tower provided with a hatch or hatches to permit the members of the crew to pass directly from the deck to the interior of the hull just before submergence.

The object of the present invention is to provide a spray-shield of rigid construction, to take the place of the familiar flimsy canvas weather cloth which is liable to be carried away in rough weather and is lost when the boat is compelled to submerge with the cloth left in place.

The present invention is preferably applied to a navigating bridge which extends in rear of and on both sides of the after portion of periscope sheers or the like; and then there may be provided a plurality of wings or movable wall members hinged at their forward ends to opposite sides of the sheers so that the wings may be swung out on opposite sides of the sheers to constitute with the sheers a spray-shield of fairwater contour adapted to adequately protect members of the crew on the bridge. The wings are preferably duplicates and so formed that they may be retracted to closely embrace the after portions of the sheers and may be secured in place as thus arranged by fastening their after ends together. The wings are also preferably so shaped that when the spray-shield is extended the contour of the forward portion of the sheers merges smoothly into the wings to provide a fairwater structure adapted to withstand deformation and displacement when the boat is propelled submerged.

The invention also involves in its preferred development, the provision of side walls of rigid construction fixed on opposite

sides of the bridge and coöperative with the extended wings or wall members to form a complete protecting structure for the navigating bridge.

It will be understood that the term sheers is used herein to include sheers for protecting some upstanding part of the boat, such as one or more periscopes or ventilators or both, or sheers provided solely for coöperating with the movable wall members to provide with them a spray-shield of fairwater contour which may be extended or collapsed as desired.

The invention will be understood clearly from the following description, when taken in connection with the accompanying drawing, illustrating a preferred embodiment of the invention.

In this drawing, Figure 1 is a plan view of an amidships portion of a submarine boat, showing a navigating station equipped with a spray-shield constructed according to the invention, and Fig. 2 is a side elevation of the parts shown in Fig. 1.

The submarine boat illustrated in the drawing has a hull 3, a superstructure 4 and a coning tower 5. Upstanding above the top of the coning tower are sheers 6 for protecting a plurality of periscopes 7, a navigating deck or bridge 8 being arranged above the coning tower and extending forward and aft of the sheers 6. The coning tower hatch is indicated at 9, the hatch being located aft of the sheers and in line therewith, and being provided with a suitable water-tight cover 10.

An electric steering control 11, preferably of the well known type now in use, and other suitable navigating fittings (not shown) may be positioned between the sheers and the hatch. A pair of vertically arranged duplicate wall members or wings 12 of suitably rigid construction, preferably of metal, are hingedly connected at their forward ends to opposite sides of the sheers 6 as indicated at 23.

Any suitable means may be provided for securing the wall members 12 in extended position; and in the present instance each of the wall members 12 is provided with a pair of fastening elements or pintles 13, adapted to embrace companion pintles extending from collar 14 fitting on a stanchion 14, the lower end of which is supported in a stanchion socket 15, and pins 110

are passed through the pintle bores as shown to secure the wall members in extended position.

The rear portions of the wall members 12 are curved so that the wall members may be swung in to closely embrace the after portion of the sheers 6, and the fastening elements 13 are so shaped and mounted on the wall members 12 that when the wall members are retracted to embrace the sheers as indicated in broken lines, the pintle bores of the fastening elements are in line, and the pins may be utilized to secure the wall members 12 in retracted position and close against the after portion of the sheers 6.

The spray-shield when arranged as shown in full lines, includes the sheers 6 and the wall members 12 and may be supplemented by the usual canvas side walls extending aft along the outer edges of the bridge although the rigid shield alone affords substantial protection for the navigating station and may be used alone when conditions require it, as immediately before submerging or in weather which would be liable to carry away the canvas.

I prefer however, to use in place of the usual canvas side walls, metal side walls 16 provided with pintles 13' adapted to embrace a second pair of pintles extending from collars 14' on stanchion 14. The metal side walls should be sufficiently rigid to withstand any expected water shocks while the vessel is traveling on the surface and may remain in place when the vessel is submerged, since they are parallel to the axis of the vessel and offer no appreciable resistance to the forward movement thereof.

I claim:

1. In a submarine boat, in combination, an exterior navigating station, and a collapsible spray-shield for protecting the station comprising fixed sheers and a plurality of wall members substantially conforming in contour to the sheers and movably connected to the boat on opposite sides of the sheers and adapted to be swung in to conform substantially to the contour of the sheers; substantially as described.

2. A submarine boat having an exterior navigating station, sheers upstanding adjacent to the forward part of the station,

and a plurality of rigid wall members pivoted to the sheers and formed and arranged so that they may be moved to expand or contract the spray-shield symmetrically on both sides of the after portion of the sheers; substantially as described.

3. In a submarine boat, in combination, an exterior navigating deck, sheers, and a plurality of substantially vertical wall members hinged at their forward ends to opposite sides of the sheers, whereby the walls may be swung out to protect members of the crew on the deck from spray, and means for securing the wall members in position when thus swung out; substantially as described.

4. In a submarine boat, in combination, sheers, a navigating deck extending on both sides of the after portion of the sheers, a plurality of rigid wall members adapted to be arranged on opposite sides of the sheers to protect the navigating deck at both sides of the sheers, and means for securing the wall members in place when thus adjusted; substantially as described.

5. In a submarine boat, in combination, sheers, a navigating deck in rear of the sheers, and a pair of wall members substantially conforming in contour to the after portion of the sheers and hinged at their forward ends to opposite sides of the sheers and adapted to be extended to shield the deck from spray and to be retracted to inclose the after portion of the sheers preparatory to submergence, and means for connecting the after ends of the wall members when retracted; substantially as described.

6. In a submarine boat having an exterior navigation station, a protecting structure therefor, comprising a pair of fixed side walls at opposite sides of the deck and a pair of movable side walls forward of the fixed side walls, the movable walls converging toward their forward ends and being hinged for adjustment toward each other and away from the fixed side walls, and means for securing the movable walls as adjusted; substantially as described.

In testimony whereof I affix my signature.

HUGO E. GRIESHABER.