(No Model.)

A. VIERT.

RUDDER.

No. 588,512. Patented Aug. 17, 1897.

Fig. 1.

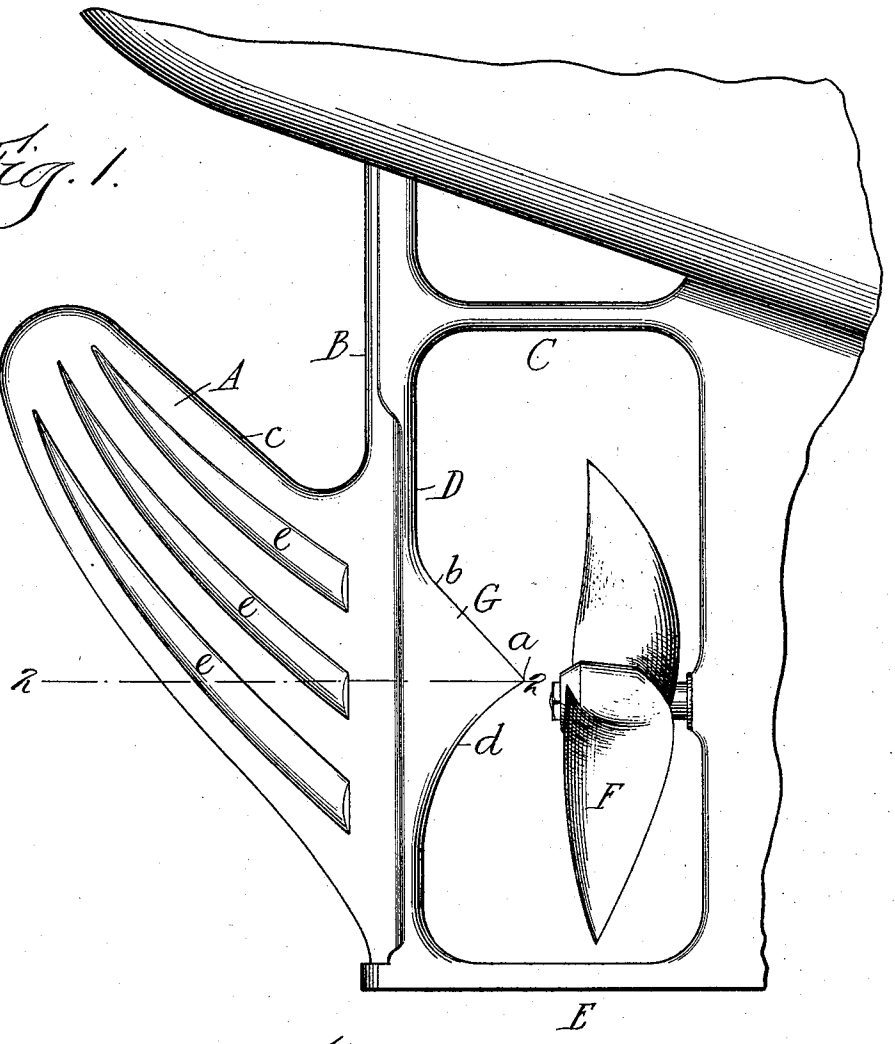
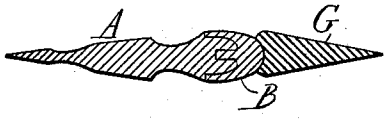


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

ALBERT VIERT, OF CHICAGO, ILLINOIS.

RUDDER.

SPECIFICATION forming part of Letters Patent No. 588,512, dated August 17, 1897.

Application filed July 27, 1896. Serial No. 600,717. (No model.)

To all whom it may concern:

Be it known that I, ALBERT VIERT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Rudders; 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.

My invention relates to a novel construction in rudders for screw-propelled vessels, the object being to provide a rudder which will be acted upon by the water column from the screw-propeller with greater force than heretofore, and thus provide a more efficient steerage and enable the use of a smaller rudder; and it consists in the features of construction hereinafter fully described and claimed.

In the accompanying drawings, illustrating my invention, Figure 1 is a side elevation of the stern of a vessel provided with a rudder constructed in accordance with my invention. Fig. 2 is a sectional view on the line 2 2 of Fig. 1.

In the construction of my rudder I have in view the fact that the propeller of a vessel lies deep and in a denser mass of water than the surface water. The water column thrown by the propeller will consequently take the course where it meets with the least resistance and therefore turns upwardly into the water of less density at a considerable angle. In this manner it avoids the main portion of the rudder now commonly used and passes above the same to an extent which greatly deteriorates from the efficiency of these rudders. My invention is intended to overcome this defect, and to this end I construct the same so that the blade or tongue A thereof extends upwardly from the lower portion of its shaft B at an incline which varies according to the depth of the propeller, the upward incline increasing with the depth. In this manner the said blade or tongue A lies in the center of the water column formed by the propeller and is obviously acted upon with the utmost power thereby.

In the drawings I have shown my rudder, comprising the blade or tongue A, mounted upon the shaft B, mounted in a frame C on the stern of the ship, which is of a shape commonly used on steamers of high tonnage. The rearmost upright or post D of said frame C is concave to receive the said shaft B, the lower end of which is journaled in the shoe E in the usual manner. The shaft of the propeller F is journaled in the forward upright of the said frame B. The said upright D of said frame C is provided with a forwardly-extending triangular projection G, the apex *a* of which is situated, preferably, opposite the uppermost portion of the propeller-shaft or the hub of the propeller F. The said projection G is sharp at its forward or projecting edges and is so formed that its upper edge *b* forms a continuation of the upper edge *c* of the blade or tongue A of the rudder, while its lower edge *d* is slightly curved and meets the forward edge of the upright D at a tangent. Said projection G serves to cut the water column into halves and throw an equal portion thereof upon each side of the rudder to insure equal pressure upon both sides thereof when not turned and serves to protect the rudder and frame from the full force of the water column.

Obviously by means of the upward incline of the blade or tongue A the same will be exposed to the full force of the water column in its upward passage, and to further utilize the latter I provide a series of grooves or recesses *e* in said blade or tongue A, which follow the incline thereof and gradually decrease in size and depth toward the rear end of the blade A. These said grooves or recesses are adapted to receive the water and thereby increase the resistance to its passage, thus causing it to act upon the rudder with greater force.

I claim as my invention—

1. A rudder comprising a blade or tongue, provided with longitudinal grooves or recesses, mounted upon a shaft and extending rearwardly therefrom at an upward incline, substantially as described.

2. The combination with a rudder-frame provided with a concave rearward upright having a forwardly-extending triangular projection, of a rudder mounted in said frame and comprising a blade or tongue mounted upon a shaft and extending rearwardly therefrom at an upward incline, the upper edge

of said blade being in alinement with the upper edge of said projection, substantially as described.

3. The combination with a rudder-frame provided with a concave rearward upright having a forwardly-extending triangular projection, of a rudder mounted in said frame and comprising a blade or tongue provided with longitudinal grooves or recesses mounted upon a shaft and extending rearwardly therefrom at an upward incline, the upper edge of said blade being in alinement with the upper edge of said projection, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ALBERT VIERT.

Witnesses:
RUDOLPH WM. LOTZ,
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